August 1966

SOYBEAN PROCESSING AND UTILIZATION

A Selected List of References 1955–1965

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PREFACE

This bibliography lists periodical articles, books, and patents (foreign and domestic) issued in the ten year period 1955-1965. All citations except those to patents have been examined and verified by the compiler. Patents cited were obtained from Chemical Abstracts.

The soybean has shown the most phenomenal development of any crop in the United States during the last thirty years. Soybean production has increased twelvefold during that time. The soybean crop is highly profitable to the American farmer and is the leading cash export farm commodity.

The processing and utilization of soybeans involve technical and marketing problems in the area of domestic consumption and in the export field. This bibliography is designed to chart the past decade's progress and suggest the future direction of research in the processing and utilization of the fourth most valuable agricultural crop of the United States.

Abbreviations for the titles of publications cited are taken from the American Standard for Periodical Title Abbreviations.

All foreign language titles have been translated into English with the original language indicated. Some less well-known languages, such as Hungarian, contain summaries in English, French, or German. Japanese publications are listed both in the translated and Romanized forms. The abbreviation "Ref." in an entry means that the article contains 10 or more references to other literature.

The bibliography is classified by subject and contains an author and subject index. Most items are followed by brief annotations, and the source of abstracts is indicated.

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Dissertation Abstracts, 1955-1965
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Nutrition Reviews, 1955-1965
Pesticides Documentation Bulletin, 1965

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PROCESSING AND UTILIZATION

A Selected List of References
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Compiled by Otto Kirchner-Dean
National Agricultural Library, Division of Reference
Special Bibliographies Section

PROCESSING

PROCESSING OF MEAL

General

1. BELTER, P. A., LANCASTER, C. R., and SMITH, A. K. Aqueous vapor pressure of soybean meal and its fractions. Amer. Oil Chem. Soc. J. 31(9):388-392. Sept. 1954. 307.8 J82
Food Abstr. 27:1443
Research to determine the moisture-adsorbing capacity of soybean-oil meal and its fractions at various temperatures, a problem of importance in the toasting and dehydration of soybean products.

2. BEN-GERA, I., ZIMMERMANN, G. Changes during storage in chemically determined lysine availability in soybean concentrate. Nature 202(4936):1007-1008. Ref. June 6, 1964. 472 N21
Chem. Abstr. 61:6259b

3. DISER, G. M. Control of the factors influencing protein quality in soybean meal by proper processing. Feedstuffs 35(9):72-74, 78, 86. Ref. Feb. 23, 1963. 286.81 F322
Chem. Abstr. 60:3420h
Fifty eight items in the bibliography together with tables and charts such as: Estimation of Nutritional Value of Soybean Meal by Dye Binding.

4. DUCHANGE, G. Soybean meal. Fr. Pat. 1,141,860. Sept. 11, 1957.
Chem. Abstr. 55:5805a

5. EL'CHENKO, S. I. Method of processing soybean meal into flour of first quality. (Rus) Masl. Zhir. Prom. 21(2):33-34. 1956. 307.8 M37

6. HESSELTINE, C. W., and SHIBASAKI, K. Miso. III. Pure culture fermentation with Saccharomyces rouxii. Appl. Microbiol. 9(6):515-518. 448.3 Ap5
Chem. Abstr. 56:15884c
Miso prepared with soybean grits.

7. HOLT, K. E. Third interim report of the A. O. C. S.-A. O. A. C. Crude fiber liaison committee, 1959-1960. Amer. Oil Chem. Soc. J. 38(3):150-151. Mar. 1961.
Chem. Abstr. 55:13693i
Statement of the screen for filtering fibers.

8. JOHNSON, D. W., and JULIAN, P. L. Removing sulfur dioxide from aqueous liquors. U. S. Pat. 2,962,421. Nov. 29, 1960.
Chem. Abstr. 55:7725e
To Glidden Company.

9. KING, W. H., THURBER, F. H., and ALTSCHUL, A. M. Treating vegetable oil-bearing materials to obtain meals of improved nutritive value. U. S. Pat. 2,726,155. Dec. 6, 1955.
Chem. Abstr. 50:5946d
To U. S. Dept. of Agriculture.

10. KRUSE, N. F., and WITTE, N. H. Apparatus for treating flowable materials. U. S. Pat. 3,018,564. Aug. 1, 1957.
Chem. Abstr. 56:7094b
To Central Soya Company.

11. KRUSE, N. F. Molasses feed. U. S. Pat. 2,947,632. Applied Jan. 12, 1956.
Chem. Abstr. 56:2748d
To Central Soya Company.

12. KRUSE, N. F. Treatment of solvent-extracted soybean meal. Ger. Pat. 1,067,290. Oct. 15, 1959.
Chem. Abstr. 54:23114i
To Central Soya Company.

13. KRUSE, N. F. Treatment of solvent-extracted soybean meal. U. S. Pat. 2,776,894. Jan. 8, 1957.
Chem. Abstr. 51:5328d
To Central Soya Company.

14. LIENER, I. E., and WADA, S. Chemical modification of the soybean hemagglutinin. J. Biol. Chem. 222(2):695-704. Ref. Oct. 1956. 381 J824
Chem. Abstr. 51:1346e
A number of derivatives of the soybean hemagglutinin have been prepared by modification of the animo and phenolic residues of the protein.

15. LYMAN, C. M., HARPER, G. A., and WILCKE, H. L. Significant differences between cottonseed and soybean meals from the standpoint of animal nutrition. Cottonseed Process. Clinic. South. Region. Res. Lab. Proc. 7:5-7. 1958. 1.9321 S2C82
Differences in terms of amino acid composition, processing and nutritional value, and crude fiber.

16. LYMAN, C. M., HARPER, G. A., and WILCKE, H. L. Significant differences between cottonseed and soybean meals from the standpoint of animal nutrition. Oil Mill Gaz. 64(11):25-26. May 1960. 307.8 Oi53
In terms of amino acid composition and crude fiber content; from the point of view of the investigator, the producer, and the feed manufacturer.

17. MORRISON, J. L. Column chromatography of soybean whey proteins. Diss. Abstr. 23(7):2312-2313. Jan. 1963. 241.8 M58
Thesis (Ph. D.)-Purdue University. 88 p.

18. MUSTAKAS, G. C., GRIFFIN, E. L., and KIRK, L. D. Debittered soybean product. U. S. Pat. 3,023,107. Feb. 27, 1962.
Chem. Abstr. 56:14684b
To U. S. Dept. of Agriculture.

19. OBATA, Y., and MIZUTANI, J. Isolation of a diketopiperazine derivative from the soy-bean meal hydrolysates, commercially available as "aminosaneki." Agr. Chem. Soc. Jap. Bull. 22(1):14-16. Jan. 1958. 385 Ag8B
Chem. Abstr. 52:14899f
L-isoleucyl-L-Valine anhydride isolated from soybean hydrolyzates.

20. OBATA, Y., ISHIKAWA, Y., and MIZUTANI, J. Studies on the degradation mechanisms of proteins and their derivatives in the foods. II. (Ja) Agr. Chem. Soc. Jap. J. 34(4):336-339. 1960. 385 Ag8
Chem. Abstr. 54:23113c
Regarding heat-labile sulfur compounds in soybean meal hydrolyzates.

21. PANEK, A. D. The products of the urease protein hydrolysis of soybeans and Canavalia ensiformis; paper chromatography. (Por) Brazil. Inst. de Quim. Agr. Bull. 40, 16 p. Ref. 1955. 385 B73B

22. RACKIS, J. J., and others. Amino acids in soybean hulls and oil meal fractions. J. Agr. Food Chem. 9(5):409-412. Ref. Sept./Oct. 1961. 381 J8223
R. L. Anderson, H. A. Sasame, A. K. Smith, and C. H. VanEtten, joint authors.
Chem. Abstr. 56:5172i
Amino acids determined by ion exchange chromatography on soybeans hulls, dehulled soybean meal, isolated soybean protein, and the residue.

23. REDE, C. VAN. The determination of urease activity in soybean meal. (Du) Chem. Weekbl. 55 (25):294-295. June 20, 1959. 385 C42
Chem. Abstr. 53:22600f

24. SCHRAMM, G., and AINES, P. D. Colorimetric determination of urease activity in soybean meals. Amer. Oil Chem. Soc. J. 36(1):1-3. Ref. Jan. 1959. 307.8 J82
Chem. Abstr. 53:4775i
The test is both accurate and specific for urease. The method is very reproducible and sensitive, especially at low urease activities.

25. SEED, J. B., and WALDIE, A. G. Dewatering slurries of insoluble meal after protein extraction. U. S. Pat. 2,756,668. July 31, 1956.
Chem. Abstr. 50:17253c
To Imperial Chemical Industries.

26. SHELBURNE, V. B., REYNOLDS, R. L., and KELLOGG, S. Bulk sampling of soybean oil meal. Amer. Oil Chem. Soc. J. 36(5):203-205. May 1959. 307.8 J82
Chem. Abstr. 53:12711d
Continuous flow method described does not conform to American Oil Chemists' Society Committee recommendation and hence has no official standing.

27. SMITH, A. K., and RACKIS, J. J. Phytin elimination in soybean protein isolation. Amer. Chem. Soc. J. 79(3):633-637. Feb. 5, 1957. 381 Am33J

Chem. Abstr. 51:7468d

Food Sci. Abstr. 29:1542

Study shows that plytin can be eliminated from water extract of soybean meal by a combination of dialysis and treatment with the aniomic exchange resin.

28. TENENT, J. Solvent processing of soybeans and controlling the products. Oil Mill Gaz. 61(2):35-36. Aug. 1958. 307.8 Oi53

Effects of processing on both meal and oil products.

29. WEYERMULLER, G., and SPENCER, M. R. Close control of flow and temperatures in soybean oil extraction. Chem. Process. 19(6):10-11. June 1956. 381 C4235

Preparation of edible soybean oil and nutritious soybean-meal feed.

30. WITTE, N. H., and SIPOS, E. Oilseed meal containing soybean soapstock. U. S. Pat. 3,033,683. May 8, 1962.

Chem. Abstr. 57:7696c

To Central Soya Company.

Extraction

31. ARNOLD, L. K., and BURNETT, G. The determination of small amounts of trichloroethylene in soybean oil meal. Iowa Acad. Sci. Proc. 61:210-216. 1954. 500 Io93

Chem. Abstr. 49:3557a

32. ARNOLD, L. K., CHOUDHURY, R. B. R., and CHANG, H. Y. Relation of the quality of solvent-extracted soybean oil and residual oil content of meal. Amer. Oil Chem. Soc. J. 38(7):336-338. Ref. July 1961. 307.8 J82

Chem. Abstr. 55:19280g

No evidence of any change in neutral oil composition with increased oil extraction.

33. BETGER, I. Fractionization of soybean seed proteins. (Rus) Akad. Nauk SSSR. Inst. Biokhim. im. A. N. Bakha. Biokhim. Zerna. Sborn. 4:34-39. Ref. 1958. 59 Ak1

34. BREKKE, O. L., and others. Flash desolventizer operation to produce soybean protein flakes. Amer. Oil Chem. Soc. J. 36(6):256-260. June 1959. 307.8 J82

G. C. Mustakas, M. C. Raether, and E. L. Griffin, joint authors.

Chem. Abstr. 53:14547

The flash desolventizing process removes hexane to produce high-quality, essentially undenatured, soybean protein flakes for industrial uses.

35. BRUGGEMANN, J. Plant protection and profitable animal nutrition. In Griesau, H. D. Vortrage Godesberg, p. 23-28. Bonn, Land-und Forstwirtschaftlichen Forschungsrat, 1958. 386.2 G872

Toxicity of benzine and trichloroethylene extracted soybean meal and a metallic fungicide.

36. BURNER, A. H. The operation of screw presses on soybeans. Oil Mill Gaz. 61(2):33-35. Aug. 1956. 307.8 Oi53

Includes discussion.

Screw-type soybean meal for export brings as much as $7.00 per ton more than solvent-extracted meal.

37. DELORT-LAVAL, J., and BOZA LOPEZ, J. Efficiency of some dietary proteins in the pig. V. Influence of the mode of oil extraction on the protein efficiency of soybean oil meals-value of some biochemical tests for the estimation of their quality. (Fr) Ann. Zootech. 13(1):35-50. Ref. 1964. 49 F84

English summary.

Extensive bibliography.

38. ECKERS, C. G. Apparatus for removing proteinaceous material from peanut and soybean extraction residues. Ger. Pat. 839,594. May 23, 1952.

Chem. Abstr. 50:2194a

To Aktiebolaget Separator and Imperial Industries.

39. GASTROCK, E. A., and others. A report on the problems of residual solvent in solvent-extraced meals. Amer. Oil Chem. Soc. J. 37(4):192-195. Apr. 1960. 307.8 J82

Chem. Abstr. 54:11519f

J. J. Spadaro, A. J. Crovetto, and R. Brian, joint authors.

A method for detecting potentially dangerous percentages of solvent, hexane, in soybean meal.

40. GREENBERG, J., and others. Toxicity of amine-extracted soybean meal. J. Agr. Food Chem. 7(8): 573-576. Ref. Aug. 1959. 381 J8223

D. J. Taylor, H. W. Bond, and J. F. Sherman, joint authors.

Chem. Abstr. 53:22608e

Soybean meal extracted with trichloroethylene is

toxic for cattle, sheep, chickens, and guinea pigs. Study of toxic factor.

41. HILL, E. G., and others. Studies on trichloroethylene-extracted feeds. 8. The relative resistance of avian species to the toxic factor in trichloroethylene-extracted soybean oil meal. Poultry Sci. 35:686-692. Ref. May 1956. 47.8 Am33P

K. P. Misra, T. H. Canfield, E. L. Johnson, V. Perman, W. R. Pritchard, J. H. Sautter, and M. O. Schultze, joint authors.

Food Sci. Abstr. 28:2473

No definite symptoms of toxicity could be ascribed to the specimens of TCESOM tested.

42. KRUSE, N. F. Soybean powder high in thiamine. Ger. Pat. 1,011,270. June 27, 1957.

Chem. Abstr. 54:16,691g

To Central Soya Company.

43. MCKINNEY, L. L., and others. Possible toxic factor of trichloroethylene-extracted soybean oil meal. Amer. Chem. Soc. J. 81(4):909-915. Ref. Feb. 20, 1959. 381 Am33J

J. C. Picken, F. B. Weakley, A. C. Eldridge, R. E. Campbell, J. C. Cowan, and H. E. Biester, joint authors.

Chem. Abstr. 53:11696c

Toxic to cattle.

Enzymic hydrolysis of a toxic protein from trichloroethylene-extracted soybean oil meal resulted in the loss of a large portion of its toxicity.

44. PICKEN, J. C., and others. Toxicity of trichloroethylene-extracted soybean oil meal. J. Agr. Food Chem. 3(5):420-424. Ref. May 1955. 381 J8223

Chem. Abstr. 49:10547g

Food Sci. Abstr. 2464

N. L. Jacobson, R. S. Allen, H. E. Biester, P. C. Bennett, L. L. McKinney, and J. C. Cowan, joint authors.

Toxicity.

45. PICKEN, J. C., BIESTER, H. E., and COVAULT, C. H. Trichloroethylene extracted soybean oil meal poisoning. Iowa State Coll. Vet. 14(3):137-141. 1952. 41.8 V6425

Chem. Abstr. 49:1238a

Experimental studies confirm this disease.

46. RYAZANSKII, KH. I. Soybean meal. U. S. S. R. Pat. 131,012. Aug. 20, 1960.

Chem. Abstr. 55:5806a

47. WILCOX, R. Soybean oil meal as a possible source of growth promoting factors. S. Dak. Acad. Sci. Proc. 39:73-76. 1960. 500 So82

Poultry.

A water extraction of soybean oil meal removed material which when added to an isolated soybean protein diet, gave significant increases in growth in poults.

48. WOLF, W. J., and BRIGGS, D. R. Ultracentrifugal investigation of the effect of neutral salts on the extraction of soybean proteins. Arch. Biochem. Biophys. 63:40-49. Ref. July 1956. 381 Ar2

Chem. Abstr. 50:14833f

Estimates were made of the amount of each fraction extractable at the different salt concentrations.

49. YAMANOUCHI, M. Extraction of phytosterol from soybean cake. Jap. Pat. 2673. Apr. 20, 1959.

Chem. Abstr. 54:12503h

Heat Treatment

50. CAPPA, V., and PIVA, G. Variations of the biological value of the soybean oil meals according to the heat treatment intensity. (It) Soc. Ital. delle Sci. Vet. Atti 16(2):87-90. 1962. pub. 1963. 41.9 So17

English summary.

51. DANGOUMAU, A., and DEBRUYNE, H. Control of the thermic treatment of soybean cakes. Rev. Franc. Corps Gras 2(6):390-393. June 1955. 307.8 R32

Chem. Abstr. 49:12019h

Methods described for determination of urease activity in soybean cakes.

52. DEPMER, W. New knowledge in the toasting of soybean-meal. (Ge) Fette, Seifen, Anstrichmtl. 65(3):214-217. Mar. 1963. 384 C422

English summary.

New technology described for obtaining high quality soybean meal.

53. EVANS, R. J., BANDEMER, S. L., and BAUER, D. H. Heat effects on proteins: effect of heating soybean proteins in the autoclave on the liberation of cystine and methionine by several digestion procedures. J. Agr. Food Chem. 10(5):416-418. Ref. Sept./Oct. 1962. 381 J8223

Includes the following tables:

1. Destruction of cystine by heating soybean meal

or protein in an autoclave.

2. Destruction of cystine by autoclaving.

3. Release of cystine from soybean alpha protein in a microbiological available form by acid hydrolysis.

4. Liberation of cystine and methionine from soybean meal and soybean proteins.

54. EVANS, R. J., BANDEMER, S. L., and BAUER, D. H. Influence of autoclaving soybean proteins on liberation of aspartic and glutamic acids and lysine by several digestion procedures. J. Food Sci. 26(6):663-669. Ref. Nov./Dec. 1961. 389.8 F7322

Autoclaving soybean protein formed lysine-aspartic acid and lysine-glutamic acid linkages that were resistant to mild hydrolysis.

55. FRANEK, F. Moist heat denaturation of soyabean proteins. J. Sci. Indus. Res. 17B(5):75-80. Ref. May 1958. 475 J82

Chem. Abstr. 53:596c

Hypothesis presented to explain the changes in soybean proteins caused by moist neat.

56. HOUGEN, J. O. Thermal properties of soybean oil meal. J. Chem. Eng. Data 2(1):51-54. Aug. 1957. 381 C4242

Chem. Abstr. 52:5857i

The objective of this work was to determine experimentally the thermal properties of a typical soybean oil meal, including thermal conductivity, thermal diffusivity, and heat capacity.

57. LONGENECKER, J. B., MARTIN, W. H., and SARETT, H. P. Protein quality improvement: Improvement in the protein efficiency of soybean concentrates and isolates by heat treatment. J. Agr. Food Chem. 12(5):411-414. Ref. Sept./Oct. 1964. 381 J8223

Protein efficiency values were determined for three soybean concentrates and four soybean isolates before and after mild heat treatment.

58. MCKINNEY, L. L., and others. Toxic protein from trichloroethylene-extracted soybean oil meal. Amer. Oil Chem. Soc. J. 34(9):461-466. Ref. Sept. 1957. 307.8 J82

F. B. Weakley, R. E. Campbell, A. C. Eldridge, J. C. Cowan, J. C. Picken, and N. L. Jacobson, joint authors.

Chem. Abstr. 51:18361h

Calf-assay of the samples indicated that the toxic factor is associated with the protein. Measurable destruction of toxic factor occurs when the protein is treated with alkali. Fed to cattle.

59. MORAN, E. T., JENSEN, L. S., and MCGINNIS, J. Dye binding by soybean and fish meal as an index of quality. J. Nutr. 79(2):239-244. Ref. Feb. 1963. 389.8 J82

Chem. Abstr. 60:6142g

An effort to establish a relationship between dye binding capacity, protein quality, and heat treatment.

60. NEHRING, K., BOCK, H. D., and WUENSCHE, J. Protein quality of toasted (steam-heated) and untoasted soybean meal. (Ge) Nahrung 7(3):233-242. 1963. Libr. Cong.

Chem. Abstr. 60:4697d

English summary.

Results of biological, chemical and microbiological tests for protein quality are reported.

61. PHILLIPS, M. A. The detoxification of guar and soya meals. World Crops 14(11):393-394, 396. Nov. 1962. 281.8 W892

Discusses the effect of heat and detoxification. Feed.

62. PIANA, G., and PIVA, G. Influence of thermic treatments on amino acid percentage in soybean meals and on the behavior of single amino acids during enzymatic hydrolysis. (It) Soc. Ital. Sci. Vet. Atti 16(2):84-87. 1962, pub. 1963. 41.9 Sol7

English summary.

63. POMERANZ, Y., and LINDNER, C. A simple method for evaluation of heat treatment of soybean meal. Amer. Oil Chem. Soc. J. 37(3):124-126. Ref. Mar. 1960. 307.8 J82

Chem. Abstr. 54:9326g

A simple and rapid method for estimating protein solubility on the basis of changes in the refractive index of dilute sodium hydroxide solution extracts.

64. POMERANZ, Y. Thiamine destruction as an index of soymeal heat treatment. Israel. Res. Counc. Bull. 7C(2):115. Dec. 1959. 330.9 Is72B

Description of 7 soybean meal samples and the thiamine content of each.

65. SHERROD, L. B., and TILLMAN, A. D. Effects of varying the processing temperatures upon the nutritive values for sheep of solvent-extracted soybean and cottonseed meals. J. Anim. Sci. 21(4):901-910. Ref. Nov. 1962. 49 J82

Autoclaving for 45 minutes as compared with no heat improved gains and feed efficiencies.

66. SIPOS, E., and WITTE, N. H. The Desolventizer-Toaster Process for soybean oil meal. Amer. Oil Chem. Soc. J. 38(3):11-12, 17-19. Mar. 1961. 307.8 J82

A study of the importance of properly toasted meal for use in feed formulas.

Proteins

67. ANSON, M. L., and PADER, M. Extraction of soybean protein. U. S. Pat. 2,785,155. Mar. 12, 1957.

Chem. Abstr. 51:7612g

Soybean protein collected as a white cake containing 25-30 percent protein. It is free of off-color and off-flavor and gels readily.

To Lever Brothers Company.

68. BERK, Z. Technological aspect of the utilization of soy proteins. Israel. Res. Council. Bull. 9C (3):155-157. Ref. Apr. 1961. 330.9 Is72B

Advantages of isolated soy proteins discussed as supplement for bread dough. References include patents.

69. BIRK, Y., and BONDI, A. The action of proteolytic enzymes on protein feeds. II. J. Sci. Food Agr. 6(9):549-556. Sept. 1955.

Chem. Abstr. 50:420e

Food Sci. Abstr. 28:831.

Intermediary products precipitated by trichloroacetic acid and phosphotungstic acid from peptic and pancreatic digests.

70. BORDEN CO. Prevention of the putrefaction of protein. Brit. Pat. 826,326. Jan. 6, 1960.

Chem. Abstr. 54:14504f

71. DELORT-LAVAL, J., and BOZA LOPEZ, J. Efficiency of some alimentary proteins in the pig. V. (Fr) Ann. Zootech. 13(1):35-50. 1964. 49 F84

Chem. Abstr. 61:7433d

Effect of technological treatment on the value of the soybean proteins.

72. ELDRIDGE, A. C., and others. Alcohol washing of soybean protein. J. Agr. Food Chem. 11(4):323-328. Ref. July/Aug. 1963. 381 J8223

W. J. Wolf, A. M. Nash, and A. K. Smith, joint authors.

Chem. Abstr. 59:5697h

Lipides are extractable with aqueous alcohols.

73. HASEGAWA, K., KUSANO, T., and MITSUDA, H. Fractionation of soybean proteins by gel filtration. Agr. Biol. Chem. 27(12):878-880. Ref. Dec. 1963. 385 Ag8B

A study of the sedimentation constants of four major components of soybean proteins.

74. KAWAMURA, S. Utilization of the by-products of soybean-protein manufacture. VII. Tec. Bull. Kagawa Agr. Coll. 6(3):227-240. Ref. Mar. 1955. 107.6 K13

Chem. Abstr. 49:15121i

In English.

Deals with utilizing soluble carbohydrates. Soluble carbohydrate should be concentrated and utilized before the alkaline extraction of protein.

75. MUSTAKAS, G. C., KIRK, L. D., and GRIFFIN, E. L. Flash desolventizing defatted soybean meals washed with aqueous alcohols to yield a high-protein product. Amer. Oil Chem. Soc. J. 39(4):222-226. Apr. 1962. 307.8 J82

Chem. Abstr. 57:3839c

The soybean flakes extracted with methanol showed the best flavor.

76. NUGENT, C. T., and KAUCHER, J. W. Soybean protein. U. S. Pat. 2,712,539. July 5, 1955.

Chem. Abstr. 49:13672f

To Buckeye Cotton Oil Company.

77. PAULSEN, T. M., HOLT, K. E., and ANDERSON, R. E. Determination of water-dispersible protein in soybean oil meals and flours. Amer. Oil Chem. Soc. J. 37(4):165-171. Apr. 1960. 307.8 J82

Chem. Abstr. 54:13478i

Probable sources of error discussed based on results in three laboratories.

78. SAIR, L. Extracting protein from defatted soybean material. U. S. Pat. 3,001,875. Sept. 26, 1961.

Chem. Abstr. 57:8979i

To Griffith Laboratories.

79. SAIR, L. Soybean protein. U. S. Pat. 2,881,076. Apr. 7, 1959.

Chem. Abstr. 53:14381e

To Griffith Laboratories.

80. SMITH, A. K., and others. Soybean by-products: recovery of soybean whey protein with edible gums and detergents. J. Agr. Food Chem. 10(4):302-304. Ref. July/Aug. 1962. 381 J8223

As an economical recovery method has not yet been

developed, whey presents a serious waste disposal problem.

81. SMITH, A. K., SCHUBERT, E. N., and BELTER, P. A. Soybean protein fractions and their electrophoretic patterns. Amer. Oil Chem. Soc. J. 32:274-278. Ref. May 1955. 307.8 J82
Chem. Abstr. 49:8615b
Food Sci. Abstr. 28:401
Electrophoretic characterization of proteins from a water extract of fat-free, undenatured, soybean meal.

PROCESSING OF OIL

General

82. BAGLAI, G. I., and others. Continuous hydration of soybean and flax seed oils with the production of phosphatide concentrates. (Rus) Masl. Zhir. Prom. 24(4):7-9. 1958. 307.8 M37
E. G. Patkanov, V. P. Rzhekhin, and E. A. Semenov, joint authors.
Chem. Abstr. 52:13288g
Tabulated data on phospholipides giving contents of soybean oil before and after hydration period.

83. BAILEY, A. E. Bailey's industrial oil and fat products. Ed. 3., edited by K. F. Mattil, F. A. Morris, A. J. Stirton, and D. Swern. New York, Intersci., 1964. 1103 p. Ref. 307 B15
Divided into two sections: The nature of fats and oils; raw materials for oil and fat products. Processing and final products included.

84. BECKER, E. The influence of interesterification on the crystallization of fat or fat mixtures. (Ge) Fette, Seifen, Anstrichmittel 61(10):1040-1046. Oct. 1959. 384 C422
Chem. Abstr. 55:8893g
English summary.
Data included for mixtures of soybean oil with other oils.

85. BELL, A., and KNOWLES, M. B. Stabilization of fats and oils with tetrahydroxy derivatives of biphenyl. U. S. Pat. 2,697,111. Dec. 14, 1954.
Chem. Abstr. 49:4312a
Imparts antioxidant properties to soybean oil.
To Eastman Kodak Company.

86. BELOBORODOV, V. V. Coefficient of diffusion of some vegetable oils. (Rus) Zh. Priklad. Khim. 29(9):1437-1438. Sept. 1956. 385 Z64
Chem. Abstr. 51:3161i
Crude soybean oil included in the study.

87. BOOTH, A. N., and DEEDS, F. Chronic toxicity study of phytic-acid treated soybean oil for rats. Food Res. 20(6):582-586. Nov./Dec. 1955. 389.8 F7322
Chem. Abstr. 50:6705g
Phytic acid treated oil is non-toxic.

88. BORNSTEIN, S. Utilization of by-products of the soybean oil industry for poultry feed. Israel. Res. Council. Bull. 9C(3):163-166. Apr. 1961. 330.9 Is72B
Study of the use of fatty supplements which are by-products of the soybean oil industry.

89. BRADLEY, T. F., MUELLER, A. C., and SHOKAL, E. C. Fractionation of fatty acid glycerides. U. S. Pat. 2,700,036. Jan. 18, 1955.
Chem. Abstr. 49:6630f
To Shell Development Company.

90. BRUECKE, O. Refining vegetable and animal oils and fats. Ger. Pat. 1,099,676. Applied July 7, 1959.
Chem. Abstr. 56:3581i

91. BURGERS, J., MOTL, C. W., and SEIDEN, P. Random rearrangement of glyceride esters. Can. Pat. 672,715. Oct. 22, 1963.
Chem. Abstr. 60:4350f
To Proctor & Gamble Company.

92. CANDELA, A., and JACINI, G. Phosphatidic acids. Olii Mineral Grassi Saponi Colori Vernici 36 (4):110-113. Apr. 1959. 307.8 OL3
Chem. Abstr. 53:23009h
From soybean oils. Their antioxidizing power determined.

93. CAPELLA, P., and others. Thermally polymerized vegetable oils. (It) Chim. Indus. (Milan) 43(9):1004-1013. Ref. Sept. 1961. 385 G43
Chem. Abstr. 56:8863c
G. de Zotti, A. Arpino, A.F. Valentini, G.S. Ricca, and G. Jacini, joint authors.
Process concentrates monoolefinic acids and eliminates di- and triolefinic acids.

94. CHOUDHURY, R. B. R., and ARNOLD, L. K. The determination of the neutral oil content of crude vegetable oils. Amer. Oil Chem. Soc. J. 37(2):87-88. Feb. 1960. 307.8 J82
Chem. Abstr. 54:7184f

Gives amounts of neutral oil recovered from samples of soybean oil by different volumes of wash chloroform.

95. CLAYTON, B. Upgrading of soda ash soapstock. U. S. Pat. 2, 902, 501. Sept. 1, 1959.
Chem. Abstr. 54:930g

96. COLLINS, F. L., and SEDGWICK, V. E. A rapid spectrophotometric method for determining the linoleic and linolenic acid components of soybean oil. Amer. Oil Chem. Soc. J. 33:149-152. Apr. 1956. 307.8 J82
Chem. Abstr. 50:8233c
Food Sci. Abstr. 28:2314
A rapid means of analyzing soybean oil for linolenic and linoleic acids.

97. CRAIG, B. M., and MURTY, N. L. Quantitative fatty acid analysis of vegetable oils by gas-liquid chromatography. Amer. Oil Chem. Soc. J. 36(11): 549-552. Nov. 1959. 307.8 J82
Chem. Abstr. 54:927g
Including soybean oil.

98. CRAIG, B. M., and MURTY, N. L. The separation of saturated and unsaturated fatty acid esters by gas-liquid chromatography. Can. J. Chem. 36(9): 1297-1301. Ref. Sept. 1958. 470 C16B
Chem. Abstr. 53:2647h
Fatty acid esters of soybeans included.

99. CRAUER, L. S. Continuous recovery of acid oil. Amer. Oil Chem. Soc. J. 42(7):661-663. July 1965. 307.8 J82
A continuous process for acidulation of all types of caustic soapstocks is described. Degummed soybean.

100. DAFIENO, V. M., and BOTTOM, R. R. Measurement of the rancidity of oils by the surface tension. Rev. Fac. Quim. Univ. Nacl. Mayor San Marcos (Lima, Peru) 7(1):32-35. June 1955. 385 Un3
Chem. Abstr. 50:17485g
Surface tensions increase with increase of acid content.

101. DICKHART, W. A. A suggestion for a U. S. P. test for olive oil. Amer. J. Pharm. 128(10):386-387. Oct. 1957. 396.8 Am3
Chem. Abstr. 51:4647a
Soybean oil was examined by the method.

102. DOLLEAR, F. G. Vegetable oils, fats, and waxes. Indus. Eng. Chem. 50(6):48A-51A. June 1958. 381 J825
Fifty years of processing vegetable oils, including soybean oil, for edible and industrial uses, in the United States, 1909-1958.

103. DOUGHTY, H. N. Checking the oil in soybeans. Co-op Grain Quart. 16(1):57. May 1958. 280.28 C7898
Suggests the use of the dielectric test and shows its accuracy.

104. DUNMIRE, R. P. Animal feed. U. S. Pat. 2, 685, 517. Aug. 3, 1954.
Chem. Abstr. 49:1240h
To Nutrition Products.

105. EIDELMAN, M. Determination of micro quantities of some chlorinated organic pesticide residues in edible fats and oils. J. Ass. Offic. Agr. Chem. 46(2):182-186. Apr. 1963. 381 As7
Chem. Abstr. 58:14625c
Soybean oil included.

106. EIKERMANN, H. Lecithin of low cephalin content. Ger. Pat. 1, 047, 597. Dec. 24, 1958.
Chem. Abstr. 55:10753b
To Nattermann (A.) & Cie.

107. EVANS, C. D., OSWALD, J., and COWAN, J. C. Soybean unsaponifiables: hydrocarbons from deodorizer condensates. Amer. Oil Chem. Soc. J. 41 (6, tech. sect.):406-411. Ref. June 1964. 307.8 J82
Chem. Abstr. 61:3313d
C14 analysis showed that the hydrocarbons are natural to soybean oil and not artifacts arising from petroleum solvent residues.

108. FIRESTONE, D. Report on spectrophotometric methods for fats and oils. Ass. Offic. Agr. Chem. J. 40(2):487-491. May 15, 1957. 381 As7
Chem. Abstr. 51:10927a
Polyunsaturated acids.

109. FRANCESCO, F. DE Instrumental analysis of oils and fats. III. Visible spectrophotometry. Olearia 15(3):153-157. May/June 1961. 307.8 OL2
Chem. Abstr. 55:27921c

110. FRANKEL, E. N., and others. Analyses of lipides and oxidation products by partition chromatography. Dimeric and polymeric products. Amer. Oil Chem. Soc. J. 38(3):130-134. Ref. Mar. 1961.
Chem. Abstr. 55:12890c

C. D. Evans, H. A. Moser, D. G. McConnell, and J. C. Cowan, joint authors.

Method used to determine the oxidation that an oil receives before deodorization and to follow various phases of fat oxidation, polymerization, and processing.

111. FRANKEL, E. N., and others. Determination of tocopherol in oxidized fats: interference from heat-formed reducing substances in highly oxidized fats. Amer. Oil Chem. Soc. J. 35(10):600-602. Nov. 1958. 307.8 J82

Chem. Abstr. 53:1578g

P. M. Cooney, C. D. Evans, and J. C. Cowan, joint authors.

Shows relationship between polymeric reducing substances and peroxide values. Includes soybean fats.

112. FRANKEL, E. N., EVANS, C. D., and COWAN, J. C. Thermal dimerization of fatty ester hydroperoxides. Amer. Oil Chem. Soc. J. 37(9):418-424. Sept. 1960. 307.8 J82

Chem. Abstr. 54:23370i

Fatty esters of soybean oil considered in the study.

113. FRANZKE, C. and IWAINSKY, H. The anti-oxidant activity of melanoidins.(Ge) Deut. Lebensmittal Rundsch. 50(10):251-254. Oct. 1954. 389.8 D482

Food Sci. Abstr. 27:717

In soybean oil.

114. FRANZKE, C. Detection of marine oils and edible fats. (Ge) Nahrung 8(3):249-251. Mar. 1964. 389.9 N142

Chem. Abstr. 61:3621a

English summary.

By means of spectral analysis.

115. FRANZKE, C. Observations on the iodometric procedure for the estimation of the peroxide number in edible fats. (Ge) Z. Lebensmittel-Untersuch. Forsch. 103(2):108-112. Feb. 1956. 384 Z39

Food Sci. Abstr. 28:1542

Soybean fats included.

116. FREHSE, H., and FRANKE, W. Fat-oxidation by vegetable lipoxidase and fatty acid dehydrogenases. (Ge) Fette, Seifen, Anstrichmittel 58(6):403-408. Ref. June 1956. 384 C422

Food Sci. Abs. 29:713

English summary.

117. FRYER, F. H., ORMAND, W. L., and CRUMP, G. B. Triglyceride elution by gas chromatography. J. Amer. Oil Chem. Soc. 37(11):589-590. Nov. 1960. 307.8 J82

Chem. Abstr. 55:4013e

A new development in gas-liquid phase chromatography analysis of fats and oils including soybean oil.

118. FUKUZUMI, K., and KOYAMA, Y. Fat splitting by the Twitchell process at low temperature. Amer. Oil Chem. Soc. J. 34(10):500-503. Oct. 1957. 307.8 J82

Chem. Abstr. 52:753h

119. GIMENO VILLACAMPA, M. Stabilizing refined soybean, olive, and cottonseed oils with citric acid. Grasas Aceites 8(4):162-165. Ref. July/Aug. 1957. 307.8 G76

English summary.

Chem. Abstr. 52:3368i

Use of citric and its degradation products as anti-oxidants for oils is reviewed.

120. GORRINDO, P. J. Epoxidation in situ of vegetable oils. (Fr) Chim. Indus. 85(6):907-912. June 1961. 383 C42

Chem. Abstr. 55:21623i

English summary.

Study to determine highest yields in epoxy compounds. Epoxidation of soybean oil included.

121. GOTODA, M. A study for amelioration of drying oils by silent electrical discharge Part 2: Air or nitrogen medium. J. Electro Chem. Soc. Japan. 24 (7):313-321. July 1956. Libr. Cong.

Chem. Abstr. 51:737h

Summary in English.

Soybean oil transformed into polymerized oil by high-frequency discharge.

122. GUTIERREZ GONZALEZ-QUIJANO, R. On the preservation with antioxidants and in open containers of a mixture of 50 o/o olive and soybean oils. (Sp) Grasas Aceites 14(6):249-253. Nov./Dec. 1963. 307.8 G76

English summary.

123. GUTIERREZ GONZALEZ-QUIJANO, R. Problems in the storage of soybean oil. (Sp) Grasas Aceites 12(4):190-198. Ref. July/Aug. 1961. 307.8 G76

English summary.

124. HANSEN, L. I., and SEDGWICK, G. O. Epoxidized oils. U. S. Pat. 3,051,729. Aug. 28, 1962.

Chem. Abstr. 57:13906d
To Archer-Daniels-Midland Company.

125. HASHIMOTO, T., and SHIINA, H. Elaidinization of fats, fatty acids, or their esters. Jap. Pat. 10, 795. Dec. 26, 1958.
Chem. Abstr. 54:6161b
To Bureau of Industrial Technics.

126. HECKLES, J. S., and DUNLAP, L. H. Urea adducts of mono- and diesters of fatty acids. Amer. Oil Chem. Soc. J. 32(4):224-229. Apr. 1955. 307.8 J82
Food Sci. Abstr. 27:2309
Includes urea extraction of glycerol monoester of soybean oil fatty acids.

127. HEDLEY (T.) & CO. Crystallization of saturated triglycerides from soybean oil. Brit. Pat. 904, 048. Aug. 22, 1962.
Chem. Abstr. 58:1653e

128. HEIDRICK, P. L., and CONVOY, H. W. Detection of antioxidants in oils, fats and waxes. (Abstr.) J. Sci. Food Agr. 14(2):101. Feb. 1963. 382 So12

129. HEIMANN, W. Inhibitols of soybean and olive oil. (Ge) Fette, Seifen, Anstrichmittel 58(5):343-347. May 1956. 384 C422
Chem. Abstr. 51:10927i
Food Sci. Abstr. 28:1897
English summary.
Isolation of antioxygenous compounds of raw soybean oil.

130. JAKUBOWSKI, A. Hydration of phospholipids in soybean oils. (Fr) Oleagineux 17(3):201-205. Ref. Mar. 1962. 77.8 OL2
Chem. Abstr. 57:8678e
Also hydration of lecithins and cephalins of refined soybean oil.

131. JOHNSON, J. L., GROSTIC, M. F., and JENSEN, A. O. Determination of stigmasterol in soybean sterol mixtures by infrared method. Anal. Chem. 29(4, pt. 1):468-470. Apr. 1957. 381 J825A
Chem. Abstr. 51:9086b

132. JULIAN, P. L., IVESON, H. T., and RADLOVE, S. B. Hydroxylation of vegetable oils and products therefrom. U. S. Pat. 2, 752, 376. June 26, 1956.
Chem. Abstr. 50:13482g
To Glidden Company.

The resulting pale viscous oil had an iodine value of 22.7 and an acid value of 19.5.

133. JURRIENS, G., and KROESEN, A. C. J. Determination of glyceride composition of several solid and liquid fats. Amer. Oil Chem. Soc. J. 42(1):9-14. Ref. Jan. 1965. 307.8 J82
Analysis of soybean oil by separation the triglycerides according to their degree of unsaturation.

134. KAFFKA, K., and SZEPLAKY, M. A continuous molecular distillation apparatus with rotating trays. (Hu) Magyar Kem. Lapja 14(9):374-377. Sept. 1959. 385 M27
Chem. Abstr. 54:4071d
Separation of fractions of oil.

135. KALBAG, S. S., and others. Polarographic studies of fat oxidation. Amer. Oil Chem. Soc. J. 32(5):271-274. 307.8 J82
Food Sci. Abstr. 27:2737
K. A. Narayan, S. S. Chang, and F. A. Kummerow, joint authors.

136. KAUFFMAN, F. L., and others. Gas-liquid partition chromatography and ultraviolet absorption of oils before and after hydrogenation. Amer. Oil Chem. Soc. J. 38(9):495-497. Sept. 1961. 307.8 J82
Chem. Abstr. 55:24053c
T. J. Weiss, G. D. Lee, and B. N. Rockwood, joint authors.
Soybean oil included.

137. KAUFMANN, H. P., and SCHNURBUSCH, H. Interesterification of fats. II. The colorimetric testing of interesterification with the help of differential-thermo-analysis. Fette, Seifen, Anstrichmittel. 61(3):177-181. Mar. 1959. 384 C422
Chem. Abstr. 53:16559i
English summary.
Includes the work with soybean oil.

138. KAUFMANN, H.P., and SCHNURBUSCH, H. Paper chromatography in the fat field. XXX. (Ge) Fette, Seifen, Anstrichmittel 61(7):523-528. July 1959. 384 C422
Chem. Abstr. 54:5129c
Paper chromatographic analysis of the glycerides.

139. KAUFMANN, H.P., and SCHNURBUSCH, H. The paper chromatography of fats. 39. Analysis of mixtures of fatty acids by means of the copper-mercury method. (Ge). Fette, Seifen, Anstrichmittel. 60(11):1046-1050. Nov. 1958.

384 C422
Chem. Abstr. 53:8663h
Soybean fats included.

140. KAUFMANN, H. P., and DAS, B. Thin-layer chromatography in the field of fats. IX. (Ge) Fette, Seifen, Anstrichmittel 65(5):398-402. May 1963.
384 C422
Chem. Abstr. 59:5374e
English summary.

141. KIRSCHENBAUER, H. G. Fats and oils, an outline of their chemistry and technology. Ed. 2. New York, Reinhold, 1960. 240 p. Ref. 307 K63
Includes the technology of fats and some important fats and a list which includes soybean oil.

142. KOCATAS, B. M., and CORNELL, D. Holdup and residual saturation of hexane in gravity-drained soybean flake beds. Indus. Eng. Chem. 46(6):1219-1224. June 1954. 381 J825
Food Sci. Abstr. 27:1224
Soybean oil is extracted from soybean flakes by using hexane as a solvent. Remaining hexane after extration must be removed by heat in a desolventizer.

143. KONINKLIJKE STEARINE KAARSENFABRIEKEN. "Gouda-Apollo". Epoxidation of unsaturated compounds. Dutch Pat. 90, 753. Apr. 15, 1959.
Chem. Abstr. 54:12620g

144. KURITA, K. Spectrophotometric studies on the purification of fats and oils. I. On soybean oil. (Ja.) Abura Kagaku 5(6):347-349. 1956. Libr. Cong.
Chem. Abstr. 51:15972e
Titles translated into English.

145. LANCASTER, E. B., BITNER, E. D., and BEAL, R. E. Recording apparatus for measuring oxygen absorption. Amer. Oil Chem. Soc. J. 33(1):36-38. Jan. 1956. 307.8 J82
Chem. Abstr. 50:3779d
Food Sci. Abstr. 28:1543
A method sought to predict shelf life of edible oils. Apparatus used to determine oxidative stability of hydrogenated soybean oil.

146. LATOURETTE, H. K., and CASTRANTES, H. M. Continuous epoxidation. U. S. Pat. 3, 065, 245. Nov. 20, 1962.
Chem. Abstr. 58:9026b
To FMC Corporation.

147. MACIAG, I. Stability of vitamin A in some oils. (Pol) Acta Pol. Pharm. 15:447-456. 1958. Nat. Libr. Med.
Chem. Abstr. 53:6536c
English summary.
Study of the influence of light on the stability of vitamin A in crude and refined oils including soybean oil, rape seed oil and arachid.

148. MACMILLAN, D., and MELVIN, E. H. Color characteristics and chemical analyses of oil from frost- and weather-damaged soybeans. Amer. Oil Chem. Soc. J. 32(2):85-88. Feb. 1955. 307.8 J82
Chem. Abstr. 49:6626i
Damaged soybeans produced dark oil.

149. MASKEY, D. F., LEDBETTER, D. M., and CRAIG, H. L. Development of Buckeye continuous moisture meter for oil-bearing materials. Amer. Oil Chem. Soc. J. 32(6):344-347. Ref. June 1955. 307.8 J82
Theoretical considerations in meter design presented.

150. MATTIKOW, M., and PERLMAN, D. Treatment of fatty materials. U. S. Pat. 2, 704, 764. Mar. 22, 1955.
Chem. Abstr. 49:9298d
To B. Clayton.

151. MAYLAND, B. J., HARVIN, R. L., and TRIMARKE, C. R. Recent trends in hydrogen plant technology. Amer. Oil Chem. Soc. J. 41(6):26, 50, 60-61. June 1964. 307.8 J82
The catalytic reforming process for producing hydrogen for the vegetable oil industry is reviewed.

152. MEADE, E. M. Separation of olefinic fatty acids. U. S. Pat. 2, 915, 537. Dec. 1, 1959.
Chem. Abstr. 54:10352g

153. METCALFE, L. D. Gas chromatography in the fat and oil industry. Amer. Oil Chem. Soc. J. 41 (5):4, 16, 25, 29, 33, 37. May 1964. 307.8 J82

154. MILLER, W. R., and others. Pressure reaction of maleic esters with vegetable oils. Amer. Oil Chem. Soc. J. 38(5):235-237. May 1961. 307.8 J82
Chem. Abstr. 55:14943h
E. W. Bell, J. C. Cowan, and H. M. Teeter, joint authors.
Yields were good with soybean oils.

155. MITROFANOVA, T. K., and others. Lipids. VII. Synthesis of triglycerides of linseed and soybean oils. (Rus) Zh. Obshchei Khim. 31(7):2178-2180. July 1961. 385 Z6

Chem. Abstr. 56:1543e

E. N. Zvonkova, I. K. Sarycheva, S. P. Ivashchenko, and N. A. Preobrazhenskii, joint authors.

156. MITROFANOVA, T. K., and others. Lipids. IX. Synthesis of some triglycerides of soybean oil. (Rus) Zh. Obshchei Khim. 31(9):2984-2986. Ref. Sept. 1961. 385 Z6

Chem. Abstr. 57:976h

I. K. Sarycheva, S. P. Ivashchenko, Y. U. Pyatnova, G. A. Serebrinnikova, and N. A. Preobrazhenskii, joint authors.

157. MOOKHERJEE, B. D., and CHANG, S. S. Characterization of the carbonyl compounds in reverted soybean oil. Amer. Oil Chem. Soc. J. 40(6, tech. sect.):232-235. Ref. June 1963. 307.8 J82

Chem. Abstr. 59:5373f

Technique described to identify mono-carbonyl compounds in soybean oil.

158. MOROZOV, I. S. On the quality of soybean oil from the principal pressing processes and its primary clearing. (Rus) Masl.-Zhir. Promysh. 19(6):8-12. 1954. 307.8 M37

159. MOSER, H. A., and others. A light test to measure stability of edible oils. Amer. Oil Chem. Soc. J. 42(1):30-33. Ref. Jan. 1965. 307.8 J82

C. D. Evans, J. C. Cowan, and W. F. Kwolek, joint authors.

Soybean oil.

160. NADIROV, N. K., BABIN, P. A., and IVAKHNENKO, P. S. Spectrophotometric studies of soybean oil, purified with clay from Pioneer deposits in the Far East. (Rus) Masl. Zhir. Promysh. 7:16-18. July 1963. 307.8 M37

161. NAUDET, M., ARLAUD, M., and BONJOUR, S. Some experiments concerning the neutralization of miscelas. Rev. Franc. Corps Gras. 5(2):74-83. Feb. 1958. 307.8 R32

Chem. Abstr. 52:8592i

Soybean oil studies.

162. NIELSEN, K. A preliminary note on the composition of the non-hydratable soyabean phosphatides. Acta Chem. Scand. 9(1):173-174. 1955. 385 Ac82

Chem. Abstr. 50:445f

Food Sci. Abstr. 28:2304

Study of phosphorus containing compounds usually called non-hydratable.

163. NOWAKOWSKA, J., MELVIN, E. H., and WIEBE, R. Separation of the oxidation products of fatty acids by means of gas-liquid partition chromatography. Amer. Oil Chem. Soc. J. 34(8):411-414. Aug. 1957. 307.8 J82

Chem. Abstr. 51:15149h

Results indicate that this is a sensitive method for the study of the oxidation of vegetable oils.

164. OKAMI, S., NEGORO, E., and SATO, H. Edible oil from marine oil. Jap. Pat. 8571. July 18, 1962.

Chem. Abstr. 59:10354b

To Ajinomoto Company.

Soybean lecithin used.

165. OLCOTT, H. S. The role of free fatty acids on antioxidant effectiveness in unsaturated oils. Amer. Oil Chem. Soc. J. 35(11):597-599. Nov. 1958. 307.8 J82

166. PKHEIDZE, T. A., and GOGUADZE, V. P. Color test for the presence of linolenic glycerides in oils and a color reaction of some organic compounds with picric acid. (Rus) Zh. Analiticheskoi Khim. 11(1):91-93. 1956. 385 Z65

Chem. Abstr. 50:9762f

Red indicates presence of oils containing linolenic glycerides of soybean oil.

167. ROBINSON, H. E., and MATTIL, K. F. Fifty years of progress in the technology of edible fats and oils. Amer. Oil Chem. Soc. J. 36(9):434-436. Sept. 1959. 307.8 J82

A general article. No bibliography.

168. ROHM & HAAS CO. Epoxidation of unsaturated fatty acid esters. Brit. Pat. 791,285. Feb. 26, 1958.

Chem. Abstr. 54:12620d

Soybean oil epoxidized in a similar manner.

169. RZHEKHIN, V. P., and PREOBRAZHENSKAYA, I. S. Antioxidant activity of phospholipides from vegetable oils. (Rus) Masl. Zhir. Promysh. 25(7):20-24. 1959. 307.8 M37

Chem. Abstr. 53:20, 844d

Soybean oil included.

170. SAKURAI, H., and FUJIWARA, M. Segregation of soybean fatty acids by urea complex with reference to concentration of urea solution. J. Chem. Soc. Jap. Indus. Chem. Sect. 59(1):33-36. Jan. 1956. 385 J82
Chem. Abstr. 50:16138i

171. SASAKAWA, F., FUKUSHIMA, M., and FURUNISHI, Y. Separation of solid fatty acids from mixtures of fatty acids. Jap. Pat. 5532. July 10, 1956.
Chem. Abstr. 52:9633b
To Nippon Soda Company.

172. SCHWAB, A. W., and EVANS, C. D. Preparation and evaluation of two new fat soluble metal inactivators. J. Agr. Food Chem. 3(6):518-521. June 1955. 381 J8223
Chem. Abstr. 49:10542h
It did not impart an objectionable flavor to soybean oil and good solubility was obtained.

173. SELKE, E., and others. Mass spectrometry and lipid research. Amer. Oil Chem. Soc. J. 38(11):614-615. Nov. 1961. 307.8 J82
Chem. Abstr. 56:8498i
C. R. Scholfield, C. D. Evans, and H. J. Dutton, joint authors.
Deals with the problem of determining the position of double bonds in monoenes and of identifying volatiles from reverted soybean oil.

174. SERZISKO, R., and TAUFEL, K. Mode of action and analysis of natural fat antioxidants. Ernahrungsforschung 4(4):484-499. Ref. 1959. Libr. Cong.
Chem. Abstr. 54:13482b

175. SIETZ, F. G. Kjeldahl nitrogen determination. (Ge) Chem. Zeitung 84(11):362-364. Ref. June 5, 1960. 384 C427
Chem. Abstr. 54:19290i
Low N values in residues from soybean oil.

176. SOLVAY & CIE. Epoxidation of soybean oil. Fr. Pat. 1,301,832. Aug. 24, 1962.
Chem. Abstr. 58:1653c

177. STEIN, W., and HENNIG, H. Degradation of salts of unsaturated fatty acids to less-saturated fatty acids by heating with alkali. Ger. Pat. 1,133,364. July 19, 1962.
Chem. Abstr. 57:16776g
To Henkel & Cie.

178. SUBBARAM, M. R., and YOUNGS, C. G. Determination of the glyceride structure of fats; analysis of 14 animal and vegetable fats. Amer. Oil Chem. Soc. J. 41(9):595-596. Sept. 1965. 307.8 J82
Chem. Abstr. 61:10877f
Soybean oil included.

179. SUTER, H., and COOLEY, S. D. Epoxidation of olefins. U. S. Pat. 2,903,465. Sept. 8, 1959.
Chem. Abstr. 54:2356d
To Celanese Corporation of America.

180. SYMPOSIA on soybean proteins and technology of edible oils. Israel. Res. Counc. Bull. 9C(3):131-166. Apr. 1961. 330.9 Is72B

181. TOKUNAGA, T., YOSHITOMI, K., and MITSUMOTO, H. Pure soybean lecithin. Jap. Pat. 8324. July 1, 1960.
Chem. Abstr. 55:6736b
To Nisshin Oil Mills.

182. TSUCHIYA, T., OKUBO, O., and MAMURO, H. Alkali-foots of soybean oil. (Ja) (Sum.) Tokyo. Government Chem. Indus. Res. Inst. Rep. 53(10): 337-342. Oct. 1958. 309.9 T57
English summary, p. XL.

183. UNILEVER. Separation of fatty acids of vegetable or animal origin. Brit. Pat. 886,138. Jan. 3, 1962.
Chem. Abstr. 56:13036c

184. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Processing oilseeds, oil, and meal; a list of publications for 1964 of the Division. U. S. Agr. Res. Serv. ARS-71-24-3, 1 p. Feb. 1965. A381 R31Ac

185. WAHLROOS, A. W. Epoxidized oils and the like. U. S. Pat. 2,813,878. Nov. 19, 1957.
Chem. Abstr. 52:7737d
Obtains 80 percent oxidized oil with little loss of reagent.
To Archer-Daniels-Midland Company.

186. WALKER, D. D. Soybean processing plant stopped by corrosion. Corrosion 16(8):29. Aug. 1960. Libr. Cong.
Chem. Abstr. 54:19416d
New corrosion free type tubing good after five years. Tubing used previously broke down after two years.

187. WHITE, H. B., and QUACKENBUSH, F. W. A simplified technique for analysis by alkali isomerization. Amer. Oil Chem. Soc. J. 36(12):653-656. Dec. 1959. 307.8 J82

Includes soybean oil. Simplified technique ("bottle method") in which the sample is isomerized with potassium-t-butoxide in a reagent bottle at 60° F for 20 hours.

188. WILDING, M. D., RICE, E. E., and MATTIL, K. F. The effect of processing conditions upon the nutritional quality of vegetable oils. Amer. Oil Chem. Soc. J. 40(2):55-57. Feb. 1963. 307.8 J82

Chem. Abstr. 59:4479e

A discussion of the relationship between heat treatment during processing and nutritional qualities.

189. WOLFF, I. A., and MIWA, T. K. Effect of unusual acids on selected seed oil analyses. Amer. Oil Chem. Soc. J. 42(3):208-215. Ref. Mar. 1965. 307.8 J82

Automatic analytical hydrogenation apparatus for rapid determination of total unsaturation.

190. YOUNGS, C. G., and SUBBARAM, M. R. Determination of the glyceride structure of fats: gas-liquid chromatography of oxidized glycerides. Amer. Oil Chem. Soc. J. 41(3):218-221. Ref. Mar. 1964. 307.8 J82

Chem. Abstr. 60:10935b

Distribution of saturated acids within the glycerides of soybean oil.

Adulteration

191. BARTLETT, J. G., and MAHON, J. H. Identification of oils and the detection of oil adulteration by differential infrared spectroscopy. Ass. Offic. Agr. Chem. J. 41(2):450-459. Ref. May 1958. 381 As7

Chem. Abstr. 52:15774i

192. BIEFER, K. W., and HADORN, H. Detection of soybean oil by determination of its δ-tocopherol content. (Ge) Mitt. Geb. Lebensm. Hyg. (Bern) 47(5):445-455. Ref. 1956. 389.9 Sw6

Chem. Abstr. 51:8315i

Food Sci. Abstr. 29:1361

English summary.

δ-Tocopherol occurs only in soybean and mustard seed oil.

193. FIRESTONE, D. Report on spectrophotometric methods for fats and oils. Ass. Offic. Agr. Chem. J. 38 (3):657-663. Aug. 1955. 381 As7

Chem. Abstr. 49:16467f

A procedure for detection of soybean oil adulteration of commercial corn oils.

194. GODED Y MUR, A., GIMENEZ RUESGA, R., and FRANCISCO GALDEANO, C. DE. Determination of soybean oil to olive oil. An. de Bromatologia 11(2): 261-264. 1959. 389.8 An1

Chem. Abstr. 53:22601h

195. KAUFMANN, H. P., and APARICIO, M. Analysis of alien fats in olive oil through paper chromatography. (Sp) Madrid, Spain. Inst. Invest. Veterinarias 11:179-184. Ref. 1961. 41.9 M262

Chem. Abstr. 57:4782d

196. KUMAR, R. A quick method of detecting castor oil in vegetable oil. Amer. Oil Chem. Soc. J. 40(2): 80. Feb. 1963. 307.8 J82

Chem. Abstr. 58:8151e

Soybean oil included.

197. MARTINENGHI, G. B., and BALESTRINI, G. The Halphen reactions for linseed oil. I. Olearia 10 (1/2):5-8. Jan./Feb. 1956. 307.8 OL2

Food Sci. Abstr. 29:1362

Summary in English.

Used for detecting linseed oil in edible oils including soybean oil.

198. PAOLINO, F. The fatty acids of tall oil and their use in foods. Rass. Chim. 10(4):25-28. July/Aug. 1958. 385 R18

Chem. Abstr. 53:9668c

Adulteration of soybean oil.

199. PRIORI, O. Chromatographic detection of oils from Cruciferae in mixture with other plant oils. Olii Mineral.; Grassi Saponi; Colori Vernici. 33(2):23-25. Feb. 1956. 307 OL3

Chem. Abstr. 50:11034e

With this method at least 5 percent of rape or colza oil can be detected in presence of soybean oil and other oils.

200. SANDER, E. H., and BIRD, E. W. Detection of milk fat adulteration. J. Dairy Sci. 45(3):317-322. Mar. 1962. 44.8 J822

Chem. Abstr. 57:5069h

Detection of soybean oil included.

201. ZIMMERMANN, G., HILLINGER, I., and GUTFINGER, T. Spectrophotometric researches in edible oils and fatty foods. Israel. Res. Coun. Bull. 9C(3):144-148. Ref. Apr. 1961. 330.9 Is72B

Method for the detection of adulteration of oils and fatty foods including soybean oil.

Bleaching

202. ARMSTRONG, M. R., and IRELAND, C. E. The bleaching of soybean oil. A spectrophotometric evaluation. Amer. Oil Chem. Soc. J. 35(8):425-428. Ref. Aug. 1958. 307.8 J82

Chem. Abstr. 52:15927b

Results are expressed by Freudlich isotherms, and a bleaching chart is given. In bleaching soybean oil primary attention is given to the removal of green pigment.

203. CROSSLEY, A., DAVIES, A. C., and PIERCE, J. H. Keeping properties of edible oils. II. Refining by treatment with alumina. Amer. Oil Chem. Soc. J. 39(3):163-165. 307.8 J82

Gives comparative effects of earth bleaching and alumina treatment for soybean oil.

204. ELSTON, A. A. Bleaching vegetable oils. U. S. Pat. 2,795,595. June 11, 1957.

Chem. Abstr. 51:12514e

Soybean oil is bleached to obtain oil of improved color.

To DuPont de Nemours (E. I.) & Company.

205. KOGLER, H. P. The manufacture and properties of bleaching earths and their applications in the oil and fat industries. (Ge) Fette, Seifen, Anstrichmittel 65 (10):834-838. Oct. 1963. 384 C422

Chem. Abstr. 60:5757d

English summary.

Bleaching soybean oil.

206. LAVIGNE, J. B. Bleaching of drying oils by ionizing radiation. Amer. Oil Chem. Soc. J. 35(3): 117-120. Mar. 1958. 307.8 J82

Chem. Abstr. 52:8484a

Including soybean oil.

207. MATYGINA, L. M. Use of bleaching elements of Far East deposits in purification of soybean oil. (Rus) Masl. Zhir. Prom. 7:14-16. July 1963. 307.8 M37

Color

208. BALBI, G. Some causes of the yellowing of stand oils during their manufacture. (Fr) Oleagineux 13(1):63-64. Jan. 1958. 77.8 OL2

Chem. Abstr. 52:12418c

Simple test for determining whether a refined drying oil will yield a light-colored stand.

209. BLANK, R. E., and ARTERS, A. A. Color improvement of raw or degummed drying or semidrying oils. U. S. Pat. 2,727,051. Dec. 13, 1955.

Chem. Abstr. 50:4528g

Soybean oil of G-H color 11 is changed to G-H color 3-4 by this treatment.

To Sherwin-Williams Company.

210. COONEY, P. M., HODGE, J. E., and EVANS, C. D. Development of color in fats stabilized with amino-hexose-reductones. Amer. Oil Chem. Soc. J. 35(4):167-171. Apr. 1958. 307.8 J82

Chem. Abstr. 52:8509e

Soybean-oil-color research.

211. GOODING, C. M. Winterization of refined oils. U. S. Pat. 3,048,491. Aug. 7, 1962.

Chem. Abstr. 59:4482h

To Corn Products Company.

212. HARADA, I., SARATANI, Y., and ISHIKAWA, M. Studies on the color reversion of refined and deodorized soybean oil. I-III. (Ja) Agr. Chem. Soc. Jap. J. 34(7):545-562. 1960. 385 Ag8

Chem. Abstr. 54:25900i

Relationship between color reversion and tocopherol contents. Influences of iron and antioxidants on color reversion.

213. KAMADA, H., EBINE, H., and NAKANO, M. Browning reaction of soybean products. XI-XIII. (Ja) Tokyo. Food Res. Inst. Rep. 17:148-161. Ref. Mar. 1963. 389.9 T57

English summary.

214. KAMADA, H., EBINE, H., and NAKANO, M. Browning reaction of soybean products. XIV-XV. (Ja) J. Food Sci. Technol. 10(2):47-56. Ref. 1963. 388 J822

215. KRISHNAMURTHY, K. Winterized oils and their products. Mysore, India. Cent. Food Technol. Res. Inst. Bull. 4(8):211-213. Ref. June 1955. 389.9 M99

Food Sci. Abstr. 28:205

The process of winterizing an oil consists in the re-

moval of higher melting glycerides from an oil. Winterizing means having clear fluid at various temperature ranges.

216. PROCTOR & GAMBLE. Winterizing hardened soybean oils. Brit. Pat. 962,814. July 1, 1964.
Chem. Abstr. 61:9964a

217. SCHMID, D. F., and BAUER, F. J. Winterization of oils with sucrose partially esterified with fatty acids. U. S. Pat. 3,059,009. and 3,059,010. Oct. 16, 1962.
Chem. Abstr. 58:1654a
To Proctor & Gamble Company.

218. SIDWELL, C. G., and others. The use of thiobarbituric acid as a measure of fat oxidative. Amer. Oil Chem. Soc. J. 31(12):603-606. Ref. Dec. 1954. 307.8 J82
Food Sci. Abstr. 27:1851
H. Salwin, M. Benca, and J. H. Mitchell, joint authors.
Show that soybean oil volatiles developed the greatest intensity of color.

219. STERN, K. G. Decolorizing green soybean oil. U. S. Pat. 2,842,577. Julv 8, 1958.
Chem. Abstr. 52:19188h
To Hans G. Grossmann, executor of the deceased inventor's estate.

220. STILLMAN, R. C. Bleach and color methods. Amer. Oil Chem. Soc. J. 32(11):587-593. Nov. 1955. 307.8 J82
Color and bleach methods are those used to determine the amount of color in an oil, how easy it is and how much it costs to remove that color, and how much color remains in the oil after bleaching.

Extraction

221. ARNOLD, L. K., and CHOUDHURY, R. B. R. Ethanol extraction of soybean oil. Amer. Oil Chem. Soc. J. 39(8):379-380. Ref. Aug. 1962. 307.8 J82
Chem. Abstr. 57:11329a
Extraction of soybean flakes with 90, 95, 98, and 100 o/o ethanol.

222. ARNOLD, L. K., and CHOUDHURY, R. B. R. Extraction of soybean and cottonseed oil by four solvents. Amer. Oil Chem. Soc. J. 37(9):458-459. Sept. 1960. 307.8 J82
Chem. Abstr. 54:23373b
The solvents used were "Commercial" hexane, "high purity" hexane, "pure" hexane" and benzene.

223. BELOBORODOV, V. V. Extraction of vegetable oil from oil cakes. (Rus) Zh. Priklad. Khim. 31(10): 1565-1572. Oct. 1958. 385 Z64
Chem. Abstr. 53:3738i
Soybean oil included.

224. BELOBORODOV, V. V. Structure of extractable material as one of the factors controlling the effectiveness of the extraction process. (Rus) Masl.-Zhir. Promysh. 23(5):13-17. 1957. 307.8 M37
Chem. Abstr. 51:14293f
Diagram of the apparatus, formulas, and the extraction curves as a function of time are given.

225. CHANG, H. Y. Relation of soybean oil quality with completeness of extraction. Diss. Abstr. 21(3): 567. Sept. 1960. 241.8 M58
Chem. Abstr. 55:2146b
Abstract of thesis (Ph. D.)-Iowa State University of Science and Technology. 69 p.

226. DUTTON, H. J. The analysis of lipids by countercurrent distribution. Amer. Oil Chem. Soc. J. 32(11):653-659. Ref. Nov. 1955. 307.8 J82
Countercurrent distribution is a kind of liquid-liquid, multiple-stage extraction.

227. DUTTON, H. J., and others. Countercurrent distribution of soybean fatty acid methyl esters biosynthetically labeled with H3 and C14. J. Lipid Res. 2(1):63-67. Jan. 1961. 381 J8282
Chem. Abstr. 55:13878e
E. P. Jones, C. R. Scholfield, W. Chorney, and J. Scully, joint authors.
Yield of linoleate, linolenate, stearate, and higher acid esters reported.

228. ESHCHENKO, N. G. Application of statistical methods for the study of vegetable oil extraction. (Rus) Masl. Zhir. Prom. 30(8):9-12. 1964. 307.8 M37
Chem. Abstr. 61:16317d

229. GRACI, A. V., and others. A bench-scale method for evaluating the processing characteristics of oilseeds for filtration-extraction. Amer. Oil Chem. Soc. J. 32(3):129-131. Mar. 1955.
Chem. Abstr. 49:7267c
J. J. Spadaro, M. L. Parades, E. L. D'Aquin, and H. L. E. Vix, joint authors.

The bench-scale unit should also find application in connection with other processes using the unit operations of extraction and filtration.

230. GREINER, J. W., and FEVIG, G. A. Countercurrent extraction of steroids. U. S. Pat. 2,839,544. June 17, 1958.
Chem. Abstr. 52:19026f
To Upjohn Company.

231. GROLL, H. P. A. Fractionation of oils by selective extraction. U. S. Pat. 2,941,941. June 21, 1960.
Chem. Abstr. 54:23376i

232. HIVON, K. J., HAGAN, S. N., and WILE, E. B. Preparation and analysis of some food fats and oils for fatty acid content by gas-liquid chromatography. Amer. Oil Chem. J. 41(5):362-363. Ref. May 1964.
Chem. Abstr. 61:2399a

233. HOFFMANN, R. L., and others. Soybean unsaponifiables: chromatographic separations and characterization. Amer. Oil Chem. Soc. J. 39(10): 323-327. Ref. Oct. 1962. 307.8 J82
Chem. Abstr. 57:7401c
H. A. Moser, C. D. Evans, and J. C. Cowan, joint authors.
Unsaponifiables extracted from 10 lots of refined soybean oil subjected to liquid-liquid chromatographic separations.

234. KAUFMANN, H. P., and GULDENPFENNIG, R. Modern technology of fats and fatty products. XCI. (Ge) Fette, Seifen, Anstrichmittel 64(12):1179-1181. Dec. 1962. 384 C422
Chem. Abstr. 58:14325b
Solvent extraction methods of oil production.

235. KIMURA, C., KASHIWAYA, K., and ASAHARA, T. Solvent separation of soybean oil by nitroethane. (Jap) Chem. Soc. Japan. J. Indus. Chem. Sect. 62(9): 1381-1383. Sept. 1959. 385 J82

236. LOWRY, M. Comparative study of aqueous acetone and various solvents for the extraction of groundnuts. Rev. Franc. Corps Gras 3(2):93-104. Feb. 1956. 307.8 R32
Food Sci. Abstr. 28:2280
Effect of different solvents on the yield and characteristics of soybean oil discussed.

237. LUCK, H., KOHN, R., and RICHERL, E. The intrinsic viscosities and apparent specific volumes of oils in organic solvents. (Ge) Fette, Seifen, Anstrichmittel 65(9):721-724. Sept. 1963. 384 C422
Chem. Abstr. 60:3204e
English summary.

238. NIELSEN, K. The composition of the difficultly extractable soybean phosphatides. Amer. Oil Chem. Soc. J. 37(5):217-219. Ref. May 1960. 307.8 J82
Chem. Abstr. 54:13692h
Study of soybean phosphatides which cannot be extracted by nonpolar solvents.

239. SUGIYAMA, M. Extraction of oil from crude lecithin of vegetable origin by a combination of rotary disks. Jap. Pat. 15,365. Oct. 14, 1960.
Chem. Abstr. 55:3871g
To Honen Oil Manufacturing Company.

240. TAMAOKI, A. Recovering of solvent from extracted cake in the process of solvent extraction of fats and oils. Jap. Pat. 7237. Nov. 4, 1954.
Chem. Abstr. 50:3783e
To Chiyoda Chemical Industries Equipment Company.

241. UGRIUMOV, P. S. Extraction of stigmasterin from soybean oil. (Rus) Masl.-Zhir. Promysh. 25(10): 18. 1959. 307.8 M37

Flavor

242. CHANG, S. S., and others. Characterization of the reversion flavor of soybean oil. Amer. Oil Chem. Soc. J. 38(12):671-674. Dec. 1961. 307.8 J82
Chem. Abstr. 56:12047e
K. M. Brobst, H. Tai, and C. E. Ireland, joint authors.
The reversion flavor isolated from revered-but-not-rancid soybean oil was separated into 14 fractions by gas-liquid chromatography.

243. CHANG, S. S. and KUMMEROW, F. A. An instrumental method of measuring the degree of reversion and rancidity of edible oils. J. Amer. Oil Chem. Soc. 32(6):341-344. June 1955. 307.8 J82
Chem. Abstr. 49:10543d
The carbonyl index method may be used in evaluating the flavor stability of edible oils.

244. CHANG, S. S. Isolation and characterization of reversion flavor of soybean oil. Flavor Chem. Symp. Proc. 1961:117-122. 389.9 F612
Relationship between reversion flavor in soybean oil, carbonyl compounds and linolenic acid.

245. CHANG, S.S. A new technique for the isolation of flavor components from fats and oils. Amer. Oil Chem. Soc. J. 38(12):669-671. Dec. 1961. 307.8 J82

Chem. Abstr. 56:12047b

Continuous process for the isolation of flavor compounds of oils including soybean oil.

246. CHANG, S.S., and KUMMEROW, F.A. The relationship between the oxidative polymers of soybean oil and flavor reversion. Amer. Oil Chem. Soc. J. 31 (8):324-327. Ref. Aug. 1954. 307.8 J82

Food Sci. Abstr. 27:724

Study shows that oxidative polymers can be unintentionally introduced into soybean oil and cause reversion.

247. EVANS, C. D. Chemical changes accompanying flavor deterioration of vegetable oils. Flavor Chem. Symp. Proc. 1961:123-146. 389.9 F612

A general article followed by a discussion period.

248. FRANKEL, E. N. and others. Effect of antioxidants and metal inactivators in tocopherol-free soybean oil. Fette, Seifen, Anstrichmittel 61(10):1036-1039. Ref. Oct. 1959. 384 C422

Chem. Abstr. 55:12618g

In English.

P. M. Cooney, H. A. Moser, J. C. Cowan, and C. D. Evans, joint authors.

Flavor reversion in soybean oil.

249. HOFFMANN, G. Isolation of two pairs of isomeric 2, 4-alkadienals from soybean oil-reversion flavor concentrate. Amer. Oil Chem. Soc. J. 38(1):31-32. Ref. Jan. 1961. 307.8 J82

Chem. Abstr. 55:5994f

250. JACOBSON, G. A., KIRKPATRICK, J. A., and GOFF, H. E. A study of the applicability of a modified thiobarbituric acid test to flavor evaluation of fats and oils. Amer. Oil Chem. Soc. J. 41(2):124-128. Feb. 1964. 307.8 J82

Chem. Abstr. 60:9825f

A test for the determination of certain oxidized fats. Soybean oil included.

251. KEPPLER, J. G., and others. Components of the hardening flavor present in hardened linseed oil and soybean oil. Amer. Oil Chem. Soc. J. 42(3):246-249. Ref. Mar. 1965. 307.8 J82

J. A. Schols, W. H. Feenstra, and P. W. Meijboom, joint authors.

252. PATTON, S., BARNES, I. J., and EVANS, L. E. N-Deca-2, 4-Dienal, Its origin from linoleate and flavor significance in fats. Amer. Oil Chem. Soc. J. 36(7):280-283. Ref. July 1959. 307.8 J82

Carbonyls from soybean oils.

253. PEZOLD, H. VON. On the problem of taste reversion of soybean oil. (Ge) Fette, Seifen, Anstrichmittel 61(10):1018-1024. Ref. Oct. 1959. 384 C422

English summary.

Chem. Abstr. 54:14494b

254. POHLE, W. D., GREGORY, R. L., and VAN GIESSEN, B. Relationship of peroxide value and thiobarbituric acid value to development of undesirable flavor characteristics in fats. Amer. Oil Chem. Soc. J. 41(10):649-650. Oct. 1964. 307.8 J82

Chem. Abstr. 61:15265a

255. SCHWAB, A. W., and others. The flavor problem of soybean oil. XIII. Sulphur coordination compounds effective in edible oil stabilization. Amer. Oil Chem. Soc. J. 30(10):413-417. Ref. Oct. 1953. 307.8 J82

Chem. Abstr. 51:7607f

H. A. Moser, R. S. Gurley, and C. D. Evans, joint authors.

Sulfur compounds of the tridentate class have been found to be effective in the stabilization of soybean oil.

256. SEALS, R. G., and HAMMOND, L. G. The buttery flavor of reverted soybean oil. (Abstr) Amer. Oil Chem. Soc. J. 42(3):124A-125A. Mar. 1965. 307.8 J82

Gas chromatography used in the analysis.

257. SIMS, R. J., MATTIL, K. F., and LEHMANN, W. J. Processing soybean oil to retard flavor reversion. U. S. Pat. 2,872,465. Feb. 3, 1959.

Chem. Abstr. 55:22872g

To Swift & Company.

258. VAHLTEICH, H. W., and others. Esters of citric acid in stabilizing edible oils. Food Technol. 8 (1):6-9. Jan. 1954. 389.8 F7398

C. M. Gooding, C. F. Brown, and D. Melnick, joint authors.

Citric acid was found to be an effective metal-deactivating agent for stabilizing soybean oil against oxidation and flavor reversion, when used in salad oil, shortening oil, and margarine.

Heat treatment

259. AKIYA, T., and others. Studies on characteristic and nutritive changes of oils during heating. 2. (Ja) Jap. Soc. Food Nutr. J. 14(5):397-400. 1962. 389.9 J27

S. Ishii, H. Sakai, and K. Arai, joint authors.

English summary.

The change of viscosity was remarkable. As heating time increased, viscosity increased and viscosity index decreased.

260. BABA, H. On the available lysine in food protein. 4. Protein of rice and soybean. Tokyo. Nat. Inst. Nutr. Annu. Rep. 1961:26. 389.9 T573

Chem. Abstr. 57:11633f

Value of available lysine is improved by heat treatment but is decreased by over-heating. Available lysine of soybean is about 4.7 percent and availability is 75 percent.

261. BABA, H., and HASHIMOTO, T. On the available lysine in food protein. 5. Tokyo. Nat. Inst. Nutr. Annu. Rep. 1963:27. 389.9 T573

262. COONEY, P. M., and others. Influence of heat on oxidative stability and on effectiveness of metal-inactivating agents in vegetable oils. Amer. Oil Chem. Soc. J. 35(4):152-156. Apr. 1958. 307.8 J82

Chem. Abstr. 52:8590g

C. D. Evans, A. W. Schwab, and J. C. Cowan, joint authors.

Soybean oil stability research at Peoria, Ill. The mechanism of autoxidation by polyphenols in oils is discussed.

263. CRAMPTON, E. W., and others. Studies to determine the nature of the damage to the nutritive value of some vegetable oils from heat treatment. IV. Ethyl esters of heat-polymerized linseed, soybean and sunflower seed oils. J. Nutr. 60(1):13-24. Ref. Sept. 10, 1956. 389.8 J82

R. H. Common, E. T. Pritchard, and F. A. Farmer, joint authors.

Food Sci. Abstr. 29:912

Rat feeding trials to study the nutritive value of certain fractions prepared from heated soybean and other oils.

264. HANNEWIJK, J., and HAIGHTON, A. J. Differential thermal analysis. III. Melting curves of oils and fats. Amer. Oil. Chem. Soc. J. 35(9):457-461. Sept. 1958. 307.8 J82

Soybean oil included in the study.

265. JANICEK, G., and POKORNY, J. Alterations in fats induced by heating with nonlipid substances. (Ge) Nahrung 5(4):387-398. Ref. 1961. Libr. Cong.

Chem. Abstr. 56:10306e

English summary.

266. LOHMAN, F. H. Spectrophotometric determination of carbonyl oxygen. Anal. Chem. 30(5):972-974. Apr. 22, 1958. 381 J825A

Chem. Abstr. 52:14432h

Method applied to soybean oil to determine the effect of heating.

267. UEZUMI, N., YAMADA, T., and FUKUDA, H. Chemical changes in edible oils due to heating. Eiyo to Shokuryo (J. Jap. Soc. Food Nutr.) 15(3):15-18. 1962. 389.9 J27

Soybean oil heated intermittently for 20 hours.

268. WURZIGER, J., and JUNKER, M. A study of thermally oxidized fats. (Ge) Deut. Lebensm. Rundsch. 59(5):133-138. May 1963. 389.8 D482

Chem. Abstr. 59:11765h

Changes occurring on heating noted in soybean oil.

Hydrogenation

269. ALBRIGHT, L.F. Quantitative measure of selectivity of hydrogenation of triglycerides. Amer. Oil Chem. Soc. J. 42(3):250-253. Mar. 1965. 307.8 J82

Hydrogenation of soybean oil.

270. ALLEN, R. R. Practical aspects of hydrogenation. Amer. Oil Chem. Soc. J. 39(10):457-459. Ref. Oct. 1962. 307.8 J82

Table gives composition of two hydrogenated soybean oils.

271. ATRAMONOV, P.A. Structure of isoacids formed in the process of hydrogenation of vegetable oils. (Rus) Zhur. Prikl. Khim. 28(7):775-777. July 1955. 385 Z64

Chem. Abstr. 49:14349c

Iodine numbers given and principal Raman lines.

272. BEAL, R.E., and LANCASTER, E.B. Effect of agitation on selectivity in the hydrogenation of soybean oil. Amer. Oil Chem. Soc. J. 31(12):619-625. Ref. Dec. 1954. 307.8 J82

Chem. Abstr. 49:2099d

Food Sci. Abstr. 27:1821

Change from turbine to gas dispersion agitation resulted in a more selective hydrogenation with respect to unsaturates.

273. BOELHOUWER, C., SNELDERWAARD, J., and WATERMAN, H.I. Problems of selectivity in the hydrogenation of linoleic acid esters. Amer. Oil Chem. Soc. J. 33(4):143-146. Apr. 1956. 307.8 J82

Chem. Abstr. 50:8309c

Data plotted from the hydrogenation of soybean oil in terms of saturated acids and iodine values.

274. BROWN, L.C., and MERKER, D.R. Prevention of hydrogenation odor. U.S. Pat. 2,773,081. Dec. 4, 1956.

Chem. Abstr. 51:4032b

To Swift & Company.

275. DAHMAN, P.M., HERTJES, P.M., and WATERMAN, H. I. Sulfurous acid as catalyst in the fat industry. Investigations on the process of hardening with sulfurous anhydide. (Fr) Chim. Indus. 64(5):560-562. Nov. 1950. 383 C42

Chem. Abstr. 49:12855i

The physiochemical characteristics of the raw and processed oils are tabulated.

276. EVANS, C.D., and others. Partial hydrogenation and winterization of soybean oil. Amer. Oil Chem. Soc. J. 41(4, tech. sect.):260-263. Ref. Apr. 1964. 307.8 J82

R.E. Beal, D.G. McConnell, L.T. Black, and J. C. Cowan, joint authors.

Chem. Abstr. 61:848g

Study of soybean oils low in linolenic acid.

277. FERREN, W.P., and MORSE, R.E. Wide-line nuclear magnetic resonance determination of liquid/solid content of soybean oil at various degrees of hydrogenation. Food Technol. 17(8):112-114. Aug. 1963. 389.8 F7398

Chem. Abstr. 60:1940h

278. FRANKEL, E.N., and others. Homogeneous catalytic hydrogenation of unsaturated fats: cobalt carbonyl. Amer. Oil Chem. Soc. J. 42(2):130-134. Ref. Feb. 1965. 307.8 J82

E.P. Jones, V.L. Davison, E. Emken, and H. J. Dutton, joint authors.

Soybean methyl esters.

279. FRANKEL, E.N., and others. Homogeneous catalytic hydrogenation of unsaturated fats: iron pentacarbonyl. Amer. Oil Chem. Soc. J. 41(3):186-191. Ref. March 1964. 307.8 J82

Chem. Abstr. 60:10936a

H.M. Peters, E.P. Jones, and H.J. Dutton, joint authors.

280. KAUFMANN, H.P. Hydrogenated glyceride oils. U.S. Pat. 2,852,541. Sept. 16, 1958.

Chem. Abstr. 53:3538h

281. KEANE, K.W., JACOBSON, G.A., and KRIEGER, C.H. Biological and chemical studies on commercial frying oils. J. Nutr. 68(1):57-74. Ref. May 10, 1959. 389.8 J82

Deals largely with hydrogenated cottonseed oil but soybean oil is mentioned.

282. KODAIRA, I. Hydrogenated oil by use of a nickel zeolite catalyst. Jap. Pat. 336. Jan. 24, 1955.

Chem. Abstr. 50:11,690e

To Marumiya Company.

283. MATTSON, F.H., and VOLPENHEIN, R.A. Hydrogenation of a fatty acid is not influenced by the position it occupies on a triglyceride molecule. Amer. Oil Chem. Soc. J. 39(6):307-308. June 1962. 307.8 J82

Chem. Abstr. 57:3578a

Soybean was the fat selected because it contains the three unsaturated acids, oleic, linoleic, and linolenic.

284. MERKER, D.R. Deodorization of hydrogenated fatty oils. U.S. Pat. 2,783,260. Feb. 26, 1957.

Chem. Abstr. 51:7743h

To Swift & Company.

285. MERKER, D.R., and BROWN, L.C. The effect of deodorization prior to hydrogenation on the development of hydrogenation odor in fats. Amer. Oil Chem. Soc. J. 33(4):141-143. Apr. 1956. 307.8 J82

Chem. Abstr. 50:8229f

Food Sci. Abstr. 28:2282

To prevent formation of hydrogenation odor, the deodorized oil must be protected from the effects of heat, light, and autoxidation. The best results were obtained with palladium catalyst at temperatures below 90° C.

286. MERKER, D.R. Hydrogenation of glycerides. U.S. Pat. 2,903,468. Sept. 8, 1959.
Chem. Abstr. 54:929f
To Swift & Company.

287. MERKER, D.R. Nonselective hydrogenation of fats and oils. U.S. Pat. 2,862,941. Dec. 2, 1958.
Chem. Abstr. 53:7631f
To Swift & Company.

288. PADRO, A. Hydrogenation of oils with high iodine numbers. (Sp) Anal. Bromatol. 14(2):149-164. Ref. 1962. 389.8 Anl
Chem. Abstr. 58:11895h
English summary.
Refined soybean oil included.

289. RIESZ, C.H., and WEBER, H.S. Catalysts for selective hydrogenation of soybean oil. I. An experimental method for evaluating selectivity. Amer. Oil Chem. Soc. J. 41(5):380-383. May 1964. 307.8 J82
A method for evaluating a wide variety of catalysts.

290. RIESZ, C.H., and WEBER, H.S. Catalysts for selective hydrogenation of soybean oil. II. Amer. Oil Chem. Soc. J. 41(6, tech. sect.):400-403. Ref. June 1964. 307.8 J82
Chem. Abstr. 61:3316d
A method for evaluating a wide variety of catalysts: platinum, palladium and rhodium for hydrogenating linolenic components of soybean oil.

291. RIESZ, C.H., and WEBER, H.S. Catalysts for selective hydrogenation of soybean oil. III. Amer. Oil Chem. Soc. J. 41(7):464-468. Ref. July 1964. 307.8 J82
A method for evaluating a wide variety of catalysts.

292. SEHER, A., and ARENDS, W. The determination of the iodine numbers. (Ge) Mitt. Gebiete Lebensmittel-Untersuch. Hyg. 48(1):1-4. 1957. 389.9 Sw6
Chem. Abstr. 51:12511a
The I numbers by Kaufman's method agree with the hydrogenation numbers after a two-hour reaction period.

293. SILVEIRA, A., MASUDA, Y., and CHANG, S. S. Chemical reactions involved in the catalytic hydrogenation of oils. II. Amer. Oil Chem. Soc. J. 42(2):85-86. Feb. 1965. 307.8 J82
Identification of some volatile by products.

294. SIMS, R.J., and HILFMAN, L. Formation of trans-isomers during the hydrogenation of glyceride oils. Amer. Oil Chem. Soc. J. 30(10):410-413. Ref. Oct. 1953. 307.8 J82
Chem. Abstr. 51:7041f
Complete curves presented showing the formation and disappearance of trans-isomers during the hydrogenation of each of the oils.

295. STINGLEY, D.V., and WROBEL, R.J. The effect of trans-isomers on the physical properties of hydrogenated oils. Amer. Oil Chem. Soc. J. 38(4): 201-205. Apr. 1961. 307.8 J82
Chem. Abstr. 55:11884b
Relationship of trans-isomer content and the congeal point, Wiley melting point, and solids index of hydrogenated soybean oils.

296. WURZIGER, J., and OSTERTAG, H. Chemical changes in animal and vegetable fats during heat treatment and reflections on the evaluations of their physiological properties. (Abstr) Amer. Oil Chem. Soc. J. 38(3):192-163. Mar. 1961. 307.8 J82
Soybean oil and hydrogenated soybean oil studied.

297. ZAJCEW, M. The hydrogenation of fatty oils with palladium catalyst. III. Hydrogenation of fatty oils for shortening stock. Amer. Oil Chem. Soc. J. 37(1):11-14. Ref. Jan. 1960. 307.8 J82
Chem. Abstr. 54:5126f
Platinum, rhodium and ruthenium were also examined but each was inferior to palladium. Bibliography lists U. S. and foreign patents.

298. ZAJCEW, M. The hydrogenation of fatty oils with palladium catalyst. IV. Pilot-plant preparation of shortening stocks. Amer. Oil Chem. Soc. J. 37(3):130-132. Mar. 1960. 307.8 J82
Chem. Abstr. 54:9326d

299. ZAJCEW, M. The hydrogenation of fatty oils with palladium catalysts. VI. Hydrogenation for margarine. Amer. Oil Chem. Soc. J. 39(6):301-304. Ref. June 1962. 307.8 J82
Chem. Abstr. 57:3574i
Soybean oil studied.

Oxidation

300. ANDREWS, J.S., and others. Toxicity of air-oxidized soybean oil. J. Nutr. 70(2):199-210. Feb. 1960. 389.8 J82

Chem. Abstr. 55:21295e

W.H. Griffith, J.E. Mead, and R.A. Stein, joint authors.

It was found that the toxic principle responded closely to the peroxide concentration of the soybean oil.

301. COWAN, J.C., COONEY, P.M., and EVANS, C.D. Citric acid: Inactivating agent for metals or acidic synergist in edible fats. Amer. Oil Chem. Soc. J. 39(1):6-9. Jan. 1962. 307.8 J82.

Chem. Abstr. 56:9174b

Oxidative stabilities of soybean oil and lard are improved by the addition of either sorbitol or citric acid.

302. EVANS, C.D., and others. Amino-hexose-reductones as antioxidants. I. Vegetable oils. Amer. Oil Chem. Soc. J. 35(2):84-88. Feb. 1958. 307.8 J82

H.A. Moser, P.M. Cooney, and J.E. Hodge, joint authors.

Chem. Abstr. 5°:5857c

Soybean-flavor - stability research. Flavor stability of soybean or cottonseed oil is not improved.

303. EVANS, C.D., and others. Effect of autoxidation prior to deodorization on oxidative and flavor stability of soybean oil. Amer. Oil Chem. Soc. J. 37 (9):452-456. Ref. Sept. 1960. 307.8 J82

E.N. Frankel, P.M. Cooney, and H.A. Moser, joint authors.

Chem. Abstr. 54:23372f

304. EVANS, C.D., FRANKEL, E.N., and COONEY, P.M. Tocopherol oxidation in fats: hydrogenated soybean oil. Amer. Oil Chem. Soc. J. 36(2):73-77. Ref. Feb. 1959. 307.8 J82

305. FRANKEL, E.N., NOWAKOWSKA, J., and EVANS, C.D. Formation of methyl azelaaldehydate on autoxidation of lipids. Amer. Oil Chem. Soc. J. 38(3):161-162. Mar. 1961. 307.8 J82

Chem. Abstr. 55:10925g

Cleavage during autoxidation of fats may lead to new series of substances which may contribute to color and flavor components of fat-containing foods.

306. GUITIERREZ GONZALEZ-QUIJANO, R. The preservation with antioxidants of a 50/50 mixture of olive and soybean oils stored in open cans. (Sp) Grasas Aceites 14(6):249-253. Nov./Dec. 1963. 307.8 G76

Chem. Abstr. 61:5917d

307. HOFFMANN, G. 1-Octen-3-ol and its relation to other oxidative cleavage products from esters of linoleic acid. Amer. Oil Chem. Soc. J. 39(10):439-444. Ref. Oct. 1962. 307.8 J82

308. PIETRZYK, C. Effect of the inhibitor concentration on the oxidation rate of certain vegetable oils. (Abstr) J. Sci. Food Agr. 14(7):ii-45. July 1963. 382 So12

309. PIETRZYK, C. Pro-oxidant action of propyl gallate during the autoxidation of soya-bean oil and of colza [rapeseed] oil. (Abstr) J. Sci. Food Agr. 14 (7):ii-45. July 1963. 382 So12

310. POKORNY, J., ZWAIN, H., and JANICEK, G. Influence of copper on the autoxidation of edible fats and oils. (Ge) Z. Lebensm. Untersuch. Forsch. 123 (5):363-368. Ref. 1963. 384 Z39

Chem. Abstr. 60:8560c

311. TAUFEL, K., FRANZKE, C., and LESKE, E. Thermal influences on the sensitivity of olefinic fats to oxidation. (Ge) Nahrung 3(3/4):270-291. 1959.

Chem. Abstr. 54:6157i

English summary.

Oxidation of soybean oil as indicated by the peroxide and iodine number.

Refining

312. BAILEY, A.V., and others. Effect of extraction temperature and refining on the Halphen-test response of cottonseed oil. Amer. Oil Chem. Soc. J. 38(9): 505-506. Sept. 1961. 307.8 J82

Chem. Abstr. 55:24053h

F.C. Magne, R.A. Pittman, E.L. Skau, joint authors.

Cognate to the refining of soybean oil.

313. BARKER, T.A. Centrifuging. Chem. Process. Eng. 41(3):92-97. Ref. Mar. 1960. 382 In8

Refining of vegetable oils by continuous centrifugal process. Extensive bibliography.

314. BEAL, R.E. Hydrolysis of phosphatides to mono- and diglycerides. U. S. Pat. 2,885,414. May 5, 1959.

Chem. Abstr. 53:15603h

To U. S. Department of Agriculture.

315. BEAL, R.E., LANCASTER, E.B., and BREKKE, O. L. The phosphorus content of refined soybean oil as a criterion of quality. Amer. Oil Chem. Soc. J. 33(12): 619-624. Ref. Dec. 1956. 307.8 J82

Chem. Abstr. 51:2309g

Food Sci. Abstr. 29:892

The ash content of the deodorized oil was a fair indication of its residual phosphorus content at levels above 20 p.p.m.

316. BEAL, R.E. Selective hydrolysis of soybean oil phosphatides. Amer. Oil Chem. Soc. J. 35(12):681-684. Dec. 1958. 307.8 J82

Chem. Abstr. 53:2649e

A rapid method is described for treating nondegummed soybean oil with water and a mixture of cation and anion exchange resins which in 20 minutes is converted to a water-soluble, petroleum, either-in-solution form.

317. BERNARD, A. H., and ROST, H. E. Analysis of lipids and oxidation products by partition chromatography: Dimeric and polymeric products. Amer. Oil Chem. Soc. J. 39(11):479. Nov. 1962. 307.8 J82

Chem. Abstr. 58:2573f

Soybean oil, degummed, neutralized, bleached, and deodorized-analyzed chromatographically according to Frankel.

318. BORNSTEIN, S., and LIPSTEIN, B. By-products of refining of soybean oil as fat supplements in practical broiler rations. World's Poultry Sci. J. 17(2):167-178. Ref. Apr./June 1961. 47.8 W89

The usefulness of several refining by-products of soybean oil as fat supplements for practical broiler rations were tested in 3 trials on 1,592 chicks.

319. BRAAE, B., and NYMAN, M. Factors influencing the oxidation stability and flavour of deodorized soya-bean and rapeseed oil. (Abstr) J. Sci. Food Agr. 9(8):ii-80. Aug. 1958. 382 So12

Refining of vegetable oils.

320. BRAAE, B., BRIMBERG, U., and NYMAN, M. Some problems involved in the water wash of neutralized vegetable oils. J. Amer. Oil Chem. Soc. 34 (6):293-297. Ref. June 1957. 307.8 J82

Chem. Abstr. 51:11737d

Soybean oils are sometimes washable and sometimes not.

321. BRADLEY, K. J., and SMITH, F. H. Vegetable oil refining. Indus. Eng. Chem. 47(5):868-875. May 1955. 381 J825

Chem. Abstr. 49:10640a

Refining edible vegetable oils, including soybean oil, at the Sharples Vegetable Oil Research and Demonstration Refinery, Philadelphia, Pa.

322. CASTRO RAMOS, R. DE. Neutralization loss and other properties of Spanish soybean oil. (Sp) Grasas Aceites 11(6):248-255. Nov-Dec. 1960. 307.8 G76

Chem. Abstr. 55:15963a

323. CASTRO RAMOS, R. DE, and NOSTI VEGA, M. Problems related to the refining of imported soybean oils. (Sp) Grasas Aceites 11(5):213-219. Sept./Oct. 1960. 307.8 G76

English summary.

324. CAVANAGH, G. C., and BEAN, R. S. Degumming soybean oil. U. S. Pat. 2,980,718. Apr. 18, 1961.

Chem. Abstr. 55:20464d

To Ranchers Cotton Oil.

325. CHANG, S. S., MASUDA, Y., and MOOKHERJEE, B. D. The chemical nature of the fishy odour from soybean oil. Chem. Indus. 23:1023-1024. June 9, 1962. 382 M31C

Chem. Abstr. 57:8674f

326. CLAYTON, B. Purification of glyceride oils. U. S. Pat. 2,769,827. Nov. 6, 1956.

Chem. Abstr. 51:3163d

Advantages are a decreased loss of oil and a higher quality of the separated gums.

327. CLAYTON, B. Treatment of glyceride oils with aqueous ammonia. U. S. Pat. 2,939,790. June 7, 1960.

Chem. Abstr. 55:1966e

Refining of soybean oil.

328. COLEMAN, M. H. Further studies on the pancreatic hydrolysis of some natural fats. Amer. Oil Chem. Soc. J. 38(12):685-688. Ref. Dec. 1961. 307.8 J82

Chem. Abstr. 56:6107a

Vegetable fats including soybean oil subjected to hydrolysis with pancreatic lipase.

329. DURKEE, M. M. Refining of glyceride press steamings. U. S. Pat. 2,701,810. Feb. 8, 1955.

Chem. Abstr. 49:5865c

To Staley (A. E.) Manufacturing Company.

330. FIALA, R. J. Refining soybean oil. U. S. Pat. 3,093,667. June 11, 1963.
Chem. Abstr. 59:6626g
To Staley (A. E.) Manufacturing Company.

331. FRANZKE, C. Behavior of linoleic and linolenic acid in the technological processes. Fette, Seifen, Anstrichmittel 57(7):482-486. July 1955. 384 C422
Chem. Abstr. 50:2190i
English summary.
Refining and baking vegetable oils does not destroy linoleic or linolenic acids. Soybean oil included in the study.

332. GLOSS, G. H., and ITTLINGER, R. Clays for decolorization. U. S. Pat. 2,903,434. Sept. 8, 1959.
Chem. Abstr. 54:1819i
To International Minerals & Chemicals.

333. GUILLAUMIN, R., and DROUHIN, N. New process of refining soybean oils. (Fr) Rev. Franc. Corps Gras 10(8/9):463-478. Ref. Aug./Sept. 1963. 307.8 R32
Chem. Abstr. 60:3206b
Extensive bibliography. Method utilizing complete degumming.

334. GUTKIN, S. S. Refining of glyceride oils with sulfonated phenol-aldehyde resins. U. S. Pat. 2,863,890. Dec. 9, 1958.
Chem. Abstr. 53:7631g
To Falk & Company.

335. HAMPTON, B. L. Polymerization, condensation, and refining of fatty acids. U. S. Pat. 2,978,468. Apr. 4, 1961.
Chem. Abstr. 55:18142h
To Glidden Company.

336. HAMPTON, B. L. Refining unsaturated fatty acids. U. S. Pat. 3,052,701. Sept. 4, 1962.
Chem. Abstr. 58:688c
To Glidden Company.

337. HAYES, L. P., and WOLFF, H. Novel method for refining soybean oil. Amer. Oil Chem. Soc. J. 33(10):440-442. Ref. Oct. 1956. 307.8 J82
Chem. Abstr. 50:485i
Food Sci. Abstr. 29:166
The break free oil produced can be used for industrial applications or be further processed as an edible oil without alkali refining.

338. HAYES, L. P., and WOLFF, H. Refining of vegetable oils. U. S. Pat. 2,782,216. Feb. 19, 1957.
Chem. Abstr. 51:10931g
Provides an economical means of obtaining break free oils.
To Staley (A.E.) Manufacturing Company.

339. HAYES, L. P., and WOLFF, H. Refining of vegetable oils. U. S. Pat. 2,881,195. Apr. 7, 1959.
Chem. Abstr. 53:13629d
To Staley (A. E.) Manufacturing Company.

340. HAYES, L. P., and WOLFF, H. Washing degummed vegetable oils. U. S. Pat. 2,792,411. May 14, 1957.
Chem. Abstr. 51:12514g
Oil losses are reduced and the color is improved.
To Staley (A. E.) Manufacturing Company.

341. HEDON, L. C., and ZURERA, M. G. Neutralization of soybean oil and other oils. Sp. Pat. 283,666. Jan. 19, 1963.
Chem. Abstr. 60:3208h

342. HODGE, J. E., and EVANS, C. D. Stabilization of oil-containing compositions with reductones. U. S. Pat. 2,806,794. Sept. 17, 1957.
Chem. Abstr. 52:3374b
To U. S. Dept. of Agriculture.
Soybean oil stabilized by the addition of a low percentage of a reductone.

343. JAMES, E. M. The determination of refining loss. Amer. Oil Chem. Soc. J. 32(11):581-587. Nov. 1955. 307.8 J82
Methods of refining edible vegetable oils, including soybean oil.

344. JAMES, E. M. New methods in refining soya oil and other oils. Israel. Res. Counc. Bull. 9C(3): 131-135. Apr. 1961. 330.9 Is72B
A survey by the Technical Advisor of the Soybean Council of America.

345. JAMES, E. M. The refining and bleaching of vegetable oils. Amer. Oil Chem. Soc. J. 35(2):76-83. Ref. Feb. 1958. 307.8 J82
Definition and object of refining given. Includes a discussion of soybean oil.

346. JONES, A. L., and HUGHES, E. C. Thermal-diffusion apparatus for liquid mixtures. U. S. Pat. 2,734,633. Feb. 14, 1956.
Chem. Abstr. 50:6106g

To Standard Oil Company (Ohio).
Designed to separate stigmasterol from soybean oil.

347. JULIAN, P. L., and IVESON, H. T. Hydration in refining glyceride oils. U. S. Pat. 2,752,378. June 26, 1956.
Chem. Abstr. 50:13482g
To Glidden Company.

348. KAISER, H. R., and DOYLE, C. M. A new development in vegetable oil refining equipment. Amer. Oil Chem. Soc. J. 37(1):4-7. Jan. 1960. 307.8 J82
Chem. Abstr. 54:5127d
The description and use of a rotating contactor.

349. KAISER, H. R., and HOFFMAN, C. A. Plant-scale operations for degumming, caustic-refining, and water-washing soybean oil by a two-step continuous process. Amer. Oil Chem. Soc. J. 38(7):332-335. July 1961. 307.8 J82
Chem. Abstr. 55:19280g
Process used in Iowa Soya Company with good results and economy. Flow sheet and plant operating data given.

350. KAUFMANN, H. P., and GULDENPHENNIG, R. Modern technology of fats and fatty products. XCII. (Ge) Fette, Seifen, Anstrichmittel 65(1):64-71. Ref. Jan. 1963. 384 C422
Chem. Abstr. 58:14325b

351. KOUROVTZEFF, H. K. Purification and fractionation of oils and fats. Fr. Pat. 1,157,938. June 5, 1958.
Chem. Abstr. 54:16876i
Applied to soybean oil.

352. LUCKMANN, F. H., and MELNICK, D. Tocopherol retention in oils aerated in glass and iron tubes. Amer. Oil Chem. Soc. J. 32(3):175-176. Mar. 1955. 307.8 J82
Oil aeration involving the substitution of iron tubes for glass tubes, resulted in a more rapid destruction of the tocopherols present.

353. MATTIKOW, M. Some recent developments in the refining of fatty oils. Amer. Oil Chem. Soc. J. 37(5):211-213. May 1960. 307.8 J82
Chem. Abstr. 54:13692d
U. S. patents listed in the bibliography.

354. MERAT, P. The degumming of fats. (Fr) Rev. Franc. Corps Gras 2(8/9):615-627. Aug./Sept. 1955. 307.8 R32
Food Sci. Abstr. 28:1141
Soybean oil may also be degummed by hydration.

355. MORRIS, C. E. Establishment of specifications. Amer. Oil Chem. Soc. J. 32(11):686-690. Nov. 1955. 307.8 J82
Specifications are the complete written statements which describe the properties or performance of a product. Types of crude soybean oil and tentative refined soybean oil specifications included.

356. MYERS, N. W. Continous degumming of vegetable oils. U. S. Pat. 3,134,794. May 26, 1964.
Chem. Abstr. 61:4605e
To Staley (A. E.) Manufacturing Company.

357. MYERS, N. W. Design, and operation of commercial soybean-oil refining plant, using acetic anhydride as a degumming agent. Amer. Oil Chem. Soc. J. 34(3):93-96. Mar. 1957. 307.8 J82
Chem. Abstr. 51:7041d
Food Sci. Abstr. 29:1813
The Staley 50 oil refining process is economically attractive, the flavor and stability characteristics are identical with conventional caustic-refined product.

358. NAUDET, M., BONJOUR, S., and ARLAUD, M. Analytical study of the alkaline neutralization of oils. V. (Fr) Rev. Franc. Corps Gras. 2(6):381-389. June 1955. 307.8 R32
Food Sci. Abstr. 28:1142
Influence of gums and of various operating conditions on the loss of oil during alkaline neutralization. Soybean oil included.

359. PARDUN, H., and WERBER, O. Laboratory methods for the determination of the refining losses of fats and oils. (Ge) Fette, Seifen, Anstrichmittel 61 (10):1010-1017. Oct. 1959. 384 C422
Chem. Abstr. 54:15967g
English summary.
Experiments with cottonseed and soybean oil.

360. PASSINO, H. J. Refining of soybean oil. U. S. Pat. 2,802,849. Aug. 13, 1957.
Chem. Abstr. 51:17205i
To H. W. Kellogg Co.

361. POTTS, T.J. A comparison of the cup refining loss and neutral oil determinations for evaluating crude soybean oil. Amer. Oil Chem. Soc. J. 40(10, tech. sect.):535-537. Oct. 1963. 307.8 J82

Chem. Abstr. 59:15506a

Data from 833 non-degummed and degummed soybean samples analyzed by the two methods.

362. PRYDE, E.H., and COWAN, J.C. Aldehydic materials by the ozonization of vegetable oils. Amer. Oil Chem. Soc. J. 39(11):496-500. Nov. 1962. 307.8 J82

363. PRYDE, E.H., and others. Ozonization of soybean oil. The preparation and some properties of aldehyde oils. Amer. Oil Chem. Soc. J. 38(7):375-379. July 1961. 307.8 J82

Chem. Abstr. 55:19280e

D.E. Anders, H.M. Teeter, and J.C. Cowan, joint authors.

A polyaldehylic product called aldehyde oil was prepared by the ozonization of soybean oil.

364. PRYDE, E.H., and others. Unsaturated aldehyde oils by the partial ozonization of soybean oil. Amer. Oil Chem. Soc. J. 40(9, tech, sect.):497-499. Sept. 1963. 307.8 J82

D.E. Anders, H.M. Teeter, and J.C. Cowan, joint authors.

Chem. Abstr. 59:11766h

365. REPAPIS, M. Alkali-refining of fatty glycerides. U. S. Pat. 3,065,249. Nov. 20, 1962.

Chem. Abstr. 58:4750c

366. ROYLANCE, A., PAUL, S., and TAYLOR, R. J. Treatment of edible oils. U. S. Pat. 2,976,156. Mar. 21, 1961.

Chem. Abstr. 55:15776a

To Lever Brothers Company.

367. SACK, M., and WOHLERS, H. C. Hydrogen peroxide variables in increasing epoxidation efficiency. Amer. Oil Chem. Soc. J. 36(12):623-627. Dec. 1959. 307.8 J82

Chem. Abstr. 54:2789a

Including soybean-oil epoxidation.

368. SADLER, F. S. Treatment of fatty oils. U. S. Pat. 2,732,388. Jan. 24, 1956.

Chem. Abstr. 50:6075h

To Sharples Corporation.

369. SCHMITT, R. O. Purification of glyceride oils. U. S. Pat. 3,102,898. Sept. 3, 1963.

Chem. Abstr. 59:13027d

To Proctor & Gamble Company.

370. SCHWARCMAN, A. Edible fats. (Fr) Chim. Indus. 80(5):587-592. Nov. 1958. 383 C42

Chem. Abstr. 53:9698a

English summary.

Discusses the catalytic hydrogenation process for the refining of soybean oil.

371. SERGEEV, A. G. Processing soybeans to obtain good quality phosphatides. (Rus) Masl.-Zhir. Promysh. 23(5):11-13. 1957. 307.8 M37

Includes drawings of processing machinery.

372. SIPOS, E. Correlation of chromatographic absolute loss determinations with the A. O. C. S. cup refining method in soybean oil. Amer. Oil Chem. Soc. J. 35(5):233-236. May 1958. 307.8 J82

Chem. Abstr. 52:10612i

Methods for determining refining efficiency of soybean oil.

373. SULLIVAN, F.E. The hermetic centrifugal. Chem. Eng. Progr. 52(2):83F-84F. Feb. 1956. 381 C4232

Food Sci. Abstr. 28:1890

Drawings and photographs of separator included.

374. SULLIVAN, F.E. Some further data on pressure system centrifugal refining. Amer. Oil Chem. Soc. J. 32(3):121-123. Mar. 1955. 307.8 J82

Food Sci. Abstr. 27:2271

Suggests criteria for evaluating a refining system.

375. THURMAN, B. H. Deodorization of glyceride oils. U. S. Pat. 2,759,883. Aug. 21, 1956.

Chem. Abstr. 51:4740g

To Kraft Food Company.

376. VARGAS ROMERO, A., and RAMOS AYERBE, F. Aspects of soybean oil refining. (Fr) Rev. Franc. Corps Gras 11(1):3-12. Jan. 1964. 307.8 R32

Chem. Abstr. 60:15056g

Discusses color and odor during the processing of soybean oil.

377. VIOQUE, A., ALBI, A., and PILAR VILLAGRAN, M. DEL. Trace elements in edible fats. VIII. Amer. Oil Chem. Soc. J. 41(12):785-787. Dec. 1964. 307.8 J82

Soybean oil "demetalization" with cation exchange resins.

378. VISHNEPOL'SKAYA, F. A., and BEZUGLOV, I. E. Refractometer method for determination of

concentration of miscella. (Rus) Masl.-Zhir. Promysh. 24(4):9-10. 1958. 307.8 M37
Chem. Abstr. 52:13288c
Analysis of soybean miscella.

379. WAKABAYASHI, T. Treatment of a sediment of a pressed oil. Jap. Pat. 8722. Nov. 29, 1955.
Chem. Abstr. 51:18661b
To Nippon Oil Company.

380. WEBER, H. M. Refining of glyceride oil. U. S. Pat. 2,739,164. Mar. 20, 1956.
Chem. Abstr. 50:8236a
To Sherwin-Williams Company.

381. WIJNBERG, J. Neutralizing fatty oils. U. S. Pat. 2,848,468. Aug. 19, 1958.
Chem. Abstr. 52:21175c
To Aktiebolaget Separator.

382. WITTE, N. H., and SIPOS, E. Purified soybean oil and xanthophyll concentrate by-product. U. S. Pat. 3,069,443. Dec. 18, 1962.
Chem. Abstr. 58:4977b
To Central Soya.

383. WOLFF, H., and HAYES, L. P. Degumming of vegetable oils. U. S. Pat. 2,754,309. July 10, 1956.
Chem. Abstr. 50:15105f
To Staley (A. E.) Manufacturing Company.
The treated oils do not darken or flock.

PROCESSING OF BEANS

General

384. ALTSCHUL, A. Proper processing of soybeans and cottonseeds to obtain maximum benefit of the proteins. Israel. Res. Counc. Bull. 9C(3):136-140. Apr. 1961. 330.9 Is72B
Study of soybean processing to make for maximum feeding efficiency.

385. ANTIOXIDANT effect of soya-bean. (Abstr) J. Sci. Food Agr. 9(8):ii-73. Aug. 1958. 382 So12
The antioxidant would appear to be a derivative of tocopherol.

386. BEGUM, A., and EDEN, W. G. Influence of defoliation caused by insects on yield and quality of soybeans. J. Econ. Ent. 58(3):591-592. June 1965. 421 J822

387. BLACK, L. T., KIRK, L. D., and MUSTAKAS, G. C. The determination of residual alcohol in defatted alcohol washed soybean flakes. Amer. Oil Chem. Soc. J. 38(9):483-485. Sept. 1961. 307.8 J82
Chem. Abstr. 55:25295b
Relative error of less than 1 percent was obtained.

388. BLACK, L. T., and MUSTAKAS, G. C. Gas-chromatographic determination of residual hexane in hexane-extracted soybean flakes. Amer. Oil Chem. Soc. J. 42(1):62-64. Jan. 1965. 307.8 J82

389. BLATT, R. E. Palatability of soybeans. U. S. Pat. 2,789,055. Apr. 16, 1957.
Chem. Abstr. 51:11614d

390. BOGORODITSKAYA, V. P. Control of phytin compounds and the enzyme phytase in some leguminous foods. (Rus) Voprosy Pitaniia 16(1):55-56. 1957. 389.8 V89
Chem. Abstr. 51:11610g
Soybeans included. Influence of cooking and other processing methods.

391. BOTTGER, I. Electrophorous separation of soybean seed proteins. (Ge) Kultpflanze Beih. 1:139-145. 1956. 450 K95K
Includes discussion.

392. BROCHE, M. G. The French oil-mills and the problem of the soybean. (Fr) Rev. Franc. Corps Gras 10(11):587-594. Nov. 1963. 307.8 R32

393. CALDER, A. Soya beans and the pig industry. Rhodesia Agr. J. 59(3):144-149. May/June 1962. 24 R34
Chiefly processing for feed.

394. CAREW, L. B., and NESHEIM, M. C. The effect of pelleting on the nutritional value of ground soybeans for the chick. Poultry Sci. 41(1):161-168. Ref. Jan. 1962. 47.8 Am33P
Soybean oil made more available if the ground soybeans were pelleted.

395. CAREW, L. B., RENNER, R., and HILL, F. W. Growth stimulating effect of soybean oil and unextracted soybean flakes in chick rations. Poultry Sci. 38(5):1183-1184. Sept. 1959. 47.8 Am33P
Chem. Abstr. 54:7837d
Effort to find which processing method best makes nutrition available to chicks.

396. CASE HISTORY: Solving a soybean processing plant's corrosion problem-with stainless tubing. Amer. Miller:88(6):22-23. June 1960. 298.8 Am32
This soybean processing plant is continous, automatic, and corrosion free.

397. CONWAY, T. F., and MOFFETT, G. M. Nuclear magnetic resonance for determining oil content of seeds. Amer. Oil Chem. Soc. J. 40(7):265-271. July 1963. 307.8 J82
Chem. Abstr. 59:7760h

398. COWAN, J. C. Progress in the technology of soybeans. Prog. Chem. Fats Other Lipids 5:51-90. Ref. 1958. 307.8 P942
Chem. Abstr. 52:11443f

399. DANGOUMAU, A., and DEBRUYNE, H. Evaluation of cooked soya-bean cake. (Abstr) J. Sci. Food Agr. 14(2):i-77. Feb. 1963. 382 So12

400. DANGOUMAU, A., and DEBRUYNE, H. Examination of heat treatment of soybean press cakes. (Fr) Rev. Franc. Corps Gras 2(6):390-393. June 1955. 307.8 R32
Food Sci. Abstr. 28:2056.

401. DANGOUMAU, A., and DEBRUYNE, H. Note on the evaluation of cooked soybeans. (Fr) Rev. Franc Corps Gras 9(2):88-96. Ref. Feb. 1962. 307.8 R32
Chem. Abstr. 56:13308b
Tests and nutritive value. Includes study of lysine and methionine content of cooked soybeans.

402. DOUGHTY, H. N. Evaluating soybeans by dielectric analysis and other methods. U. S. D. A. Marketing Res. Rep. 367, 36 p. Oct. 1959. 1 Ag84Mr
Further modifications of test equipment needed before dielectric analysis can be used by the trade.

403. EBIHARA, K. Synthetic aroma for soy sauce. Jap. Pat. 5250. Aug. 21, 1954.
Chem. Abstr. 49:13552d

404. EDEN, W. G., and ARTHUR, B. W. Translocation of DDT and Heptachlor in soybeans. J. Econ. Entomol. 58(1):161-162. Feb. 1965. 421 J822

405. ENGELBRECHT, R. S., EWING, B. B., and HOOVER, R. L. Soybean and mixed feed plant processing wastes. J. Water Pollut. Contr. Federation 36 (4):434-442. Apr. 1964. 293.8 Se8
Chem. Abstr. 61:8052b

406. EVANS, V. J. Sedimentation method for determining flour particle size. Cereal Sci. Today 5(2): 40-43. Feb. 1960. 59.8 C333
Chem. Abstr. 54:7914e
Method based on Stroke"s law.

407. FETZER, W. R., and KIRST, L. C. The determination of moisture in gluten and sweetened feeds. Ass. Offic. Agr. Chem. 38(1):130-140. Feb. 1955. 381 As7
Food Sci. Abstr. 28:857
Amount of moisture related to caking and flow characteristics.

408. FUJISAWA, S. Rapid fermentation of soy sauce. Jap. Pat. 7199. Oct. 30, 1954.
Chem. Abstr. 50:3709b

409. FUKUSHIMA, D., and MOGI, M. Treatment of soybeans. Jap. Pat. 6817. Aug. 19, 1958.
Chem. Abstr. 54:777b
To Noda Industrial Science Research Institute.

410. HELME, J. P. The cooking of soybean cake. (Fr) Rev. Franc. Corps Gras 8(10):549-558. Oct. 1961. 307.8 R32

411. HESSELTINE, C. W., DE CAMARGO, R., and RACKIS, J. J. A mould inhibitor in soybeans. Nature [London] 200(4912):1226-1227. Dec. 21, 1963. 472 N21
Inhibits Rhizopus sp. utilized in fermentation of soybeans in making tempeh.

412. HIROSE, K. Debittering of soybeans. U. S. Pat. 2,901,353. Aug. 25, 1959.
Chem. Abstr. 54:7000c

413. ITO, H., EBINE, H., and KOSAKA, S. On the property of lactic acid bacteria in commercially available starter for making miso and soy sauce. (Ja) Tokyo. Food Res. Inst. Rep. 18:28-35. Ref. Mar. 1964. 389.9 T57
English summary.

414. ITO, H., and EBINE, H. Study on lactic acid bacteria in miso. 1. Isolation of lactic acid bacteria from miso. (Ja) Tokyo. Food Res. Inst. Rep. 18:1-8. Ref. Mar. 1964. 389.9 T57
English summary.

415. KAWAMURA, S., and NARASAKI, T. Studies on the carbohydrates of soybeans. VI. Agr. Biol. Chem. 25(7):527-531. July 1961. 385 Ag8B

Chem. Abstr. 56:689c

Soybean polysaccharides were fractionated by using water, ammonium oxalate and sodium hydroxide solutions as successive extracting agents.

416. KAWAMURA, S. Study of the carbohydrates of soybeans. (Ja) Agr. Chem. Soc. Japan. J. 28(11): 851-853. Ref. Nov. 1954. 385 Ag8

Esperanto summary.

417. KONDRASHIN, N.A. The peculiarities of soybean processing in winter. (Rus) Masl.-Zhir. Promysh. 21(3):36. 1956. 307.8 M37

418. LEARMONTH, E.M. Standards for processed soya. Food Manufacture. 34(8):314-317. Aug. 1, 1959. 389.8 F736

Great Britain.

A general standard of quality is proposed for full fat processed soybeans covering enzyme activity, husk content and granularity.

419. LIENER, I.E. The photometric determination of the hemagglutinating activity of soyin and crude soybean extracts. Arch. Biochem. Biophys. 54(1):223-231. Ref. Jan. 1955. 381 Ar2

Chem. Abstr. 49:4772i

This technique was found to have potential value for predicting the nutritive value of soybean meals subjected to various degrees of heat treatment.

420. MARTINELLI, A., and HESSELTINE, C.W. Tempeh fermentation: package and tray fermentations. Food Technol. 18(5):167-171. Ref. May 1964. 389.8 F7398

Soybean product.

Method devised to make tempeh rapidly and in large amounts by pure-culture fermentations in shallow wooden and metal trays.

421. NAKAJIMA, K. Deodorization of soybeans. Jap. Pat. 3026. May 4, 1955.

Chem. Abstr. 51:13264c

To Nichiman Food Industries Company.

422. NITTA, K. Rapid method for the determination of oils in soybean seeds. (Ja) Hokkaido Natl. Agr. Exp. Sta. Res. Bull. 71:109-113. Sept. 1956. 107.6 H68

English summary.

By the method described the oil contents of soybeans can be determined within 60 to 90 minutes.

423. OHTA, T., and others. Manufacturing new-type fermented soybean food product employing Bacillus natto. 1-2. (Ja) Tokyo. Food Res. Inst. Rep. 18:46-59. Mar. 1964. 389.9 T57

H. Ebine, M. Nakano, H. Hieda, and H. Sasaki, joint authors.

English summary.

A description of the process and an indication of its acceptability.

424. OKUHARA, A., and YOKOTSUKA, T., and SAKASI, T. Studies on the analytical methods of soy-sauce. I-II (Ja) Agr. Chem. Soc. Jap. J. 32(2):138-151. Ref. 1958. 385 Ag8

Chem. Abstr. 54:10231g

Table of contents in English.

Includes a estimate of glycerine in soy sauce and the potentiometric titration of acidic ingredients and of formol nitrogen in soy sauce.

425. ROELOFSEN, P. A., and TALENS, A. Changes in some B vitamins during molding of soybeans by Rhizopus oryzae in the production of tempeh kedelee. J. Food Sci. 29(2):224-226. Ref. Mar./Apr. 1964. 389.8 F7322

Chem. Abstr. 61:6277g

426. RZHEKHIN, V. P., POGONKINA, N. I., and CHUKAEVA, V. N. Processing of soybean seeds and obtaining edible seedcake and oil. (Rus) Masl.-Zhir. Promysh. 21(6):9-13. 1955. 307.8 M37

Chem. Abstr. 50:1228g

Relationship between high-quality soybean cake and moisture content of crushed seed meats during processing.

427. SANNELLA, J. L., and WHISTLER, R. L. Isolation and characterization of soybean hull hemicellulose B. Arch. Biochem. Biophys. 98(1): 116-119. Ref. July 1962. 381 Ar2

Soybeans hulls have a higher cellulose content than most annual plant stems.

428. SCARASCIA, G. T., and SCARASCIA-VENEZIAN, M. E. Cytological effects and biochemical characteristics of water extracts of soybean seeds of various ages. (It) Caryologia 6:247-270. Ref. 1954. 442.8 C25

English summary.

Decrease and disappearance of amino acids in the

homogenized form of old seeds show a destruction of protein reserves.

429. SMITH, A. K., and others. Soybean by-products: Recovery of soybean whey protein with edible gums and detergents. J. Agr. Food Chem. 10(4):302-304. Ref. July/Aug. 1962. 381 J8223
A. M. Nash, A. C. Eldridge and W. J. Wolf, joint authors.

430. SOCIETE INDUSTRIELLE DES OLEANGINEUX, and RAMBAUD, M. Process for the treatment of soybeans. Fr. Pat. 1,304,077. Sept. 21, 1962.
Chem. Abstr. 58:1311e

431. SOCIETE INDUSTRIELLE DES OLEAGINEUX, and RAMBAUD, M. Process for the treatment of soybeans. Fr. Pat. 1,304,077. Dec. 13, 1963.
Chem. Abstr. 60:15064c

432. SOLOWAY, S. Use of amidoximes in solvent extraction of metal ions. U. S. Pat. 2,909,542. Oct. 20, 1959.
Chem. Abstr. 54:3895f

433. STENBERG, R. J., and RHEINECK, A. E. Nitriles. U. S. Pat. 2,993,926. Oct. 30, 1957.
Chem. Abstr. 56:4625i
To Archer-Daniels-Midland Company.

434. STEPHENSON, E. L., and TOLLETT, L. Processing of soybeans for broiler feeding. Feedstuffs 31 (30):8. July 25, 1959. 286.81 F322
Contains two tables: "Effect of cooking time and added water on nutritive value of soybean flakes"; and "Effect of temperature and cooking on nutritive value of soybean flakes."

435. TEETER, H. M., and others. Investigations on the bitter and beany components of soybeans. Amer. Oil Chem. Soc. J. 32:390-397. Ref. July 1955. 307.8 J82
L. E. Gast, E. W. Bell, W. J. Schneider, and J. C. Cowan, joint authors.
Chem. Abstr. 49:12857g
Food Sci. Abstr. 27:2736
Study of removal and identification of bitter components of edible soybean flour.

436. TERRILL, R. L. Production, processing, and utilization of soybeans and soybean products. Cereal Sci. Today 5(1):8-12. Jan. 1960. 59.8 C333

437. TOTH, M. Studies on carotene content of alfalfa and soybeans during storage. (Hu) Allattenyesztes 12(3):277-288. Sept. 1963. 49 AL57
German summary.

438. WEYERMULLER, G. Cool and condition soybean material. Chem. Process. 19(3):17, 20. Mar. 1956. 381 C4235
Since the rotary units have no internal moving parts, maintenance is minimized.

439. WEYERMULLER, G., and SPENCER, M. R. More modern method is developed for soybean processing as rotary driers, in addition to drying, are also used to cool and condition soybean material. Chem. Process. 19(3):16, 20. Mar. 1956. 381 C4235
Preparation of edible soybean meal for animal feed.

440. YAMAGUCHI, S., and EBIHARA, K. Treatment for soybeans or fat-free soybeans. Jap. Pat. 7646. Nov. 19, 1954.
Chem. Abstr. 50:7347d
To Noda Soy Sauce Company.

441. YOKOYAMA, Y., and others. Browning phenomenon of "Koridofu" (frozen soya-bean milk curd). I. The fat in the browned products. (Jap) Utsunomiya Univ. Coll. Agr. Bull. 4(2):231-233. Dec. 1959. 107.6 Ut7B
Y. Shigeno, S. Sotome, W. Shimada, and K. Fukuda, joint authors.
English summary.

Drying

442. CARR, R. B. Soybean drying. Plant Oper. Symp. [Rep. & Papers] 4:30-33. 1960. 307.9 P69

443. LEE, C. C. The drying characteristics of rewetted soybean. Diss. Abstr. 21(1):139. July 1960. 241.8 M58
Abstract of thesis (Ph. D.)-University of Minnesota. 206 p.
Effort to derive a rate of drying equation for soybeans based on air temperature, relative humidity, initial kernel moisture content and size of kernel.

Extraction

444. ARNOLD, L. K., and CHOUDHURY, R. B. R. Extraction of soybeans with four hydrocarbon solvents. Amer. Oil Chem. Soc. J. 39(8):378. Aug. 1962. 307.8 J82

Chem. Abstr. 57:11328h

Gives extraction rates of four solvents: isopentane, pentane, isohexane, and hexane.

445. BELIKOV, I. F. Changes occuring in the protein complex of soybeans in the process of oil extraction. (Rus) Masl.-Zhir. Promysh. 21(5):14-17. 1956. 307.8 M37

Chem. Abstr. 50:17247a

Loses of lysine and digestible protein reduced when a continuous process was used.

446. CHAPLIN, J. Preparation of soyabeans for direct solvent extraction. Milling 138(14):355-356, 358. Apr. 6, 1962. 298.8 M622

Deals with cleaning, premilling, conditioning, and flaking of the beans.

447. D'AQUIN, E. L., and others. Pilot-plant application of filtration-extraction to soybeans. Amer. Oil Chem. Soc. J. 31(12):606-613. Dec. 1954. 307.8 J82

J. J. Spadaro, A. V. Graci, P. H. Eaves, L. J. Molaison, N. B. Knoepfler, A. J. Crovetto, H. K. Gardner, and H. L. E. Vix, joint authors.

Chem. Abstr. 49:2099c

At the Southern Regional Research Laboratory, New Orleans. Process should be of interest to the small mills faced with the problem of crushing soybeans and one or more oil-bearing materials.

448. DEPMER, W. Pre-treatment of soybeans and their effect on the solvent-extraction. (Ge) Fette, Seifen, Anstrichmittel 65(6):466-469. June 1963. 384 C422

English summary.

Pre-extraction analysis such as bulk-density determination permits a more efficient use of extraction machinery.

449. GUGGENHEIM, K., and others. Nutritive value of human diets as affected by extraction rate of flour and its supplementation with soya meal. Amer. J. Clin. Nutr. 10(3):231-239. Ref. Mar. 1962. 389.8 J824

Chem. Abstr. 56:15923c

E. Perez, J. Ilan, S. Joseph, and A. Goldberg, joint authors.

Soybean meal added improves the nutritive value of bread proteins.

450. GUGGENHEIM, K., and FRIEDMANN, N. Effect of extraction rate of flour and of supplementation with soya meal on the nutritive value of bread proteins. Food Technol. 14(6):298-300. Ref. June 1960. 389.8 F7398

Soy improved the nutritive value of proteins of both white and dark breads.

451. GUNSTONE, F. D., PADLEY, F. B., and ILYAS QURESHI, M. The glyceride composition of seed oil rich in linoleic and/or linolenic acid. (Abstr) Amer. Oil Chem. Soc. J. 42(3):120A. Mar. 1965. 307.8 J82

Soybean oil.

452. HAINES, H. W., PERRY, G. C., and GASTROCK, E. A. Filtration-extraction of cottonseed oil. Indus. Eng. Chem. 49(6):920-929. Ref. June 1957. 381 J825

Food Sci. Abstr. 29:2288.

Extensive bibliography covering aspects common to oil seed extraction.

453. HART, J. R., and NEUSTADT, M. H. Application of the Karl Fisher method to grain moisture determination. Cereal Chem. 34(1):26-37. Ref. Jan. 1957. 59.8 C33

Chem. Abstr. 51:6026e

Food Sci. Abstr. 29:1116

A method for determining moisture which involves grinding of the grain and extraction of the water with methanol.

454. HUTCHINS, R. P. Some improvements in design in solvent-extraction plants. Amer. Oil Chem. Soc. J. 32(12):698-699. Dec. 1955. 307.8 J82

Chem. Abstr. 50:2191c

By streamlining design of machinery, costs have been reduced by half.

455. KARNOFSKY, G. B. Removal of solvent from solvent extracted solid organic particles. U. S. Pat. 2,691,830. Oct. 19, 1954.

Chem. Abstr. 49:2761c

To Blaw-Knox Company.

System for continuous solvent removal from particles such as soybean flakes.

456. KAUFMANN, H. P., and ORDE, H. O. VOM. Extraction of oil-seeds with aliphatic fluoro-chlorocarbohydrates I: Extraction of soybeans and cottonseed with 1, 2, 2-trifluoro-trichloroethane. (Ge) Fette, Seifen, Anstrichmittel 57(6):399-401. June 1955. 384 C422

English summary.

Chem. Abstr. 49:13670i
Food Sci. Abstr. 28:187

457. KAUFMANN, H. P. Fractional extraction of lipides from natural products. Ger. Pat. 1,000,225. Jan. 3, 1957.
Chem. Abstr. 53:23011c

458. KEANE, J. D., and SMITH, C. T. Solution hold-up as a factor in oilseed extractor design. Amer. Oil Chem. Soc. J. 35(5):199-203. May 1958. 307.8 J82
Chem. Abstr. 52:10611f
Hold-up was measured for a wide variety of oilseeds. Includes soybean seeds.

459. KOENIG, P. Soluble-protein-rich residues from solvent-extracted oil seeds. Feb. 8, 1962.
Chem. Abstr. 56:14685c
To Metallgesellschaft.

460. LEDBETTER, D. M., WISSEL, H. J., and MASKEY, D. F. Development of Buckeye Moisture Meter for use on oil-bearing materials. Amer. Oil Chem. Soc. J. 30(11):442-447. Nov. 1953. 307.8 J82
Meter found to fill a need in process control in the milling of oil bearing materials.

461. MCDONALD, F. L. Solvent extraction of soybeans (V. D. Anderson totally immersed extractor). Oil Mill Gaz. 67(3):39-40. Sept. 1962. 307.8 Oi53

462. MATSUK, YU. P., and others. Mechanical expulsion of solvent from grist. (Rus) Masl.-Zhir. Prom. 23(3):6-7. 1957. 307.8 M37
Chem. Abstr. 51:9970a
V. N. Kurdyumov, G. D. Malyi, and M. I. Bezuglov, joint authors.
Maximum amount of benzene was expelled from soybean grist at 35 kg./sq. cm. pressure.

463. MINASIAN, M. A., and PLIUSHKINA, E. Z. Processing of sunflower seeds and soybeans by the system, single pressing-continuous extraction. (Rus) Masl.-Zhir. Prom. 19(5):29-31. 1954. 307.8 M37

464. MOLYNEUX, F. The prediction of "A" factor and efficiency in leaching calculations. Indus. Chem. 37(440):485-492. Ref. Oct. 1961. 382 In22
Chem. Abstr. 56:3319i
Leaching as a diffusional process discussed in connection with the extraction of soybean and methods of solution are included.

465. MUSTAKAS, G. C., KIRK, L. D., and GRIFFIN, E. L. Bland undenatured soybean flakes by alcohol washing and flash desolventizing. Amer. Oil Chem. Soc. J. 38(9):473-478. Sept. 1961. 387.8 J82
Chem. Abstr. 55:25077g
This method reduces excessive moisture by low retention time and rapid heat transfer.

466. NEDELKO, E. Y. Temperature effect on substances and the content of amino acids in the process of oil extraction from soybeans. (Rus) Ref. Zh. Khim. (Abstr. 33480)23:161. 1960. 241.7 R252
Chem. Abstr. 55:11885e

467. OTHMER, D. F., and AGARWAL, J. C. Extraction of soybeans; theory and mechanism. Chem. Eng. Progr. 51(8):372-378. Aug. 1955. 381 C4232
Chem. Abstr. 49:14350d
Food Sci. Abstr. 28:186
Extraction rate is physically and mathematically defined by the Hagen-Pouiseulle law governing viscous fluid flow in capillaries.

468. OTHMER, D. F., and JAATINEN, W. A. Extraction of soybeans. Indus. Eng. Chem. 51(4):543-546. Apr. 1959. 381 J825
Chem. Abstr. 53:14547d
Includes a study of the various solvents.

469. RAO, R. K., and others. Alcoholic extraction of vegetable oils. 1. Solubilities of cottonseed, peanut, sesame, and soybean oils in aqueous ethanol. Amer. Oil Chem. Soc. J. 32:420-423. July 1955. 307.8 J82
M. G. Krishna, S. H. Zaheer, and L. K. Arnold, joint authors.
Chem. Abstr. 49:12858b
Food Sci. Abstr. 27:2727
Effect of extraction method on flavor and other properties of edible soybean oil.

470. RZHEKHIN, V. P., and POGONKINA, N. I. Denaturation of protein substances in the process of extracting oil from soybeans. (Rus) Masl.-Zhir. Prom. 19(6):6-8. 1954. 307.8 M37
Chem. Abstr. 49:2099t
The data shows that the loss of water and salt-soluble protein during I and II varied with temperature from 39 percent at 105° C to 89 percent at 135° C.

471. RZHEKHIN, V. P., and POGONKINA, N. I. Interaction between lipides and protein of the oil-bearing seed in oil extraction process. (Rus) Masl.-Zhir. Prom. 23(1):11-13. 1957. 307.8 M37

Chem. Abstr. 51:7741c

Method could be employed in the control of the manufacturing process.

472. SCHADE, H. An antioxidant based on soybean. (Ge) Fette, Seifen, Anstrichmittel 56:1011-1012. Dec. 1954. 384 C422

Chem. Abstr. 50:6705f

English summary.

Methods of decreasing bitter taste of soybean products without destroying antioxidants.

473. SHAW, W. Extraction units. Oil Mill Gaz. 61(10):36-37. Apr. 1957. 307.8 Oi53

Soybeans. Discusses and describes the Kennedy and the Hildebrandt extractor including a drying unit and the final stills.

474. SUGARMAN, N. Process of extraction of oil and protein simultaneously from oil-bearing materials. U. S. Pat. 2,762,820. Sept. 11, 1956.

Chem. Abstr. 51:4031c

To Georgia Technological Research Institute.

475. TOI, B., and SHIIO, I. Extraction of choline chloride from soybean cake. Jap. Pat. 9456. Oct. 25, 1958.

Chem. Abstr. 54:6043b

To Ajinomoto Company.

476. TOKUNAGA, T., TSUJI, O., and YASUDA, K. Extraction of phytosterols from soybean cake. Jap. Pat. 8528. Sept. 22, 1959.

Chem. Abstr. 54:16479b

To Nisshin Oil Manufacturing Company.

477. VERCOE, C. S. Materials-handling at oil mills. Amer. Oil Chem. Soc. J. 30(11):567-570. Nov. 1953. 307.8 J82

Outline of the type of material handling equipment which might be used in a well equipped mill for the extraction of oil from soybeans.

478. WEYERMULLER, G., and SPENCER, M. R. Close control of flow and temperatures in soybean oil extraction. Chem. Process. 19(6):10-11. June 1956. 381 C4235

After extraction, spent flakes are automatically elevated to a desolventizer-toaster unit which removes remaining solvent, heat treats the meal with steam, and develops flake's protein for high nutritional value.

479. WHITTEN, M. E., and BAUMANN, L. A. Evaluation of a rapid method for determining oil content of soybeans. U. S. D. A. Tech. Bull. 1296, 32 p. Ref. Nov. 1963. 1 Ag84Te

Chem. Abstr. 60:9825h

480. YAMANAKA, S., and others. Extraction of protein from defatted soybean. Jap. Pat. 17,041. Sept. 4, 1963.

Chem. Abstr. 59:15596d

M. Sasakawa, N. Takagi, and I. Umemoto, joint authors.

To Hankyu Kyoei Bussan Company.

Storage

481. BYSTROV, N. M., and LYSIAKOV, M. P. From the practices of storing peanuts and soybeans at low temperatures. (Rus) Masl.-Zhir. Prom. 19(3):8-9. 1954. 307.8 M37

482. KENNEDY, B. W. Moisture content, mold invasion, and seed viability of stored soybeans. Phytopathology 54(7):771-774. Ref. July 1964. 464.8 P56

483. MILLER, W. J., CLIFTON, C. M., and CAMERON, N. W. Nutrient losses and silage quality as affected by rate of filling and soybran flakes. J. Dairy Sci. 45(3):403-407. Mar. 1962. 44.8 J822

Total losses were lower in the rapidly filled silos.

UTILIZATION

UTILIZATION OF MEAL IN FEED

484. ACKER, D. C., CATRON, D. V., and HAYS, V. W. Lysine and methionine supplementation of corn-soybean oil meal rations for pigs in drylot. J. Anim. Sci. 18(3):1053-1058. Ref. Aug. 1959. 49 J82

Chem. Abstr. 54:11326i

On the protein ration feed efficiency improved by addition of L-lysine supplement. Methionine had no effect.

485. ACKERSON, C. W. High levels of meat, bone meal and soybean meal in rations for broilers. Feed Age 7(4):48-50. Apr. 1957. 389.78 F327

Research shows that soybean meal is a suitable protein for broiler rations.

486. ACKERSON, C. W., and MUSSEHL, F. E. The utilization of food elements by growing chicks. 15. The substitution of Korean lespedeza seed for soybean oil meal in chick rations. Poultry Sci. 33(6):1228-1229. Nov. 1954. 47.8 Am33P

Ground lespedeza may replace soybean meal up to 20 percent of the diet.

487. ANDERSEN, P. E., and SORENSEN, M. Herring meal versus soybean meal for heifers. (Da) Denmark. Stat. Husdyrbrugsudv. Landokon. Forsogslab. Overs. over Landokon. Forsogslab. Arb. 1961(fall mtg.):50-51. 49.9 D41

488. ANDERSON, G. C., and others. Comparative effects of urea, uramite, biuret, soybean protein, and creatine on digestion and nitrogen metabolism in lambs. J. Anim. Sci. 18(1):134-140. Ref. Feb. 1959. 49 J82

G. A. McLaren, J. A. Welch, C. D. Campbell, and G. S. Smith, joint authors.

Chem. Abstr. 53:13300c

Nitrogen utilization was significantly improved by soybean protein and creative.

489. ANWAR, A. Nutritive value of soya bean meal as measured by chemical and physical methods. Poultry Sci. 41(6):1915-1918. Ref. Nov. 1962. 47.8 Am33P

Nutritive value of 10 samples of soybean meal assessed by gross protein value was poorly correlated. with Lund-Sandstrom fractions.

490. ASCARELLI, I., and GESTETNER, B. Chemical and biological evaluation of some protein feeds for poultry. J. Sci. Food Agr. 13(8):401-410. Aug. 1962. 382 So12

Chem. Abstr. 57:17154g

Chemical and biological methods tested as indexes of protein quality in three protein supplements including soybean meal.

491. ASKELSON, C. E., and BALLOUN, S. L. Amino acid supplementation of a corn-soybean meal chick ration. Poultry Sci. 43(2):333-341. Mar. 1964. 47.8 Am33P

Chem. Abstr. 61:7434f

Chick growth and feed efficiency.

492. BAELUM, J. Can we use more soybean meal in our feed mixtures? (Da) Landbonyt 12(1):27-29. Jan. 1958. 11 L2322

493. BALLOUN, S. L. Laboratory estimation of the biological value of soybean oil meal as related to method of preparation. (Abstr) Iowa State Coll. J. Sci. 28(3):278. Feb. 1954. 470 Io9

Food Sci. Abstr. 27:738

The correlation of several laboratory tests with the nutritive value of soybean oil meal for chicks studied.

494. BALODE, K. Use of substitutes for replacing pollen as bee feed. (La) Riga. Latviiskii Nauch.-Issled. Inst. Zhivotn. i Vet. Trudy 12:243-267. Ref. 1961. 41.9 R43

English summary.

Chiefly a mixture of brewers' yeast and soybean meal.

495. BARNETT, B. D., and BIRD, H. R. Standardization of assay for unidentified growth factors. Poultry Sci. 35(3):705-710. May 1956. 47.8 Am33P

Basal ration used in chick assay for unidentified growth factors included isolated soybean protein.

496. BARTH, K. What is toasted soybean meal? (Ge) Tierzuchter 14(1):28, 30. Jan. 5, 1962. 49 T445

497. BECKER, D. E., and others. Levels of protein in practical rations for the pig. J. Anim. Sci. 13(3):611-621. Aug. 1954. 49 J82

Chem. Abstr. 48:12259d

J. W. Lassiter, S. W. Terrill, and H. W. Norton, joint authors.

Comparison of the protein-nutritive value of menhaden fishmeal and soybean meal in rations for young pigs, showed the fishmeal less satisfactory than the soy meal.

498. BEELER, D. A., ROGLER, J. C., and QUACKENBUSH, F. W. Effects of levels of certain dietary lipids on plasma cholesterol and atherosclerosis in the chick. J. Nutr. 78(2):184-188. Ref. Oct. 1962. 389.8 J82

Chem. Abstr. 60:4535g

Isolated soybean protein included in the high-fat diet.

499. BERG, L. R. Unidentified growth factors in soybean oil meal. WSC Anim. Indus. Conf. Feed Manufacturers Feed Dealers. Abstr. 11:33-34. 1958. 389.79 W94

Poultry.

500. BERRY, T. H., and others. The limiting amino acids in soybean protein. J. Anim. Sci. 21(3):558-

561. Aug. 1962. 49 J82
D. E. Becker, O. G. Rasmussen, A. H. Jensen, and H. W. Norton, joint authors.
Chem. Abstr. 58:4867b
Methionine, lysine and threonine.

501. BIELORAI, R., and BONDI, A. Relationship between antitryptic factors of some plant protein feeds and products of proteolysis precipitable by trichloroacetic acid. J. Sci. Food Agr. 14(2):124-132. Ref. Feb. 1963. 382 So12
Chem. Abstr. 58:14506b

502. BIRK, Y., and GERTLER, A. Effect of mild chemical and enzymatic treatments of soybean meal and soybean trypsin inhibitors on their nutritive and biochemical properties. J. Nutr. 75(4):379-387. Ref. Dec. 1961. 389.8 J82
As feed. Growth experiments with chicks.

503. BLOCK, R. J., and others. Effect of supplementing soybean proteins with lysine and other amino acids. Amer. J. Diseases Children 92(2):126-130. Aug. 1956. Libr. Congr.
Chem. Abstr. 50:15783i
D. W. Anderson, H. W. Howard, and C. D. Bauer, joint authors.
Addition to lysine did not improve the nutritive value of the soybean proteins. Experiment with rats.

504. BOLTON, W. Digestibility by adult fowls of wheat fine middlings, maize germ meal, maize gluten feed, soybean meal, and ground-nut meal. J. Sci. Food Agr. 8(3):132-136. Mar. 1957. 382 So12
Chem. Abstr. 51:10688c
Digestibility coefficients determined for carbohydrate fractions of soybean meal.

505. BONDI, A., and BIRK, Y. The action of proteolytic enzymes on protein feeds. I. J. Sci. Food Agr. 6(9):543-548. Ref. Sept. 1955. 382 So12
Food Sci. Abstr. 28:830
The nutritional assessment of protein feeds of plant and animal origin was carried out by "in vitro" proteolytic digestion. Soybeans included.

506. BOOTH, A. N., and others. Effect of raw soybean meal and amino acids on pancreatic hypertrophy in rats. Soc. Exper. Biol. Med. Proc. 104(4):681-683. Ref. Aug.-Sept. 1960. 442.9 So1
Chem. Abstr. 55:709a
D. J. Robbins, W. E. Ribelin, and F. DeEds, joint authors.
Study of the use of raw soybean meal as sole source of dietary protein.

507. BOOTH, A. N. Physiological effects of feeding soybean meal and its fractions. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:120-126. Ref. 1962. A389.9 C76
Chicks and rats.

508. BORCHERS, R., MOHAMMAD-ABADI, D., and WEAVER, J. M. Antibiotic growth stimulation of rats fed raw soybean oil meal. J. Agr. Food Chem. 5(5): 371-373. May 1957. 381 J8223
Chem. Abstr 51:16756d
Results open new understanding of possible growth stimulatory effects of antibiotics.

509. BORCHERS, R. Bound growth inhibitor in raw soybean meal. Soc. Exp. Biol. Med. Proc. 112(1):84-85. Jan. 1963. 442.9 So1
Chem. Abstr. 59:2007f
Growth rate of rats fed digested soybean meal compared with autoclaved soybean meal.

510. BORCHERS, R. Counteraction of the growth depression of raw soybean oil meal by amino acid supplements in weanling pigs. J. Nutr. 75(3):330-334. Ref. Nov. 1961. 389.8 J82
Chem. Abstr. 59:9140e
Shows the influence of heated soybean oil meal on growth rate.

511. BORCHERS, R. Digestibility of threonine and valine by rats fed soybean meal rations. J. Nutr. 78 (3):330-332. Ref. Nov. 1962. 389.8 J82
Chem. Abstr. 60:4534a
A comparison between raw soybean rations with supplements and heated soybean meal.

512. BORCHERS, R. Effect of dietary level of raw soybean oil meal on the growth of weanling rats. J. Nutr. 66(2):229-234. Ref. Oct. 1958. 389.8 J82
Chem. Abstr. 53:7343a
Results disprove that raw soybeans contain a "toxic" factor whose effect is enhanced by higher levels of raw soybean intake.

513. BORCHERS, R., and MOHAMMAD-ABADI, D. Indican excretion by rats fed raw soybean-oil meal. J. Nutr. 59(3):435-442. Ref. July 10, 1956. 398.8 J82
Chem. Abstr. 50:17025f
Rats fed raw soybean oil meal grew more slowly than those fed autoclaved meal.

514. BORCHERS, R. Supplementary methionine requirement of weanling rats fed soybean oil meal rations. J. Nutr. 77(3):309-311. Ref. July 1962. 389.8 J82
Chem. Abstr. 60:2104h

515. BORNSTEIN, R.S., and BEN-ADAM, Z. Roasted soybean oilmeal. (He) Hassadeh 39(4):413-416; (5):558-561. Jan.-Feb. 1959. 26 H27
Poultry feed.

516. BORNSTEIN, S., BEN-ADAM, Z., and LIPSTEIN, B. Effect of processing conditions on nutritive value of soya-bean oil meals for chicks. J. Sci. Food Agr. 12(1):80-88. Jan. 1961. 382 So12
Chem. Abstr. 55:15652b
Thirteen commercial and experimental soybean oil meals used in chick rations and their nutritional quality was tested in growth experiments.

517. BORNSTEIN, S., and LIPSTEIN, B. The influence of age of chick on their sensitivity to raw soybean oil meal. Poultry Sci. 42(1):61-69. Jan. 1963. 47.8 Am33P

518. BORNSTEIN, S., and LIPSTEIN, B. The use of underprocessed soya-bean oil meal in practical layer rations. J. Sci. Food Agr. 14(10):719-725. Ref. Oct. 1963. 382 So12
Chem. Abstr. 60:8398b
Experiments to compare solvent extracted soybean oil meals produced by dry heat with those meals produced by wet desolventising.

519. BORNSTEIN, S. The utilization of soybean oil meal as poultry feed. Israel. Res. Council. Bull. 9C (3):141-143. Apr. 1961. 330.9 Is72B
Substitution of fishmeal by soybean oil meal possible only if the soybean meal is of the highest protein content.

520. BOTHA, M. B., WETHLI, E., and RIDDER, G. J. DE. Plant proteins would be cheaper in chicken rations. Farming So. Africa 40(1):43-44. Apr. 1964. 24 So842
Sunflower, peanut, and soybean oilmeals. Experiments to overcome the deficiency in plant protein ration by using various combinations of plant proteins.

521. BOWLAND, J. P. Addition of lysine and/or a tranquilizer to low protein, soybean meal supplemented rations for growing bacon pigs. J. Anim. Sci. 21(4): 852-856. Nov. 1962. 49 J82
Addition improved the rate of growth.

522. BRAHAM, J. E., BIRD, H. R., and BAUMANN, C. A. Effect of antibiotics on the weight of chicks and rats fed raw or heated soybean meal. J. Nutr. 67(1):149-158. Ref. Jan. 10, 1959. 389.8 J82
Chem. Abstr. 53:12425h
High levels of antibiotics improved the growth of chicks fed raw soybean meal by an average of 31 o/o to 51 o/o.

523. BRAMBILA, S., NESHEIM, M. C., and HILL, F. W. Effect of trypsin supplementation on the utilization by the chick of diets containing raw soybean oil meal. J. Nutr. 75(1):13-20. Ref. Sept. 1961. 389.8 J82
Chem. Abstr. 59:9139e
Trypsin supplementation does not overcome the growth depressing properties of raw soybean oil meal.

524. BRAMBILA, S., NESHEIM, M. C., and HILL, F. W. Studies of the effect of trypsin on the utilization of raw soybean oil meal by the chick. (Abstr) Poultry Sci. 39(5):1237. Sept. 1960. 47.8 Am33P
The trypsin concentrate inactivated by heating was without effect in diets containing either raw or heated soybean oil meal.

525. BRAY, D. J. The effect of different proportions of corn and soybean protein on performance of laying pullets. (Abstr) Poultry Sci. 38(5):1191. Sept. 1959. 47.8 Am33P
Best performance obtained when soybean oil meal contributed from 50 to 60 percent of the total protein.

526. BRAY, D. J. Pancreatic hypertrophy in laying pullets induced by unheated soybean meal. Poultry Sci. 43(2):382-384. Mar. 1964. 47.8 Am33P
Differences of degree, rather than absolute differences, characterize the response of growing vs. mature chickens to unheated soybean meal.

527. BRAY, D. J., and GARLICH, J. D. Studies with corn-soya laying diets. 1-2. Poultry Sci. 39(6):1346-1349, 1541-1546. Ref. Nov. 1960. 47.8 Am33P
Includes amino acid supplementation of low protein diet.
Chem. Abstr. 56:1818c
Supplementing corn-soya laying diets with amino acids resulted in an increase in egg production and nitrogen retention.

528. BRAY, D. J., and GESELL, J. A. Studies with corn-soya [meal] laying diets. 4. Environmental temperature-a factor affecting performance of pullets

fed diets suboptimal in protein. Poultry Sci. 40(5): 1328-1335. Sept. 1961. 47.8 Am33P

An inverse relationship existed between temperature and egg production at suboptimal protein levels only.

529. BRAY, D. J., and MORRISSEY, D. J. Studies with corn-soya laying diets. 5. Seasonal patterns of performance at marginal levels of dietary protein. Poultry Sci. 41(4):1078-1081. July 1962. 47.8 Am33P

530. BRAY, D. J. Studies with corn-soya laying diets. 7. Limiting amino acids in a 60:40 blend of corn and soybean protein. Poultry Sci. 43(2):396-401. Mar. 1964. 47.8 Am33P

Lysine and isoleucine appeared to be the most limiting amino acids in a 60:40 blend of corn and soybean protein.

531. BROOKS, C. C., and THOMAS, H. R. Supplements to peanut oil meal protein for growing fattening swine. J. Anim. Sci. 18(3):1119-1127. Aug. 1959. 48 J82

532. BRUGGEMANN, J., GIESECKE, D., and DREPPER, K. Influence of various sources of nitrogen on composition and activity of the rumen flora. (Ge) Z. Tierpsychol. Tierernaehr. Futtermittelkunde. 17 (3):162-188. Ref. July 1962. 389.78 Z3

Chem. Abstr. 57:14270f

English summary.

Soybean meal as a feed supplement.

533. BRUGGEMANN, J., and others. Physiopathological studies and clinical observations on Durener disease. Zentbl. Vetmed. 5(7):634-664. Ref. Sept. 1958. 41.8 Z5

K. Bronsch, H. Karg, and E. Dahme, joint authors.

English summary.

In cattle, caused by soybean-meal.

534. CARLSON, C. W., MCGINNIS, J., and JENSEN, L. S. Anti-rachitic effects of soybean preparations for turkey poults. J. Nutr. 82(3):366-370. Mar. 1964. 389.8 J82

Heated soybean meal, raw soybean meal, or water extracts of raw or heated soybean meal partially prevented the rickets and improved growth.

535. CARLSON, C. W., and others. Rachitogenic activity of soybean fractions. J. Nutr. 82(4):507-511. Apr. 1964. 389.8 J82

H. C. Saxena, L. S. Jensen, and J. McGinnis, joint authors.

Chem. Abstr. 60:13642a

For poults. Soybean isolated protein shown to possess growth-depressing properties when fed in a glucose-soybean diet for turkey poults 4 weeks of age.

536. CHASHKIN, A. Soybean meal in the rations of dairy cows. (Rus) Sel'sk. Khoz. Sibiri 12:36-39. Dec. 1962. 20 Se492

Effect on milk production.

537. CHURY, J., and CRHA, A. J. The antithyroid effect of soy meal in rats. (Cz) Brno. Vysoka Sk. Zemedel. Sborn. Rada B, Spisy Vet. 11(2):139-146. Ref. 1963. 105.92 B833

German summary.

538. CLAWSON, A. J., and others. Effect of protein source, autoclaving, and lysine supplementation on gossypol toxicity. J. Anim. Sci. 20(3):547-552. Ref. Aug. 1961. 49 J82

F. H. Smith, J. C. Osborne, and E. R. Barrick, joint authors.

Corn, soybean, and cottonseed meal for pigs.

539. CLAWSON, A. J., BARRICK, E. R., and SMART, W. W. G. Response of pigs to graded levels of soybean meal and added lysine in ten percent protein rations. J. Anim. Sci. 22(4):1027-1032. Ref. Nov. 1963. 49 J82

Increasing the proportion of the protein soybean meal resulted in increases in feed intake and daily gain.

540. CONRAD, H. R., and HIBBS, J. W. Nitrogen metabolism in dairy cattle. II. Soybean flakes versus oats as principal sources of digestible carbohydrates for nitrogen utilization. J. Dairy Sci. 44(10):1903-1909. Ref. Oct. 1961. 44.8 J822

Soybean flakes and soybean oil meal supported nitrogen utilization in dairy cows.

541. COUCH, J. R., and STELZNER, H. D. Preparation of poultry growth-promoting substances. U. S. Pat. 3,119,692. Jan. 28, 1964.

Chem. Abstr. 60:11296a

Soybean meal.

542. CREGER, C. R., HAQUE, M. E., and COUCH, J. R. Reproduction studies in the mature fowl. 1. Corn and soybean oil meal as sources of unidentified growth and hatchability factors. Poultry Sci. 40(2): 299-302. Mar. 1961. 47.8 Am33P

Chem. Abstr. 55:20108b

Addition of soybean oil meal to synthetic diet pro-

duced a marked improvement in fertility and hatchability of fertile eggs.

543. CREGER, C. R., and COUCH, J. R. Reproduction in the mature fowl. 2. Effects of soybean oil meal, organic and inorganic fractions of corn on production, fertility, and hatchability. Poultry Sci. 40 (5):1299-1305. Ref. Sept. 1961. 47.8 Am33P

Corn and soybean oil meal or a combination greatly stimulated egg production, hatchability of fertile eggs and egg weight.

544. CREMER, H. D., and MENDEN, E. Nonenzymic browning reactions and their physiological effects. (Ge) Z. Lebensm.-Untersuch. Forsch. 104(1):33-43. Ref. July 1956. 384 Z39

Chem. Abstr. 50:17223e

The so-called Browning reaction reviewed with regard to capacity to reduce nutritive value of soybean meal.

545. DAVIS, P. N., NORRIS, L. C., and KRATZER, F. H. Interference of soybean proteins with the utilization of trace minerals. J. Nutr. 77(2):217-223. Ref. June 1962. 389.8 J82

Chem. Abstr. 59:15657e

Chick nutrition. Chicks fed three diets containing three levels of zinc, manganese, copper and iron, in order to measure the effect of isolated soybean protein on the availability of these proteins.

546. DAVIS, P. N., NORRIS, L. C., and KRATZER, F. H. Iron deficiency studies in chicks using treated isolated soybean protein diets. J. Nutr. 78(4):445-453. Ref. Dec. 1962. 389.8 J82

Chem. Abstr. 60:4527b

Experiments on freeing soybean protein of its mineral elements.

547. DAVIS, R. F., WILLIAMS, C., and LOOSLI, J. K. Studies on sulfur to nitroten ratios in feeds for dairy cows. J. Dairy Sci. 37(7):813-818. July 1954. 44.8 J822

Chem. Abstr. 48:10255g

Lactation studies with dairy-cow feeding, including soybean-oil meal as feed, at the Department of Animal Husbandry, Cornell University, Ithaca, N. Y.

548. DELIC, I., and MARJANOVIC, M. Partial substitution of fish meal and dried skim milk by soybean and peanut oil meal with early weaned pigs of 30 days of age. (Se) Stocarstvo 15(11/12):631-638. Ref. Nov./Dec. 1961. 43.8 St6

English summary.

549. DESHPANDE, P. D., and others. Biological availability of isoleucine. Arch. Biochem. Biophys. 67(2):341-349. Ref. Apr. 1957. 381 Ar2

Chem. Abstr. 51:11509g

A. E. Harper, M. Collins, and C. A. Elvehjem, joint authors.

In soybean protein over 90 percent of isoleucine was available to the rat.

550. DEVOS, P. Utilization of milk by-products. Fr. Pat. 1,315,180. Jan. 18, 1963.

Chem. Abstr. 59:1034a

Milk by products supplemented by meal for cattle feed.

551. DIAZ, F., and others. Comparative performances of baby pigs fed infant and baby pig diets. J. Nutr. 68(1):131-140. May 10, 1959. 389.8 J82

V. C. Speer, P. G. Homeyer, V. W. Hays, and D. V. Catron, joint authors.

Study showed baby pig's inability to adequately utilize soy protein.

552. DISER, G. M. Protein quality in soybean meal. Milling 142(15):373-376, 380. Ref. Apr. 10, 1964. 298.8 M622

Study of amino acid content of feed which permits an approximation of its nutritional value. Fifty eight items in the bibliography.

553. DOBRIKOVA, A. N. Amino acid composition of soybean seed proteins of Primorski Krai. (Rus) Akad. Nauk SSSR. Inst. Biokhim. im. A. N. Bakha. Biokhim. Zerna. Sborn. 4:86-100. Ref. 1958. 59 Ak1

554. DONOVAN, G. A. Influence of various factors on the protein requirements of the chick. (Abstr) Iowa State Coll. J. Sci. 31(3):392-393. Feb. 15, 1957. 470 Io9

Chem. Abstr. 51:13091e

Arginine was most readily available and threonine was least available in both soy protein and casein-soy protein.

555. EDWARDS, H. M. The current status of essential fatty acid requirements of poultry. Cornell Nutr. Conf. Feed Manufacturers Proc. 1963:93-100. 389.79 C81

Soybeans included in the diets. Extensive bibliography.

556. ELAM, C. J., and DAVIS, R. E. Effects of various fats on feedlot bloat. (Abstr) J. Anim. Sci. 20(1):197. Feb. 1961. 49 J82

Soybean meal served both as a basal ration and also in another of the experimental rations.

557. ELLIS, W. C., and others. The utilization of nitrogen by lambs from purified rations containing urea, gelatin, casein, soybean protein, and blood fibrin. (Abstr) J. Anim. Sci. 14:1200. Nov. 1955. 49 J82

G. B. Garner, M. E. Muhrer, and W. H. Pfander, joint authors.

Chem. Abstr. 51:12248g

Demonstrates the superiority of "true" protein as compared to urea for sheep.

558. EMBRY, L. B., and HALVERSON, A. W. Carotene loss in feed supplements containing urea, soybean meal, oats, and trace minerals. S. Dak. Acad. Sci. Proc. 32:64-67. 1953, pub. Jan. 1, 1954. 500 So82

Carotene loss through storage is high in oats; in soybean meal the loss is only one-third as great.

559. EMBRY, L. B., and GASTLER, G. F. Influence of urea on ration digestibility by cattle and sheep. S. Dak. Acad. Sci. Proc. 34(1):109-116. Jan. 1, 1956. 500 So82

Chem. Abstr. 50:15769f

Increasing the protein content of hay rations with urea or soybean meal increased the digestibility of protein but not of dry and organic matter.

560. ESSIG, H. W., HATFIELD, E. E., and JOHNSON, B. C. Volatile fatty acid rations for growing lambs. J. Nutr. 69(2):135-141. Ref. Oct. 1959. 389.8 J82

Chem. Abstr. 54:3621c

Experimental diets containing up to 30 percent soybean protein.

561. EVANS, R. E. The amino acid supplementation of diets rich in maize meal for weanling pigs. J. Agr. Sci. 58(2):209-218. Apr. 1962. 10 J822

Chem. Abstr. 57:5089f

Maize diet compared with soybean meal diet.

562. FERON, R. Feed quality and control of soybean cake. (Fr) Rev. Franc. Corps Gras 10(12):661-666. Ref. Dec. 1963. 307.8 R32

563. FISHER, H., and JOHNSON, D. Effectiveness of essential amino acid supplementation in overcoming the growth depression of unheated soybean meal. Arch. Biochem. Biophys. 77(1):124-128. Ref. Sept. 1958. 381 Ar2

Chem. Abstr. 53:3406f

Amino acid availability is a major factor in the growth-depressing activity of raw soybean meal.

564. FISHER, H., JOHNSON, D., and FERDO, S. The utilization of raw soybean meal protein for egg production in the chicken. J. Nutr. 61(4):611-621. Ref. Apr. 10, 1957. 389.8 J82

Chem. Abstr. 51:13101b

Raw meal fed at high protein level and properly supplemented was effectively utilized for good egg production.

565. FITZSIMMONS, R. C., and WAIBEL, P. E. Determination of the limiting amino acids in corn-soybean oil meal diets for young turkeys. Poultry Sci. 41(1):260-268. Ref. Jan. 1962. 47.8 Am33P

Objective was to determine the amino acid deficiencies in 20 and 24 percent protein corn-soybean oil meal type turkey starting diets, using a 28 percent protein diet as a control.

566. FORBES, R. M. Mineral utilization in the rat. III. Effects of calcium, phosphorus, lactose and source of protein in zinc-deficient and in zinc-adequate diets. J. Nutr. 83(3):225-233. Ref. July 1964. 389.8 J82

Chem. Abstr. 61:9820g

567. FORBES, R. M. and YOHE, M. Zinc requirement and balance studies with the rat. J. Nutr. 70 (1):53-57. Ref. Jan. 1960. 389.8 J82

Chem. Abstr. 55:15656b

Study of the absorption of zinc from both isolated soy protein and casein.

568. FOX, S. W., WARNER, C., and HURST, T. L. Soybean protein: quantitative determination of terminal methionine, leucine, and lysine in raw and toasted soybean oil meal. J. Agr. Food Chem. 3(8): 704-706. Aug. 1955. 381 J8223

Chem. Abstr. 50:49bc

Food Sci. Abstr. 28:400

The nutritional value of soybeans.

569. FRITZSCHE, J. Blood silage in combination with lupine and soybean meal in swine feeding. (Ge) Tierzucht 15(10):450-452. Oct. 1961. 49 T443

570. FROLICH, A. Effectiveness of DL-methionine in overcoming the deleterious effects of insufficiently heated soybean oil meal to growing chicks. Acta Agr.

Scand. 5(1):3-10. Ref. 1954/55. 11 Ac82
Chem. Abstr. 49:7666i

571. GALLUP, W. D., WHITEHAIR, C. K., and BELL, M. C. Utilization of urea and protein nitrogen by ruminants fed high-molasses and sugar rations. J. Anim. Sci. 13(3):594-600. Aug. 1954. 49 J82
Chem. Abstr. 48:12259b
Urea compared with soybean-oil meal as a protein supplement in steer rations. Research at the Oklahoma Agricultural Experiment Station, Stillwater.

572. GARLICH, J. D., and NESHEIM, M. C. Fat absorbability as affected by raw soybean oil meal. (Abstr) Poultry Sci. 41(5):1645. Sept. 1962. 47.8 Am33P
Only 5 percent raw soybean protein required to depress fat absorption in two week old chicks fed diets containing 25 percent soybean protein.

573. GAROWICZ, F. A comparative evaluation of dried skim milk, fish meal and solvent process soybean oilmeal as protein fodders in fattening of pigs. (Pol) Zeszyty Prob. Postepow Nauk Roln. 3(36):159-161. Ref. 1962. 20.5 Z5

574. GRIFFIN, S.A., and LIDVALL, E.R. Soybean oil meal as a protein supplement for swine. Tenn. Farm Home Sci. Progr. Rep. 50:2-3. Apr./June 1964. 100 T25F
Soybean, alfalfa, and corn in various feed combinations tested. Which ration to use depends on prices and availability of the ingredients.

575. GRIFFITH, M., and YOUNG, R.J. Effect of soybean meal on growth and phosphorus utilization in the turkey poult. Cornell Nutr. Conf. Feed Manufacturers Proc. 1963:84-90. 389.79 C81
Soybean meal in turkey rations as a source of proteins.

576. GRIMINGER, P., MORRISON, W. D., and SCOTT, H. M. Effect of unheated soybean meal on blood coagulation of chicks. Poultry Sci. 35:911-915. Ref. July 1956. 47.8 Am33P
Chem. Abstr. 50:15766g
The inclusion of 20 percent of an unheated sample of hexane-extracted soybean meal into a diet had no influence on the bloodclotting time of chicks.

577. GRIMINGER, P., FORBES, R. M., and SCOTT, H. M. Studies on the methionine requirement of the chick. (Abstr) Poultry Sci. 33(5):1057. Sept. 1954. 47.8 Am33P
Soybean meal fed. The addition of 1 percent DL-methionine was as effective in promoting chick growth as higher levels.

578. GRZESZCZAK-SWIETLIKOWSKA, U., and ABGAROWICZ, F. Addition of vitamin B_{12} or cobalt to exclusively vegetable diet with soybean meal in feeding meat type swine. I. (Pol) Rocz. Nauk Roln. 81-B-4:675-693. Ref. 1963. 20.5 R59
English summary.
Addition of vitamin B12 balanced the unfavorable results caused by lack of animal protein.

579. GUGGENHEIM, K., HALEVY, S., and FRIEDMANN, N. Levels of lysine and methionine in portal blood of rats following protein feeding. Arch. Biochem. Biophysics. 91(1):6-10. Ref. Nov. 1960. 381 Ar2
Chem. Abstr. 55:5687f
Study of various carbohydrates fed along with soybean proteins.

580. GUPTA, J. D., and ELVEHJEM, C. A. Biological availability of tryptophan. J. Nutr. 62(3): 313-324. July 10, 1957. 389.8 J82
Chem. Abstr. 51:18163b
Tryptophan from purified soybean protein showed about 90 percent availability, in nutrition experiments with laboratory rate at the Wisconsin University College of Agriculture, Madison.

581. HAFNER, F. H. The story of dehulled soybean oil meal. Feedstuffs 28(33):66-68. Aug. 18, 1956. 286.81 F322
Fifty percent dehulled soybean oil meal is the near ultimate in high quality vegetable protein.

582. HAINES, C. E., GILLESPIE, L., and WALLACE, H. D. Combinations of soybean meal & low-gossypol cottonseed as protein supplements for weanling pigs. (Abstr) J. Anim. Sci. 14:1205. Nov. 1955. 49 J82

583. HAINES, C. E., WALLACE, H. D., and KOGER, M. The value of soybean oil meal, low gossypol (degossypolized) solvent processed cottonseed meal, low gossypol expeller processed cottonseed meal, and various blends thereof in the ration of growing-fattening swine. J. Anim. Sci. 16(1):12-19. Feb. 1957. 49 J82
Chem. Abstr. 51:7610h
Rations containing mixtures of degossypolized solvent meal and soybean meal were most efficient.

584. HALLAB, A. H., and EPPS, E. A. Variables affecting the determination of crude fibers. J. Ass. Offic. Agr. Chem. 46(6):1006-1010. Dec. 1963. 381 As7

Including the study of soybean meal. For animal feeds.

585. HANSON, C. T., and HODGE, H. M. Animal feed supplement rich in vitamin B12. U. S. Pat. 2,785,068. Mar. 12, 1957.

Chem. Abstr. 51:8324i

To National Distillers Products Corporation.

586. HANSON, L. E., and others. Studies on trichloroethylene-extracted feeds. IX. Experiments with swine fed trichloroethylene-extracted soybean oil meal. J. Anim. Sci. 15(2):368-375. May 1956. 49 J82

W. R. Pritchard, C. E. Rehfeld, V. Perman, J. H. Sautter, and M. O. Schultze, joint authors.

Food Sci. Abstr. 28:2474

Swine are more resistant than cattle to toxic factor in TCESOM which produces aplastic anemia in the bovine.

587. HARMS, R. H. Methionine supplementation of corn-soybean meal type laying-hen feeds. Feeds Illus. 12(6):11-12. June 1961. 389.78 F326

Addition of methionine resulted in better feed utilization.

588. HARMS, R. H., DOUGLAS, C. R., and WALDROUP, P. W. Methionine supplementation of laying hen diets. Poultry Sci. 41(3):805-812. Ref. May 1962. 47.8 Am33P

Chem. Abstr. 58:2692c

Data shows that methionine is a limiting amino acid in a corn-soybean oil meal diet.

589. HATFIELD, E. E., and others. A nitrogen balance study with steers using urea, biuret, and soybean oil meal as sources of nitrogen. (Abstr) J. Anim. Sci. 14:1206. Nov. 1955. 49 J82

R. M. Forbes, A. L. Neumann, and U. S. Garrigus, joint authors.

590. HAWKINS, G. E., and AUTREY, K. M. Relationship between estrogenic potency of soybean and cottonseed meals and lactation response. (Abstr) J. Dairy Sci. 41(2):343-344. Feb. 1958. 44.8 J822

Nutrients from cottonseed meal were similar to nutrients from soybean meal and inferior to concentrate mixture for milk production.

591. HEADY, E. O., and others. New procedures in estimating feed substitution rates and in determining economic efficiency in pork production. II. Replacement rates of corn and soybean oilmeal in fortified rations for growing-fattening swine on pasture. Iowa. Agr. Exp. Sta. Res. Bull. 462:341-360. Nov. 1958. 100 Io9

D. V. Catron, D. E. McKee, G. C. Ashton, and V. C. Speer, joint authors.

A study of the economics of least-cost versus least-time rations in pork production.

592. HELLBERG, A., DAHL, O., and APPELGREN, K. I. Feeding trials with skim milk, meat meal, fish meal and soybean oil meal for bacon pigs. Uppsala. Lantbrhogsk. och Stat. Lantbrforsok. Stat. Husdjursforsok. Meddel. 62, 26 p. Ref. 1956. 104 Up62

English summary.

Chem. Abstr. 6798b

Assimilation and growth rate were least with soybean meal.

593. HILL, F. W., and RENNER, R. The metabolizable energy of soybean oil meals, soybean millfeeds and soybean hulls for the growing chick. Poultry Sci. 39(3):579-583. May 1960. 47.8 Am33P

Chem. Abstr. 54:22881g

The metabolizable energy content of soybean millfeed increased as the fat and protein content increased and the crude fiber decreased.

594. HIRABAYASHI, T., and others. Effect of vitamin K on the rabbits with collars which prevented coprophagy. (Ja) Tokyo Nogyo Daigaku (J. Agr. Sci.) 6(3):302-306. 1961. 22.5 J824

Chem. Abstr. 61:6113e

Y. Sahashi, T. Suzuki, A. Maekawa, and K. Tanaka, joint authors.

English summary.

Study of diet containing soybean milk.

595. HODGE, D. E., PLUMLEE, M. P., and BEESON, W. M. Digestible energy determinations of high and regular moisture corn and cob meal, corn cobs and soy mill feed using identical twin beef calves. (Abstr) J. Anim. Sci. 18(4):1527-1528. Nov. 1959. 49 J82

Rations were equalized in protein and dry matter. The digestible energy content of corn and soybean oil meal was 66.8 percent and of soy meal feed 74.6 percent.

596. HOIE, J., and SANNAN, F. Experiments with extracted soybean oil meals and different oil-cake meals for chickens. (No) Norges Landbrhogsk. Meld. 40(8), 40 p. Ref. 1961. 104 N762M

English summary.

An article with over 65 references.

597. HOLLIS, L. Effect of ration on vitamin synthesis in rumen of sheep. J. Anim. Sci. 13(4):732-738. Apr. 1954. 49 J82

Chem. Abstr. 49:4099f

C. F. Chappel, R. MacVicar, and C. K. Whitehair, joint authors.

Addition of nitrogen (either as soybean meal or urea) together with corn caused a sharp increase in the synthesis of all vitamins.

598. HOUGHTLIN, R. G. Soybean oil meal. Amer. Feed Grain 39(10):36. Nov. 1955. 298.8 C83

Soybean oil meal is the most important protein used by the formula feed industry.

599. HOVE, E. L., and HERNDON, J. F. Growth of rabbits on purified diets. J. Nutr. 63(1):193-199. Sept. 10, 1957. 389.8 J82

Chem. Abstr. 52:3948h

In animal-nutrition studies it was found that defatted soybean meal was superior to casein as a protein source for growth of rabbits.

600. HUNT, J. R., and MCGINNIS, J. The prevention of a perosis-like condition in turkey poults. Poultry Sci. 38(3):612-619. Ref. May 1959. 47.8 Am33P

Effect of isolated soybean protein and of vitamins in diet.

601. HUNT, J. R. Studies on the prevention of a perosis-like condition in turkeys induced by an isolated soybean protein. Diss. Abstr. 16(5):423. Mar. 1956. 241.8 M58

Abstract of thesis (Ph. D.)-State College of Washington. 69 p.

In one experiment the addition of all the B complex vitamins prevented the disorder while the fat soluble vitamins failed to alleviate the condition.

602. IWAO, H., and KENMOKU, A. The effect of water-soluble substances of soybean oil meal on the growth of rats. Jap. J. Nutr. 20(3):115-120. May 1962. Libr. Cong.

Chem. Abstr. 59:939b

The influence of methionine on the unheated water soluble fraction of the soybean meal.

603. JACKSON, J. A., BAKER, G. N., and BAKER, M. L. Soybean oil meal and dehydrated alfalfa for fattening steers. Nebr. Agr. Exp. Sta. Bull. 448, 16 p. 1958. 100 N27

A slight advantage in fattening associated with the feeding of dehydrated alfalfa.

604. JOHNSON, D., and FISHER, H. Amino-acid requirement of laying hens. IV. (Abstr) J. Sci. Food Agr. 10(8):ii-85. Aug. 1959. 382 So12

Supplying minimal levels of essential amino-acids from natural feed ingredients. Soybean oilmeal included.

605. JOHNSON, E. L. Protein quality and quantity and unidentified factors in poultry nutrition. Feedstuffs 24(49):46-48. Dec. 6, 1952. 286.81 F322

Chem. Abstr. 49:7671a

The feeding of soybean oil meal to chicks at levels to provide 16, 18, and 20 percent protein was studied in relation to antibiotic supplementation.

606. JONES, J. R., and POND, W. P. Effect of the addition of lysine and virginiamycin to corn-soybean meal rations on performance of weanling pigs. J. Anim. Sci. 22(4):1033-1037. Ref. Nov. 1963. 49 J82

607. JONES, J. R., and POND, W. G. Effect of the inclusion of dried skim milk, whole milk or corn oil in corn-soybean meal diets from early weaning to market weight on performance and carcass characteristics of pigs. J. Anim. Sci. 23(2):481-484. Ref. May 1964. 49 J82

608. JORDAN, R. M., and JORDAN, P. S. Comparative value of feather meal and soybean meal as protein supplement for fattening lambs. (Abstr) J. Anim. Sci. 14:1211-1212. Nov. 1955. 49 J82

609. JUKES, H. G., HILL, D. C., and BRANION, H. D. Effect of feeding antibiotics on the intestinal tract of the chick. Poultry Sci. 35(3):716-723. May 1956. 47.8 Am33P

Each of the experimental diets contain soybean oil meal and one contains soybean oil.

610. KARBYSHEV, S. I., and DUDYREV, YU. I. Soybean meal in cow rations. (Rus) Zhivotnovodstovo 11:25-28. Nov. 1962. 49 Z6

611. KIRSCH, W., and FENDER, M. Research about the substitution of fishmeal by extracted soybeans for feedstuffs for swine. (Ge) Z. Tierphysiol. Tierernahr.

Futtermtlk. 15(5):257-265. Oct. 1960. 389.78 Z3
English summary.

612. KIRSCH. W. Research with extracted soybeans instead of fishmeal for grain feedstuffs for swine. (Ge) Futter u. Futterung 10(12):96-97. Dec. 1959. 389.78 F98

613. KJELSON, N. A. Protein-rich feeds and a process for their preparation. Belg. Pat. 633,804. Nov. 4, 1963.
Chem. Abstr. 61:6288f
To General Mills.

614. KLAIN, G. J., and others. The value of rapeseed oil meal and sunflower seed oil meal in chick starter rations. Poultry Sci. 35(6):1315-1326. Ref. Nov. 1956. 47.8 Am33P
Chem. Abstr. 51:14917b
D. C. Hill, H. D. Branion, and J. A. Gray, joint authors.
Includes a section on a comparison of the nutrient content of soybean oil meal, rapeseed oil meal and sunflower seed oil meal.

615. KLOSTERMAN, E. W., and others. Relations between level of protein, molasses, trace minerals and quality of hay in rations for fattening cattle. J. Anim. Sci. 15(2):456-463. Ref. May 1956. 49 J82
Chem. Abstr. 50:15988g
O. G. Bentley, A. L. Moxon, L. E. Kunkle, joint authors.
Using soybean oil meal as a feed supplement.

616. KLUSSENDORF, R. C. Hemorrhage from feeding soybean oil meal. No. Amer. Vet. 36(4):273-274. Apr. 1955. 41.8 N812
In cattle and sheep. Toxic material present only in trichloroethylene-extracted meal.

617. KOLARI, O. E., and others. Diethylstilbestrol, oxytetracycline, linseed oil meal, soybean oil meal and levels of corn silage in cattle fattening rations. J. Anim. Sci. 19(4):1041-1048. Ref. Nov. 1960. 49 J82
A. L. Harvey, J. C. Meiske, W. J. Aunan, and L. E. Hanson, joint authors.
A study in feed use efficiency.

618. KOLARSKI, D. Determination of crude cellulose in animal feed. Kem. Indus. (Zagreb) 9(4):87-90. 1960. Libr. Congr.
Chem. Abstr. 61:8825a

619. KONNO, S., KUMAGAI, T., and ICHIMURA, K. Hematological studies on panmyelopathia of cattle associated with poisoning by trichloroethylene-extracted soybean-oil meal. (Ja) Tokyo. Natl. Inst. Anim. Health. Bull. 1956(31):115-134. Ref. 41.9 T572
English summary.
Clinical findings in cattle.

620. KORNEGAY, E. T., and others. Influence of protein source on toxicity of gossypol in swine rations. J. Anim. Sci. 20(3):597-602. Ref. Aug. 1961. 49 J82
Chem. Abstr. 56:7773a
A. J. Clawson, F. H. Smith, and E. R. Barrick, joint authors.
Soybean meal used as a protein source.

621. KOSTIC, J., and ANASTASIJEVIC, V. The value of sunflower oil meal, soybean oil meal, soybean oil meal and peanut oil meal in quick fattening of pigs. (Serbo-Croatian.) Veterinaria [Sarajevo] 9(1): 47-60. Ref. 1960. 41.8 V6494
English summary.
Use of the diets shortened fattening time by 40 to 50 days.

622. KRATZER, F. H., and others. The effect of autoclaving soybean protein and the addition of ethylene-diaminetetracetic acid on the biological availability of dietary zinc for turkey poults. J. Nutr. 68(2):313-322. Ref. June 10, 1959. 389.8 J82
J. B. Allred, P. N. Davis, B. J. Marshall, and P. Vohra, joint authors.
Chem. Abstr. 53:22305b
Autoclaving of isolated soybean protein improved growth of poults.

623. KRATZER, F. H., and PORTER, J. W. G. The effect of pH on the digestion of proteins in vitro by pepsin. Brit. J. Nutr. 16(4):579-584. Ref. 1962. 389.8 B773
Chem. Abstr. 59:4320a
Three sources of soybean protein were used.

624. KRATZER, F. H., and others. Fractionation of soybean oil meal for growth and antiperotic factors. I. Poultry Sci. 38(5):1049-1055. Sept. 1959. 47.8 Am33P
P. Vohra, R. L. Atkinson, P. N. Davis, B. J. Marshall, and J. B. Allred, joint authors.
Chem. Abstr. 54:7836d
Turkeys. Incidence of perosis reduced.

625. KRATZER, F. H., STARCHER, B. , and MARTIN, E. W. Fractionation of soybean meal for growth and antiperotic factors. 3. Poultry Sci. 43(3): 663-667. Ref. May 1964. 47.8 Am33P
Turkeys.

626. KRAUTMANN, B. S., and others. Sources of the factor which lowers the arginine level in a casein diet. Poultry Sci. 37(3):530-534. May 1958. 47.8 Am33P
Chem. Abstr. 53:1480i
S. M. Hauge, E. T. Mertz, and C. W. Carrick, joint authors.
The growth responses produced by soybean oil meal are interpreted to be vitamin-like rather than protein or amino acid responses.

627. KURNIK, E. The increase of protein content of our feed with special regard for the use of soy. (Hungarian.) Budapest. Magyar Tudo. Akad. Agrtudo. Osztalyanak. Kozlem. 15(1/3):189-200. 1959. 19 B855

628. LAMPEN, J. O., and others. Growth stimulating animal feeds. U. S. Pat. 2,903,356. Sept. 8, 1959.
Chem. Abstr. 54:2630a
A. F. Langlykke, and H. Yacowitz, joint inventors.
To Mathieson (Olin) Chemical Corporation.

629. LAUN, G. F., and COSTA, B. L. DA. Test of rations for chicks, with high levels of soybean, peanut and corn meal. (Por) Rio de Janeiro. Inst. Zootec. P. 36, 15 p. Dec. 1960. 49.9 R472P
English summary.

630. LEE, P. K., and YANG, Y. F. Comparative studies on yellow corn and sweet potato as the basal feed, soybean cake and Taitong yeast mixed feed as the protein supplement in the nutrition of pigs. (Ch) Taiwan Ass. Anim. Husb. Vet. Med. J. 5:38-45. Aug. 1961. 49 J822
English summary.

631. LEPKOVSKY, S., and others. The effect of raw soya-beans upon the digestion of proteins and upon the function of the pancreas of intact chickens and of chickens with ileostomies. Brit. J. Nutr. 19(1):41-56. 1965. 389.8 B773
F. Furuta, T. Koike, N. Hasegawa, M. K. Dimick, K. Krause, and F. J. Barnes, joint authors.

632. LIBETS, S. P. Effect of inclusion of soybean meal in cow rations on milk production and properties of milk fat and milk proteins. (Rus) Moskov. Ordena Lenina Sel'skokhoz. Akad. im. K. A. Timiryazeva. Dok. 65:205-209. 1961. 20 M857

633. LIN, P. C. , and CHOW, S. T. Investigation and study of the sources of the protein feedstuffs in Taiwan. II. The chemical characteristic of lupin seed and its utilization as a feed for hogs. Agr. Res. (Taipan) 5(3/4):4-13. Dec. 1955. 22.5 Ag823
Chem. Abstr. 50:12344g
English summary.
Acid treated lupin seed may be utilized in place of soybean meal as a hog feed.

634. LINTZEL, W. Problems of the protein quality in the maintenance and performance fodder of herbivores and carnivores. Arch. Tierernaehr. Beih. 5:127-134. Ref. 1954. 389.78 Ar22A
Chem. Abstr. 50:10881b

635. LOOSLI, J. K., ELLIOT, J. M., and WARNER, R. G. Comparative value of corn distillers dried grains with solubles, soybean oil meal, and linseed oil meal for milk production. J. Dairy Sci. 43(6):816-820. June 1960. 44.8 J822
Chem. Abstr. 54:18817g
Linseed oil meal inferior to soybean oil meal when used as chief protein source due to lower digestibility of linseed oil.

636. LOOSLI, J. K., WARNER, R. G., and HINTZ, H. F. Value of corn distillers dried grains, soybean oil meal, heated soybeans, and soybean oil meal plus starch for milk production. J. Dairy Sci. 44(10):1910-1914. Ref. Oct. 1961. 44.8 J822
Dairy milk yield was higher on heated soybeans and the fat content was lower.

637. LYMAN, R. L., and LEPKOVSKY, S. The effect of raw soybean meal and trypsin inhibitor diets on pancreatic enzyme secretion in the rat. J. Nutr. 62(2): 269-284. June 10, 1957. 389.8 J82
Chem. Abstr. 51:14058e
The nutritive value of raw soybean meal.

638. MCCALL, J. T., MASON, J. V., and DAVIS, G. K. Effect of source and level of dietary protein on the toxicity of zinc to the rat. J. Nutr. 74(1):51-54. Ref. May 1961. 389.8 J82
Chem. Abstr. 57:11636h
Rats fed excessive zinc in soybean protein compared with rats fed zinc and casein.

639. MCGINNIS, J. Advances in research on the nutritional value of soybean meal in animal feeds. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:134-139. 1962. A389.9 C76

640. MCGINNIS, J. Use of full-fat soybeans for growing turkeys. Wash. Anim. Indus. Conf. Proc. 13: 47. 1960. 389.79 W94

Soybean oil meal must be heated to obtain maximum nutritional value for the young chick.

641. MCKEE, D. E. Economics of corn-soybean oil meal substitution for hogs on pasture. (Abstr) Iowa State Coll. J. Sci. 31(3):475-476. Feb. 15, 1957. 470 Io9

A comparison of pasture feeding with the drylot system.

642. MANER, J. H., and others. Effect of isolated soybean protein and casein on the gastric pH and rate of passage of food residues in baby pigs. J. Anim. Sci. 21(1):49-52. Ref. Feb. 1962. 49 J82

W. G. Pond, J. K. Loosli, and R. S. Lowrey, joint authors.

Abstracted in J. Sci. Food Agr. 14(5):i-247-248. May 1963. 382 So12

643. MANER, J. H., POND, W. G., and LOOSLI, J. K. Utilization of soybean protein by baby pigs and by rats. J. Anim. Sci. 20(3):614-620. Ref. Aug. 1961. 49 J82

Casein was superior to soybean protein in stimulating weight gains and feed conversion in pigs 3 to 27 days of age.

644. MATHUR, M. L., VARANDANI, P. T., and KEHAR, N. D. Studies on the nutritive value of soya bean cake. Indian J. Dairy Sci. 14(2):67-72. June 1961. 44.8 In28

Chem. Abstr. 56:5188c

As cattle feed. Gives the digestibility coefficient of crude protein in soybean cake and the nutritive value.

645. MATSUBARA, A., SUGIYAMA, H., and TAKASE, K. Prevention of contamination of bean curd (tofu) by a constant flow of water. (Ja) Jap. Vet. Med. Assoc. J. 16(11):22-23. Ref. 1963. 41.9 J275

646. MATSUBARA, A. Sanitary effect of heating bean curd packed in Hi-zex bags. (Ja) Jap. Vet. Med. Assoc. J. 16(5):18-20. 1963. 41.9 J275

English summary.

647. MATSUBARA, A., and SUGIYAMA, H. Studies on the prevention of contamination of bean curd (tofu) by germicidal ultraviolet lamp. (Ja) Jap. Vet. Med. Assoc. J. 16(7):18-19. Ref. July 1963. 41.9 J275

648. MEADE, R. J., and TETER, W. S. The influence of l-lysine supplementation of 12, 14 and 16 percent protein corn-soybean oil meal diets upon nitrogen balance of growing swine. J. Nutr. 60(4):609-618. Ref. Dec. 10, 1956. 389.8 J82

Chem. Abstr. 51:12251b

Supplementation of higher protein diets with additional lysine did not influence nitrogen balance of growing pigs.

649. MEADE, R. J. The influence of methionine supplementation of 12, 14 and 16 percent protein corn-soybean oil meal diets upon nitrogen balance of growing swine. J. Nutr. 60(4):599-608. Ref. Dec. 10, 1956. 389.8 J82

Chem. Abstr. 51:12250h

Supplementation of higher protein diets with lysine did not influence nitrogen balances of growing pigs.

650. MEADE, R. J. The influence of tryptophan, methionine and lysine supplementation of a corn-soybean oil meal diet on nitrogen balance of growing swine. J. Anim. Sci. 15(1):288-296. Ref. Feb. 1956. 49 J82

Chem. Abstr. 50:10208e

Levels of 0.132, 0.27 and 0.69 percent of tryptophan, methionine, and lysine in a 15.9 percent crude protein basal diet were adequate to promote nitrogen retention by growing pigs.

651. MEYER, J. H., and NELSON, A. O. Efficiency of feed utilization by various animal species fed similar rations. J. Nutr. 80(4):343-349. Ref. Aug. 1963. 389.8 J82

Soybean oil meal included in the ration.

652. MICHI, K., HASEGAWA, Y., and OUYE, K. Studies on dietary utilization of soybean meal. II. Trypsin inhibiting activity and nutritive value of soybean protein. (Ja) Agr. Chem. Soc. Jap. J. 37(1): 21-24. Ref. 1963. 385 Ag8

653. MICHI, K., HASEGAWA, Y., and OUYE, K. Studies on dietary utilization of soybean meal. II. Trypsin inhibiting activity and nutritive value of soybean protein. 10 p. Ref. Transl. 13640

Translation from Agricultural Chemical Society of Japan. Journal 37(1):21-24. 1963.

Soybean protein fraction subjected to heat treatment improved nutritional value. Heat destroyed the growth inhibiting factor.

654. MICHI, K., HASEGAWA, Y., and DOI, Y. Studies on the dietary utilization of soybean meal. III. Eiyo To Shokuryo (Jap. Soc. Food Nutr.) 16(4):300-305. 1963. 389.9 J27
Chem. Abstr. 61:3471a
English summary.
Effect of the phytin phosphorus of soybean meal on bone calcification.

655. MIDDENDORF, D. F. Current research broadens scope of soybean products-nutrition and production. Cereal Sci. Today 7(10):350, 352. Ref. Dec. 1962. 59.8 C333
Most significant step has been toward changing the soybean oil meal from a fertilizer to a feed protein.

656. MILLER, E. R., and others. Comparisons of casein and soy proteins upon mineral balance and vitamin-D2 requirement of the baby pig. J. Nutr. 85 (4):347-354. Apr. 1965. 389.8 J82
D. E. Ullrey, C. L. Zutaut, J. A. Hoefer, and R. L. Luecke, joint authors.

657. MILLER, W. J., and MILLER, J. K. Zinc content of certain feeds, associated materials, and water. J. Dairy Sci. 46(6):581-583. June 1963. 44.8 J822
Chem. Abstr. 59:12094c
Soybean oil meal (44 percent protein, solvent-extracted), soybean flakes, soybean protein (isolated), and soybean protein (isolated and washed) included.

658. MINER, J. J. Biological evaluation of soybean meal and cottonseed meal by amino acid digestibility and protein efficiency ration studies. Diss. Abstr. 23 (11):4045-4046. May 1963. 241.8 M58
Chem. Abstr. 59:7930e
Thesis (Ph. D.)-Louisiana State University. 79 p.

659. MINER, J. J., and WATTS, A. B. Biological evaluation of soybean oil meal versus cottonseed meal by amino acid digestibility and protein efficiency ratio studies. (Abstr) Poultry Sci. 40(5):1430-1431. Sept. 1961. 47.8 Am33P
Adult hen diets.

660. MONROE, C. F., HIBBS, J. W., and WASHBURN, R. G. Carotenoid and vitamin A content of milk and blood of dairy cattle fed moderate amounts of ground soybeans, soybean oil meal, and linseed oil meal. J. Dairy Sci. 40(5):503-509. Ref. May 1957. 44.8 J822
Chem. Abstr. 52:3062e
Butterfat percentage was higher when ground soybeans were fed. Total milk production, carotenoids and Vitamin A were not affected.

661. NAUFEL, F., and others. Comparative effects of administration of detoxicated castorbean meal, soybean meal and cottonseed meal in the diet of lactating cows. (Por) Bol. Indus. Anim. (n. s.) 20:47-53. Dec. 1962. 49 R324
F. de P. Assis, M. L. R. Rezende, G. L. da Rocha, M. Becker, E. L. Caielli, J. F. S. Leao, and E. B. Kalil, joint authors.
English summary.

662. NEAGLE, L. H. Soya protein hydrolysates and supplemental enzymes in baby pig nutrition. Diss. Abstr. 21(7):1685-1686. Jan. 1961. 241.8 M58
Chem. Abstr. 55:9590h
Thesis (Ph. D.)-Iowa State University of Science and Technology. 137 p.
Trypsin inhibitor decreases the digestibility of soy proteins.

663. NIJVELD, W. J., and TERPSTRA, K. The digestibility of heated and unheated soybean meal for chicks. (Du) Landbk. Tijdschr. 73(6):240-246. Ref. Mar. 1961. 105.2 Or3
Thirty one items in the bibliography.

664. NORRIS, L. C., and DAVIS , P. N. The metal-binding properties of soybean protein. Feedstuffs 32 (35):44, 50. Ref. Aug. 27, 1960. 286.81 F322

665. OBENKO, K. S. Does soybean meal have an effect on the fat content of milk and the level of milk yield? (Rus) Zhivotnovodstvo 1960(5):73. May. 49 Z6
Dairy cattle feed.

666. OLOMUCKI, E., and BORNSTEIN, S. The dye absorption test for the evaluation of soybean meal quality. Assoc. Off. Agr. Chem. J. 43(2):440-442. May 1960. 381 As7
Samples were tested by growth rate with chicks.

667. OLSON, G., and others. Metabolizable energy values of soybean oil meal and meat meal as affected by protein level and type. Poultry Sci. 40(1):260-262. Jan. 1961. 47.8 Am33P
Chem. Abstr. 55:18909f
W. C. Lockhart, D. W. Bolin, and R. L. Bryant, joint authors.

668. PALAFOX, A. L., and ROSENBERG, M. M. A comparison of Hawaiian meat and bone meal, soybean oil meal, and herring meal in chick starter rations. Hawaii. Agr. Exp. Sta. Tech. Bull. 28, 15 p. Ref. June 1955. 100 H313T

Findings inconclusive.

669. PARTANEN, J. Skim milk, dried whey, meat-bone meal and soybean meal as protein sources in swine fodder. (Fi) Finland. Maatalouden Tutkimuskeskus. Maatalous ja Koet. 18:248-255. 1964. 64.9 F49

English summary.

670. PEKAS, J. C., HAYS, V. W., and THOMPSON, A. M. Exclusion of the exocrine pancreatic secretion: effect on digestibility of soybean and milk protein by baby pigs at various ages. J. Nutr. 82(2):277-286. Ref. Feb. 1964. 389.8 J82

671. PEREL'DIK, N. SH., TITOVA, M. I., and POBEDIN, V. I. Utilization of soybean meal for feeding Silver Black foxes. (Rus) Karakulevodstvo i Zverovodstvo 10(2):22-26. Mar./Apr. 1957. 49 K14

Chem. Abstr. 51:15722g

There was no change in the fur or the health of the animals.

672. PERMAN, V., and others. Toxicity in oil meal: bioassay for toxic factor in trichloroethylene-extracted soybean oil meal. J. Agr. Food Chem. 4:959-963. Ref. Nov. 1956. 381 J8223

C. E. Rehfeld, J. H. Sautter, and M. O. Schultze, joint authors.

Chem. Abstr. 51:3717b

Aplastic anemia can be produced in calves by feeding different levels of toxic trichloroethylene-extracted soybean oilmeal.

673. PIETERSE, P. J. S., and ANDREWS, F. N. The estrogenic activity of alfalfa and other feedstuffs. J. Anim. Sci. 15(1):25-36. Ref. Feb. 1956. 49 J82

Chem. Abstr. 50:7346a

Soybean oilmeal contains detectable estrogens.

674. POATS, F. J., DOTY, H. O., and ELEY, C. P. Cooked, unextracted soybean meal; its economic feasibility in poultry feeds. U. S. D. A. Econ. Res. Serv. ERS-32, 16 p. Oct. 1961. A281.9 Ag83E

The feasibility of replacing soybean oil meal with cooked unextracted soybean meal.

675. POPE, L. S., and others. Soybean meal vs. urea supplement, with and without trace minerals, for fattening yearling steers. Okla. Agr. Exp. Sta. Misc. Publ. MP-55:115-119. June 1959. 100 Ok4

K. Urban, L. E. Walters, and G. Waller, joint authors.

Net returns per steer supported the use of soybean meal.

676. PRITCHARD, W. R., and others. Aplastic anemia in chickens fed trichloroethylene-extracted soybean oil meal and failure of this dietary meal to suppress the development of experimental lymphomatosis. Amer. J. Vet. Res. 17(65):771-777. Ref. Oct. 1956. 41.8 Am3A

O. S. Davis, D. B. Taylor, and L. P. Doyle, joint authors.

Chem. Abstr. 51:1442b

Chickens fed this diet developed "hemorrhagic" syndrome. In addition they developed atrophy of the testes and marked depression of secondary male sexual characteristics.

677. PRITCHARD, W. R., and others. Studies on trichloroethylene-extracted feeds. I-VII. Amer. J. Vet. Res. 17:425-454. Ref. July 1956. 41.8 Am3A

I, Experimental production of acute aplastic anemia in young heifers, by W. R. Pritchard, C. E. Rehfeld, N. S. Mizuno, J. H. Sautter, and M. O. Schultze; II, The effect of feeding different levels of trichloroethylene-extracted soybean oil meal to young heifers-experimental production of chronic aplastic anemia, by W. R. Pritchard, C. E. Rehfeld, W. E. Mattson, J. H. Sautter, and M. O. Schultze; III, The use of young calves for study of various aspects of toxicity of trichloroethylene-extracted soybean oil meal, by W. R. Pritchard, W. E. Mattson, J. H. Sautter, and M. O. Schultze; V, Failure to demonstrate the presence of a toxic factor in the milk of cows fed toxic specimens of trichloroethylene-extracted soybean oil meal, by W. R. Pritchard, W. E. Mattson, J. H. Sautter, and M. O. Schultze; VI, The effects of feeding trichloroethylene-extracted soybean oil meal to sheep, by W. R. Pritchard, V. Perman, W. E. Mattson, J. H. Sautter, and M. O. Schultze; VII, Observations with laboratory animals fed trichloroethylene-extracted soybean oil meal, by W. R. Pritchard, F. Sauer, C. E. Rehfeld, V. Perman, J. H. Sautter, S. Wada, and M. O. Schultze.

678. PUYAOAN, R. B., PENGSON, R. D., and EUSEBIO, J. A. The value of soybean oil meal in ration for growing-fattening pigs. Philippine Agr. 44 (7):355-360. Ref. Dec. 1960. 25 P542

Chem. Abstr. 55:22510i

Soybean oilmeal can profitably replace half of the fishmeal.

679. RICHARDSON, D. The effect of cottonseed meal and soybean oilmeal fed separately and together upon the digestibility of a ration fed to lambs, 1953. Kans. Agr. Exp. Sta. Circ. 308:46-47. May 1954. 100 K13S

The digestibility of proteins and total nutrients was highest when soybean oilmeal was used in the ration.

680. RICHARDSON, D., and TSIEN, W. S. Quantitative determination of the amino acid content of rumen fluid from twin steers fed soybean oil meal or urea. J. Anim. Sci. 22(1):230-231. Feb. 1963. 49 J82

Steers supplemented with soybean oilmeal synthesized a greater amount of all amino acids than steers fed urea.

681. RICHARDSON, L. R., and others. Effect of moldy diet and moldy soybean meal on the growth of chicks and poults. J. Nutr. 78(3):301-306. Ref. Nov. 1962. 389.8 J82

Chem. Abstr. 60:4530c

S. Wilkes, F. Godwin, and K. R. Pierce, joint authors.

682. RICHARDSON, L. R., and others. Reproductive performance of rats receiving various levels of dietary protein and fat. J. Nutr. 82(2):257-262. Ref. Feb. 1964. 389.8 J82

J. Godwin, S. Wilkes, and M. Cannon, joint authors.

Soybean proteins used.

683. RICHARDSON, L. R., and BROCK, R. Studies of reproduction in rats with large does of vitamin B12 and highly purified soybean proteins. J. Nutr. 58(1): 135-145. Jan. 1956. 389.8 J82

Chem. Abstr. 50:5868g

Five generations of females which received a synthetic diet which contained these purified proteins weaned 90 percent or more of their young.

684. RICHTER, K., and SCHILLER, K. The effect of heating on the biological protein value of soybean meal. (Ge) Z. f. Tierphysiol. Tierernahr. u. Futtermtlk. 14(4):241-252. Ref. Sept. 1959. 389.78 Z3

English summary.

685. ROIG MIRO, J. New horizons in the development of the new aviculture. (Sp) Avicultura Tec. 10(1):27-28. Dec. 1958. 47.8 Av57

Especially soybean meal as feed.

686. ROSS, C. V., PAVEY, R. L., and KARR, M. Alfalfa hay plus corn versus soybean oil meal for supplementing corn silage in ewe wintering rations. Mo. Agr. Exp. Sta. Bull. 751:21-22. Apr. 1960. 100 M693

Ewes fed soybean oilmeal made significant gains during pregnancy. Other differences between the rations were not significant.

687. SANDRUD, L. Harvesting and feeding pollen and soybean meal to bees. (Da) Birokteren 74(3):41-42. Mar. 1958. 424.8 B53

688. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Failure of amino acid supplementation to completely overcome the growth depression effect of raw soybean meal in chicks. J. Nutr. 77(3):259-263. Ref. July 1962. 389.8 J82

Chem. Abstr. 60:913 ef

Experiments conducted to determine the effect of amino acid supplementation on the growth retardation effect of raw soybean meal in chicks.

689. SAXENA, H. C., and others. Histo-physiological studies on chick pancreas as influenced by feeding raw soybean meal. Soc. Exp. Biol. Med. Proc. 112 (2):390-393. Ref. Feb. 1963. 442.9 So1

L. S. Jensen, J. McGinnis, and J. K. Lauber, joint authors.

Chem. Abstr. 59:6911g

Pancreatic hypertrophy in chicks fed raw soybean meal.

690. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, "In vivo" studies with raw soybean meal fractions. (Abstr) Poultry Sci. 41(5):1680. Sept. 1962. 47.8 Am33P

691. SAXENA, H. C. , and others. Production, interior egg quality and some physiological effects of feeding raw soybean meal to laying hens. Poultry Sci. 42 (2):291-293. Mar. 1963. 47.8 Am33P

L. S. Jensen, J. V. Spencer, and J. McGinnis, joint authors.

Includes blood spots in eggs and pancreatic studies. A study of the use of raw soybean meal as the only source of protein in laying hens.

692. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Protein metabolism in chicks fed raw soybean meal. Poultry Sci. 42(3):788-790. May 1963. 47.8 Am33P

Growth retarding characteristic of raw soybean due to reduced digestibility of protein.

693. SCHILLER, K. Effect of different protein sources in animal nutrition. 3. A comparison of fishmeal, soybean meal, and potato. Arch. Tierernaehr. 7(4): 244-249. Aug. 15, 1957. 389.78 Ar22
Chem. Abstr. 52:13134c
Best results included a soybean mixture.

694. SCHILLER, K. The supplementary value of protein from various sources in animal feeding. (Ge) Arch. Tierernaehr. 3(6):342-359. Ref. May/June 1953. 389.78 Ar22
Chem. Abstr. 49:12623g
Includes soybean proteins.

695. SELL, J. L. Lysine supplementation of wheat-soybean meal turkey ration. Can. Grain J. 20(7):13-14. July 1964. 59.8 C16
Lysine supplementation most effective during late growing periods (16 to 24 weeks).

696. SELLERS, J. H., and others. Soybean meal vs. urea supplement, with and without trace minerals, in rations containing sorghum silage or cottonseed hulls. Okla. Agr. Exp. Sta. Misc. Publ. 57:102-107. June 1960. 100 Ok4
L. S. Pope, K. Urban, L. E. Walters, and G. Waller, joint authors.
For beef cattle. Trace minerals did not improve steer performance or feed efficiency with either supplement.

697. SETO, T. A. Studies on the chemical nature of a toxic factor which causes aplastic anemia in calves. Diss. Abstr. 18(5):1603. May 1958. 241.8 M58
Abstract of thesis (Ph. D.)-University of Minnesota. 134 p.
In trichloroethylene-extracted soybean meal. Toxic factor is associated with the protein fraction of the soybean oilmeal.

698. SETO, T. A., and others. Toxicity in oil meal: properties of the toxic factor in trichloroethylene-extracted soybean oil meal. J. Agr. Food Chem. 6(1): 49-54. Ref. Jan. 1958. 381 J8223
M. O. Schultze, V. Perman, F. W. Bates, and J. H. Sautter, joint authors.
Effects on cattle. The toxic factor is an organic compound, which is associated with the protein fraction of the soybean meal from which it can be liberated by pancreatic digestion.
Chem. Abstr. 52:8404d

699. SEWELL, R. F., KEEN, B. C., and CARMON, J. L. The value of various blends of soybean oil meal, peanut oil meal, and degossypolized cotton-seed oil meal as protein supplements in swine rations. J. Anim. Sci. 16(2):357-363. Ref. May 1957. 49 J82
Chem. Abstr. 51:18162f
Appears that one-half of soybean meal can be replaced by peanut oilmeal in dry-lot rations when non-protein dietary factors are in adequate supply. Abstract in J. Anim. Sci. 14:1222. Nov. 1955. 49 J82

700. SIDRANSKY, H., VERNEY, E., and LOMBARDI, B. Factors influencing the induction of fatty liver by orotic acid. J. Nutr. 81(4):348-356. Ref. Dec. 1963. 389.8 J82
Chem. Abstr. 60:4518g
Soybean protein or its hydrolyzate included in the experimental diets of rats.

701. SLEN, S. B., and WHITING, F. Wool and lamb production as affected by the source of protein in the ration of the mature ewe. J. Anim. Sci. 14(3):844-859. Aug. 1955. 49 J82
Chem. Abstr. 49:14952b
Soybean meal in feed rations.

702. SMITH, A. K., and others. Growth and pancreatic hypertrophy of rats fed commercial and laboratory soybean meals and hulls. Feedstuffs 36(7):46-48. Feb. 15, 1964. 286.81 F322
J. J. Rackis, L. L. McKinnery, D. J. Robbins, and A. N. Booth, joint authors.
Chem. Abstr. 60:11138d
Describes the results of fifteen minutes of steam treatment of raw soybeans.

703. SMITH, F. H., YOUNG, C. T., and SHERWOOD, F. W. Effect of bound gossypol on the growth-promoting properties of cottonseed soybean and peanut meals. J. Nutr. 66(3):393-409. Ref. Nov. 10, 1958. 389.8 J82
Chem. Abstr. 53:10588t
Animal nutrition experiments. The meals were assayed by feeding the various diets to weanling rats during a 4-week period.

704. SMITH, W. H., PLUMLEE, M. P., and BEESON, W. M. Zinc requirements of the growing pig fed isolated soybean protein semi-purified rations. J. Anim. Sci. 20(1):128-132. Ref. Feb. 1961. 49 J82
Dietary zinc requirement lower when casein was substituted pound for pound for isolated soybean protein.

705. SMYTH, J. R. Raising poultry for meat in the United States-soy protein concentrate in self-feeders. (It) G. Pollicoltori 9(5):66-70. May 1959. 47.8 G43

706. SNETSINGER, D. C., and SCOTT, H. M. The adequacy of soybean oil meal as a sole source of protein for chick growth. Poultry Sci. 37(6):1400-1403. Nov. 1958. 47.8 Am33P

Chem. Abstr. 53:18214f

All the essential amino acids were tested in a futile attempt to determine the second limiting amino acid of soybean oilmeal. Abstract in Poultry Sci. 36(5): 1158-1159. Sept. 1957. 47.8 Am33P

707. SNYDER, J. M., MORRISON, W. D., and SCOTT, H. M. The arginine requirement of chicks fed purified and corn-soya diets. Poultry Sci. 35:852-855. July 1956. 47.8 Am33P

Chem. Abstr. 50:15766d

Neither arginine nor glycine or combinations of the amino acids improved the growth promoting ability of a practical diet for chicks.

708. STOEWSAND, G. S., and SCOTT, M. L. Influence of high protein diets on vitaminA metabolism and adrenal hypertrophy in the chick. J. Nutr. 82(1): 139-149. Ref. Jan. 1964. 389.8 J82

High dietary levels of isolated soybean protein compared with amino acids to simulate isolated soybean protein.

709. SULLIVAN, T. W., and STEPHENSON, E. L. Feather meal as a partial replacement for soybean oil meal in broiler rations. (Abstr) Assoc. South. Agr. Workers. Proc. 52:169-170. 1955. 4 C82

710. SUMMERS, J. D., SLINGER, S. J., and ASHTON, G. C. The effect of dietary energy and protein on carcass composition with a note on a method for estimating carcass composition. Poultry Sci. 44(2): 501-509. Ref. Mar. 1965. 47.8 Am33P

Diet includes soybean meal of which 50 percent was protein.

711. SUMMERS, J. D., and FISHER, H. Net protein values for the growing chicken as determined by carcass analysis: exploration of the method. J. Nutr. 75 (4):435-442. Ref. Dec. 1961. 389.8 J82

Chem. Abstr. 59:10532a

Soybean protein included in the method.

712. SUMMERS, J. D., and FISHER, H. Net protein values for the growing chicken from carcass analysis with special reference to animal protein sources. J. Sci. Food Agr. 13(9):496-500. Ref. Sept. 1962. 382 So12

Chem. Abstr. 58:1754g

Isolated soybean protein evaluated.

713. TAGARI, H., ASCARELLI, I., and BONDI, A. The influence of heating on the nutritive value of soya-bean meal for ruminants. Brit. J. Nutr. 16(2): 237-243. Ref. 1962. 389.8 B773

Part of a Ph. D. thesis to be submitted to the Faculty of Agriculture, the Hebrew University, Israel.

714. TAYLOR, J. W. Molasses plus soybean meal-a substitute for corn. Feed Age 7(3):55-56. Mar. 1957. 389.78 F327

In feed manufacture. With proper price relationships costs can be reduced with a mixture of molasses and soybean meal.

715. TEAGUE, H. S., and RUTLEDGE, E. A. Soybean oil meal as a protein source for successive generations of swine. J. Anim. Sci. 19(3):902-909. Aug. 1960. 49 J82

Feeding of rations containing both plant and animal products resulted in an increase in birth weight and vigor at birth.

716. TEAGUE, H. S. The use of soybean meal for swine. Feed Age 7(10):40-43. Oct. 1957. 389.78 F327

Ability of pigs to perform well was not adversely affected by the feeding of raw soybeans, even though growth stopped on this ration.

717. TERRILL, S. W., and others. Some plant and animal sources of crude protein for weanling pigs fed in drylot. J. Anim. Sci. 13(3):622-629. Aug. 1954. 49 J82

Chem. Abstr. 48:12259f

D. E. Becker, H. W. Norton, W. K. Warden, and C. R. Adams, joint authors.

Soybean-oil meal and meat-and-bone-scrap rations.

718. THOMPSON, G. B. Comparison of a liquid supplement (Morea) with soybean meal in wintering and fattening beef cattle rations. Mo. Agr. Exp. Sta. Spec. Rep. 5:8-9. Apr. 1961. 100 M693Sp

Morea is urea-molasses mixture. Summary carcass data given for the two rations.

719. TILLMAN, A. D., and KRUSE, K. Effect of gossypol and heat on the digestibility and utilization

of soybean protein by sheep. J. Anim. Sci. 21(2):290-292. May 1962. 49 J82

720. TONGUR, V. S., and ORLOVA, L. V. Graupel mixtures with increased nutritional value. (Rus) Vop. Pitan. 15(6):25-30. 1956. 389.8 V89
Chem. Abstr. 51:5942i
Amount of methionine, cystine, tryptophan, histidine, lysine and arginine given for the soy component.

721. TORRES, A. P. Soybean meal for poultry. (Por) Lav. e Criacao 1956(87):36-37. Nov. 1956. 49 L392

722. TRUAX, H. Soybeans: the addition of soy proteins in the feed of swine and cattle. (It) Nuovi Allevamenti 2(2):15, 17-19, 21. Feb. 1960. 49 N922
Soybean meal.

723. TURK, J. L., JENSEN, L. S., and MCGINNIS, J. Influence of autoclaving soybean protein (C-1 Assay) on methionine requirement of chicks and on "In vitro" binding of zinc. (Abstr) Poultry Sci. 39(5):1302. Sept. 1960. 47.8 Am33P
Studies in the growth response of chicks.

724. VASKOV, G., and others. Parellel investigations of soya bean oil meal and poppy oil meal with and without the additon of colvit in the feed of broilers. (Se) Skoplje. U. Zemjodelsko-Sumarski Fakul. God. Zborn. Zemjodelstvo 14:185-196. Ref. 1960/61, pub. 1961. 21.5 Sk5
J. Sokarovski, A. Georgiev, and T. Angelovski, joint authors.
English summary.
Soybean oilmeal is superior to poppy meal oil in the feed of broilers.

725. VOHRA, P., and others. Fractionation of soybean oil meal for growth and antiperotic factors. 2. Poultry Sci. 38(6):1476-1477. Ref. Nov. 1959. 47.8 Am33P
J. B. Allred, I. S. Gupta, and F. H. Kratzer, joint authors.
Diets for poults.
Chem. Abstr. 54:12287d

726. VOLCANI, R., and RODERIG, H. The effect of feeding ammoniated orange peels and tobacco seed cake, versus soya bean cake, on milk yield of dairy cattle. Israel. Agr. Res. Sta. Ktavim 8(1/2):45-50. Feb. 1958. 107 J552
Chem. Abstr. 52:10316g
Cows fed soybean cake gave highest milk yield.

727. WAIBEL, P. E., and JOHNSON, E. L. Effect of low protein corn-soybean oil meal diets and amino acid supplementation on performance of laying hens. Poultry Sci. 40(2):293-298. Ref. Mar. 1961. 47.8 Am33P
Study of various levels of protein diets on hens.

728. WALLACE, H. D., CUNHA, T. J., and COMBS, G. E. Low-gossypol cottonseed meal as a source of protein for swine. Fla. Agr. Exp. Bull. 566, 26 p. June 1955. 100 F66S
Chem. Abstr. 50:10305i
A half and half combination of low-gossypol cottonseed meal and soybean meal was superior to soybean alone.

729. WARD, J. B., and SCHAIBLE, P. The failure of certain dietary ingredients to effect the incidence of blood spots in chicken eggs. Poultry Sci. 42(3):663-669. Ref. May 1963. 47.8 Am33P
Soybean oilmeal used.

730. WELCH, J. A., and others. The relative value of biuret, creatine, soybean protein and other nitrogenous materials for lambs in digestion and nitrogen metabolism trials. (Abstr) J. Anim. Sci. 15:1265. Nov. 1956. 49 J82
G. A. McLaren, G. S. Smith, C. D. Campbell, D. C. Shelton, and G. C. Anderson, joint authors.
Creatine and soybean protein significantly enhanced nitrogen utilization when compared with urea.

731. WEST, J. W. Degossypolized cottonseed meal as a substitute for soybean oil meal in a turkey growing mash. Poultry Sci. 35:304-307. Mar. 1956. 47.8 Am33P
Chem. Abstr. 50:13204b
Turkey-feeding trials.

732. WEST, J. W. Cottonseed oil meal as a substitute for soybean oil meal in poultry rations. (Abstr) Poultry Sci. 33:1086. Sept. 1954. 47.8 Am33P
A complementary relationship between soybean oilmeal and cottonseed meal was noted. The combination improved growth as much as four percent over either meal fed singly.

733. WESTERFELD, W. W., RICHERT, D. A., and HERMANS, A. C. Growth and liver xanthine dehydrogenase in chicks and poults fed casein or soy protein diets. J. Nutr. 76(4):475-482. Ref. Apr. 1962. 389.8 J82
Chem. Abstr. 59:14351b

Study indicates an unidentified deficiency of two factors in the casein gelatin diet corrected by soy protein and fish solubles.

734. WESTERFELD, W. W., and HERMANS, A. C. Studies on the soy and fish solubles growth factors for chicks. J. Nutr. 76(4):503-511. Ref. Apr. 1962. 389.8 J82

Chem. Abstr. 59:14351c

Soy protein exerted a protective effect in thyrotoxic chicks.

735. WESTERFIELD, W. W., RICHERT, D. A., and RUEGAMER, W. R. Thyroxine and antithyrotoxic effects in the chick. J. Nutr. 83(4):325-331. Ref. Aug. 1964. 389.8 J82

Concentrates prepared from soy protein.

736. WILCKE, H. L. Soybean products. Ass. Amer. Feed Contr. Offic. Offic. Publ. 1955:73-76. 389.7 As7

Soybean oilmeal as feed. Properly processed soybean oilmeals in the feeding of livestock and poultry show no detrimental effects whatever.

737. WILCOX, R. Soybean oil meal as a possible source of growth promoting factors. S. Dak. Acad. Sci. Proc. 39:73-76. 1960. 500 So82

For poultry.

738. WILCOX, R.A., and others. Evidence for a water-soluble growth promoting factor (s) in soybean oil meal. Poultry Sci. 40(1):94-102. Jan. 1961. 47.8 Am33P

Chem. Abstr. 55:18908e

C.W. Carlson, W. Kohlmeyer, and G.F. Gastler, joint authors.

Studies of the water extracted material reported.

739. WILCOX, R.A., and others. The growth response of turkey poults to a water-extract of soybean oil meal as influenced by different sources of isolated soybean protein. Poultry Sci. 40(5):1353-1354. Sept. 1961. 47.8 Am33P

C.W. Carlson, W. Kohlmeyer, and G.F. Gastler, joint authors.

Chem. Abstr. 56:9184c

Soybean proteins vary considerably in their effects on poult growth. In poult studies, the source of the protein needs to be considered.

740. WILCOX, R.A., CARLSON, C.W., and KOHLMEYER, W. Separation by dialysis of a water soluble growth factor (s) found in soybean oil meal. Poultry Sci. 40(6):1766-1767. Nov. 1961. 47.8 Am33P

Chem. Abstr. 56:9184d

Includes use in poult formulas.

741. WILCOX, R.A. Unidentified growth factors in soybean oil meal. Diss. Abstr. 21(2):284. Aug. 1960. 241.8 M58

Thesis (Ph.D.) - South Dakota State College. 1960. 80 p.

For poults. Thiocetic acid was without effect on poult growth.

742. WILSON, R. F., and JORDAN, A. W. Methods of feeding soybean meal as a supplement to corn for growing pigs on pasture. Ohio. Agr. Exp. Sta. Anim. Sci. Mimeog. Ser. 112:29-30. Sept. 1958. 46.9 Oh34

743. WOODS, W. R., GALLUP, W. D., and TILLMAN, A. D. Comparative value for sheep of some protein supplements fed at three protein levels. J. Anim. Sci. 17(3):758-762. Aug. 1958. 49 J82

Chem. Abstr. 53:3403d

In digestion and nitrogen balance trials soybean oilmeal was compared with sesame and cottonseed meal.

744. WOODS, W. R., and TILLMAN, A. D. The effect of soybean meal ash or vitamins of the "B" complex group upon the growth of sheep receiving purified diets. (Abstr) J. Anim. Sci. 15:1259. Nov. 1956. 49 J82

In the study of urea utilization by ruminants it was found in iso-nitrogenous "purified diets" that soybean meal promoted faster growth in sheep than either Drackett protein or crystalline urea.

745. WOTTLING, H., and PENCHINAT, A. Zootechnical verification of criteria of evaluation of cooked soybean cakes. (Fr) Rev. Franc. Corps Gras 9(3):141-144. Mar. 1962. 307.8 R32

Chem. Abstr. 56:15907a

Chick feeding tests.

746. WRIGHT, T. A comparison of linseed and soybean oil meal and methods of feeding growing-fattening pigs. S. Dak. Agr. Exp. Sta. Bull. 445, 7 p. Apr. 1955. 100 So82

In all trials with mixed rations the most efficient gains were made by those on the soybean oilmeal ration.

747. YACOWITZ, H., and BOYKO, W. L. Effects of high calcium and unheated soybean oil meal on fat utilization in calorie-restricted chicks. (Abstr) Poultry Sci. 41(5):1695. Sept. 1962. 47.8 Am33P

Unheated soybean meal depressed growth.

748. ZAUSCH, M., and GEBHARDT, G. Possibilities of substitute animal protein through soybean extraction meal with suitable vitamin fortification. (Ge) Arbgemeinsch. Futterungsberatung. Jahrb. 3:214-220. 1960/61, pub. 1962. 389.79 Ar1

For swine.

749. ZEIGLER, T. R., and others. Zinc requirement of the chick: factors affecting requirement. Poultry Sci. 40(6):1584-1593. Ref. Nov. 1961. 47.8 Am33P

Chem. Abstr. 56:9190e

R. M. Leach, L. C. Norris, and M. L. Scott, joint authors.

Casein protein was replaced by isolated soybean protein for one of the diets.

750. ZIVKOVIC , S., and KOSANOVIC, M. The compared value of soyabean oil meal and skimmed milk in the fattening of pigs. (Serbo-Croatian.) Arh. Poljoprivredne Nauke 13(41):44-51. Ref. 1960. 21.5 Y9

English summary.

751. ZIVKOVIC, S., PAVLOVIC, M., and MILOVANCEV, S. The substitution of soya meal proteins with urea added with the microelements in the fattening of young cattle. (Se) Veterinaria [Sarajevo] 11(3):339-345. 1962. 41.8 V6494

English summary.

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752. AKTIESELSKABET GRINDSTEDVAERKET. Emulsions containing high concentrations of fats suitable for animal food. Dan. Pat. 90,829. Applied Apr. 22, 1955.

Chem. Abstr. 56:3874c

753. ALLEN, R. S., and others. The effect of various dietary lipids on the blood plasma polyunsaturated fatty acids of dairy calves. J. Dairy Sci. 39(8):1161-1169. Aug. 1956. 44.8 J822

Chem. Abstr. 51:2149h

N. L. Jacobson, R. M. Ward, and J. H. Zaletel, joint authors.

Crude and hydrogenated soybean oil in dairy-cattle nutrition.

754. ALLEN, R. S., and others. Rumen metabolism of I^{131} labeled soybean oil. (Abstr) J. Dairy Sci. 42 (5):914. May 1959. 44.8 J822

E. G. Hammond, N. L. Jacobson, and F. D. Hill, joint authors.

755. ASCARELLI, I., and SENGER, M. Vitamin A utilization by the chick as affected by type of vitamin-A concentrate and other dietary factors. J. Sci. Food Agr. 13(6):332-338. Ref. June 1962. 382 So12

Chem. Abstr. 57:12979h

Vitamin-A utilization, as judged by liver storage and survival. Soybean oil considered.

756. BAXTER, J. G. Vitamin E-fortified animal feeds. U. S. Pat. 2,891,864. June 23, 1959.

Chem. Abstr. 54:3787d

To Eastman Kodak Company.

Use of sludge from soybean oil deodorization.

757. BLUMER, T. N., and others. Influence of changing the kind of fat in the diet at various weight intervals on carcass fat characteristics of swine. J. Anim. Sci. 16(1):68-73. Ref. Feb. 1957. 49 J82

Chem. Abstr. 51:9818a

E. R. Barrick, W. L. Brown, F. H. Smith, and W. W. G. Smart, joint authors.

Carcass measurements of the hogs fed soybean oil to several weights followed by coconut oil.

758. BOOTH, A. N., BICKOFF, E. M., and KOHLER, G. O. Estrogen-like activity in vegetable oils and mill by-products. Science 131(3416):1807-1808. June 17, 1960. 470 Sci2

Chem. Abstr. 54:21453g

Soybean oil included. Experiment done with mice.

759. BORNSTEIN, S. Utilization of by-products of the soybean oil industry for poultry feed. Israel. Res. Council Bull. 9C(3):163-166. Apr. 1961. 330.9 Is72B

Use of acidulated soapstock for the feeding of poultry.

760. BUDOWSKI, P., and others. Vitamin A activity of acidulated soybean soapstocks in chicks. Amer. Oil Chem. Soc. J. 41(6):441-445. Ref. June 1964. 307.8 J82

Chem. Abstr. 61:4764g

I. Ascarelli, J. Gross, I. Nir, and A. Bondi, joint authors.

Acidulated soybean soapstock increased the vitamin A storage in the livers of young chicks and improved the survival of chicks reared on vitamin A-deficient diets.

761. CAMPBELL, A. J., and HILL, F. W. Comparison of purified diets for the study of growth-stimulating effects of fats and unidentified factors. (Abstr) Poultry Sci. 40(4):1385-1386. Sept. 1961. 47.8 Am33P

Determine the effect of protein source on the growth-stimulating effect of soybean oil.

762. CAMPBELL, A. J., and HILL, F. W. The effect of protein source on the growth promoting action of soybean oil, and the effect of glycerine in a low fat diet. Poultry Sci. 41(3):881-882. May 1962. 47.8 Am33P

For chicks.

763. CAREW, L. B., and others. Growth stimulating effect of soybean oil and other fractions of soybeans. Cornell Nutr. Conf. Feed Manufacturers Proc. 1959: 74-80. Ref. 389.79 C81

D. T. Hopkins, R. Renner, and F. W. Hill, joint authors.

For poultry.

764. CAREW, L. B., NESHEIM, M. C., and HILL, F. W. An in vitro method for determining the availability of soybean oil in unextracted soybean products for the chick. Poultry Sci. 41(1):188-193. Jan. 1962. 47.8 Am33P

Method described for determining the rate of ether extraction of the oil in samples of unextracted soybean products.

765. CARVER, D. S., and JOHNSON, E. L. Further studies of the unidentified chick growth factors in unsaturated fats. Poultry Sci. 33(3):543-548. May 1954. 47.8 Am33P

Soybean oil as a source of the growth factor.

766. CHRISTENSEN, K. D. Coconut meal and soybean oil. (Da) Denmark. Stat. Husdyrbrugsudv. Landokon. Forsogslab. Overs. over Landokon. Forsogslab. Arb. 1962(fall mtg.):199-213. 49.9 D41

Swine feeding.

767. CHRISTENSEN, K. D. Various fatty acids in fat tissues of pigs of the Danish Landrace fed with coconut fat or soybean oil. Acta Agr. Scand. 13(3): 249-258. Ref. 1963. 11 Ac82

Chem. Abstr. 60:11130e

768. CRAMPTON, E. W., and others. Comparative feeding value of common edible fats as measured by the growth of prematurely weaned pups, guinea pigs, and swine. J. Nutr. 70(1):81-90. Ref. Jan. 1960. 389.8 J82

Chem. Abstr. 55:15656h

R. K. Shaw, V. G. McKay, and D. C. Schad, joint authors.

Study of corn, linseed, rapeseed, fish, soybean, cottonseed, and coconut oils.

769. CURRAN, G. L., and COSTELLO, R. L. Effect of dihydrocholesterol and soybean sterols on cholesterol metabolism in rabbit and rat. Soc. Exp. Biol. Med. Proc. 91(1):52-56. Ref. Jan. 1956. 442.9 So1

Chem. Abstr. 50:7304a

Soy sterols failed to produce a lowering of total liver sterol levels in rats.

770. DAGHIR, N. J., MARION, W. W., and BALLOUN, S. L. Influence of dietary fat and choline on serum and egg yolk cholesterol in the laying chicken. Poultry Sci. 39(6):1459-1466. Ref. Nov. 1960. 47.8 Am33P

Chem. Abstr. 55:18907f

Neither the type of fat used nor the level of choline had a significant influence on the level of cholesterol in egg yolk. Soybean oil.

771. DAM, R., and others. Studies on the effect of quantity and type of fat on chick growth. J. Nutr. 68(4):615-632. Ref. Aug. 10, 1959. 389.8 J82

R. M. Leach, T. S. Nelson, L. C. Norris, and F. W. Hill, joint authors.

Growth-promoting effect of the oil was markedly reduced during hydrogenation. Included soybean oil.

772. DANGOUMAU, A., and DEBRUYNE, H. Use of oils obtained by esterification of distilled fatty acids for enrichment of poultry rations. (Fr) Rev. Franc. Corps Gras. 10(5):259-271. Ref. May 1963. 307.8 R32

Chem. Abstr. 59:10537b

773. DARROW, M. I., and ESSARY, E. O. Influence of fats in rations on storage quality of poultry. Poultry Sci. 34(2):427-431. Mar. 1955. 47.8 Am33P

Chem. Abstr. 49:13549e

Soybean fats.

774. DEGKWITZ, E., and LANG, K. Changes in the body fat of rats subsequent to feeding with autoxidized soybean oils. (Ge) Fette, Seifen, Anstrichmittel 64 (10):893-900. Oct. 1962. 384 C422

Chem. Abstr. 58:2692d

English summary.

Unsaturated fatty acids in the body fat of rats resulting from a soybean oil diet.

775. DENTON, C. A., and MENGE, H. Fats and oils; their role in chick nutrition. Cornell Nutr. Conf. Feed Manufacturers Proc. 1959:42-46. 389.79 C81
Includes soybean oil.

776. DUDLEY, W. A., MACHLIN, L. J., and GORDON, R. S. Improvement in laying hen productivity from the replacement of tallow with soybean oil. (Abstr) Poultry Sci. 41(5):1641. Sept. 1962. 47.8 Am33P
Egg production, feed efficiency, and average egg weight improved.

777. EDGREN, B., and others. Long-term tolerance study of two fat emulsions for intravenous nutrition in dogs. Amer. J. Clin. Nutr. 14(1):28-36. Ref. Jan. 1964. 389.8 J824
Chem. Abstr. 60:9678h
D. Hallberg, I. Hakansson, H. C. Meng, and A. Wretlind, joint authors.
Two emulsions compared: one containing cotton seed oil and the other soybean oil.

778. ELAM, C. J., and DAVIS, R. E. Effects of two levels of soybean oil mixed into a complete pelleted steer ration on the incidence of feedlot bloat. (Abstr) J. Anim. Sci. 18(4):1510. Nov. 1959. 49 J82
The increase in bloat resulting from crude soybean oil in the ration was significant.

779. ELAM, C. J., GUTIERREZ, J., and DAVIS, R. E. Increased feedlot bloat from feeding soybean oil in a mixed ration to steers. J. Anim. Sci. 19(4):1089-1097. Ref. Nov. 1960. 49 J82
Feeding soybean oil increased feedlot bloat. Extensive bibliography.

780. ELAM, C. J., and DAVIS, R. E. Ruminal characteristics and feedlot bloat incidence in cattle as influenced by vegetable oil, mineral oil, and animal fat. J. Anim. Sci. 21(3):568-574. Ref. Aug. 1962. 49 J82
Soybean oil included.

781. ERSHOFF, B. H. Effects of diet on fish oil toxicity in the rat. J. Nutr. 71(1):45-53. Ref. May 1960. 389.8 J82
Chem. Abstr. 56:10666b
Study of low fat diet on immature rats and the influence of soybean oil.

782. FENDER, M., and LORENZ, G. Calf fattening research with soybean lecithin during regular and dark stall keeping. (Ge) Z. f. Tierphysiol. Tierernahr. u. Futtermtlk. 18(6):377-383. Dec. 1963. 389.78 Z3
English summay.

783. FINDRIK, M., and SREMAC, Z. The effect of animal protein concentrates, soybean oil meal and methylthiouracil upon the increase of bodyweight and utilization of food in fattening chickens. (Serbo-Croatian.) Vet. Arh. 25(5-6):161-166. 1955. 41.8 V6416
English summary.
Soybean oil could not replace animal protein concentrates in the fattening of chicks.

784. FIRESTONE, D., and others. The examination of fats and fatty acids for toxic substances. Amer. Oil Chem. Soc. J. 38(8):418-422. Ref. Aug. 1961. 307.8 J82
Chem. Abstr. 55:21411g
W. Horwitz, L. Friedman, and G. M. Shue, joint authors.
Acidulated fatty acids and primary distillates and residues from coconut, corn, and soybean oil foots showed no chick edema activity.

785. FISHER, H., and LEVEILLE, G. A. Observations on the cholesterol, linoleic, and linolenic acid content of eggs as influenced by dietary fats. J. Nutr. 63 (1):119-129. Ref. Sept. 10, 1957. 389.8 J82
Chem. Abstr. 52:3948d
Soybean oil increased only the linoleic acid content of the egg fat.

786. FOREMAN, C. F., and others. Effect of adding soybean oil to green-chopped alfalfa on milk production, milk composition and other responses of dairy cows. (Abstr) J. Anim. Sci. 18(4):1541-1542. Nov. 1959. 49 J82
N. L. Jacobson, D. K. Hotchkiss, and A. R. Porter, joint authors.

787. HASHIMOTO, T. The effect of heated soybean oil on the nutritional efficiency of rats. (Ja) Jap. J. Nutr. 18(6):375-388. 1960.
Chem. Abstr. 60:11135h
English summary.

788. HASHIMOTO, T. The nutritional efficiency of used fat and oil. Tokyo. Nat. Inst. Nutr. Annu. Rep. 1957:95-97. 389.9 T573
Chem. Abstr. 52:14776e
Soybean oil and lard heated show similar weight gains for rats.

789. HAYS, V. W., and others. Effect of age and supplementatal amino acids on the utilization of milk and soya protein by the young pig. J. Nutr. 69(2): 179-184. Oct. 1959. 389.8 J82

Chem. Abstr. 54:2528i

V. C. Speer, P. A. Hartman, D. V. Catron, joint authors.

Pigs fed skim milk rations gained faster than those fed soybean oil diets.

790. ITO, T. An artificial diet for the silkworm, Bombyx mori, and the effect of soybean oil on its growth. Int. Congr. Ent. Trans., 11th Cong., v. 3 (symp. 3/4):157-162. 1960. 422 C76

791. ITO, T. Nutrition of the silkworm, Bombyx mori. I. Nutritive effects of soybean oil for the larva. (Ja) Jap. Sericult. Exp. Sta. Bull. 16(5):311-348. Ref. Jan. 1961. 425.9 J273B

English summary.

In most experiments hexane-extracted oil, degummed but not refined was used.

792. ITO, T. Nutrition of the silkworm, Bombyx mori. III-IV. (Ja) Jap. Sericult. Exp. Sta. Bull. 17(1):91-136. Ref. July 1961. 425.9 J273B

English summary.

III, Requirements for sterols and their effects on the feeding; IV, Effects of ascorbic acid.

Includes sterols from soybean oil, mulberry, and cellulose powder.

793. JAMES, E. M. Edible uses of soybean lipids. Israel. Res. Counc. Bull. 9C(3):149-150. Apr. 1961. 330.9 Is72B

A summary of the use of lecithin as a food supplement.

794. JOHNSON, R. H., and others. Effectiveness and practicality of some oils, penicillin, n-decyl alcohol, and lecithin in the control of alfalfa bloat. J. Anim. Sci. 17(3):893-902. Aug. 1958. 49 J82

L. R. Brown, N. L. Jacobson, and P. G. Homeyer, joint authors.

Includes soybean oil.

795. JOHNSON, R. H., and others. An emulsified soybean oil for bloat therapy. J. Dairy Sci. 43(9): 1341-1342. Sept. 1960. 44.8 J822

R. S. Allen, N. L. Jacobson, and W. R. Woods, and D. R. Warner, joint authors.

Soybean oil was chosen because of its availability, relatively low cost, and palatability.

796. KANEDA, T., and ARAI, K. Comparison of nutritive value between methyl and ethyl esters of fatty acids for rats. Eiyo To Shokuryo (J. Soc. Food Nutr.) 16(2):101-103. 1963. 389.9 J27

Chem. Abstr. 61:2246a

English summary.

797. KAUNITZ, H., and others. Nutritional properties of fresh fats added to diets containing autoxidized cottonseed oil. J. Nutr. 70(4):521-527. Ref. Apr. 1960. 389.8 J82

Chem. Abstr. 56:10667b

C. A. Slanetz, R. E. Johnson, V. K. Babayan, joint authors.

Soybean oil used as added fat.

798. KLOPOTOWSKI, T., and SMIETANSKA, Z. Lipid synthesis in livers of rats maintained on soybean oil diet. (Pol) Acta Biochim. Pol. 7(1):21-28. 1960. 385 Ac85

Chem. Abstr. 56:5186h

English summary.

799. KRUSE, N. F., and CRAVENS, W. W. Poultry treatment for skin pigmentation. U. S. Pat. 2,924,525. Feb. 9, 1960.

Chem. Abstr. 54:16692d

To Central Soya Company.

Xanthophyll content of soybean oil used.

800. KWONG, E., and BARNES, R. H. Effect of soybean trypsin inhibitor on methionine and cystine utilization. J. Nutr. 81(4):392-398. Dec. 1963. 389.8 J82

Chem. Abstr. 60:4533g

A study of a feeding experiment with rats.

801. MIZUNO, N. S., SAUTTER, J. H., and SCHULTZE, M. O. Enzyme and nucleic acid content of thrombocytes from normal and thrombocytopenic calves. Soc. Exp. Biol. Med. Proc. 98(1):42-46. Ref. May 1958. 442.9 So1

Hypoplastic or aplastic anemia can be elicited in the bovine by feeding trichloroethylene-extracted soybean oil meal. A study of thrombocytes.

802. NICHOLS, E. L., SCHULTZ, J. R., and BALLOUN, S. L. Dietary effects on blood pressure. I-II. Poultry Sci. 42(6):1411-1422. Ref. Nov. 1964. 47.8 Am33P

Chem. Abstr. 61:2248b

Dietary soybean oil caused a significant decrease in serum cholesterol in laying hens.

803. NIESAR, K. H. Evaluation of animal feed fat quality. (Abstr) J. Sci. Food Agr. 14(4):i-202. Apr. 1963. 382 So12

Poultry, in contrast, to rats, can utilise spoilt feed fats.

804. NIKKILA, O. E., and LINKO, R. R. Comparison of tests for oxidative rancidity in edible oils. Suomen Kem. 28B(3):113-116. 1955. 385 Su7

Chem. Abstr. 49:15113c

Food Sci. Abstr. 28:193

A close relation on established between carbonyl and rancid flavor.

805. PALOHEIMO, L., ROINE, P., and UKSILA, E. A comparative investigation on the use of rapeseed oil and soybean oil in the feeding of swine. Suomen Maataloustiet. Seura. Maataloustiet. Aikakausk. 31(4): 251-258. 1959. 20 Su7M

Swine eating soybean feed required less water.

806. PALOHEIMO, L., and JAHKOLA, B. Digestibility of soybean oil and rape oil by swine. Suomen Maataloustiet. Seura. Maataloustiet. Aikakausk. 31 (3):212-214. 1959. 20 Su7M

Chem. Abstr. 54:16576g

Digestibility of rape oil seemed slightly inferior to that of soybean oil.

807. RENNER, R., and HILL, F. W. Factors affecting the absorbability of saturated fatty acids in the chick. J. Nutr. 74(3):254-258. Ref. July 1961. 389.8 J82

Chem. Abstr. 59:7928a

Absorbability of fatty acids in tallow, lard, and soybean oil.

808. ROSENBERG, A. Fat mixtures of high melting point suitable for mixture with cattle feed. Ger. Pat. 1,145,903. Mar. 21, 1963.

Chem. Abstr. 60:9829b

To Commercial Solvents Corporation.

809. ROY, J. H. B., and others. The effect of emulsification of a milk-substitute diet by mechanical homogenization and by the addition of soyabean lecthin on plasma lipid and vitamin A levels and on the growth rate of the newborn calf. Brit. J. Nutr. 15(4):541-554. Ref. 1961. 389.8 B773

K. W. G. Shillam, S. Y. Thompson, and D. A. Dawson, joint authors.

Three experiments discussed.

810. SELL, J. L., and HODGSON, G. C. Comparative value of dietary rapeseed oil, sunflower seed oil, soybean oil and animal tallow for chickens. J. Nutr. 76(2, pt. 1):113-118. Ref. Feb. 1962. 389.8 J82

Chem. Abstr. 59:13161e

Study of the comparative metabolizable energy content of soybean oil rations and other fat rations.

811. SIBBALD, I. R., SLINGER, S. J., and ASHTON, G. C. Factors affecting the metabolizable energy content of poultry feeds. 2. Variability in the M. E. values attributed to samples of tallow, and undegummed soybean oil. Poultry Sci. 40(2):303-308. Ref. Mar. 1961. 47.8 Am33P

Chem. Abstr. 55:18910a

Level of protein in the basal diet has significant effect on the utilization of the energy of the fats.

812. SOCHOCKA, A. Influence of high-energy additions to fodder upon the fattening of chickens. (Pol) Krakow. Wyzsza Szkola Roln. Zeszyty Nauk. Zootech. 2:197-207. 1961. 49.9 K852

English summary.

Use of soybean oil and pork fat. Experiments carried out with 250 chicks at the ages of 2 to 9 weeks, divided into 5 groups.

813. TENNENT, D. M., and others. The influence of selected vegetable fats on plasma lipid concentrations and aortic atheromatosis in cholesterol-fed and diethylstilbestrol-implanted cockerels. J. Nutr. 69 (3):283-288. Ref. Nov. 1959. 389.8 J82

M. E. Zanetti, H. Siegel, G. W. Kuron, and W. H. Ott, joint authors.

The total calculated neutral fat content of the cholesterol-containing diets was 8.21 percent including 3.21 percent from soybean meal.

814. TOVE, S. B., and MOCHRIE, R. D. Effect of dietary and injected fat on the fatty acid composition of bovine depot fat and milk fat. J. Dairy Sci. 46(7): 686-689. Ref. July 1963. 44.8 J822

Chem. Abstr. 59:9171b

Ingestion of soybean oil by cows resulted in increase in stearic acid of both milk and adipose tissue.

815. TOYOMIZU, M., KAWASAKI, K., and TOMIYASU, Y. Effect of dietary oil on the fatty acid composition of rainbow trout oil. Jap. Soc. Sci. Fish. 29(10):957-961. Oct. 1963. 414 J274

Chem. Abstr. 61:7437f

Fish fed soybean oil.

816. TSUCHIYA, T., and others. Concentration of phenolic substance from fats and oils. Jap. Pat. 16,482. Applied Apr. 3, 1958.
Chem. Abstr. 56:2524i
A. Kato, O. Okubo, and H. Mamuro, joint inventors. To Japan Bureau of Industrial Technics.

817. WITTEE, N. H., and SIPOS, E. Treatment of soybean oil soapstock for use in poultry feed. U. S. Pat. 2,929,714. Mar. 22, 1960.
Chem. Abstr. 54:13494f
To Central Soya Company.

818. YOUNG, R. J. Energy value of fats and fatty acids for chicks. 1. Metabolizable energy. Poultry Sci. 40(5):1225-1233. Ref. Sept. 1961. 47.8 Am33P
Chem. Abstr. 56:9198i
Absorbability values given for soybean oil.

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819. ACHA V., D. E. The carotene content of forage plants, corn, and Ipomea batatas used for livestock feeding. (Sp) Agronomia (Lima) 20(82):40-49. 1955. 9.8 Ag83
Chem. Abstr. 50:2744i
Soybeans included.

820. ALUMOT, E., and NITSAN, Z. The influence of soybean antitrypsin on the intestinal proleolysis of the chick. J. Nutr. 73(1):71-77. Ref. Jan. 1961. 389.8 J82
Chem. Abstr. 57:11642i
A study in the growth retarding effect of soybeans.

821. APPLEGARTH, A., FURUTA, F., and LEPKOVSKY, S. Response of the chicken pancreas to raw soybeans; morphologic responses, gross and microscopic, of the pancreases of chickens on raw and heated soybean diets. Poultry Sci. 43(3):733-739. May 1964. 47.8 Am33P

822. AUGUSTIN, P. Influence of brewer's yeast and of soybeans on the development of weaning pigs. (Rum) Prob. Zooteh. 1956(12):27-30. Dec. 49 P944

823. BAINTNER, K., TOTH, P., and KOVACS, T. L. The effect of feeding cows with raw soyabeans, on the milkyield and on the composition of the milk. (Hu) Budapest. Agrtudo. Egyetem. Allattenyesztesi Kar. Kozlem. 1(5):21-32. 1955. 49.9 B852
English summary.
Milk yield increases by 10 percent. Milk fat increases. Butter has better consistency.

824. BARNES, R. H., FIALA, G., and KWONG, E. Methionine supplementation of processed soybeans in the rat. J. Nutr. 77(3):278-284. July 1962. 389.8 J82
Chem. Abstr. 60:2104g
Study of growth inhibitor factor in unheated soyflakes.

825. BENTLEY, O. G., QUICKE, G. V., and MOXON, A. L. Digestibility and feeding value of soybean hulls. (Abstr) J. Anim. Sci. 17(4):1193. Nov. 1958. 49 J82
In steer and sheep feeding trials at the Ohio Agricultural Experiment Station, Wooster.

826. BHAGAVAN, H. N., and RAJAGOPALAN, R. Vitamin B12 and hemoglobin regeneration by raw soybean. J. Sci. Indus. Res. (India) 15C:232-233. Oct. 1956. 475 J82
Chem. Abstr. 51:6799b

827. BOLDIZSAR, H., and others. Studies on the function of the thyroid gland using I^{131}. IV. The effect of the iodine and soya flour content of the food on the I^{131} uptake of chickens of different age groups. (Hu) Magyar Allat. Lapja 16(4):135-138. Ref. Apr. 1961. 41.8 V644
A. Kemeny, N. Z. Gaspar, and M. Stutzel, joint authors.
English summary.
Chem. Abstr. 56:5179e

828. BORCHERS, R. Raw soybean feeding decreases transamidinase activity. Soc. Exp. Biol. Med. Proc. 115(4):893-894. Apr. 1964. 442.9 Sol
Chem. Abstr. 61:2248c

829. BORGEN, H. R. Preparation of soybean cakes. (No) Birokteren 80(3):39-40. Mar. 1964. 424.8 B53
Bee feeding.

830. BUCKER, J. Animal feeds from pressed brewers' yeast and carriers. Ger. Pat. 1,061,608. July 16, 1959.
Chem. Abstr. 55:23870f
To Bierhefe-Verarbeitungsgesellschaft Inh. Franz. Lieber.

831. CALDER, A. Soya beans in pig rations. Rhodesia Agr. J. 60(1):40-42. Jan./Feb. 1963. 24 R34
Soybeans not grown in this land suited for the crop.

832. CAREW, L. B., HILL, F. W., and NESHEIM, M. C. The comparative value of heated ground unextracted soybean and heated dehulled soybeans flakes as a source of soybean oil and energy for the chick. Amer. Oil Chem. Soc. J. 38(5):249-253. Ref. May 1961. 307.8 J82

Chem. Abstr. 55:15772h

A study of how to prepare unextracted soybeans for maximum feeding efficiency for the chick.

833. CHEBOTAEV, N. F., and PALAMARENKO, I. K. Utilization of soybeans in swine feeding. (Rus) Zhivotnovodstvo 3:111-113. Mar. 1955. 49 Z6

834. COATES, M. E. Soya in animal nutrition. Chem. Indus. 32:833-834. Aug. 18, 1956. 382 M31C

Soy proteins supplemented with Vitamin B12 and methionine used as a major ingredient in synthetic milk.

835. COLUMBUS, A., and GEBHARDT, G. Influence of antibiotic concentrate on protein utilization in extracted and raw soybean before and after heat treatment. (Ge) Z. f. Tierernahr. u. Futtermtlk. 12(6):366-380. Ref. Dec. 1957. 389.78 Z3

English summary.

836. ELLINGTON, C. P. Try soybeans and sorghum for silage. Hoard's Dairyman 102(5):230, 265. Mar. 10, 1957. 44.8 H65

Culture and varieties. Cutting at the proper stage is the key to obtaining yields of highest quality silage. The soybeans are ready when the beans are half to three-quarters developed.

837. ELLMORE, M. F., and SHAW, J. C. The effect of feeding soybeans on blood plasma carotene and vitamin A of dairy calves. J. Dairy Sci. 37(11):1269-1272. Ref. Nov. 1954. 44.8 J822

Chem. Abstr. 49:4106e

The blood plasma vitamin A was also depressed by the feeding of soybeans when Vitamin A was provided in the form of vitamin A ester.

838. ENDO, A. Ensiling process. II. Ecological aspects of yeast actions in the silaged process. Tohoku J. Agr. Res. 5(4):291-303. Mar. 1955. 22.5 T574

In English.

Food Sci. Abstr. 28:789

The role of yeast in the putrefaction of the silage studied in regard to soybean silage.

839. FACTORS affecting growth depression by raw soybeans. Nutr. Rev. 21(1):19-21. Ref. Jan. 1963. 389.8 N953

Survey of recent research.

840. FISHER, H., and SHAPIRO, R. Counteracting the growth retardation of raw soybean meal with extra protein and calories. J. Nutr. 80(4):425-430. Ref. Aug. 1963. 389.8 J82

In poultry nutrition. Growth depression of raw meal overcome through the use of corn oil.

841. FISHER, H., and others. Further evaluation of proteins for the growing chicken by the carcass retention method. J. Sci. Food Agr. 13(12):658-662. Dec. 1962. 382 So12

Chem. Abstr. 58:9460g

J. D. Summers, J. P. H. Wessels, and R. Shapiro, joint authors.

Comparison between dehulled and nondehulled soybean meal.

842. FISHER, H., and GRIMINGER, P. Further studies on unextracted raw soybeans for laying hens. Feedstuffs 33(51):38-39. Dec. 23, 1961. 286.81 F322

Young pullets cannot utilize raw soybeans properly at the onset of egg production.

843. FISHER, H. Nature of the nutritional defect responsible for growth retardation on raw soybean diets. Feedstuffs 35(44):62, 68. Oct. 26, 1963. 286.81 F322

Study of heating on feed utilization of soybeans.

844. FRIES, G. F., LASSITER, C. A., and HUFFMAN, C. F. Effect of enzyme supplementation of milk replacers on the growth of calves. J. Dairy Sci. 41(8):1081-1087. Aug. 1958. 44.8 J822

Chem. Abstr. 52:18171i

Soybean flour included as a milk replacer.

845. GABOS, D. Feeding of dairy cattle with green soy beans. (Hu) Magyar Mezogazdasag 16(35):19. Aug. 30, 1961. 19 M27

846. GARRIGUS, R. R., NEUMANN, A. L., and MITCHELL, G. E. Digestibility of ground and flaked soybean hulls. (Abstr) J. Anim. Sci. 19(4):1261. Nov. 1960. 49 J82

In beef-cattle feeding trials.

847. GEBHARDT, G. Effect of antibiotics in connection with heat treatment of rye and soybeans in breeding experiments on albino rats. Arch. Tierernaehr. 8(3):211-234. June 1958. 241.64 G792

Chem. Abstr. 53:9404g

848. GEBHARDT, G., and COLUMBUS, A. The influence of antibiotic concentrate on the utilization of extracted soybeans before and after heating. (Ge) Z. f. Tierernahr. u. Futtermtlk. 12(5):285-304. Ref. Oct. 1957. 389.78 Z3

English summary.

849. GOLDBERG, A., and GUGGENHEIM, K. The digestive release of amino acids and their concentrations in the portal plasma of rats after protein feeding. Biochem. J. 83(1):129-135. Ref. 1962. 382 B52

Proteins include unheated soy flour, processed soy flour, and overheated soy flour protein.

850. GRIMINGER, P., and FISHER, H. Unextracted raw soybeans for laying hens. Feedstuffs 32(12):18. Mar. 19, 1960. 286.81 F322

Compares performance of pullets receiving raw, unextracted soybeans and heated soybean meal. Figures given for egg production, weight gained and average feed consumption.

851. HAINES, P. C., and LYMAN, R. L. Relationship of pancreatic enzyme secretion to growth inhibition in rats fed soybean trypsin inhibitor. J. Nutr. 74(4):445-452. Ref. Aug. 1961. 389.8 J82

Chem. Abstr. 59:9129c

Study of the relationship between growth depression, restricted diet, and trypsin inhibitor.

852. HALVERSON, A. W., HENDRICK, C. M. Some factors affecting the stability of carotene in mixed feeds. S. Dak. Agr. Exp. Sta. Tech. Bull. 14, 15 p. Ref. Jan. 1955. 100 So82

Chem. Abstr. 51:17017d

Carotene storage losses were observed in a corn soybean diet during a 30-day trial.

853. HANSEN, V. Soybean bran. (Da) Denmark. Stat. Husdyrbrugsudv. Landokon. Forsogslab. Overs. over Landokon. Forsogslab. Arb. 1962(fall mtg.):213-215. 49.9 D41

Swine feeding.

854. HAUGSE, C. N., and DINUSSON, W. E. "Green" soybeans as a feed for pigs. N. Dak. Agr. Exp. Sta. Biomon. Bull. 21(6):4-5. July/Aug. 1960. 100 N813B

Not satisfactory.

855. HEYWANG, B. W. The effect of supplemental methionine in a corn-soybean diet for laying chickens. Poultry Sci. 35:462-468. Mar. 1956. 47.8 Am33P

Supplemental dl-methionine had little effect on egg production, diet consumption per-dozen eggs laid, egg weight and shell thickness, hatchability, or pullet weight.

856. HILL, F., and RENNER, R. Effects of heat treatment on the metabolizable energy value of soybeans and extracted soybean flakes for the hen. J. Nutr. 80 (4):375-380. Ref. Aug. 1963. 389.8 J82

Effects of graded levels of heat treatment for various periods on soybeans as feed for adult hens.

857. HILL, F. W. The enigma of the soybean. Poultry Comment 16(1):4, 3. Ref. Spring 1959. 47.8 D92

As feed. Review of research which is overcoming the toxic effect of soybeans for feed.

858. HILL, F. W., RENNER, R., and CAREW, L. B. Growth promoting value and digestibility of soybeans and soybean oil. (Abstr) Poultry Sci. 38(5):1213-1214. Sept. 1959. 47.8 Am33P

For chicks. Flaking process may produce disruption of cell structure to permit digestibility of the oil of whole soybeans and permit full expression of its growth stimulating properties.

859. HILL, F. W., and PETERSON, D. W. Modifying animal products through nutrition. Cornell Nutr. Conf. Feed Manufacturers. Proc. 1961:101-108. 389.79 C81

A general article including soybeans. An extensive bibliography.

860. HILL, F. W. Soybeans and soybean products in poultry feeding. Wash. Anim. Indus. Conf. Proc. 13: 37-40. Ref. 1960. 389.79 W94

Factor other than enzyme inhibition is the primary limitor of growth.

861. HILL, F. W., and RENNER, R. Studies of the metabolizable energy of soybeans and soybean products for the chick. (Abstr) Poultry Sci. 37(5):1212. Sept. 1958. 47.8 Am33P

Extracted flakes showed greater improvement from heat treatment than did whole beans.

862. HINTZ, H. F., and others. Effects of processing and of feeding hay on the digestibility of soybean hulls. J. Anim. Sci. 23(1):43-46. Feb. 1964. 49 J82

M. M. Mathias, H. F. Ley, and J. K. Loosli, joint authors.

Digestion trials with cattle and sheep.

863. HIROSE, M., and others. Studies on the successive production of forage crops all the year round. 1. On the seeding and cutting time of green soybean forage. (Ja) Kanto-Tosan Agr. Exp. Sta. J. 5:70-76. May 1954. 107.6 K83

K. Hiraishi, K. Suzuki, K. Koike, S. Inoue, and H. Abe, joint authors.

English summary.

864. HRDLICKA, J. Contribution of evaluation of protein, especially soybean proteolysates. (Cz) Prague. Vysoka Sk. Chem.-Technol. Sborn. Potravinarska Technol. 6(3):145-151. 1962. 389.9 P88

English summary.

Foreign products of the type "shoyu" were analyzed in order to evaluate and compare then with Czechoslovak products.

865. INTERNATIONAL ANIMAL NUTRITION CONFERENCE. II. Madrid, 1960. U. S. Foreign Agr. Serv., 1961. 389 p. A 389.79 In82

Soybean Council of America and U. S. Feed Grain Council, joint sponsors.

866. IPEKDZHIIAN, V. M., and NIKITENKO, N. D. On the interrelationship between leguminous and cereal plants in mixed crops of corn and soybeans. (Rus) Fiziol. Rast. 6(4):491-493. Ref. July/Aug. 1959. 450 F58

Value as forage crops.

This journal will appear in English translation 450 F58Ae

867. JACQUET, J., and BOUTIBONNES, P. Antibiotic and toxic properties of Aspergillus clavatus Desmazieres. (Fr) Acad. Agr. France. Compt. Rend. 49(5):368-373. Ref. Feb. 27/Mar. 6, 1963. 14 P215Bc

On grain, cassava, and soybeans fed to animals.

868. JENSEN, L. S., and SAXENA, H. C. Growth inhibitors in soybeans-a review. Feedstuffs 35(17): 44, 46. Apr. 20, 1963. 286.81 F322

The major growth depressing factor in raw soybeans is present in a water soluble residue fraction, the nature of which remains to be determined.

869. JIMENEZ, A. A., and others. Effect of feeding raw or heated ground soybeans on gains, feed efficiency and carcass quality of swine. Feedstuffs 33(44):42, 60. Nov. 4, 1961. 286.81 F322

T. W. Perry, R. A. Pickett, and W. M. Beeson, joint authors.

Two experiments to re-evaluate raw and heated unextracted soybeans as supplementary sources of protein to corn in a typical corn-soybean meal ration.

870. JIMENEZ, A. A., and others. Raw and heat-treated soybeans for growing-finishing swine, and their effect on fat firmness. J. Anim. Sci. 22(2):471-475. Ref. May 1963. 49 J82

T. W. Perry, R. A. Pickett, and W. M. Beeson, joint authors.

The performance of pigs fed heated soybeans was equal to that of pigs fed soybean meal as supplemental source of protein.

871. JOHNSON, R. R., and others. Soybean hulls are feed ingredient for ruminant rations. Ohio Farm Home Res. 44(319):55. July/Aug. 1959. 100 Oh3S

A. L. Moxon, H. W. Scott, and O. G. Bentley, joint authors.

Changes in the soybean milling industry have made soybean hulls a by product.

872. JOHNSON, R. R. Soybean hulls for ruminants. Feed Age 12(11):39-41. Nov. 1962. 389.78 F327

Illustrates the high energy value of soybean hulls in ruminant ration.

873. JOHNSON, R. R., and KLOSTERMAN, E. W. Soybran flakes have high feed value for beef cattle. Ohio Farm Home Res. 46(6):86, 94. Nov./Dec. 1961. 100 Oh3S

For best results soybran flakes should be supplemented with small quantity of wheat straw.

874. JOHNSON, R. R., KLOSTERMAN, E. W., and SCOTT, H. W. Studies on the feeding value of soybran flakes for ruminants. J. Anim. Sci. 21(3):406-411. Ref. Aug. 1962. 49 J82

Two digestion trials with sheep and one with heifers to test feeding value of soybran flakes.

875. JORDAN, R. M. Soybeans for fattening lambs. S. Dak. Agr. Exp. Sta. Bull. 442, 4 p. Oct. 1954. 100 So82

Whole soybeans used as protein supplement compare favorably with soybean oil meal.

876. JOSHI, S. K., and SELL, J. L. Comparative dietary value of soybean oil, sunflower oil, rapeseed oil, and animal tallow for turkey poults. Can. J. Anim. Sci. 44(1):34-38. Ref. Apr. 1964. 41.8 C163

877. KANDATSU, M., and YASUI, T. Studies on the nutritive value of grass proteins. VIII. The effect of drying methods upon the digestibility of soy bean leaf protein. (B) On the nutritive value of the green leaf of soybean. (Ja) Agr. Chem. Soc. Japan. J. 32(1): 62-69. 1958. 385 Ag8

Chem. Abstr. 54:12420i

Concerns the decrease in digestibility of plant-leaf protein by drying.

878. KEENNER, H. A. The effect of various factors on the vitamin D content of several common forages. J. Dairy Sci. 37(11)1337-1345. Nov. 1954. 44.8 J822

Including soybean hay. Lactation-nutrition studies involving dairy cows.

879. KENDALL, K. A., HAYS, R. L., and ROLLERI, G. D. Impaired reproduction in the rabbit fed supplemented diets containing soybean hay. J. Anim. Sci. 13:859-866. Nov. 1954. 49 J82

The feeding of soybean hay, autoclaved, was ineffective in curing sterility syndrome.

880. KRAACK, E. Comparison of feed research for growing swine with feed reinforced with codliver oil, reinforced meal and of soybean chips. (Ge) Tierzucht 10:8-12. Jan. 1956. 49 T443

881. KRUGER, L., and KIRCHBERG, K. Research on the function of vitamin B12 and processed soybeans with feedstuffs for chicks. (Ge) Arch. Tierernahr. 10(5): 354-364. Oct. 1, 1960. 389.78 Ar22

Chem. Abstr. 55:6624f

882. KURELEC, V. The usefulness of green and silage soybean-corn in feeding. (Hu) Allatenyesztes 10 (4):373-383. Ref. Dec. 1961. 49 A157

German summary.

Cattle.

883. LEAL, J. C. Production of green material from varieties of soybeans and cowpeas. (Por) Porto Alegre. Univ. Rio Grande Sul. Fac. Agron. Veterinaria Rev. 4(2):71-75. July 1961. 41.9 P832

Includes forage value.

884. LEPKOVSKY, S., BINGHAM, E., and PENCHARZ, R. The fate of the proteolytic enzymes from the pancreatic juice of chicks fed raw and heated soybeans. Poultry Sci. 38(6):1289-1295. Nov. 1959. 47.8 Am33P

Chem. Abstr. 54:11173h

Decrease in proteolytic activity when diet changed from heated to raw soybeans.

885. LIBETS, S. P. Effect of soybeans in cattle rations on composition of milkfat and quality of butter. (Rus) Moskov. Ordena Lenina Sel'skokhoz. Akad. im. K. A. Timiryazeva. Dok. 78:177-182. 1962. 20 M857

886. LIENER, I. E. Soybeans vs. soybean oil meal. Minn. Farm Home Sci. 13(2):9. Feb. 1956. 100 M668

In general, raw soybeans are unsuitable for poultry, swine, and calves but may be used for beef and dairy cattle and for sheep.

887. LINERODE, P. A., WAIBEL, P. E., and POMEROY, B. S. Effects of antibiotics, amino acids, zinc and enzymes on the growth depression in the turkey produced by raw soybeans. J. Nutr. 75(4):427-434. Ref. Dec. 1961. 389.8 J82

Chem. Abstr. 59:9144e

When the diet contained 20 percent of ground raw soybeans, the antibiotics reversed the raw soybean growth depression.

888. LOVELL, H. B. Let's talk about honey plants. Gleanings Bee Cult. 86(2):101, 125. Feb. 1958. 424.8 G47

Soybeans and lima beans in Virginia. Hives have good crops of a very light honey and is very similar to lima bean honey.

889. LUSK, J. W., and others. Comparative feeding value of alfalfa, soybean, and Johnsongrass hays for milk production. (Abstr) Assoc. South. Agr. Workers. Proc. 53:116. 1956. 4 C82

J. R. Owen, W. C. Cowsert, and J. T. Miles, joint authors.

Cows gained weight with soybean hay and lost weight on Johnsongrass hay.

890. MCKINNEY, L. L., and others. Autoxidation products of trichloroethylene. J. Agr. Food Chem. 3(5):413-419. Ref. May 1955. 381 J8223

Food Sci. Abstr. 27:2463

E. H. Uhing, J. L. White, and J. C. Pickens, joint authors.

Soybean and soybean oil flakes toxicity study.

891. MCKINNEY, L. L., and others. Changes in the composition of soybeans on sprouting. Amer. Oil Chem. Soc. J. 35(7):364-366. July 1958.

F. B. Weakley, R. E. Campbell, and J. C. Cowan,

joint authors.

Sprouted soybeans could be used as the basis for high-energy, high-protein broiler feed.

892. MADDY, K. H. Soybeans vs. soybean meal for swine feeds. Feedstuffs 36(13)38, 48. Mar. 28, 1964. 286.81 F322

An economic appraisal.

893. MAGEE, A. C., and MATRONE, G. Estrogenic activity of soybean forage. J. Anim. Sci. 17(3):787-791. Ref. Aug. 1958. 49 J82

Chem. Abstr. 53:3383a

Study of the removal of estrogenic active substance from green soybean forage. Activity found to be largely in the ether fraction.

894. MANTEL, K. Proof of the possibility of substituting fishmeal with toasted soybeans and dry skim milk. Arch. Geflugelkunde 24(3):263-270. July 1960. 47.8 Ar2

English summary.

Four rations with the same energy content compared for egg production, feed efficiency and feed consumption.

895. MEDINA CHACON, R. D. Study of three rations with byproducts of soybeans (Soja max Moench) for the feeding of dairy cattle. (Sp) Acta Agron. [Palmira] 12(3/4):171-188. Ref. July/Dec. 1962. 9.4 Ac8

English summary.

Soybean hulls and oil meal used to supplement dairy rations.

896. MEHRING, A. L., TITUS, H. W., and WADDELL, J. The effect of adding methionine and vitamin B12 singly and together, to a corn-soybean diet for laying chickens. Poultry Sci. 33(6):1191-1197. Ref. Nov. 1954. 47.8 Am33P

Chem. Abstr. 49:12626e

Data indicated that the effects of DL-methionine and vitamin B12 were independent and additive.

897. MUELENAERE, H. J. H. DE Studies on the digestion of soybeans. J. Nutr. 82(2):197-205. Ref. Feb. 1964. 389.8 J82

Study of 5 amino acids as determined by the fecal analysis method were higher for heated soybeans. Feeding tests for rats.

898. NESHEIM, M. C. The metabolizable energy values of full fat soybean products. N. Y. State Col. Agr. (Cornell U.) Ext. Cornell Feed Serv. 54:13-14. Aug. 1961. 275.29 N48Cf

In poultry nutrition.

899. NESHEIM, M. C. Raw soybeans and digestion. Poultry Livestock Comment 18(2):4-3. Ref. Summer 1961. 47.8 D92

Poultry feed.

900. NESHEIM, M. C. Recent studies on factors affecting the nutritive value of soybean products. Cornell Nutr. Conf. Feed Manufacturers. Proc. 1961: 35-37. 389.79 C81

In poultry rations. Raw soybeans and their effect on fat digestion.

901. NESHEIM, M. C. Soybeans in poultry feeding-a processing problem. Feedstuffs 33(18):164, 170. May 6, 1961. 286.81 F322

The need to heat soybean products to use as chick feed is reviewed.

902. NESHEIM, M. C., GARLICK, J. D., and HOPKINS, D. T. Studies on the effect of raw soybean meal on fat absorption in young chicks. J. Nutr. 78 (1):89-94. Ref. Sept. 1962. 389.8 J82

Chem. Abstr. 60:13638c

Dietary raw soybean meal depressed fat absorption in chicks at two weeks of age but not at four weeks of age.

903. NESHEIM, M. C. Studies on the utilization of soybeans by hens and chicks. Cornell Nutr. Conf. Feed Manufacturers. Proc. 1963:80-83. 389.79 C81

The relationship between raw soybean diet and egg laying.

904. NITSAN, Z., and ALUMOT, E. Role of the cecum in the utilization of raw soybean in chicks. J. Nutr. 80(3):299-304. Ref. July 1963. 389.8 J82

With heated soybean the cecum removal increased feed utilization.

905. NOGUCHI, S., and FUKUDA, S. Growth promoting feed. Jap. Pat. 2128 (61) Applied Mar. 9, 1958.

Chem. Abstr. 56:9182g

Soy sauce fermentation residue.

906. NOLAND, P. R., SCOTT, K. W., and BAUGUS, C. A. Unextracted, cooked soybeans for growing and finishing swine. Ark. Farm Res. 9(2):3. Mar./Apr. 1960. 100 Ar42F

Study of the possibility of using cooked, dehulled soybeans as a protein supplement for swine.

907. NORDFELDT, S., and MELIN, G. Digestibility experiments with mink. (Sw) Vara Palsdjur 26(5): 105-109. Apr. 15, 1955. 410 V42

908. NORRIS, L. C., and DAVIS, P. N. Studies on the availability of trace minerals in soya diets. Cornell Nutr. Conf. Feed Manufacturers. Proc. 1960:48-56. Ref. 389.79 C81
Chicks and poults.

909. PANEL discussion on soy milk. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:188-191. 1962. A389.9 C76
Moderator, P. Gyorgy; panel members: D. W. Anderson, S. J. Fomon, D. B. Hand, H. W. Miller, and H. P. Sarett.

910. PERRY, T. W. Cooked soybeans for swine; limited feeding vs. full feeding; and wet feeding vs. dry feeding. Feedstuffs 35(43):14, 16. Oct. 19, 1963. 286.81 F322
Tables of ration formulas. No bibliography.

911. PERRY, T. W., JIMENEZ, A. A., and BEESON, W. M. The effect of feeding raw or heated ground soybeans as the supplemental source of protein in swine growing rations. Ind. Agr. Exp. Sta. Progr. Rep. 2, 3 p. Jan. 1962. 100 In2Res
Gives carcass characteristics and weights of swine with the various rations and ration supplements.

912. PERRY, T. W., and BEESON, W. M. Unextracted heated soybeans for swine. Feed Age 12(1): 30-33. Ref. Jan. 1962. 389.78 F327
Carcasses of hogs fed unextracted soybeans contained a higher proportion of unsaturated fatty acids.

913. PICKETT, R. A., PLUMLEE, M. P., and JONES, H. W. Levels of salt in a fortified soy supplement. Ind. Agr. Exp. Sta. Progr. Rep. 41, 2 p. Aug. 1962. 100 In2Res
Swine.

914. POLI, V. P7, basis of feeding weakened swine. (It) Nuovi Allevamenti 3(3):5, 7. Mar. 1961. 49 N922
A soybean-grain mixture added to other concentrates.

915. PRATT, A. D., SETTLEMIRE, C. T., and HIBBS, J. W. High dry matter zinc bacitracin-treated legume-grass silage vs. untreated high dry matter silage: each with corn, soybran flakes, and dried beet pulp. J. Dairy Sci. 46(12):1385-1389. Dec. 1963. 44.8 J822
Effects on milk production and body weight.

916. QUICKE, G. V., and others. Digestibility of soybean hulls and flakes and the in vitro digestibility of the cellulose in various milling by-products. J. Dairy Sci. 42(1):185-186. Jan. 1959. 44.8 J822
O. G. Bentley, H. W. Scott, R. R. Johnson, and A. L. Moxon, joint authors.
Chem. Abstr. 53:8347f
Sheep digestion trials.

917. RAMBAUD, M., and DELOBEZ, R. The antitrypsin factor and the cooking of soybean oil cakes. (Fr) Indus. Aliment. Agr. 78(5):529-536. Ref. May 1961. 383 As7

918. RAY, M. L. Soybean hulls for fattening steers. Ark. Farm Res. 11(6):2. Nov./Dec. 1962. 100 Ar42F
Grinding and toasting are unnecessary when soybean hulls are fed to beef steers.

919. RAY, M. L., WALLACE, W. T., and CHILD, R. D. Soybean mill run as a roughage for beef cattle. Ark. Farm Res. 12(3):12. May/June 1963. 100 Ar42F
Soybean mill run fed both wintering and finishing beef steers with excellent results.

920. READ, M. S. Current aspects of wholesomeness of irradiated foods. New York, N. Y. Eng. Joint Counc., 1960. 26 p. Libr. Cong.

921. REIMER, D., and others. Barley rations for swine. I-III. J. Anim. Sci. 23(2):392-408. Ref. May 1964. 49 J82
R. J. Meade, M. Soldevila, and R. S. Grant, joint authors.
Soybeans included in the various rations and experiments.

922. RENNER, R., and HILL, F.W. Studies of the effect of heat treatment on the metabolizable energy value of soybeans and extracted soybean flakes for the chick. J. Nutr. 70(2):219-225. Ref. Feb. 1960. 389.8 J82
Chem. Abstr. 55:18916h
Low nutritional value of raw soybeans due to poor digestion and absorption.

923. ROGLER, J. C., and CARRICK, C. W. Studies on raw and heated unextracted soybeans for layers. Poultry Sci. 43(3):605-612. Ref. May 1964. 47.8 Am33P

A study of raw unextracted ground soybeans and heated unextracted ground soybeans, and various supplements on egg production.

924. RUNNELS, T. D. Processed whole soybeans as an ingredient in broiler diets. Distill. Feed Conf. Proc. 16:23-32. Ref. 1961. 389.79 C765

Review of research to increase the efficiency of soybeans as feed for broilers.

925. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Growth inhibition by raw soybean meal for chicks and turkey poults. (Abstr) Poultry Sci. 40 (3):1452. Sept. 1961. 47.8 Am33P

Greatest improvement obtained by supplementation with all amino acid required for normal growth.

926. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Influence of age on utilization of raw soybean meal by chickens. J. Nutr. 80(4):391-396. Ref. Aug. 1963. 389.8 J82

Study of active fraction in raw soybean which cannot be fully digested and its relation to pancreatic hypertrophy.

927. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Influence of dietary protein level on chick growth depression by raw soybean meal. J. Nutr. 77(3):241-244. July 1962. 389.8 J82

Chem. Abstr. 60:913e

Adding an amino acid mixture to raw soybean meal resulted in normal oxygen consumption and normal liver and muscle glycogen levels.

928. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Influence of raw soybeans on oxygen consumption and liver and muscle glycogen content of chicks. Poultry Sci. 41(4):1304-1305. July 1962. 47.8 Am33P

Chem. Abstr. 58:7186d

Adding an amino acid mixture to raw soybeans resulted in normal oxygen consumption. Abstract in J. Sci. Food Agr. 14(2):i-80. 382 So12.

929. SAXENA, H. C., JENSEN, L. S., and MCGINNIS, J. Pancreatic hypertrophy and chick growth inhibition by soybean fractions devoid of trypsin inhibitor. Soc. Exp. Biol. Med. Proc. 112(1):101-105. Ref. Jan. 1963. 442.9 So1

Chem. Abstr. 59:5551g

Study of growth inhibiting factor which resides in the water insoluble residue.

930. SHERWOOD, D. H., and SLOAN, H. J. Vitamin B12 and choline in corn-soy rations for starting poults. Poultry Sci. 33(5):1015-1021. Ref. Sept. 1954. 47.8 Am33P

Chem. Abstr. 49:4814h

Choline plays a role in the prevention of gizzard erosion in turkeys.

931. STANDIFER, L. N., and others. Relative availability of various proteins to the honey bee. Entomol. Soc. Amer. Ann. 53(5):618-625. Ref. Sept. 1960. 420 En82

Chem. Abstr. 55:15756g

W. F. McCaughey, F. E. Todd, and A. R. Kemmerer, joint authors.

Proteins from soybean flour used.

932. SVOBODA, J., and SIPEK, A. Bee feed preparation. Czech. Pat. 101,415. Oct. 15, 1961.

Chem. Abstr. 57:12976a

933. TAKAHASI, M., and NOMURA, T. Studies on the digestibility of some kinds of leguminous seed proteins. I-II. (Ja) Jap. Soc. Food Nutr. J. 12(3):198-205. Ref. 1959. 389.9 J27

Chem. Abstr. 59:11959b

English summary.

Fundamental experiments on heat treatment. Study includes soybeans.

934. THORBEK, G., BOZA-LOPEZ, J., and ENGELENDER, J. Experiments with the influence of certain growth factors on growth during feeding with "toasted" and "non-toasted" soybean bran. (Da) Denmark. Stat. Husdyrbrugsudv. Landokon. Forsogslab. Overs. over Landokon. Forsogslab. Arb. 1962(fall mtg.):418-419. 49.9 D41

Swine.

935. TITUS, H. W., BRUMBAUGH, J. H., and MEHRING, A. L. Evaluation of the effect of additions of vitamin B12, DL-methionine, and procaine penicillin, singly and in combination, to corn-soybean diets for young growing chicks. Poultry Sci. 34(1):167-177. Ref. Jan. 1955. 47.8 Am33P

Chem. Abstr. 49:12628h

The DL-methionine in the presence of procaine penicillin appeared to increase the gains made by female chicks.

936. TODD, A. C. E., and PRESTON, D. B. Feeding soybeans to pigs. Queensland Agr. J. 90(7):420-422. July 1964. 23 Q33

Discusses heat treatment of soybean feed for swine.

937. TORRES, A. P. Soybean bran in poultry raising. (Por) Coopercotia 12(85):36-37. Nov. 1956. 9.2 C78

938. TSCHIDERER, K. Preparation of soybeans: for full utilization. (Ge) L und E 12(2):7-8. Feb. 1959. 389.8 Z34
Nutritive value for feed.

939. UCHIKI, M. Milklike food for young sheep. Jap. Pat. 9223. 1958.
Chem. Abstr.53:4608h

940. VILLUMSTAD, E. Experiments with soybean and pollen feeding, spring 1963. (No) Birokteren 80(1): 9-13. Jan. 1964. 424.8 B53

941. VUYST, A. DE., and others. Amino acids in oil cakes. Agricultura (Louvain) 11(3):385-390. Sept. 1963. 13 R32
Chem. Abstr. 60:8240a
W. Vervack, M. Vanbelle, R. Arnould, and A. Moreels, joint authors.

942. WASHKO, J. B. Soybean varieties for forage and grain in Pennsylvania. Pa. Agr. Exp. Sta. Bull. 666, 9 p. Apr. 1960. 100 P381
Promising varieties for forage.

943. WEAVER, J. M. Inhibitory compounds in raw soy beans. (Abstr) Federation Amer. Soc. Exp. Biol. Federation Proc. 14:301. Mar. 1955. 442.9 F31P
Animal feeding. Indications are that soy saponins cannot account for all the growth inhibition in rats.

944. WOOD, A. J., ROBERTSON, M. C., and KITTS, W. D. The nutritive value of refuse screenings. I. The essential amino acid content of certain weed seeds. Can. J. Animal Sci. 38(1):97-102. June 1958. 41.8 C163
Chem. Abstr. 53:20614b
Soybean weed seeds included.

945. ZANOTTI, L. Varieties of soybeans for forage. (It) Gior. Agr. 68(37):335. Sept. 14, 1958. 16 It1G

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946. ANDREGG, H. Imitation nutmeats. U. S. Pat. 2,776,212. Jan. 1, 1957.
Chem. Abstr. 51:4599b
Soybean proteinaceous fibers are treated to produce nutmeats.
To Swift & Company.

947. ANSON, M. L., and PADER, M. Protein food product. U. S. Pat. 2,802,737. Aug. 13, 1957.
Chem. Abstr. 51:17020e
Vegetable protein food products which simulate meats and contain soybean proteins.
To Lever Brothers Company.

948. ANSON, M. L., and PADER, M. Protein food product. U. S. Pat. 2,802,738. Aug. 13, 1957.
Chem. Abstr. 51:17020e
Edible protein food of high nutritive value for use in special diets.
To Lever Brothers Company.

949. ANSON, M. L., and PADER, M. Protein food product. U. S. Pat. 2,813,024. Nov. 12, 1957.
Chem. Abstr. 52:5698i
A simulated meat spread of soybean protein in a flavorful binder.
To Lever Brothers Company.

950. ANSON, M. L., and PADER, M. Protein food product. U. S. Pat. 2,813,025. Nov. 12, 1957.
Chem. Abstr. 52:5699b
The method is applicable to soybean protein.
To Lever Brothers Company.

951. BALIGA, B. R., and RAJAGOPALAN, R. Influence of vitamin B12 on the biological value of soya protein. Indian Sci. Congr. Ass. Proc. 41(3, abstr.): 35. 1954. 513 In22
Vitamin B12 supplement increased biological value of soya protein to almost the value of autoclaved soybeans.

952. BARNES, R. H., and others. Dietary fat and protein and serum cholesterol. II. J. Nutr. 69(3): 269.273. Ref. Nov. 1959. 389.8 J82
E. Kwong, W. Pond, R. Lowry, and J. K. Loosli, joint authors.
Promine used in experimental diets for young swine.

953. BOYER, R. A., and SAEWERT, H. E. Imitation meat products. U. S. Pat. 2,730,448. Jan. 10, 1956.
Chem. Abstr. 50:5192c
To Swift & Company.

954. BRESSANI, R., and MARENCO, E. The enrichment of lime-treated corn flour with proteins, lysine and tryptophan, and vitamins. J. Agr. Food Chem. 11(6):517-522. Ref. Nov./Dec. 1963. 381 J8223

Chem. Abstr. 59:15855c
Soybean protein improves the nutritive value of flour.

955. BUNYAN, J. Orange-G binding as a measure of protein content. J. Sci. Food Agr. 10(8):425-430. Aug. 1959. 382 So12
Chem. Abstr. 54:771d

956. CAMERON, D. E., and others. Powdered fat compositions. U. S. Pat. 2,913,342. Nov. 17, 1959.
Chem. Abstr. 54:3786d
W. M. Chilson, C. C. Elsesser, and R. Windmuller, co-inventors.
To General Foods Corporation.

957. DIBBERN, H., and KOENEN, K. The influence of feeding on the consistency of butterfat. (Ge) Int. Dairy Congr., 14th Rome, 1956. 2(Pt. 1):123-128. 44.9 In8214
Chem. Abstr. 52:4051i
English summary.
One diet included soybean residues which seemed to make for a softer butter.

958. ELDRIDGE, A. C., NASH, A. M., and SMITH, A. K. Soybean whey protein-polysaccharide complexes. U. S. Pat. 3,069,327. Dec. 18, 1962.
Chem. Abstr. 58:6129h
To U. S. Department of Agriculture.

959. FOMON, S. J. Nitrogen balance studies with normal infants fed soya bean protein. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:175-178. 1962. A389.9 C76

960. FRANK, S. S., and CIRCLE, S. J. The use of isolated soybean protein for non-meat, simulated sausage products, frankfurter and Bologna types. Food Technol. 13(6):307-313. Ref. June 1959. 389.8 F7398
Illustrations of products processed under various conditions.
Abstract in Food Technol. 12(4, sup.):23. Apr. 1958. 389.8 F7398

961. FUJIKI, S., CHICHITA, M. Mayonnaise-like product. Jap. Pat. 2776. Mar. 30, 1963.
Chem. Abstr. 59:3266a
To Ajinomoto Company.

962. FUKAMACHI, C., ABE, K., and WATANABE, T. Qualification of defatted soybean meal as the material of tofu. (Ja) Tokyo. Food Res. Inst. Rep. 17: 132-134. Mar. 1963. 389.9 T57
English summary.

963. FUKIMBARA, T. Seasoning material for food. Jap. Pat. 8548. Dec. 24, 1954.
Chem. Abstr. 50:9650g
To Scientific Research Institute.
A cooked culture which contains soybean proteins.

964. FUKUSHI, T., and NAITO, K. Studies on the fortification methods of vitamin A in "miso." (Ja) Jap. Soc. Food Nutr. J. 11(3):123-125. 1958. 389.9 J27
English summary.
Study of vitamin A loss during storage after adding vitamin A by various methods.

965. GHADIMI, H., and PECORA, P. Free amino acids of different kinds of milk. Amer. J. Clin. Nutr. 13(2):75-81. Aug. 1963. 389.8 J824
Chem. Abstr. 59:10529h
Milk substitute made from soybeans included in studies.

966. GIDDEY, C. Protein meatlike food compositions. U. S. Pat. 2,952,542. Sept. 13, 1960.
Chem. Abstr. 55:1965c
To F. P. Research.

967. GLABE, E. F., and others. Uses of Gelsoy in prepared food products. Food Technol. 10(1):51-56. Jan. 1956. 389.8 F7398
Chem. Abstr. 50:12320c
Food Sci. Abstr. 28:1392
P. F. Goldman, P. W. Anderson, L. A. Finn, and A. K. Smith, joint authors.
Gelsoy, a bland-tasting, water-soluble proteinaceous product isolated from soybean meal, shows promise as a water-binding material in prepared meat products such as frankfurters, meat loaf, and canned meat.

968. HAFNER, F. H. Adapting soy protein products to food use. Cereal Sci. Today 9(5):163-164, 166. May 1964. 59.8 C333
Composition and properties. Suggests soy proteins for the following: sausage, meat patties, baby foods, white breads, sweet goods, pancake and waffle mixes, doughnut mixes, spice bases, food dips, barbecue sauces, cookies, beverage powders, brewery products, breakfast cereals, and numerous other food items.

969. HAYASHI, Y., and ARIYAMA, H. Effect of heat on the digestibility of soybean proteins. (Ja) Jap. Soc. Food Nutr. J. 10(3):134-137. 1957. 389.9 J27

English summary.

Shows the influence of heat on the liberation of methionine, cystine, and lysine.

970. HAYASHI, Y., and ARIYAMA, H. Studies on pulses used as food in Japan. Tohoku J. Agr. Res. 11 (2):171-185. July 1960. 22.5 T574

Chem. Abstr. 55:841c

In English.

Influence of heat treatment on nutritive value of soy protein.

971. HINO, T., and others. Preparation of seasonings by the hydrolysis of proteins. IV-V. Agr. Chem. Soc. Jap. J. 36(1):82-91. 1962. 385 Ag8

Chem. Abstr. 61:4873h

T. Tsunoda, T. Tsuchiya, K. Narui, M. Tsuchiya, A. Usui, A. Kimizuka, K. Ito, T. Takenishi, and T. Ogasawara, joint authors.

972. HINO, T., and others. Preparation of seasonings by the hydrolysis of proteins. VI. (Ja) Agr. Chem. Soc. Jap. J. 36(2):120-123. 1962. 385 Ag8

Chem. Abstr. 61:4873d

A. Kimizuka, K. Ito, T. Takenishi, and T. Ogasawara, joint authors.

Neutral C5 carbonyl compounds in the hydrochloric acid hydrolysate of soybean meal.

973. HINO, T., and others. Studies on the amino acids of soy sauce and other seasoning liquids. (Ja) Agr. Chem. Soc. Jap. J. 34(1):22-27. Ref. 1960. 385 Ag8

Chem. Abstr. 54:23173b

K. Ito, K. Hayashi, and N. Abe, joint authors.

974. HORECNY, K. Utilization of qualitatively different proteins in the nutrition of babies. Bratisl. Lek. Listy Ser. I. 43:423-430. Ref. 1963. Nat. Libr. Med.

Chem. Abstr. 59:5561c

English summary.

Soy protein diet compared with milk and meat protein diet.

975. HOWARD, H. W., and others. The nutritive value of bread flour proteins as affected by practical supplementation with lactalbumin, nonfat dry milk solids, soybean proteins, wheat gluten and lysine. J. Nutr. 64(1):151-165. Jan. 10, 1958. 389.8 J82

W. J. Monson, C. D. Bauer, and R. J. Block, joint authors.

Human-nutrition research.

976. INOUE, Y. A stable vitamin containing dried tofu (soybean cheese). Jap. Pat. 2482. May 6, 1954.

Chem. Abstr. 49:1990c

977. JOHNSON, D. W., and CIRCLE, S. J. Multipurpose quality protein offers "plus" factors. Food Process. 20(3):37-38. Mar. 1959. 389.8 F7325

Soybean utilization. Isolated soybean protein containing 92 percent protein, free of undesirable flavor characteristics and no undigestable carbohydrates.

Also a list of products in which promine may be used.

978. KAMADA, H., and SAKURAI, Y. On the discoloration of shoyu (usukuchi) in the stored conditions. (Ja) Tokyo. Food Res. Inst. Rep. 9:115-119. Apr. 1954. 389.9 T57

Chem. Abstr. 53:10653i

979. KASTELL, A. Significance and estimation of urease activity of coarse soybeans. Bodenkultur 12(1): 79-85. Mar. 1961. 19 B635

Chem. Abstr. 58:876f

English summary.

Urease activity of raw and roasted soybean meal.

980. KATO, S. Freezing as applied to the process of drying soya-bean curd. (Sum.) Int. Inst. Refrig. Bull. 39(3):878. 1959. 295.9 In7

Kogori-tofu is a molded protein curd obtained by freezing, defrosting, and final drying.

981. KISHI, T., and IWABUCHI. Coloring of glutinous food. Jap. Pat. 3028. May 5, 1955.

Chem. Abstr. 51:13263b

To Imperial Food Company.

This colored protein flour could also be produced with soybean meal.

982. KITA, D. A. Glutamic acid. U. S. Pat. 2,789,939. Apr. 23, 1957.

Chem. Abstr. 51:10002c

To Pfizer (C.) & Company.

Good yields of d-glutamic acid obtained as a flavor enhancer of meat products. Soybeans meal used.

983. KJELSON, N. A. Foods from protein fibers. Belg. Pat. 634,140. Nov. 4, 1963.

Chem. Abstr. 61:3626a

To General Mills.

Foods of the type called ground or minced synthetic meat made by spinning filaments from dispersions of edible proteins.

984. KOWARSKY, I. Hardening proteins and the hardening solution. U. S. Pat. 2,722,484. Nov. 1, 1955.
Chem. Abstr. 50:3000b
Method can be applied to manufacture of soy protein.

985. KREHL, W. A., and SNYDER, B. Dietary supplement. U. S. Pat. 2,860,051. Nov. 11, 1958.
Chem. Abstr. 53:4605c
To H. B. Bishop.
Dietary supplement high in protein and calcium.

986. KRISHMAMURTHY, K., and others. The nutritive value of composite protein foods based on blends of groundnuts, soyabean, Bengal gram, and sesame flours. Ann. Biochem. Exp. Med. 19(6):139-146. June, 1959. 448.8 An73
T. N. Ramakrishnan, S. Ganapathy, R. Rajagopalan, M. Swaminathan, A. N. Sankaran, and V. Subrahmanyan, joint authors.

987. KRISHNAMURTHY, K., and others. Studies on the nutritive value of composite protein foods based on blends of groundnut, soyabean and sesame flours. Food Sci. 9(3):86-88. Mar. 1960. 389.9 M99
T. N. Ramakrishnan, R. Rajagopalan, M. Swaminathan, and V. Subrahmanyan, joint authors.
Chem. Abstr. 54:21363d
Overall nutritive value of the protein foods compared with skim milk powder determined by the rat growth method.

988. KRISHNAMURTHY, K., and others. Studies on the nutritive value of protein foods based on blends of groundnut, soyabean, bengal gram (Cicer arietinum) and sesame flours. Food Sci. 8(11):388-389. Nov. 1959. 389.9 M99
S. N. Ganapathy, R. Rajagopalan, M. Swaminathan, and V. Subrahmanyan, joint authors.
Food for combating protein malnutrition.

989. KURAMOTO, S., WESTEEN, R. W., and KEEN, J. L. Meat substitute. Belg. Pat. 635,727. Nov. 29, 1963.
Chem. Abstr. 61:15272d
To General Mills, Incorporated.
Use of soybean proteins.

990. KYD, G. H. Edible soy-protein fibers promise new family of foods. Food Process. 24(5):123, 126, 138. May 1963. 389.8 F7325
Products amazingly like meat such as the ham-like product shown and the chicken-like product shown in this article can be fabricated from protein fibers of soybeans.

991. LENNON, E. J., LEHMANN, J., and RELMAN, A. S. The effects of phosphoproteins on acid balance in normal subjects. J. Clin. Invest. 41(3):637-645. Mar. 1962. Libr. Cong.
Chem. Abstr. 57:5089i
Large supplements of purified soy phosphoprotein and of beefsteak were fed to normal subjects and the effects on acid balance compared.

992. MIYAZAKI, M., and TOKUDA, T. Seasoned meat. Jap. Pat. 15,422. Oct. 15, 1960.
Chem. Abstr. 55:11701b

993. MOTOSAKI, S., and others. Iron-free amino acid solution for flavoring purposes. Jap. Pat. 4387. May 9, 1959.
Chem. Abstr. 53:20618b
To Ajinomoto Company.
T. Ogasahara, K. Ito, S. Adachi, joint authors.

994. MOTOSAKI, S., and others. Seasoning solution. Jap. Pat. 15,835. Oct. 21, 1960.
Chem. Abstr. 55:10742h
T. Ogasawara, J. Kawai, T. Hino, and K. Ito, joint inventors.
To Ajinomoto Company.

995. NAGAHARA, T., and SUGIMURA, K. Microbiological assay of soybean amino acids. (Ja) J. Jap. Soc. Food Nutr. 6(6):275. 1954. 389.9 J27
Chem. Abstr. 52:20750b

996. RACKIS, J. J., and others. Feeding studies on soybeans. Growth and pancreatic hypertrophy in rats fed soybean meal fractions. Cereal Chem. 40(5):531-538. Sept. 1963. 59.8 C33
A. K. Smith, A. M. Nash, D. J. Robbins, and A. N. Booth, joint authors.
Chem. Abstr. 60:2106c
Weight gains, protein efficiencies and pancreas weights were determined for rats fed raw or toasted soybean meal and other proteins.

997. RACKIS, J. J. Protein efficiency studies on soybean meal and its fractions. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:110-119. Ref. 1962. A389.9 C76

998. REGISTER, U. D., and PETERSON, E. W. The influence of carbohydrate on the utilization of rations

containing soybean alpha protein. J. Nutr. 64(3):483-491. Mar. 10, 1958. 389.8 J82
Human-nutrition research with rats.

999. RUTKOWSKI, A. Influence of rancidity on the keeping quality of canned soups. (Ge) Olii Miner. Grassi Saponi, Colori Vernici 34(7):333-336. July 1957. 307.8 OL3
Chem. Abstr. 51:18381f
English summary.
The addition of soymeal (anti-oxidant) increased the keeping quality of soup.

1000. SAKURAI, Y., and others. Effect of soybean defattening process on the protein denaturation of soybean. Rep. Food Res. Inst. (Tokyo) 2:73-76. Aug. 1949. 389.9 T57
Chem. Abstr. 49:16257e
English summary.
T. Watanabe, I. Yokozawa, and U. Koizumi, joint authors.

1001. SHARON, N. Recent research on soy proteins. Israel. Res. Counc. Bull. 9C(3):158-162. Apr. 1961. 330.9 Is72B
Wide scope exists for study of chemical modification of soy protein aimed at improving their nutritional qualities.

1002. SMITH, A. K., and WOLF, W. J. Food uses and properties of soybean protein. I-II. Food Technol. 15(5):4-6, 8, 10, 12-13, 16, 18, 21, 23, 26, 28, 31, 33. Ref. May 1961. 389.8 F7398
Food uses and physical and chemical properties of soybean protein.

1003. SMITH, A. K., HESSELTINE, C. W., and SHIBASAKI, K. Miso. U. S. Pat. 2,967,108. Jan. 3, 1961.
Chem. Abstr. 55:9718h
To U. S. Dept. of Agriculture.

1004. SMITH, A. K. Theories on improving the nutritional value of soybean meal. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:101-109. Ref. 1962. A389.9 C76

1005. TASKER, P. K., and others. The chemical composition and shelf-life of a protein food based on a blend of soyabean, groundnut and coconut flours. Food Sci. (Mysore) 12(6):173-175. June 1963. 389.9 M99
Chem. Abstr. 60:8547d
M. Narayana Rao, M. Swaminathan, A. Sreenivasan, and V. Subrahmanyan, joint authors.
The protein food prepared has shelf-life of 9 months.

1006. U. S. AGRICULTURAL RESEARCH SERV. Edible soybean protein products, a list of publications and patents for 1962 of the Northern Utilization Research and Development Division, Peoria, Illinois. U. S. Agr. Res. Serv. ARS-71-26-1, 2 p. Jan. 1963. A381 R31Ac

1007. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Edible soybean protein products; a list of publications and patents, 1936-1961, Northern Regional Research Laboratory. U S Agr. Res. Serv. ARS-71-26, 9 p. Dec. 1962. A381 R31Ac

1008. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Edible soybean protein products; a list of publications for 1964. U. S. Agr. Res. Serv. ARS-71-26-3, 2 p. Feb. 1965. A381 R31Ac

1009. VAN HEES G. m. b. H. Treatment of fish. Ger. Pat. 853,245. Sept. 6, 1956.
Chem. Abstr. 52:13140a
Soybean flour used as extender.

1010. VAUGHAN, O. W., FILER, L. J , CHURELLA, H. The effect of carrageenin on the peptic hydrolysis of various proteins. J Agr. Food Chem. 10(6):517-519. Nov./Dec. 1962. 381 J8223
Chem. Abstr. 58:3823f
Soybean protein included in the study.

1011. WATANABE, T., and others. Studies on the changes of the properties of soybean protein by freezing. I-II. (Ja) J. Food Sci. Technol. 10(5):163-169. May 1963. 388 J822
O. Nakayama, N. Iwasaki, C. Fukamachi, and K. Abe, joint authors.

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General

1012. AKTIESELSKABET GRINDSTEDVAERKET. Phosphatized hydroxy fatty acids and their esters preparing emulsions and dispersions. Brit. Pat. 829,050. Feb. 24, 1960.
Chem. Abstr. 54:17924b
Emulsions for bakery goods using soybean oil.

1013. ALFIN-SLATER, R. B., and others. The effect of plant sterols on cholesterol levels in the rat. Circulation Res. 2(5):471-475. Ref. Sept. 1954. Libr. Cong.
Chem. Abstr. 49:3340f
A. F. Wells, L. Aftergood, D. Melnick, and H. J. Deuel, joint authors.
Lower plasma cholesterol levels were not noted when plant sterols and cholesterol were fed at the same time.

1014. ALFIN-SLATER, R. B., AUERBACH, S., and AFTERGOOD, L. Nutritional evaluation of some heated oils. Amer. Oil Chem. Soc. J. 36(12):638-641. Dec. 1959. 307.8 J82
Chem. Abstr. 54:3778c
Including soybean oil.

1015. ALLEN, R. R., BELL, R. J., and DONOHUE, R. B. Shortening and shortening additive. U. S. Pat. 3,097,098. July 9, 1963.
Chem. Abstr. 59:6914b
To Anderson, Clayton, and Company.

1016. ALMEDA, A. F. Preparing a total oil extract of carotene-containing plants. Span. Pat. 243,370. July 30, 1958.
Chem. Abstr. 54:11520h
Vegetable oil extracts prepared to replace milk fat.

1017. ANDRE, E. Food product from oil-extracted, protein-type flours. Fr. Pat. 1,228,259. Aug. 29, 1960.
Chem. Abstr. 55:16852h

1018. ANDREWS, J. S., MEAD, J. F., and GRIFFITH, W. H. Toxicity of lipide peroxides in the rat. Federation Amer. Soc. Exp. Biol. Federation Proc. 15 (3):918-920. Sept. 1956. 442.9 F31P
Chem. Abstr. 51:1491h
Growth of rats retarded by feeding various amount of oxidized soybean oil.

1019. ARFFMANN, E. Heated fats and allied compounds as carcinogens; studied by the newt test. Acta Pathol. Microbiol. Scand. 61(2):161-180. Ref. 1964. 448.3 Ac8
Soybean oil.

1020. ARMOUR & CO. Shortening. Brit. Pat. 924,249. Oct. 6, 1960.
Chem. Abstr. 59:2109c

1021. BECKER, E., and ROST, H. E. Investigations of frying fats. Fette, Seifen, Anstrichmittel 66(2):123-132. Ref. Feb. 1964. 384 C422
Chem. Abstr. 61:1178h

1022. BECKET, T. Shortenings for biscuits. Food Trade Rev. 26(3):3-6, 32. Mar. 1956. 389.8 F7334
Food Sci. Abstr. 29:1518
Discusses the neutralizing, bleaching, deodorizing, and hydrogenation of shortenings.

1023. BEELER, D. A., and QUACKENBUSH, F. W. Effects of linoleate and dietary fat level on plasma and liver cholesterol and vascular lesions of the cholesterol-fed rat. J. Nutr. 79(3):360-364. Ref. Mar. 1963. 389.8 J82
Chem. Abstr. 60:5953e
Soybean oil gave partial protection against lesion formation.

1024. BHALERAO, V. R., JOHNSON, O. C., and KUMMEROW, F. A. Effect of thermal oxidative polymerization on the growth-promoting value of some fractions of butterfat. J. Dairy Sci. 42(6):1057-1062. Ref. June 1959. 44.8 J822
Chem. Abstr. 53:20603h
The acetone-insoluble fraction of butterfat seemed to contain a specific triglyceride which counteracted the growth-depressing effect of thermally polymerized corn or hydrogenated soybean oil.

1025. BURKE, K. A., MCCANDLESS, R. F. J., and KRITCHEVSKY, D. Effect of soybean sterols on liver deposition of cholesterol-C14. Soc. Exp. Biol. Med. Proc. 87(1):87-88. Oct. 1954. 442.9 Sol
Chem. Abstr. 1892i
Recoveries of labeled cholesterol in liver were 6.61 percent in a cholesterol-fed group and 1.80 percent in a cholesterol fed group.

1026. COCHRAN, W. M., and others. Domestic oil hard butters and their edible coatings. U. S. Pat. 2,972,541. Feb. 21, 1961.
Chem. Abstr. 55:11700g
M. L. Ott, B. R. Wonsiewicz, and T. J. Zwolanek, joint inventors.
To Glidden Company.

1027. COCHRAN, W. M., and MCGEE, R. F. Hard butter. U. S. Pat. 2,726,158. Dec. 6, 1955.
Chem. Abstr. 50:5944h
To Glidden Company.

1028. COMMERCIAL HENKEL, S. A. Cocoa-butter substitute. Sp. Pat. 226,999. Apr. 4, 1956.

Chem. Abstr. 51:4598c
Soybean oil used as substitute.

1029. DAVIS, P. F., and IVESON, H. T. Water-dispersible alcohol-soluble phosphatide compositions. U. S. Pat. 2,910,362. Oct. 27, 1959.
Chem. Abstr. 54:4964b
To Glidden Company.

1030. DUIN, H. J., and SCHAAP, J. A. Edible oil-in-water emulsions. U. S. Pat. 2,919,197. Dec. 29, 1959.
Chem. Abstr. 54:16690i
To Lever Brothers Company.

1031. EIKERMANN, H., and BETZING, H. Edible oils containing phosphatides. Ger. Pat. 1,173,778. July 9, 1962.
Chem. Abstr. 61:13810g
To Nattermann (A.) & Cie.

1032. ENDO, N. Mayonnaise-like product. Jap. Pat. 12725. July 19, 1963.
Chem. Abstr. 60:6144d

1033. FARBAK, J. E., and KASMEN, E. J. Yeast plasticizer. U. S. Pat. 2,830,906. Apr. 15, 1958.
Chem. Abstr. 52:12316a
Bleached soybean oil added to yeast to prevent crumbling.
To Swift & Company.

1034. FEDERAL REGISTER. Food additives. As contained in Federal Register July 2, 1963. 28 F. R. 6783. Li.451
Chem. Abstr. 59:5685f
Polyglycerol esters of fatty acids from soybean oil.

1035. FEDERAL REGISTER. Food additives permitted in food for human consumption. As contained in Federal Register June 28, 1961, 28 F. R. 6679. L1.451
Chem. Abstr. 59:5685b
Soybean oil fatty acids used as defoaming agents.

1036. FEDERAL REGISTER. Oxystearin. As contained in Federal Register May 19, 1961, 26 F. R. 4359-4360. L1.451
Chem. Abstr. 55:14741c
Crystallization inhibitor in soybean cooking and salad oils.

1037. GADDIS, A. M., ELLIS, R., and CURRIE, G. T. Carbonyls in oxidizing fat. V. Amer. Oil Chem. Soc. J. 38(7):371-375. Ref. July 1961. 307.8 J82
Chem. Abstr. 55:27688i
Steam volatile monocarbonyl compounds in mildly autoxidized esters of oleic, linoleic, linolenic acids, and animal and vegetable fats were quantitatively estimated. Soybean oil included.

1038. GOLDMAN, M. L., BURTON, T. H., and RAYMAN, M. M. Use of finely emulsified fats for the determination of lipase activity. Food Res. 19(5): 50c-514. Ref. Sept./Oct. 1954. Ref. 389.8 F7322
Food Sci. Abstr. 27:738
Soy phospholipid used as emulsifying agent.

1039. GOODING, C. M. Plastic margarine. U. S. Pat. 2,814,633. Nov. 26, 1957.
Chem. Abstr. 52:3198f
Margarine of improved spreadability produced from soybean oil.
To Best Foods.

1040. HANSON, F. F. Baking grease. U. Pat. 2,758,928. Aug. 14, 1956.
Chem. Abstr. 50:17251d
Vegetable oils processed to prevent baked dough products from sticking to baking utensils. Soybean oil very satisfactory.

1041. HERALD, C. T., and PATTON, S. The effect on flavor of using substitute fats in dry whole milk. J. Dairy Sci. 38(6):640-644. June 1955. 44.8 J822
Studies to improve human acceptability of dry milk, using soybean oil and other fats as butter-fat substitutes.

1042. HERNANDEZ, H. H., and CHAIKOFF, I. L. Do soybean sterols interfere with absorption of cholesterol? Soc. Exp. Biol. Med. Proc. 87(3):541-544. Ref. Dec. 1954. 442.9 Sol
Chem. Abstr. 49:4102d
Administered soy sterols depress cholesterol absorption when as little as 4 mg. or as much as 100 mg. of cholesterol were fed.

1043. HERTING, D. C., and DRURY, E. E. Vitamin E content of vegetable oils and fats. J. Nutr. 81(4): 335-342. Ref. Dec. 1963. 389.8 J82
Treatment of hypercholesterolemia by increasing intake of polyunsaturated fatty acids.

1044. HORLICK, L. Studies on the regulation of serum-cholesterol levels in man. Lab. Invest. 8(3): 723-735. Ref. May-June 1959. 448.8 L11
Chem. Abstr. 55:10615a

The effects of corn oil, ethyl stearate, hydrogenated soybean oil, and nicotinic acid when added to a very low-fat basal diet.

1045. HOUSER, C. J. Liquid shortening. U. S. Pat. 2,968,562. Jan. 17, 1961.
Chem. Abstr. 55:7697e
To National Dairy Products Corporation.

1046. IVY, A. C., LIN, T. M., and KARVINEN, E. Absorption of dihydrocholesterol and soya sterols by the rat intestine. Amer. J. Physiol. 183(1):79-85. Ref. Oct. 1955. 447.8 Am3
Chem. Abstr. 50:2808f
Dihydrocholesterol and soya sterols decrease the absorption of cholesterol by competing for the total capacity of the sterol absorptive mechanism.

1047. KAJIMOTO, G., KAMO, K. Influence of rancid oil on cooking. 24. Influence of food constituents on the rancidity of oil. Eiyo To Shokuryo (J. Jap. Soc. Food Nutr.) 16(6):510-515. 1964. 389.9 J27
Chem. Abstr. 61:15264h

1048. KATZ, J. R. Base materials for frozen desserts. U. S. Pat. 2,658,831. Nov. 10, 1953.
Chem. Abstr. 49:4205a
Soybean oil included.

1049. KIKUCHI, T., and others. Polarographic studies on the rancid oil. Tokyo, Japan. Coll. Fish J. 42(1): 39-63. Feb. 1956. 414.9 T57
Chem. Abstr. 52:21171i
I. Okada, I. Osakabe, and K. Fukushima, joint authors.
Soybean oil included in the study.

1050. KING, J. S., CLARKSON, T. B., and WARNOCK, N. H. The hypocholesterolizing effects of drugs fed singly and in combination on cholesterol fed cockerels. Circulation Res. 4(2):162-166. Mar. 1956. Libr. Cong.
Chem. Abstr. 50:9623i
The Gallogen-soybean sterol combination is most effective.

1051. KOTSUBO, M., and UEYANAGI, F. Study on the changes of fried oil by cooking (Part 2): Acid value, iodion value, specific gravity and viscosity. (Ja) J. Home Econ. (Japan) 6(1):5-8. 1955. Libr. Cong.
Chem. Abstr. 50:14995a
Table of contents in English.

1052. KREGLOW, A. F. Control of serum cholesterol by experimental diets. J. Amer. Geriat. Soc. 6(2): 134-139. Feb. 1958. Libr. Cong.
Chem. Abstr. 52:9345a
Diet containing soybean oil reduced serum cholesterol by 25 percent.

1053. KUHRT, N. H., and BROXHOLM, R. A. Bakery products prepared with mixed partial ester compositions. U. S. Pat. 3,034,897. May 15, 1962.
Chem. Abstr. 57:5078c
To Eastman Kodak Company.

1054. KURODA, C. Powdered preparation to be used for mayonnaise. Jap. Pat. 2889. Apr. 11, 1961.
Chem. Abstr. 56:12051c
Soybean lecithin used.

1055. LESESNE, J. M., CASTOR, C. W., HOOBLER, S. W. Prolonged reduction in human blood cholesterol levels induced by plant sterols. Univ. Mich. Med. Bull. 21:13-17. 1955. Natl. Libr. Med.
Chem. Abstr. 49:4847d
Soy sterols reduced serum cholesterol with no ill effects.

1056. LEWIS, L. A., PAGE, I. H., and BROWN, H. B. Effect of exercise on serum and hepatic lipids in rats fed high fat diets. Amer. J. Physiol. 201(1):4-8. Ref. July 1961. 447.8 Am3
Chem. Abstr. 55:26162h
Cholesterol concentrations normal in those rats fed soybean oil diets.

1057. MELNICK, D., and GOODING, C. M. Frying oils. U. S. Pat. 2,874,055. Feb. 17, 1959.
Chem. Abstr. 53:8474h
To Best Foods.

1058. MELNICK, D., and GOODING, C. M. A highly nutritional margarine. U. S. Pat. 2,921,855. Jan. 19, 1960.
Chem. Abstr. 54:7928c
To Corn Products Company.

1059. MELNICK, D., and AKERBOOM, J. Nonpourable soybean-oil dressings. U. S. Pat. 2,983,618. May 9, 1961.
Chem. Abstr. 55:16854c
To Corn Products Company.

1060. MONTEOLIVA, M., and others. Comparative study of frying in different culinary fats. 1. Anal.

Bromatol. 15(3):255-340. Ref. 1963. 389.8 Anl
Chem. Abstr. 60:13796e
English summary.
O. Moreiras-Varela, F. Sanchez Rasero, J. Thomas, M. Truyols, and G. Varela, joint authors.
A study of soybean oil when used for frying potatoes. Study includes penetration of the oil into the food.

1061. MORI, T., and NINOMIYA, T. Elimination of growth-inhibiting substances from acid or alkaline hydrolyzates of crude gluten. Jap. Pat. 5289. July 29, 1955.
Chem. Abstr. 51:15835i
To Ajinomoto Company.

1062. NAGAMINE, S., and others. Effect of a fat diet on the efficiency of work: effect of vegetable oil. Tokyo, Jap. Nat. Inst. Nutr. Annu. Rep. 1957:3-5. 389.9 T573
Chem. Abstr. 52:14774d
T. Kuga, S. Kamada, K. Yamakawa, S. Oshima, and S. Oshima, joint authors.
During soybean diet acetone bodies increasing in urine.

1063. NAKAOKA, N., and others. Water-in-oil-type shortening. Jap. Pat. 8886. Oct. 2, 1959.
Chem. Abstr. 54:6999h
S. Mitsunnaga, S. Arai, T. Shimada, J. Kawai, M. Umezawa, joint inventors.
To Nippon Fats & Oil Company.

1064. NEUSTADT, M. H. Rapid testing of oilseeds for oil quantity and iodine number of oil. U. S. D. A. Tech. Bull. 1171, 26 p. Oct. 1957. 1 Ag84Te
Chem. Abstr. 52:5857f
Reviews the older analytical methods, and proposes new methods for the rapid determination of oil quantity and quality, a very important aspect of soybean oil utilization in edible products such as margarine, as well as in products like paint.

1065. OFELT, C. W., and others. Effect on crumb firmness. I-II. Cereal Chem. 35(2):137-145. Mar. 1958. 59.8 C33
Chem. Abstr. 52:9463h, 52:9464a
M. M. MacMasters, E. B. Lancaster, F. R. Senti, C. L. Mehltretter and F. H. Otey, joint authors.
Mono- and diglycerides and the action of additives in relation to their chemical structure.

1066. OSMAN, E. M., and DIX, M. R. Effects of fats and nonionic surface-active agents on starch pastes. Cereal Chem. 37(4):464-475. Ref. July 1960. 59.8 C33
Chem. Abstr. 55:1040c
Soybean oil included.

1067. PATTEN, L. E., and KELLY, H. C. Food coating compositions from vinyl chloride polymers. U. S. Pat. 2,840,475. June 24, 1958.
Chem. Abstr. 52:20767h
To Dow Chemical Company.

1068. PERKINS, E. G. Nutritional and chemical changes occurring in heated fats. Food Tech. 14(10): 508-514. Ref. Oct. 1960. 389.8 F7398
A review with 111 references. Periodical articles only but no patents.

1069. PETERS, V., BURGDORF, M., and LIESSEM, B. Stabilization of aliphatic sulfonic acid esters of phenols. Ger. Pat. 1,131,225.
Chem. Abstr. 58:1403g
To Farbenfabriken Bayer, A. G.

1070. PETERSEN, N. Which vegetable oil is best for cheese rind? (Ge) Osterreichische Milchwirtsch. 13(3): 39-40. Feb. 7, 1958. 44.8 Os72
Chem. Abstr. 52:10452h
Soybean oil was not satisfactory.

1071. RAMOS, F. Byproducts of soybean oil and their utilization (theoretical and practical study). (Sp) Grasas Aceites 14(4):171-181. July/Aug. 1963. 307.8 G76
English summary.

1072. REPORTER, M. C., and HARRIS, R. S. Effects of oxidized soybean oil on the vitamin A nutrition of the rat. Amer. Oil Chem. Soc. J. 38(1):47-51. Jan. 1961. 307.8 J82
Chem. Abstr. 55:6630i
Severely oxidized oil may destroy vitamin A in the tissue of the rat.

1073. RICE, E. E., and others. A nutritive evaluation of over-heated fats. Amer. Oil Chem. Soc. J. 37(11): 607-613. Ref. Nov. 1960. 307.8 J82
Chem. Abstr. 55:4011c
C. E. Poling, P. E. Mone, and W. D. Warner, joint authors.
Study shows that nutritional value of fats is not damaged by present-day food preparation. Soybean oil included in the study.

1074. SACHS, B. A. Effect of soybean phosphatides on serum lipids and lipoproteins. Amer. J. Clin. Nutr. 8(3):337-339. June 1960. 389.8 J824
Effect of soybean lecithin fractions on serum cholesterol levels in human patients.

1075. SCHOLFIELD. C. R., and DUTTON, H. J. Extraction of sugars from phosphatides. U. S. Pat. 2,727,046. Dec. 13, 1955.
Chem. Abstr. 51:12526a
To U. S. Dept. of Agriculture.

1076. SEDLACEK, B. Rancidity of fats by ultraviolet spectrophotometric and other methods. (Ge) Nahrung 8(2):176-187. 1964. 389.8 N142
Chem. Abstr. 60:16418c
English summary.

1077. SEDLACEK, B. A. J. Influence of ionizing radiation on fats. (Ge) Nahrung 2(6):547-556. 1958. Libr. Cong.
Chem. Abstr. 53:7453f
Peroxide number of soybean oil exposed to rays increased faster as exposure increased.

1078. SEDLACEK, B. A. J. Mechanism of the spectrophotometric method for the determination of the degree of rancidity of fats by means of diphenylcarbazide. (Ge) Nahrung 5(6):637-645. Ref. 1961. Libr. Cong.
Chem. Abstr. 56:15896e
English summary.

1079. THOMPSON, S. W. Edible fats. Belg. Pat. 614,799. Sept. 7, 1962.
Chem. Abstr. 58:9567b
To Unilever.

1080. THOMPSON, S. W. Fatty alimentary substances in the beta-crystalline phase. Belg. Pat. 615,898. Oct. 2, 1962.
Chem. Abstr. 58:6130f
To Unilever.

1081. TOLLENAAR, F. D., and VOS, H. J. Problems arising in connection with the use of antioxidants in the food industry. Amer. Oil Chem. Soc. J. 35(9): 448-455. Sept. 1958. 307.8 J82
Effectiveness of antioxidants in soybean oil included.

1082. TURPEINEN, O., and JOKIPII, S. G. Effects on serum cholesterol level of changes in dietary fat composition and of administration of vitamins, thyroid, and other substances. J. Atheroscler. Res. 1:307-316. Ref. 1961. Nat. Libr. Med.
Chem. Abstr. 56:14707a
Serum-cholesterol changes after replacement of milk fat of the house diet by soybean oil in the diet of institutionalized elderly females in Finland.

1083. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Edible soybean oil; a list of publications and patents, 1936-1961, Northern Regional Research Laboratory. U. S. Agr. Res. Serv. ARS-71-25, 15 p. Dec. 1962. A381 R31Ac

1084. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Edible soybean oil; a list of publications for 1962, of the Northern Utilization Research and Development Division, Peoria, Illinois. U. S. Agr. Res. Serv. ARS-71-25-1, 2 p. Jan. 1963. A381 R31Ac

1085. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Edible soybean oil; a list of publications and patents for 1964 of the Division. U. S. Agr. Res. Serv. ARS-71-25-3, 5 p. Feb. 1965. A381 R31Ac

1086. VAN GINKEL, J. G., and ROOS, J. B. The analysis of butter and cheese. In Boekenoogen, H. A. Analysis and characterization of oils, fats and fat products. P. 183-232. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1087. WILLIAMS, A. W., BECKMAN, R. H., and MOOK, D. E. Stabilizers for edible fats. U. S. Pat. 3,001,878. July 3, 1959.
Chem. Abstr. 56:3872e
To Borden Company.

1088. WOLFF, J. P. Application of spectrophotometry in ultraviolet light to the examination of the quality of fats in alimentary substances. Ann. Fals. Fraudes 50 (580):149-162. Apr. 1957. 389.8 An72
Chem. Abstr. 51:15828h
Coagulated tetraenes found in soy oil are described.

1089. WOOTTON, J. C. Anti-spattering dry shortening composition. U. S. Pat. 3,138,463. June 23, 1964.
Chem. Absfr. 61:6287d
To Proctor & Gamble Company.
Sorbitol used.

Margarine

1090. BROWN, L. C. Margarine production. Amer. Oil Chem. Soc. J. 33(10):506-512. Oct. 1956. 307.8 J82

Traces the development of margarine from its invention in France during the Franco-Prussian War of 1870 to the present, and describes the processes by which soybean oil, its principal ingredient, is refined and hydrogenated for use.

1091. FARNWORTH, V., and JACKSON, D. Use of soybean and cottonseed oil in margarine and shortening. Agr. Marketing 3(2):10. Feb. 1958. A280.38 Ag8

1092. GROS, A. T., and FEUGE, R. O. Consistency of fats plasticized with acetoglycerides. Amer. Oil Chem. Soc. J. 31(9):377-383. Ref. Sept. 1954. 307.8 J82

Food Sci. Abstr. 27:724

Chem. Abstr. 48:13241a

One possible use of acetylated oils is in the formation of a margarine-like spread having an exceptionally long plastic range.

1093. HERLOEW, A. Emulsifiers and dispersants for glycerides. Ger. Pat. 1,155,768. Oct. 17, 1963.

Chem. Abstr. 60:2260e

1094. KIRSCH, F. W., POTTS, J. D., and SAVOURNIN, W. J. Controlled hydrogenation of fats and oils. Belg. Pat. 630,383. Oct. 21, 1963.

Chem. Abstr. 60:13803f

To Air Products and Chemicals.

1095. LEMON, H. W., AVIS, P., and HAYNES, J. W. A wide-plastic range spread for the Canadian Armed Forces. Amer. Oil Chem. Soc. J. 36(2):45-49. Feb. 1959. 307.8 J82

A margarine with good spreadability in both extremes of heat and cold using hydrogenated soybean oil of a very low linolenic acid content.

1096. MELNICK, D., and GOODING, C. M. Margarine. Brit. Pat. 927,534. May 29, 1963.

Chem. Abstr. 59:4482h

To Corn Products Company.

1097. MERKER, D. R., BROWN, L. C., and WIEDERMANN, L. H. The relationship of polymorphism to the texture of margarine containing soybean and cottonseed oils. Amer. Oil Chem. Soc. J. 35(3): 130-133. Mar. 1958. 307.8 J82

Chem. Abstr. 52:8408c

Tendency for hydrogenated soybean oil to form beta crystals can be reduced or eliminated.

1098. PARDUN, H. Margarine with improved frying properties. Belg. Pat. 617,203. Nov. 5, 1962.

Chem. Abstr. 58:11900c

To Unilever.

1099. PARDUN, H. Process for the production of water-containing edible fats, similar to margarine with improved frying qualities. Ger. Pat. 1,167,637. Apr. 9, 1964.

Chem. Abstr. 61:2406f

To Unilever N. V.

1100. STRUBLE, C. H., and STEPHENS, R. E. Edible oil preparations. U. S. Pat. 2,787,550. Apr. 2, 1957.

Chem. Abstr. 51:9036e

To Miami Margarine Company.

1101. TURPEINEN, O., and others. Effect on serum-cholesterol level of replacement of dietary milk fat by soybean oil. Lancet 1960-I (7117):196-198. Jan. 23, 1960. 448.8 L22

Chem. Abstr. 54:11177i

P. Roine, M. Pekkarinen, M. J. Karvonen, Y. Rautanen, J. Runeberg, and P. Alivirta, joint authors.

Mean serum-cholesterol decreased significantly.

1102. WERLY, E. F. Refining of soybean oil. U. S. Pat. 2,746,867. May 22, 1956.

Chem. Abstr. 50:12349b

To Pillsbury Mills.

The product is a non-reverting light-colored, edible oil suitable for use in margarine, salad oils, etc.

1103. WODE, G. Analytical control of the degree of oxidation in fats. (Sw) TVF 29(4):141-150. 1958. Libr. Cong.

Chem. Abstr. 53:2645i

Deals with refining oils and fats and their use in the manufacture of margarine.

UTILIZATION OF BEANS IN FOOD

General

1104. ALBANESE, A. A., ed. Protein and amino acid nutrition. New York, Academic Press, 1959. 604 p. 386.2 AL13

Includes soybeans as a source of proteins and essen-

trial amino acids, and soybean supplement in infant nutrition.

1105. ALMEDA, A. F. Condensed milk of corrected composition. Span. Pat. 217,451. Jan. 12, 1954.
Chem. Abstr. 50:3673fg
Soybean used in condensed milk to reduce cholesterol.

1106. ALTSCHUL, A. M., ed. Processed plant protein foodstuffs. New York, Acad. Press. 1958. 955 p. Ref. 387.1 AL73

1107. ARUYAMA, K. Yogurt from soybean. Jap. Pat. 9262. July 25, 1962.
Chem. Abstr. 58:10666d

1108. BALIGA, B. R., and RAJAGOPALAN, R. Influence of vitamin B12 on the biological value of raw soyabean protein. (Abstr) Soc. Biol. Chem. India. Proc. 13:46. 1955. 385 So13P
Biological value of the raw soybean with added vitamin B12 was the same as that of the autoclaved soybean.

1109. BALIGA, B. R., and RAJAGOPALAN, R. Vitamin B12 and the nutritive value of heat treated soyabean. Indian J. Med. Res. 51(4):758-763. Ref. May 3, 1963. Nat. Libr. Med.
Chem. Abstr. 60:4522g
Vitamin B12 and aureomycin.

1110. BEABER, N. J., and OBEY, J. H. Organoleptically bland protein. U. S. Pat. 3,043,826. July 10, 1962.
Chem. Abstr. 58:7301e
To Short (J. R.) Milling Company.

1111. BENSON, W. L., and LAPIERRE, R. J. Anticaking powdered preparations. U. S. Pat. 2,970,056. Jan. 31, 1961.
Chem. Abstr. 55:9729d
To Merck & Company.

1112. BOURDON, D., and others. Measurement of the urease index of soybean cake. (Fr) Rev. des Ferment. et des Indus. Aliment. 16(3):75-78. Ref. 1961. 390.08 R32
J. Cotte, M. L. Gielfrich, and L. Kaszas, joint authors.
Chem. Abstr. 56:10648
Method for determination of urease indicative of insufficient heat treatment presented.

1113. BRAUNSDORF, K. Critique of soybean dough products. (Ge) Nahrung 4(10):913-922. 1960. Libr. Cong.
Chem. Abstr. 55:11693a
English summary.

1114. CHAMBERS, J. A. Soya as a foodstuff. Arkady Rev. 39(3):39-41. Sept. 1962. 389.9 Ar4
Special attention to soy sauce, tempeh and tofu.

1115. CHAMBERS, J. A. Soya in nutritional foods. Arkady Rev. 40(3):47-50. Sept. 1963. 389.8 Ar4
Soybeans which are high in protein and low in carbohydrates lend themselves to both speciality diets (slimming foods) and to food for those suffering from milk allergies, coeliac disease and phenyl ketonuria.

1116. CHEN, P. S., and CHEN, H. D. Soybeans for health, longevity, and economy. Ed. 2. South Lancaster, Mass., Chem. Elements, 1962. 242 p. Ref. 389 C42

1117. CHIU, W. L., and VAN DUYNE, F. O. Soybean curd: preparation, calcium content, and palatability. Ill. Res. 3(4):6-7. Fall 1961. 100 IL64
Soybean curd, or tofu, resembles Cottage cheese.

1118. CONFERENCE ON SOYBEAN PRODUCTS FOR PROTEIN IN HUMAN FOODS, PEORIA, 1961. Proceedings. Washington, U. S. Agr. Res. Serv., 1962. 242 p. Ref. A389.9 C76

1119. DALDERUP, L. M. Some data on an orientating study on the cariogenicity of biscuits containing casein and soya bean protein and the effect of addition of sodium fluoride. (Du) Voeding 20(10):388-401. Ref. Oct. 15, 1959. 389.8 V85
English summary.
Cariogenicity of the soybean biscuit not very high but ought not to be neglected.

1120. DISER, G. M. Soy flour and soy grits as protein supplements for cereal products. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:52-73. Ref. 1962. A389.9 C76

1121. EBINE, H., and others. On the manufacture of enriched miso. III-IV. (Ja) Tokyo. Food Res. Inst. Rep. 10:149-153, 155-160. Ref. Apr. 1955. 389.9 T57
H. Ito, M. Nakano, and M. Nakajima, joint authors.

1122. EBINE, H., and others. On soybean cake miso. (Ja) Tokyo. Food Res. Inst. Rep. 10:133-141. Apr. 1955. 389.9 T57
H. Ito, K. Koiso, and M. Nakano, joint authors.

1123. EBINE, H., KOISO, K., and NAKANO, M. Studies on the buffer action of miso. I. (Ja) Tokyo. Food Res. Inst. Rep. 10:143-147. Apr. 1955. 389.9 T57

1124. FARRER, K. T. H. The thermal destruction of vitamin B1 in foods. Advance. Food Res. 6:257-311. 1955. 389 M87
Including edible soybeans cooked as vegetables.

1125. FERRARI, C. G. Bread improvers. U. S. Pat. 2,978,331. Apr. 4, 1961.
Chem. Abstr. 55:14752a
To Short (J. R.) Milling Company.

1126. FERRARI, C. G. Bread improvers. U. S. Pat. 2,978,332. Apr. 4, 1961.
Chem. Abstr. 55:14752f
To Short (J. R.) Milling Company.

1127. FUJIKAWA, F., HITOSA, Y., and YAGI, Y. Antiseptics for foods. J. Pharm. Soc. Jap. 76(12): 1438-1942. Dec. 1956. 396.9 P49
Chem. Abstr. 51:5317h
Soy sauce can be used as the medium for mold prevention tests.

1128. FUJISAWA, S. Food product for brewing of soy sauce or fermented soybean paste. Jap. Pat. 4442. June 28, 1955.
Chem. Abstr. 51:13311a
Product can be used as a food or as an ingredient in the production of soy sauce.

1129. FUJISAWA, S. Food product for brewing of soy sauce or fermented soybean paste. Jap. Pat. 4443. June 28, 1955.
Chem. Abstr. 51:13311a
Soybeans mixed with fishmeal and fermented with yeast.

1130. FUKAMACHI, C., ABE, K., and WATANABE, T. Qualification of spray-dried soybean milk as the material of bagged tofu. (Ja) Tokyo. Food Res. Inst. Rep. 17:129-131. Mar. 1963. 389.9 T57
English summary.

1131. FUKUSHIMA, D. Modification of alcohol treatment of soybeans for fermented products. Jap. Pat. 6313. June 28, 1962.
Chem. Abstr. 58:11928g
To Noda Industrial Science Research Institute.

1132. GAGER, C. H. Fruit-containing cereal product. U. S. Pat. 2,694,642. Nov. 2, 1954.
Chem. Abstr. 49:2640g
Fruit retains its texture and flavor. Soy flour can be used.

1133. GYORGY, P. Protein-rich foods in calorie-protein malnutrition. Amer. J. Clin. Nutr. 14(1):7-12. Ref. Jan. 1964. 389.8 J824
Deals with the problems of evaluation. Soybeans are included.

1134. HAND, D. B., STEINKRAUS, K. H., and GAGE, M. H. A new soybean food: precooked dehydrated soybeans plus corn or rice. Rur. Missions 129: 4. Summer 1964. 281.28 Ag8
Adult protein food should have body, texture, and organoleptic qualities. The new food meets all these requirements.

1135. HESSELTINE, C. W., and others. Investigations of tempeh, an Indonesian food. Develop. Indus. Microbiol. 4:275-287. 1963. 448.3 D49
M. Smith, B. Bradle, and K. S. Djien, joint authors.
How to make and preserve tempeh and its chemical constituents.

1136. HESSELTINE, C. W. Research at Northern Regional Research Laboratory on fermented foods. Conf. Soybean Prod. Protein Human Foods. Proc. 1961: 74-82. 1962. A389.9 C76
Soybean products. Three fermented foods have been investigated: soya sauce, miso and tempeh.

1137. HIDA, S. Apparatus for the fermentation of soy sauce. Jap. Pat. 2496. May 6, 1954.
Chem. Abstr. 49:2026d
To Takeda Foods Company.

1138. HINO, T., and IWASHITA, S. Semichemical fermentation of soybean sauce. Jap. Pat. 3249. June 5, 1954.
Chem. Abstr. 49:7186a
To Ajinomoto Company.

1139. HIRAI, K. Antiseptics for foodstuff. 64. Studies on antiseptics of alkyl p-hydroxybenzoates for

foodstuff. (2). Antifungal action of alkyl p-hydroxybenzoates and their monohalogen derivatives against soy sauce. J. Pharm. Soc. Japan 77(12):1279-1282. Dec. 1957. 396.9 P49

Chem. Abstr. 52:4874h

Gives the chemical which showed the greatest antiseptic action against soy sauce.

1140. HORI, S., and others. Studies on the behavior of L-glutamic acid in shoyu. Part 1. Studies on the various types of L-glutamic acid and their formation mechanism in shoyu. J. Agr. Chem. Soc. Japan. 30 (9):519-523. Sept. 1956. 385 Ag8

Chem. Abstr. 51:5357a

T. Ogawa, R. Aoki, Y. Kondo, and Y. Ota, joint authors.

1141. HORN, M. J. Sources of error in microbiological determinations of amino acids on acid hydrolyzates. II.Apparent loss of amino acids in storage. Cereal Chem. 32(1):64-70. Jan. 1955. 59.8 C33

Chem. Abstr. 49:5703d

A. E. Blum, C. E. F. Gersdorff, and H. W. Warren, joint authors.

1142. HOWARD, H. W., and others. The effect of long time feeding of a soybean infant food diet to white rats. Ann. Allergy 14:166-171. Ref. Mar./Apr. 1956. 448.8 An72

R. J. Block, D. W. Anderson, and C. D. Bauer, joint authors.

Chem. Abstr. 51:2135d

1143. JOSEPH, K., and others. The supplementary value of certain processed protein foods based on blends of groundnut, soya-bean, sesame, chich-pea (Cicer arietinum) flours and skimmilk powder to a maize-tapioca diet. Brit. J. Nutr. 16(1):49-57. Ref. 1962. 389.8 B773

M. Narayanarao, M. Swaminathan, A. N. Sankaran, A. P. Jayaraj, and V. Subrahmanyan, joint authors.

Chem. Abstr. 57:2650d

Study of four processed protein foods on the growth of albino rats. The foods were blends which included soybean flour.

1144. KAGAYA, A., INABA, Y., and ABE, T. Effect of enriched soy upon riboflavin deficiency of children in a farm-village. (Ja) Vitamins [Nagoya] 13(1):52-57. 1957. 386.3 B54

English summary.

Soybeans improved the diet.

1145. KARPOVA, I. F., and KAZAKOV, E. V. Colloid chemical processes during storage of food products. (Rus) Min-Vo Vys. I. Sred. Spets. Obraz. SSSR. Pishchevaia Tekhnol. 1964(2):21-23. Libr. Congr.

Chem. Abstr. 61:9957d

1146. KATO, H., and SAKURAI, Y. Studies on browning mechanisms of soybean products. II. Agr. Chem. Soc. Jap. J. 36(2):131-137. 1962. 385 Ag8

Chem. Abstr. 61:8823g

Roles of 3-deoxyosones, hexoses and pentoses for the darkening of pasteurized soy sauce.

1147. KATO, H., and SAKURAI, Y. Studies on browning mechanisms of soybean products. III. Roles of 3-deoxyosones and furfurals for the darkening of pasteurized soy-sauce. (Ja) Agr. Chem. Soc. Japan. J. 37(7):423-425. 1963. 385 Ag8

1148. KATO, M., ICHIKAWA, M., and SHUZUI, K. Studies on improving the odour and taste of white wine. I. On the utilization of extracted soy-bean powder. (Ja) Tokyo. Sci. Res. Inst. Rep. 32(6):224-233. Nov. 1956. 513 T577B

Chem. Abstr. 52:648i

1149. KATSUI, G., and TAKATA, R. Studies on the preparation of miso, fortified with vitamin A. I. (Ja) Vitamins 7:229-232. Mar. 1954. 386.3 B54

Stability of vitamin A added to the ripened miso.

1150. KAWAMURA, A., AKABANE, K., and INAGAKI, F. Molecular size of protein degraded product in foodstuff studies by ion exchange. I. Colloidal state of miso. (Abstr) J. Sci. Food Agr. 10(12):ii-276. Dec. 1959. 382 So12

The degradation of soybean protein in miso.

1151. KAWASHIRO, I., and KONDO, T. Determination of trace amounts poisonous metals in foods. II. (Ja) Eisei Shikensho Hokoku (Bull. Nat. Inst. Hyg. Tokyo) 80:75. Sept. 1962. Libr. Congr.

Chem. Abstr. 61:9951g

Contents of arsenic, cadmium, copper, manganese and mercury, in rice, wheat flour and soybeans.

1152. KOMINATO, K. Taste constitutents from soy sauce cake. Jap. Pat. 9238. Oct. 17, 1958.

Chem. Abstr. 54:6026a

1153. KOYANAGI, T., and SATO, M. Studies on the enrichment of "miso". I. (Ja) Jap. Soc. Food Nutr.

J. 10(6):269-271. 1958. 389.9 J27
English summary.
Vitamin B12 and methionine contents of miso fortified with viscera solubles.

1154. KRISHNAMURTHY, K., and others. Effect of heat processing on the trypsin inhibitor and nutritive value of the proteins of soyabean. Ann. Biochem. Exp. Med. 18(5):153-156. Ref. 1958. 448.8 An73
P. K. Taskar, T. N. Ramakrishnan, R. Rajagopalan, M. Swaminathan, and V. Subrahmanyan, joint authors.
Chem. Abstr. 53:13443f
Also studies the influence of a higher initial moisture content which in combination with heat destroyed the inhibitor.

1155. KRUEGER, J. W., and ANDREWS, F. A. Fractionation of soybean hulls. U. S. Pat. 3,119,805. Jan. 28, 1964.
Chem. Abstr. 60:11295c
To Staley (A. E.) Manufacturing Company.

1156. KUNINAKA, A. Studies on the decomposition of nucleic acid by microorganisms. 2. On the ribonucleolytic enzyme system of Aspergillus oryzae employed in shoyu manufacture. (Ja) J. Agr. Chem. Soc. Jap. 29(1):52-57. Jan. 1955. 385 Ag8
Chem. Abstr. 50:6581h
Table of contents in English.
English summary.

1157. KWONG, E., BARNES, R. H., and FIALA, G. Intestinal absorption of nitrogen and methionine from processed soybeans, in the rat. J. Nutr. 77(3):312-316. July 1962. 389.8 J82
Chem. Abstr. 60:5948h
Study of influence of heating on digestion soybean diets.

1158. LASZTITY, R. Acidgrade of flour mixtures. (Hu) Elelmezesi Ipar 9(6):189-192. 1955. 290.9 M57
English summary.
Food Sci. Abstr. 29:1120.
An examination of albumin acidity and total residual alkalinity of wheat soy flour mixtures.

1159. LONGWORTH, F., and LEARMOUTH, E. M. Baking powder from soybean raw material with enzymic activity. Ger. Pat. 1,143,162. Feb. 7, 1963.
Chem. Abstr. 58:11899d
To British Soya Products.

1160. LUYKEN, R., and LUYKEN-KONING, F. M. W. The digestibility of boiled ground soybeans. Trop. Geog. Med. 12(4):359-362. Ref. Dec. 1960. 448.8 D65
Includes nutritive value.
Animal protein replaced by soybeans for four Javanese children.

1161. MATSUSHITA, A., and YAMADA, A. Studies on the free amino acid in the "miso" and the variation of their contents in the ripening periods. 2. (Ja) Jap. Soc. Food Nutr. J. 9(3):123-130. 1956. 389.9 J27

1162. MELO, M. DE L. The use of soybeans in infant nutrition. (Por) Minas Gerais. Dep. Prod. Veg. Bol. Agr. 8(7/8):41-46. July/Aug. 1959. 9.2 M663

1163. MINATO, A. Nutrient from fat-extracted and iodized soybeans containing various mineral complexes. Jap. Pat. 840. Feb. 13, 1958.
Chem. Abstr. 52:20768

1164. MORIZUI, M. Synthetic wine. Jap. Pat. 4438. June 28, 1955.
Chem. Abstr. 51:17091b
Defatted soybeans used.
To Scientific Research Institute.

1165. NAGAFUGE, E. Food products derived from the soybean. (Sp) Tierra [Mexico] 17(9):678. Sept. 1962. 8 T445

1166. NAGATA, A., and others. Beverages from oil-free soybean flakes. Ger. Pat. 1,160,717. Jan. 2, 1964.
Chem. Abstr. 61:6287h
H. Yamamoto, S. Terashima, T. Matsumoto, S. Onishi, and S. Konishi, joint inventors.
To Ajinomoto Company.

1167. NAKAMURA, S. Stability of ascorbic acid in soybean curd (tofu). (Ja) J. Food Sci. Technol. 10 (2):67-69. Ref. 1963. 388 J822

1168. NEILL, J., and PAGE, L. The effect of antioxidants on frozen ground pork. Food Technol. 10(7): 315-319. Ref. July 1956. 389.8 F7398
Chem. Abstr. 50:12327c
Food Sci. Abstr. 28:2147
Soybean flour inhibited peroxide development. Result rated badly on palatability. Ground pork treated with full-fat soybean flour.

1169. NIELSEN, K. Studies on the non-hydratable soybean phosphatides, translated by V. Bonde. Kobenhavn, Busck, 1956. 183 p. 60.3 N552
Afhandling-Danmarks Tekniske Hojskole, 1955.
Food Sci. Abstr. 28:2305
Soybean phosphatides extracted from American and Manchurian soybeans have been examined separately. Treats the problem of mucilaginous materials or gums.

1170. OHTA, T., EBINE, H., and NAKANO, M. Study on tempe. 1. On the property of tempe powder. Tokyo. Food Res. Inst. Rep. 18:67-69. Mar. 1964. 389.9 T57
English summary.
Tempe is a soybean product. A study of tempe powder made in Indonesia.

1171. OMATA, S., UENO, T., and NAKAGAWA, Y. On the color of soy sauce. 3. On the substances increasing colour intensity of soy sauce. (Ja) Agr. Chem. Soc. Jap. J. 29(2):165-168. Feb. 1955. 385 Ag8
Chem. Abstr. 52:8448g
English summary.

1172. ONISHI, H. Osmophilic yeasts. Advn. Food Res. 12:53-94. Ref. 1963. 389 M87
In soybean fermentation products.

1173. OTAKI, N. Food product from soybeans. Jap. Pat. 1535. Mar. 20, 1959.
Chem. Abstr. 53:19220b

1174. PIPPITT, R., NELSON, A. I., and STEINBERG, M. P. Use of de-hulled extracted soybean flakes as a ground meat extender. (Abstr) Food Technol. 9(5, sup.):18. May 1955. 389.8 F7398
Meat containing treated soybean flakes were preferred to the all-meat control item.

1175. RAO, G. R., and KADKOL, S. B. Water-extractable nitrogen in Indian pulses. Food Sci. 6(7):154-155. July 1957. 389.9 M99
Chem. Abstr. 52:10457a
Pulses prepared from Glycine Max were included.

1176. RAYMOND, C. A. Soybean products. U. S. Pat. 2,795,502. June 11, 1957.
Chem. Abstr. 51:12381a
Soybeans are improved in taste and odor for use in baked goods.

1177. SAKAMOTO, M., TAJIMA, O., and KOJIMA, Y. Studies for increasing the odour and test of artificial sake. IV. Artificial sake brewed by utilizing refined extracted soy-bean powder and taka-dieastase. (Ja) Tokyo. Sci. Res. Inst. J. 33(6):353-358. Nov. 1957. 513 T577B

1178. SARETT, H. P. Nutritional studies relating to development of soy containing foods. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:127-133. A389.9 C76
Soybean nutrition for infant formula products, precooked cereal for infants and for speciality foods.

1179. SCHADE, H. Nurupan-antioxidant and emulsifier for ice cream. Molk. Kaserei Z. 6(49):1758-1759. Dec. 1955. 44.8 M736
Chem. Abstr. 50:5186b
A soybean preparation stabilized the mix and caused better emulsification.

1180. SHIBASAKI, K., and HESSELTINE, C. W. Miso. I. Preparation of soybeans for fermentation. J. Biochem. Microbiol. Technol. Eng. 3(2):161-174. July 1961. 381 J8224
A study of a variety of soaking and cooking conditions in the preparation of soybeans for fermentation.

1181. SHIBASAKI, K., and HESSELTINE, C. W. Miso. II. Fermentation. In developments in Industrial microbiology. Society for industrial microbiology. Proc., 17th. v.2 p. 205-211. Aug. 28-Sept. 1, 1960. 338.3 D49
Relates the special problems of using American soybeans in the Japanese manufacture of miso.

1182. SHIBUYA, Y. Soy sauce from the mother liquor of glutamic acid. Jap. Pat. 6198. Sept. 27, 1954.
Chem. Abstr. 50:2118e

1183. SHIGENO, Y., and SOTOME, S. The biochemical study of chian toufu. I. (Ja) Utsunomiya Univ. Coll. Agr. Bull. 4(1):125-128. Dec. 1958. 107.6 Ut7B
English summary.

1184. SHORT (J. R.) MILLING Co. Edible protein material from soybeans. Brit. Pat. 919,550. Feb. 27, 1963.
Chem. Abstr. 58:11900e

1185. SHUZUI, K., and TAJIMA, O. A study for increasing the flavour of artificial sake. VII. On delectable components in artificial sake made from extracted soybean powder. 2. (Ja) Tokyo. Sci. Res. Inst. Rep. 34(2):152-161. Mar. 1958. 513 T577B

Chem. Abstr. 53:19290d
Title-page translated.

1186. SMITH, A. K., and others. Tempeh: nutritive value in relation to processing. Cereal Chem. 41(3): 173-181. Ref. May 1964. 59.8 C33
J. J. Rackis, C. W. Hesseltine, M. Smith, D. J. Robbins, and A. N. Booth, joint authors.
Chem. Abstr. 61:7434a
Soybean product. Various heating periods needed to destroy growth inhibitors according to size of particle.

1187. SMITH, A. K., WATANABE, T., and NASH, A. M. Tofu from Japanese and United States soybeans. Food Technol. 14(7):332-336. July 1960. 389.8 F7398
General average yield of tofu is the same from U. S. beans as from Japanese beans. The color and texture differed.

1188. STANDAL, B. R. Nutritional value of proteins of oriental soybean foods. J. Nutr. 81(3):279-285. Ref. Nov. 1963. 389.8 J82
Net protein utilization (NPU values) for edamame, tofu, soybean sprouts and natto were determined.

1189. STEINKRAUS, K. H., and others. Pilot plant studies on tempeh. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:83-92. 1962. A389.9 C76
D. B. Hand, J. P. Van Buren, and L. R. Hackler, joint authors.
Fermented soybean product.

1190. STEINKRAUS, K. H., and others. Research on soybean products of improved nutritional value. Farm Res. [N. Y. Sta.] 28(4):4-5. Dec. 1962. 100 N48A
D. B. Hand, L. R. Hackler, and J. P. Van Buren, joint authors.
For food. Soybean products including soymilk and tempeh.

1191. STEINKRAUS, K. H., and others. Studies on tempeh, an Indonesian fermented soybean food. Food Res. 25(6):777-788. Nov./Dec. 1960. 389.8 F7322
Chem. Abstr. 58:9559h
B. H. Yap, J. P. VanBuren, M. I. Provvidente, and D. B. Hand, joint authors.
A step by step description for making tempeh.

1192. SUBRAHMANYAN, V., LULLA, B. S., and JOHAR, D. S. Predigested protein-rich pastry product. Indian Pat. 64,226. June 17, 1959.
Chem. Abstr. 53:19218c
To Council of Scientific and Industrial Research.

1193. SUGIMURA, K. I., and others. Studies on amino acid contents of processed soybean. 3-4. (Ja) Jap. Soc. Food Nutr. J. 14(5):411-419. Ref. 1962. 389.9 J27
H. Taira, H. Ebisawa, and Y. Sakurai, joint authors.
English summary.
Eighteen kinds of amino acid of fermented soybean paste were observed.

1194. TAKIMOTO, S. Solution containing concentrated amino acids. Jap. Pat. 2887. Apr. 11, 1961.
Chem. Abstr. 56:12051a
To Marunaka Sake Manufacturing Company.

1195. TAMURA, T. Coagulation numbers of salts for soybean milk. J. Chem. Soc. Jap. 66(8):1224-1228. 1963. 385 J82
Chem. Abstr. 61:7615g

1196. TASKER, P. K., and others. The nutritive value of the proteins of a processed food based on a blend of full-fat soya flour, groundnut flour and coconut meal. Food Sci. (Mysore) 12(6):175-177. Ref. June 1963. 389.9 M99
Chem. Abstr. 60:7215h
H. N. Ananthaswamy, M. Narayana Rao , M. Swaminathan, A. N. Sankaran, A. Sreenivasan, and V. Subrahmanyan, joint authors.
Skim milk powder compared with soybean flour and other vegetable proteins.

1197. TASKER, P. K., and others. Supplementary value of a protein food based on a blend of soya, groundnut and coconut flours to a tapioca-rice diet. Food Sci. (Mysore) 12(6):178-181. Ref. June 1963. 389.9 M99
Chem. Abstr. 60:7215h
A. A. Joseph, H. N. Ananthaswamy , A. P. Jayaraj, K. Indiramma, M. Narayana Rao, M. Swaminathan, A. Sreenivasan, and V. Subrahmanyan, joint authors.
Addition of soybean flour improved the growth of rats.

1198. TOYAMA, N., and KAMATA, M. An improvement on the Japanese soy brewing. (Ja) Miyazaki. Univ. Fac. Agr. Bull. 3(1/2):18-22. Mar. 1958. 22.5 M6932B
English summary, p. 22.
Edible soy products manufactured by the Noda Soy Company of Japan.

1199. TOYOSAWA, I. Studies on the choline of foods and fodders. 2. Choline content in commercially prepared soybean curd and its waste liquor. (Ja) Jap. Soc. Food Nutr. J. 10(6):272-274. Ref. 1958. 389.9 J27

English summary.

Choline loss as a result of processing of soybean curd.

1200. USUDA, N., and ICHIMURA, N. Caking agent for foods, especially for soba, a kind of Japanese macaroni. Jap. Pat. 4425. June 28, 1955.

Chem. Abstr. 51:17020b

1201. VALENCIA, R., BLUM, J. C., and JACQUOT, R. Influence of methionine supplement in soybean flour on the biosynthesis of vitamin B12 by Streptomyces olivaceus. (Fr) Acad. Sci. Compt. Rend. 255(18):2288-2290. Oct. 29, 1962. 505 P21

1202. WAGENKNECHT, A. C., and others. Changes in soybean lipids during tempeh fermentation. Food Res. 26(4):373-376. Ref. July/Aug. 1961. 389.8 F7322

Chem. Abstr. 56:3863a

L. R. Mattick, L. M. Lewin, D. B. Hand, and K. H. Steinkraus, joint authors.

Changes in the lipids of soybeans brough about by Rhizopus oryzae during the production of tempeh were studied.

1203. WEAKLEY, F. B., and MCKINNEY, L. L. A modified indophenol-xylene extraction method for the determination of ascorbic acid in soybeans. Amer. Oil Chem. Soc. J. 35(6):281-284. Ref. June 1958. 307.8 J82

Chem. Abstr. 52:12973g

The vitamin appeared shortly after the start of germination and increased rapidly. The ascorbic acid was mostly in the reduced form.

1204. WEBER, R. O. Beer. U. S. Pat. 2,692,199. Oct. 19, 1954.

Chem. Abstr. 49:1278e

To Archer-Daniels-Midland Company.

1205. WESTEEN, R. W., and KURAMOTO, S. Preparation of shaped protein products. U. S. Pat. 3,118,959. Jan. 21, 1964.

Chem. Abstr. 60:11294g

To General Mills.

1206. WESTERMAN, B. D., OLIVER, B., and MAY, E. Improving the nutritive value of flour. VI. J. Nutr. 54(2):225-236. Oct. 11, 1954. 389.8 J82

Chem. Abstr. 49:3332g

A comparison between soy flour and wheat germ giving a slight advantage to soy flour. This advantage was shown in the second generation in experimental diets with rats.

1207. WHEELER, E. H., TITUS, M. C., and VAN DUYNE, F. O. Thiamine in, and palatability of soybeans. J. Amer. Diet. Ass. 37(4):357-362. Ref. Oct. 1960. 389.8 Am34

Chem. Abstr. 55:19054i

Studies the effects of canning, freezing, and storage.

1208. WICKERHAM, L. J., and BURTON, K. A. Heterothallism in Saccharomyces rouxii. J. Bact. 80 (4):492-495. Oct. 1960. 448.3 J82

In fermentation of the Japanese food, miso, a soybean product.

1209. WORK, L. T. Protopectin compositions. U. S. Pat. 2,952,548. Sept. 13, 1960.

Chem. Abstr. 55:1964a

Replace flour for cookies for reducing diets.

1210. YAMASHITA, T., and KAWAI, S. High-protein foods from soybeans. Jap. Pat. 4542. June 7, 1958.

Chem. Abstr. 53:9515g

To Nagao Research Institute.

1211. YOKOTA, S., and FUJIMOTO, S. Recovery of L-tyrosine in the process of manufacturing soy sauce from protein hydrolyzate. J. Jap. Brewers' Ass. 57 (1):65-68. 1962. 390.8 N62

Chem. Abstr. 61:6278b

1212. YOKOYAMA, Y., and others. Studies on vitamin B12 in miso (fermented bean paste) and soy. (Ja) Utsunomiya Univ. Coll. Agr. Bull. 2:411-412. Mar. 1955. 107.6 Ut7B

J. Takahaski, K. Miura, and H. Kawarai, joint authors.

English summary.

Flour

1213. ABBOTT, C. T. Compositions to make a more friable pastry dough. Belg. Pat. 617,276. May 4, 1962.

Chem. Abstr. 58:9566g

To Proctor & Gamble Company.

1214. ADLER, L., and POMERANZ, Y. Use of lecithin in production of bread containing defatted soy flour as a protein supplement. J. Sci. Food Agr. 10(8):449-456. Ref. Aug. 1959. 382 So12
Chem. Abstr. 54:769e
Quantity of lecthin necessary for a defatted soya-wheat blend for various ratios.

1215. ADOLPHSON, L. C. The development and use of soybean flour in human nutrition. (Fr) Rev. Franc. Corps Gras 10(12):649-659. Dec. 1963. 307.8 R32
Includes composition, properties, and nutritive value.

1216. ANDREWS, J. T. R. Report of the Uniform Methods Committee, 1956-1957. Amer. Oil Chem. Soc. J. 35(3):138-139. Mar. 1958. 307.8 J82
A new method recommended for urease activity in soybean mills.

1217. BARBER, J., and KENNEDY, B. M. Relationships among dough ingredients, water absorption, moisture content of bread and bread yield. Cereal Chem. 35(3):201-220. May 1958. 59.8 C33
Chem. Abstr. 52:13127i
Inclusion of soy flour increased bread yield, in experiments at the California University Department of Nutrition and Home Economics, Berkeley.

1218. BECK, R. N. Soy flour and fecal thyroxine loss in rats. Endocrinology 62(5):587-592. Ref. May 1958. Libr. Cong.
Chem. Abstr. 52:18714e

1219. BERNARDINI, G. Control of thermal treatment in soybean extraction flour. (It) Aliment Anim. 6 (10):543-546. Nov./Dec. 1962. 389.78 AL4

1220. BIANCHI, G. The importance of soybean flour quality. (It) Aliment. Anim. 3(1):43-45. Jan. 1959. 389.78 AL4
Feed.

1221. BORNSTEIN, S., and LIPSTEIN, B. Evaluation of the nutritive quality of different types of bread by feeding trials with chicks. Israel J. Agr. Res. 12(2): 63-73. Sept. 1962. 107 J552
Chem. Abstr. 59:3135h
Study of improving human diet by improving its protein content by the use of soy protein.

1222. COLE, E. W., MECHAM, D. K., and PENCE, J. W. Effect of flour lipides and some lipid derivatives on cookie-baking characteristics of lipid-free flours. Cereal Chem. 37(2):109-121. Ref. Mar. 1960. 59.8 C33
Chem. Abstr. 54:13479d
Purified soybean lecithin also studied.

1223. ERICSON, L. E., LARSSON, S., and LID, G. A comparison of the efficiencies of free lysine and of roller-dried milk, fish protein and soya bean protein for the supplementation of wheat bread. Acta Physiol. Scand. 53(3-4):366-375. Ref. 1961. Nat. Libr. Med.
Chem. Abstr. 58:13053d
Study indicates that roller-dried skim milk suffered greater lysine loss during baking than the other supplements.

1224. FINNEY, K. F., RUBENTHALER, G., and POMERANZ, Y. Chemical composition and physical treatment are among the soy-product variable affecting bread-baking. Cereal Sci. Today 8(5):166-168. 183. Ref. May 1963. 59.8 C333
Chiefly flour. Such variables as chemical composition, and soy product blends, used at 2.5 percent protein level are assessed.

1225. GINI, B., and KOCH, R. B. Study of a lipohydroperoxide breakdown factor in soy extracts. J. Food Sci. 26(4):359-364. July/Aug. 1961. 389.8 F7322
Chem. Abstr. 56:2740d
The rapid decrease in linoleic acid hydroperoxides observed with high levels of soy flour extracts.

1226. HEINTZE, K. Influence of temperature, pressure, and duration of heating on the acid hydrolyses of protein-containing products. 1. (Ge) Z. Lebensmittel-Untersuch Forsch. 100(4):253-260. Apr. 1055.
Chem. Abstr. 49:8515c
Food Sci. Abstr. 28:398
The splitting off of amino nitrogen in relation to pressure and temperature. Soybean flour included.

1227. HI-SOY in confectionery. Arkady Rev. 40(3): 42-46. Sept. 1963. 389.8 Ar4
Hi-soy, a processed flour together with recipes for cake, general-purpose mix and pies.

1228. KIGER, S. Detection and determination of eggs in alimentary pastes. (It) Selezione Tec. Molitoria 11(9):69-78. Sept. 1960. 298.8 Se42
Chem. Abstr. 55:7692a
Soybean flour pastes included.

1229. LEARMONTH, E. M. The influence of soya flour on bread doughs. III. The distribution of the papain-inhibiting factor in soya-beans. J. Sci. Food Agr. 9(5):269-273. Ref. May 1958. 382 So12

The papain-inhibiting factor of soya is concentrated almost entirely in the germ.

1230. LEARMONTH, E. M., and WOOD, J. C. The influence of soya flour in bread doughs. IV. Alpha-amylase of soya. Cereal Chem. 37(2):158-169. Ref. Mar. 1960. 59.8 C33

Chem. Abstr. 54:14490d

Soy flour offers a natural means of controlling the undesirable proteolysis produced by malt.

1231. LEARMONTH, E. M. Inhibitions of proteolytic enzymes such as papain. Brit. Pat. 784,831.

Chem. Abstr. 52:4063c

To British Soya Products.

Proteolytic action of enzymes is controlled by raw soybeans. Inhibitor improves the quality of bread.

1232. LEMANCIK, J. F., and ZIEMBA, J. V. Versatile soy flours. Food Eng. 34(7):90-91. July 1962. 389.8 F737

Gives flour types, properties, and applications. Nutritive and functional properties to improve product quality and production efficiency.

1233. LOGAN, J. L., and LEARMONTH, E. M. Gluten-oxidizing capacity of soybean. Chem. Indus. 39:1220-1221. Sept. 24, 1955. 382 M31C

Chem. Abstr. 50:2890a

Food Sci. Abstr. 28:1309.

Raw soybean added to unbleached white flour increased the strength of the dough.

1234. MCPHERSON, J. R., and ALBERT, A. Effect of soy flour diet and other agents on excretion of I131 after use of labeled thyroxine in the rat. Endocrinology 69(4):856-862. Ref. Oct. 1961. Libr. Cong.

Chem. Abstr. 56:4028f

The goiter produced in rats fed soy flour did not appear to be on the basis of excessive loss of thyroxine in feces.

1235. MUSTAKAS, G. C., and others. Production and nutritional evaluation of extrusion-cooked full-fat soybean flour. Amer. Oil Chem. Soc. J. 41(9):607-615. Ref. Sept. 1964.

E. L. Griffin, L. E. Allen, and O. B. Smith, joint authors.

Analysis of 12 soybean flours processed under different conditions.

1236. NAKAOKA, N., and others. Edible fat compound for treatment of flour. Jap. Pat. 15,419. Oct. 5, 1960.

Chem. Abstr. 55:10743a

S. Mitsunaga, S. Arai, and J. Kawai, joint inventors.

To Nippon Oils & Fats Company.

1237. OFELT, C. W., SMITH, A. K., and MILLS, J. M. Effect of soy flour on amylograms. Cereal Chem. 32(1):48-52. Jan. 1955. 59.8 C33

Chem. Abstr. 49:5705a

Food Abstr. 27:1981

Comparison of viscosities of raw soy flour, defatted soy flour and soy flour modified by heating.

1238. OFELT, C. W., and SMITH, A. K. Importance of oxidation on the use of soy flour with high-extraction wheat flours. Amer. Assoc. Cereal Chem. Trans. 13 (2):122-129. June 1955. 59.9 Am3T

Chem. Abstr. 49:15107a

Efforts to make soy flour bread acceptable to Greeks and other Europeans whose native bread contains neither sugar nor shortening.

1239. OFELT, C. W., SMITH, A. K., and MILLS, J. M. Proteases of the soybean. Cereal Chem. 32 (1):53-63. Jan. 1955. 59.8 C33

Chem. Abstr. 49:5705e

Food Sci. Abstr. 27:1982

Raw soy flour contained three to four times the amount of protease as wheat flour, but the protease value for heat-treated soy flour were so low to have no effect on bread dough properties.

1240. OTEY, F. H., and MEHLTRETTER, C. L. Preparation of 3-stearoyl-D-glucose. Amer. Oil Chem. Soc. J. 38(3):221-228. Ref. May 1961. 307.8 J82

Chem. Abstr. 53:232i

A bread softening agent.

1241. PARKS, V. B., and others. Developing breads of higher nutritive value. Amer. Diet. Ass. J. 30 (3):245-250. Ref. Mar. 1954. 389.8 Am34

Food Sci. Abstr. 27:907.

E. M. Hewston, M. W. Marshall, and A. M. Bruinooge, joint authors.

1242. PFEIFER, V. F., STRINGFELLOW, A. C., and GRIFFIN, E. L. Fractioning corn, sorghum and soy flours by fine grinding and air classification. Amer. Miller 88(8):11-13, 24. Aug. 1960. 298.8 Am32

Fractionation of soy flour was ineffective for pro-

ducing materials with a range of chemical compositions, even when carried out after fine grinding. Includes tables giving moisture, protein, ash, oil, and crude fiber for defatted soy flour.

1243. POLLOCK, J. M., and GEDDES, W. F. Soy flour as a white bread ingredient. 1. Preparation of raw and heat-treated soy flours, and the effects on dough and bread. 2. Fractionation of raw soy flour and effects of the fractions in bread. Cereal Chem. 37 (1):19-29; 30-54. Jan. 1960. 59.8 C33
Chem. Abstr. 54:7914g

1244. POMERANZ, Y., and MILLER, G. D. Detection and estimation of soy flour in wheat flour. Ass. Offic. Agr. Chem. J. 43(2):442-444. May 1960. 381 As7
Chem. Abstr. 54:18815i
Method based on the flourescence of soy flour particles.

1245. POMERANZ, Y. The lysine content of bread supplemented with soya flour, wheat gluten, dry yeast, and wheat flour. J. Sci. Food Agr. 13(2):78-83. Ref. Feb. 1962. 382 So12
Chem. Abstr. 56:14674c
Lysine content of nine milled flours was determined microbiologically.

1246. RASMUSSEN, R. A. Chemical tests on the degree of cooking of soybean flour. (It) Aliment. Anim. 4(6):349-353. June 1960. 389.78 AL4

1247. SHURPALEKAR, S. R., and others. Preparation, chemical composition and shelf-life of precooked roller-dried protein foods based on full-fat soya flour and low-fat groundnut flour. J. Sci. Food Agr. 15(6): 370-372. Ref. June 1964. 382 So12
M. R. Chandrasekhara, M. Swaminathan, A. Sreenivasan, and V. Subrahmanyan, joint authors.

1248. SHURPALEKAR, S. R., and others. Studies on a spray-dried infant food based on peanut protein isolate and full-fat soy flour and fortified with DL-methionine and certain vitamins and minerals. I-III. Food Technol. 18(6):108-116. Ref. June 1964. 389.8 F7398
M. R. Chandrasekhara, S. Korula, M. Swaminathan, A. Sreenivasan, V. Subrahmanyan, B. S. Chandrasekhar, A. P. Jayaraj, and D. Rajalakshmi, joint authors.

1249. SHURPALEKAR, S. R., and others. Supplementary value of precooked roller-dried protein foods based on full-fat soya flour and low-fat groundnut flour to a poor Indian rice diet. J. Sci. Food Agr. 15(6):373-377. Ref. June 1964. 382 So12
S. Korula, A. A. Joseph, L. Parthasarathy, M. R. Chandrasekhara, M. Swaminathan. A. Sreenivasan, and V. Subrahmanyan, joint authors.
Chem. Abstr. 61:11247d

1250. SUBRAMANIAN, T. R. Some studies on sugarcane juice clarificants. Madras Agr. J. 45(2):67-71. Feb. 1958. 22 M262
Chem. Abstr. 54:23381i
Soybean flour supplemented by monocalcium phosphate used as clearing agent.

1251. TOKUNAGA, T., and others. Deodorization and improvement of digestibility of defatted soybean flour. Jap. Pat. 6315. June 28, 1962.
Chem. Abstr. 58:11899e
K. Yoshitomi, A. Akioka, and S. Yamamoto, joint inventors.
To Nisshin Oil Mills.

Milk

1252. ALMEDA, A. F. Condensed milk of corrected composition. Span. Pat. 217,451. Jan. 12, 1954.
Chem. Abstr. 50:3673fg.
Soybean used in condensed milk to reduce cholesterol.

1253. ALMEDA, A. F. Improved milk. Span. Pat. 243,371. July 30, 1958.
Chem. Abstr. 54:11327g

1254. ANDERSON, D W. Problems in formulation of soy milk. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:166-174. Ref. 1962. A389.9 C76
Soy milks need the addition of iodine. Amino acid supplementation is not required if protein level is adequate in the diet.

1255. BIERINGER, O. R Soybean milk. Ger. Pat. 1,037,245. Aug. 21, 1958.
Chem. Abstr. 55:846c
Soybean milk used in foods.

1256. BLUE, J. A. Folklore remedy (Canada fleabane) for soybean diarrhea. J. Allergy 26:425-428. 1955. Nat. Libr. Med.
Children allergic to cow's milk use soy milk and develop diarrhea from soy milk. Describes cure for soymilk diarrhea.

1257. BORGES, J. M., VIANA, S. DE L., and LEME, J. Comparative study of two processes for determining total sugars in soybean milk (preliminary note). (Por) Rev. de Agr. [Piracicaba] 33(4):199-204. Dec. 1958. 9.2 R324

Chem. Abstr. 54:25354h

1258. BORGES, J. M. Review of literature relative to the nutritive value and digestibility of soybeans and soybean milk and its derivatives. (Por) Rev. Ceres 10(60):423-436. Ref. Jan./Apr. 1959. 9.2 C332

1259. BORGES, J. M.. Revision of literature relative to mineral salts and vitamins in soybeans and soybean milk. (Por) Rev. Ceres 11(61):36-47. Ref. May/Dec. 1959. 9.2 C332

1260. BOTTAZZI, V. Observations on the microflora of cows fed a diet supplemented with "Vivilat." (It) Agr. Ital. [Pisa] 55:55-69. Feb. 1955. 16 Ag8259

A fermented soybean milk product. Included eight pages of statistical tables.

1261. GYORGY, P., OMANS, W. B., and HAU, E. W. S. Feeding value of soy milks for premature infants. Conf. Soybean Prod. Protein Human Foods. Proc. 1961: 179-187. 1962. A389.9 C76

Effect of heat on the nutritive value of soy milk for premature children is still unsolved.

1262. HAND, D. B., and others. Pilot plant studies on soy milk. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:157-165. Ref. 1962. A389.9 C76

K. H. Steinkraus, J. P. VanBuren, L. R. Hackler, I. el Rawi, and H. R. Pallesen, joint authors.

1263. HERALD, C. T., and PATTON, S. The effect on flavor of using substitute fats in dry whole milk. J. Dairy Sci. 38(6):640-644. June 1955. 44.8 J822

Chem. Abstr. 49:11197f

Food Sci. Abstr. 27:2670.

Substitute soybean fats made dry milks with poor flavor qualities.

1264. INAGAKI, C., and others. On the combination of protein and thiamine. J. Vitaminol. (Osaka) 6(1): 43-51. Mar. 10, 1960. 389.8 J825

Chem. Abstr. 54:21217d

H. Fukuba, T. Miyakawa, and S. Iwata, joint authors.

On the disappearance of thiamine when soybean curd is frozen and thawed.

1265. KAY, J. L., DAESCHNER, C. W., and DESMOND, M. M. Evaluation of infants fed soybean and evaporated milk formulae from birth to three months. Amer. J. Diseases Children. 100(2):264-276. Ref. Aug. 1960. Libr. Cong.

Chem. Abstr. 55:3749d

A comparison of weight, length, hemoglobin, hematocrit, and plasma biochemical values.

1266. LAHIRI, N. L., and others. Vegetable milk powder. Indian Pat. 70,049. Apr. 7, 1962.

Chem. Abstr. 57:14256a

To Council of Scientific & Industrial Research.

L. V. L. Sastry, S. R. Shurpalekar, M. R. Chandrasekhara, M. Swaminathan, and V. I. Subrahamanyan, joint inventors.

1267. MILLER, H. W. Traditional methods of processing and use of soy liquid and powdered milk. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:149-156. 1962. A389.9 C76

1268. NAKASIMA, K., and TAMURA, T. Studies on Koya-Tofu. IV. Coagulation of the soybean milk. (Ja) Osaka Furitsu Kogyo Shoreikan Hokoku 17(3):78-84. 1957. Libr. Cong.

Chem. Abstr. 51:18370e

English summary.

Effect of temperature, time, and stirring speed on the coagulation of soybean milk. Koya-Tofu is dried soybean cheese.

1269. NAKAYAMA, O., and WATANABE, T. Studies on soybean milk. 1. (Ja) Jap. Soc. Food Nutr. J. 15 (3):191-195. Ref. 1962. 389.9 J27

English summary.

Describes method for removing odor from soybean milk.

1270. NETO, L. G. Soybean milk and cheese. (Por) Minas Gerais. Dept. Prod. Veg. Bol. Agr. 7(9/10): 49-50. Sept./Oct. 1958. 9.2 M663

Manufacture.

1271. PINEDA, F. A. The economic value of soybeans and its manufacture for food products. Agr. Indus. Life 18:8-9, 30-31. June 1956. 25 Ag8

Soybean milk is suitable for the diabetic. Its food value approaches cow's milk.

1272. SAKATA, H., ENOMOTO, M., and HIGUCHI, Y. Deodorization of soybean milk products. Jap. Pat. 11,939. July 12, 1963.

Chem. Abstr. 60:6144a

1273. SAKATA, H., ENOMOTO, M., and HIGUCHI, Y. Deodorization of soybean milk products. Jap. Pat. 11,940. July 12, 1963.
Chem. Abstr. 60:6144a

1274. SANCHEZ, A., SCHARFFENBERG, J. A., and REGISTER, U. D. Nutritive value of selected proteins and protein combinations. I. Amer. J. Clin. Nutr. 13(4):243-249. Ref. Oct. 1963. 389.8 J824
Chem. Abstr. 60:2105c
The biological value of proteins singly and in meal patterns with varying fat composition. Soybean milk included in experimental diets for rats.

1275. SASAKI, R., and TSUGO, T. The manufacture of synthetic milk powder from whey and soy-bean. I-II. Int. Dairy Congr. Proc. 13(4):602-610. 1953. 44.9 In8213
I, the preparation of synthetic milk from whey and soybean; II, The manufacture and nutritive value of the synthetic milk powder.

1276. SHEPARD, T. H., and others. Soybean goiter. (Abstr) J. Amer. Diet Ass. 37(3):270. Sept. 1960. 389.8 Am34
G. E. Pyne, J. F. Kirschvink, and M. McLean, joint authors.
Three children in whom goiters developed after being on a diet including soybean milk.

1277. SHURPALEKAR, S. R., and others. Studies on milk substitutes of vegetable origin. I. The nutritive value of milk substitues prepared from soyabean and groundnut. Ann. Biochem. Exp. Med. 19(11):269-274. Nov. 1959. 448.8 An73
N. L. Lahiry, M. R. Chandrasekhara, M. Swaminathan, K. Indiramma, and V. Subrahmanyan, joint authors.
Chem. Abstr. 54:13485g
Albino rats showed good growth with soybean milk fortified with calcium and vitamins.

1278. SHURPALEKAR, S. R., and others. Studies on milk substitues of vegetable origin. II. The effect of fortification with DL-methionine on the nutritive value of spray dried powder obtained from a blend of soyabean and groundnut milks. Ann. Biochem. Exp. Med. (Calcutta) 20(6):145-156. June 1960. 448.8 An73
Chem. Abstr. 57:7695g
M. R. Chandrasekhara, N. L. Lahiry, M. Swaminathan, K. Indiramma, and V. Subrahmanyan, joint authors.
Studies made with albino rats.

1279. SHURPALEKAR, S. R., and others. Studies on milk substitues of vegetable origin. III. Ann. Biochem. Exp. Med. 21(6):143-150. June 1961. 448.8 An73
M. R. Chandrasekhara, N. L. Lahiry, M. Swaminathan, K. Indiramma, and V. Subrahmanyan, joint authors.
Nutritive value of soybean and sesame milk.

1280. TAN, B. H. Technology of soymilk and some derivatives. Wageningen, 1958. 132 p. Ref. 60.3 T15
Proefschrift-Wageningen.
Thesis (Ph. D.)-University of Wageningen.
Includes soymilk, evaporated soymilk, soycurd, and soyyoghurt. Maps, charts and statistics for 1955 given.

1281. VAN BUREN, J. P., and others. Heat effects on soymilk: indices of protein quality in dried soymilks. J. Agr. Food Chem. 12(6):524-528. Ref. Nov./Dec. 1964. 381 J8223
K. H. Steinkraus, L. R. Hackler, I. El Rawi, and H. B. Hand, joint authors.
A study of protein damage in the processing of soy milk.

1282. VIANA, J. A. C., CARNEIRO, G. G., and DRUMMOND, G. A. Substitution of cottonseed meal for extracted soybeans (whole or parts) in milk production. (Por) U. Rur. Estado Minas Gerais. Esc. Super. Vet. Arq. 10:37-44. 1957, pub. 1958. 41.9 M662

1283. YOSHINO, K. How to make soybean milk, a new agricultural product. (Ja) Agr. Hort. 38(8):69-72. Aug. 1963. 22.5 N682

Soy Sauce

1284. ASAO, Y., and YOKOTSUKA, T. Studies on flavorous substances in soy sauce. XVIII-XIX. (Ja) Agr. Chem. Soc. Japan. J. 35(9):831-845. Ref. 1961. 385 Ag8

1285. CHENG, H. Comparative studies on the mixing fermentation of soy sauce prepared from different cultures of Aspergillus. (Ch) Agr. Ass. China. J. (n. s.) 43:52-57. Sept. 1963. 22.5 Ag862
English summary.

1286. FUJITA, M., HAMADA, S., and KOMAZAKI, T. Aromatizing of soy sauce and other seasoning materials. Jap. Pat. 14,485. Oct. 3, 1960.
Chem. Abstr. 55:3872b

1287. HASE, S. Note on the technology of manufacturing soysauce. 2. (Ja) Chem. Indus. 10(3):47-51. Mar. 1959. 385 C428

1288. HORI, S., and others. Decolorization of amino acid soy sauce and simultaneous separation of aromatic amino acids. Jap. Pat. 3789. May 16, 1958.
Chem. Abstr. 53:5586g
T. Yoshida, T. Hino, and K. Ito, joint inventors. To Ajinomoto Company.

1289. HORI, S., MATSUMI, M., and YOSHIDA, T. Removal of iron from amino-acid soy sauce. Jap. Pat. 4546. June 7, 1958.
Chem. Abstr. 53:9567c
To Ajinomoto Company.

1290. IKEHATA, H., and ITO, T. Studies on the effects of metal ions and amino acids on thiamine and on the enrichment of thiamine to "shoyu." (Ja) Rep. Sci. Living 5:21-33. Ref. 1957. 280.9 Os1
English summary.
Metal ions stimulated the destruction of thiamine; amino acids prevented thiamine destruction.

1291. INOUE, T., and TSUGE, Y. Tamari. IV. On the precipitate separated from tamari by heating. (Ja) Hakko Kogaku Zasshi (J. Ferment. Tech.) 37(4):152-155. 1959. Libr. Congr.
Chem. Abstr. 54:9137h
English summary.
Tamari is a thick soy sauce.

1292. IRIE, T., and HAMADA, S. Brewing of soy sauce. Jap. Pat. 7586. Aug. 31, 1956.
Chem. Abstr. 52:9514b
To Japan Seasoning Brewing Company.

1293. KAWAKAMI, Y. Improvement of the flavor of soy sauce. Jap. Pat. 4444. June 28, 1955.
Chem. Abstr. 51:311e
To K. Endo.

1294. KAZAMA, Y. Determination of reducing sugar in soy sauce. II. Influence of amino acids on the determination of reducing sugar by a modified method of Seiler. (Ja) Nippon Jozo Kyokai Zasshi 51:800-803. 1956. Libr. Cong.
Chem. Abstr. 52:13184d
English summary.
This is a modified use of the S. Seiler method.

1295. KONDO, Y., AOKI, R., and OGAWA, T. On the types of dicarboxylic amino acid residues in the vegetable proteins from the starting materials of soy sauce. (Ja) Agr. Chem. Soc. Jap. J. 32(7):518-521. 1958. 385 Ag8
Chem. Abstr. 54:20002i

1296. MASILUNGAN, V. A., RAMOS, M. A., and PALO, M. A. Studies on some improtant factors involved in the mold process of making soy sauce. Philippine J. Sci. 89(2):149-162. Ref. June 1960, pub. 1962. 475 P53

1297. MINO, S., and MINO, Y. Koji for the brewing of Mieki. Jap. Pat. 4445. June 28, 1955.
Chem. Abstr. 51:13312c
The product is a soy sauce with a superior flavor and color.

1298. MITUI, M., and KUSAKA, E. Studies on the colour of soy-sauce. (Ja) II. Nihon Jozo Kyokai Zasski 52(10):816-122. 1957. Libr. Cong.
Chem. Abstr. 52:20873i
English summary.
Soy sauce was studied by paper-chromatography and spectrophotometric method.

1299. MOGI, M. Shoyu, a Japanese sauce. Jap. Pat. 10,199. Nov. 25, 1958.
Chem. Abstr. 53:4650a
To Noda Industrial Chemical Research Foundation.

1300. MOGI, M. Recent studies on soy sauce brewing. Hakko Kyokaishi 17:78-86. Ref. 1959.
Chem. Abstr. 53:10654f
A review with 58 references.

1301. MORIMOTO, S., and KAGOSHIMA, Y. Studies on a quick ripening process for soy sauce. II. (Ja) J. Ferment. Technol. 41(6):331-336. 1963. 390.08 H12
English summary.
Process based on alcohol fermentation.

1302. MOSHY, R. J. Treating soybean flour. U. S. Pat. 3,126,286. Mar. 24, 1964.
Chem. Abstr. 60:16425h
To General Food Corporation.

1303. NAMIKI, M., OKAZAWA, Y., and MATSUYAMA, A. Gamma irradiation of miso and soy sauce. I-II. (Ja) Agr. Chem. Soc. Jap. J. 35(6):528-540. Ref. 1961. 385 Ag8
Miso a fermented soybean paste generates gases during storage at high temperatures. This phenomenon

called "Waki" is a disadvantage for commercial packaging. Irradiation reduces this gas generation.

1304. OKUHARA, A., and YOKOTSUKA, T. Studies on the analytical methods of soy sauce. III. (Ja) Agr. Chem. Soc. Jap. J. 36(4):320-326. Ref. 1962. 385 Ag8
Chem. Abstr. 61:13808g
Total polyols in soy sauce.

1305. OMATA, S., UENO, T., and NAKAGAWA, Y. Browning reaction of soysauce. VIII. (Ja) Agr. Chem. Soc. Jap. J. 31(11):822-826. Ref. 1957. 385 Ag8
Chem. Abstr. 52:16688c
Substances which effect browning are amino acids, reducing sugars, reductones and carbonyl compounds. Soy sauce koji.

1306. OMATA, S. On the Browning phenomena of soy-sauce and mirin. (Ja) Bull. Univ. Osaka Prefect, Ser. B(7):77-111. 1957. 107.6 Sa23
Chem. Abstr. 52:20874
English summary.
Browning phenomena studied spectroscopically and chromatographically.

1307. OMATA, S., UENO, T., and NAKAGAWA, Y. The color of soy sauce. 4. (Ja) Agr. Chem. Soc. Jap. J. 29(3):215-219. Ref. Mar. 1955. 385 Ag8
Chem. Abstr. 52:8448h
English summary.
The effect of furfural on the color of soy sauce.

1308. OMATA, S., and UENO, T. On the colour of shoyu and its characteristics for the active charcoal. (Jap) J. Agr. Chem. Soc. (Japan) 27(9):570-575. Sept. 1953. 385 Ag8
Chem. Abstr. 49:15164d
English summary.
Color of soy sauce studied by Hardy's self-recording spectrophotometer in the region of visible spectrum.

1309. OMATA, S., UENO, T., and NAKAGAWA, Y. On the colour of soy sauce. 5. (Ja) Agr. Chem. Soc. Jap. J. 29(5):251-256. 1955.
Chem. Abstr. 52:8448i
English summary.
Effect of reductone on the color of soy sauce.

1310. ONAGA, D. M., LUH, B. S., and LEONARD, S. J. Quality evaluation and chemical composition of soy sauce. Food Res. 22(1):83-88. Ref. Jan./Feb. 1957. 389.8 F7322
Chem. Abstr. 51:17080e
Soy sauce samples showed significant differences in flavor and aroma. Importance of various chemical constitutents to flavor discussed.

1311. SHIMIZU, R., and NAKAYA, Y. Addition of aroma to soy sauce. Jap. Pat. 3796. May 16, 1958.
Chem. Abstr. 53:5586e

1312. TAKATA, R., and others. Studies on the stability of vitamins in "shoyu" with thiamine and riboflavin. Vitamins (Jap) 10(3):200-204. Ref. 1956. 386.3 B54
Chem. Abstr. 50:14999h
English summary.
T. Iima, M. Fukano, and S Shimizu, joint authors.
Since thiamine and riboflavin added to shoyu are well kept, shoyu is supposed to be the best foodstuff for fortification with water soluble vitamins in Japan.

1313. TAKEDA, Y., and KAGAMI, M. Concentration of soy sauce by use of ion-e change resins. Jap. Pat. 4441. June 28, 1955.
Chem Abstr. 51:13311d
To Takeda Foods Company.

1314. TANAKA, S., UEDA, R Inorganic components of soy sauce. III. (Ja) J. Ferment. Tech. 37(5):203-207. 1959. L br. Cong.
Chem. Abstr. 54:9149e
English summary.
Phosphorus and potassium contents of soy sauce.

1315. UENO, T., and KURAMOCHI, T. Studies on shinshiki (semi-chemical soy sauce). I. (Ja) Agr. Chem. Soc. J. 34(2):187-193. Ref. 1960 385 Ag8
Chem. Abstr. 54:172g

1316. UENO, T. Studies on shinshiki shoyu (Semi-chemical soy sauce) (Ja) Pt. IX, X, XI. Nippon Nogeikagaku Kaishi (J. Agr. Chem. Soc. Jap) 35(12): 1184-1198. 1961. 385 Ag8
Chem. Abstr. 61:2403g
Inhibitory effects of acid hydrolysate of defatted soybean against yeast fermentation. Oxidation of short-chain fatty acids by yeast.

1317. UMEDA, I. Continuous steaming of the raw materials in soy sauce brewing. (Ja) J. Ferment. Technol. 41(4):205-207. 1963. 390.08 H12
English summary.
Soybeans and wheat. Continuous steaming in a screw conveyer has been tested using rotary valves.

1318. UMEDA, I. Shoyu [Jap. soy sauce]. (Ja) New ed., rev. Tokyo, Sankyo Shuppan K. K., 1963. 232 p. 389 Um2

Title variously translated as Japanese soy sauce and Japanese bean sauce.

1319. UMEDA, I. Some problems on the recent brewing technology of soy-sauce. (Ja) Agr. Chem. Soc. Jap. J. 31(4):A48-A52. Ref. Apr. 1957. 385 Ag8

1320. WATANABE, T., and ASO, K. On the sugar composition of Shiro Shoyu (white soy sauce). Tohoku J. Agr. Res. 13(3):265-271. Ref. Sept. 1962. 22.5 T574

The main sugar was glucose and its content was about 70 percent of the total sugar.

1321. YAMAUCHI, Y. Soybean sauce. Jap. Pat. 2245. Apr. 3, 1958.

Chem. Abstr. 53:3596b

1322. YOKOTSUKA, T. Aroma and flavor of Japanese soy sauce. Advn. Food Res. 10:75-134. Ref. 1960. 389 M87

Literature review. Text and over 200 references.

1323. YOKOTSUKA, T. Flavoring substances in soy sauce. 13. On the yeast static substances in brewed soy. (Ja) Agr. Chem. Soc. Jap. J. 28(2):114-118. Feb. 1954. 385 Ag8

Chem. Abstr. 49:15164a

English summary.

Phenolic substances increased in heated soy and were more resistant to the harmful yeasts of soy than the raw soy.

1324. YOKOTSUKA, T. Studies on flavorous substances in soy. 9. On high boiling point's fraction (4) isolation of phenolic flavorous substances. (Ja) Agr. Chem. Soc. Jap. J. 27(5):276-281. May 1953. 385 Ag8

Chem. Abstr. 49:15163c

English summary.

Reports an important component of soy flavors.

1325. YOKOTSUKA, T. F. Studies on flavorous substances in shoyu. XV. Flavorous substances in heated shoyu. (Ja) Agr. Chem. Soc. Jap. J. 32(1):23-26. Jan. 1958. 385 Ag8

Chem. Abstr. 54:10231b

1326. YOKOYAMA, Y. Fermentation and synthetic method of preparing soy sauce; with a supplement on manufacturing methods. (Ja) Tokyo, Meibundo, 1961. 435 p. 389 Y7

UTILIZATION OF MEAL FOR INDUSTRIAL USES

General

1327. AKABORI, S., and others. Surfactant agents from soybean or wheat protein. Jap. Pat. 6455. May 20, 1963.

Chem. Abstr. 59:7758f

Y. Kawakami, Y. Izumi, and S. Komatsu, joint inventors.

To Ajimomoto Company.

1328. ASH, J. R., LAMBUTH, A. L. Adhesives from phenolic resins and proteins. U. S. Pat. 2,817,639. Dec. 24, 1957.

Chem. Abstr. 52:4248c

To Monsanto Chemical Company.

1329. ATKINSON, J. D. Water-dispersible protein compositions. U. S. Pat. 2,848,342. Aug. 19, 1958.

Chem. Abstr. 53:616h

To Buckeye Cellulose Corporation.

Soybean used in preparation useful for paper coatings, adhesives, and paints.

1330. BADISCHE ANILIN & SODA-FABRIK. Stabilized aqueous protein preparation. Brit. Pat. 797,526. July 2, 1958.

Chem. Abstr. 53:616f

Soybean proteins used in preparation used for fibers, films, lacquers and impregnating agents.

1331. BAKER, E. B. Epoxy resin-modified proteins. U. S. Pat. 2,882,250. Apr. 14, 1959.

Chem. Abstr. 53:14390c

To Stauffer Chemical Company.

1332. BOBETH, W. Microscopic investigation of the swelling of protein fibers. Reyon, Zellwolle Chemiefasern. 8(1):40-44. Jan. 1958. 304.8 J45

Chem. Abstr. 52:15074c

Determine whether all protein fibers show the same type swelling with formation of a false lumen. Soybean protein fibers included.

1333. CALVERT, F. E. Recent technological developments in industrial soybean proteins. Tappi 38:145A-147A. Mar. 1955. 302.8 T162

Soybean proteins develop water resistance rapidly on aging of the dried coatings at room temperatures.

1334. CHESTER, A. E. Salts of oxyalkylated fatty amines. U. S. Pat. 2,739,980. Mar. 27, 1956.
Chem. Abstr. 50:15578i
Soybeans used for pickling baths.
To Poor & Company.

1335. CIRCLE, S. J., JULIAN, P. L., and WHITNEY, R. W. Soybean protein. U. S. Pat. 2,881,159. Apr. 7, 1959.
Chem. Abstr. 53:14381g
To Glidden Company.

1336. CLAYTON, E. T. Coating metallic articles with impacted powders. U. S. Pat. 3,132,043. May 5, 1964.
Chem. Abstr. 61:4012c
Primary amine from soybean base used.
To Peen Plate.

1337. DURLIN WERK. Modified vinyl copolymers. Austrian Pat. 231,710. June 9, 1961.
Chem. Abstr. 60:9436h

1338. EAST, E., and GREEN, E. Extruding protein solutions. U. S. Pat. 2,809 090. Oct. 8, 1957.
Chem. Abstr. 52:4198g
To Lever Brothers Company.

1339. ELINS, H. S., and GATES, J. W. Imide derivatives of proteins. U. S. Pat. 2,688,610. Sept. 7, 1954.
Chem. Abstr. 49:89d
To Eastman Kodak Company.

1340. ELINS, H. S., BELLIS, D. C., and GATES, J. W. Protein derivatives. U. S. Pat. 2,763,639. Sept. 18, 1956.
Chem. Abstr. 51:3873g
To Eastman Kodak Company.

1341. EVANS, G. Spray-drying of tomato puree, groundnut and soyabean proteins and sugar-gelatine solutions. J. Biochem. Microbiol. Technol. Eng. 3 (1):65-77. Ref. Apr. 1961. 381 J8224
Chem. Abstr. 55:19052b
The temperature in the spray-drier is the major factor affecting the quality of the final powder.

1342. FALANGHE, H., SMITH, A. K., and RACKIS, J. J. Production of fungal mycelial protein in submerged culture of soybean whey. Appl. Microbiol. 12(4): 330-334. Ref. July 1964. 448.3 Ap5
Mushroom culture. Various soybean whey media tested as substrate for seven species of mushrooms in submerged culture.

1343. FARKAS, R. Z. Emulsions for warp sizing. U. S. Pat. 2,757,097. July 31, 1956.
Chem. Abstr. 50:16127a
To Texize Chemicals Incorporated.

1344. FIBRAN, S. A. Hardening of artificial bodies made from collagen and other proteins. Span. Pat. 227,766. Apr. 14, 1956.
Chem. Abstr. 51:4764b

1345. FINBERG, J. Smoking compositions. U. S. Pat. 2,930,719. Mar. 29, 1960.
Chem. Abstr. 54:15856b
To ERB-Tobacco Products Company.
Soybean used as tobacco substitute.

1346. FRANTZ, G. C., SANDERS, J. W., and SAUNDERS, F. L. Synthetic latex agglomeration and thickening agents. Ind. Eng. Chem. 49(9):1449-1450. Sept. 1957. 381 J825
Use of soybean protein as a thickening agent in latex paints.

1347. FROHLICH, H. G. Fibers from casein, maize, earthnut, soy, and cottonseed protein. In Pummerer, R., ed. Chemische textilfasern, filme und folien, p. 557-569. Ref. Stuttgart, Enke, 1953. 304 P96
Describes the state of the art of synthetic fibers.

1348. GIDDEY, C. Artificial protein fibers. U. S. Pat. 2,947,644. Aug. 2, 1960.
Chem. Abstr. 55:2128c
To F. P. Research.

1349. GREEN, E., and others. Aging of alkaline solutions of globular proteins for spinning solutions. Dutch Pat. 84,724. Apr. 15, 1957.
Chem. Abstr. 52:13282b
R. W. Graham, H. S. Gardner, and A. W. Holmes, joint inventors.
To Unilever.

1350. HASEMAN, J. F. Amine residues for flotation of silica from phosphate ore. U. S. Pat. 2,914,174. Nov. 24, 1959.
Chem. Abstr. 54:6068f
To International Minerals & Chemical Corporation.

1351. INTERNATIONAL MINERALS & CHEMICAL CORPORATION. Tyrosine recovery from protein hydro-

lyzates. Brit. Pat. 740,722. Nov. 16, 1955.
Chem. Abstr. 50:9696h

1352. JONES, E. J. Setting coatings containing proteins with ammonia. U. S. Pat. 2,652,345. Sept. 15, 1953.
Chem. Abstr. 49:90b

1353. KNIERIEM, H. Water-resistant adhesives. Belg. Pat. 616,748. Oct. 22, 1962.
Chem. Abstr. 58:8107h
To Dow Chemical Company.

1354. KOHZU, T., and others. Fundamental studies on manufacturing glutamic acid from soy-bean meal by the hydrolysis with hydrochloric acid. (Ja) I, II, III, V. Agr. Chem. Soc. Jap. J. 31(2):80-87; 31(5): 323-328 31(9):658-669; 32(5):333-337. Feb.-Sept. 1957. 385 Ag8
Chem. Abstr. 53:20615g
H. Mori, and Tadokoro, Y., joint authors.

1355. LOWE, W. G., and GATES, J. W. Peptization of silver halides with oxodized proteins or protein derivatives. U. S. Pat. 2,691,582. Oct. 12, 1954.
Chem. Abstr. 49:1460e
To Eastman Kodak Company.

1356. MCKINNEY, L. L., and UHING, E. H. Carboxymethylated soybean protein. Amer. Oil Chem. Soc. J. 36(2):49-51. Ref. Feb. 1959. 307.8 J82
Problems in the industrial utilization of vegetable proteins.

1357. MAKAREVICH, V. G., and LAZNIKOVA, T. N. Media with different oil cakes as sources of organic nitrogen for the fermentation of chlortetracycline. (Rus) Antibiotik 6(4):308-311. Apr. 1961. 396.8 An84
Chem. Abstr. 55:19125f

1358. MANN, G. E. Acylated proteins. U. S. Pat. 2,729,628. Jan. 3, 1956.
Chem. Abstr. 50:5818a
To U. S. Dept. of Agriculture.
The intrinsic viscosity of natural proteins of soybeans is doubled by peptizing. The products are useful in the production of textile fibers.

1359. MASKEY, D. F. Adhesive compositions for lamination of paper. U. S. Pat. 2,844,482. July 22, 1958.
Chem. Abstr. 52:21104b
To Buckeye Cellulose Corporation.
Prepared from soybean protein.

1360. MEYER, E. W., and CIRCLE, S. J. Acylated, isolated, partially hydrolyzed soybean protein. U. S. Pat. 2,862,918. Dec. 2, 1958.
Chem. Abstr. 53:4738i
To Glidden Company.

1361. MORIMOTO, S., and others. Graft copolymerization of proteins with acrylonitrile. Jap. Pat. 18,387. Nov. 28, 1962.
Chem. Abstr. 59:7721a
M. Ishihara, A. Yamamoto, K. Hamada, K. Imai, M. Otsuka, and H. Murakami, joint inventors.
To Toyo Spinning Company.

1362. MORIMOTO, S., and others. Graft copolymers. Jap. Pat. 9431. June 17, 1963.
Chem. Abstr. 59:8928c
M. Ishihara, A. Yamamoto, K. Hamada, K. Imai, and M. Otsuka, joint inventors.
To Toyo Spinning Company.

1363. MORIMOTO, S., and others. Spinnable solutions of acrylonitrile graft copolymers. U. S. Pat. 3,104,154.
Chem. Abstr. 59:12970d
M. Ishihara, A. Yamamoto, K. Hamada, K. Imai, and M. Otsuka, joint inventors.
To Toyo Spinning Company.

1364. MORIMOTO, S., YAMAMOTO, A., and HAMADA, K. Vinyl compound grafting on cyanoethylated or carbamoylethylated protein. Jap. Pat. 90. Jan. 11, 1964.
Chem. Abstr. 60:13380g
To Toyo Spinning Company.

1365. PODOJIL, M., and RICICOVA, A. Influence of the soya meal fractions CN gibberellic-acid and gibberellin-a production in submerged cultivation. Fol. Microbiol. 10(1):55-59. Jan. 1965. 448.3 C332

1366. READ, D. H. Proteinaceous adhesives. U. S. Pat. 2,813,037. Nov. 12, 1957.
Chem. Abstr. 52:4224b
To American Marietta Company.

1367. REZNIKOVA, L. S. Antigens from plant materials for serological tests for syphilis. (Rus) Vestnik Venerol. Dermatol. 30(6):43-45. 1956. Libr. Cong.
Chem. Abstr. 51:7552g
Antigens produced from soybean meal.

1368. ROBINETTE, H. Low viscosity quaternary ammonium ethosulfate compositions and methods. U. S. Pat. 3,113,956. Dec. 10, 1963.
Chem. Abstr. 60:5335c
To Robinette Research Laboratories.

1369. SALZBERG, H. K. Casein compounds. U. S. Pat. 2,748,009. May 24, 1956.
Chem. Abstr. 50:12534a
To reaction is also applicable to soybean protein and fatty amines.
To Borden Company.

1370. SALZBERG, H. K., and KINNEY, W. B. Modified proteins, especially casein cements. U. S. Pat. 2,860,062. Nov. 11, 1958.
Chem. Abstr. 53:3748g
To Borden Company.

1371. SCHOLL, E. C. Water-dispersible texture paint. U. S. Pat. 2,880,104. Mar. 31, 1959.
Chem. Abstr. 53:19405h
To United Gilsonite Laboratories.

1372. THOMPSON, C. E. Soil stabilization with soybean proteins. U. S. Pat. 3,131,074. Apr. 28, 1964.
Chem. Abstr. 61:3649d
To Products Development Company.

1373. TOYO SPINNING CO. Protein-acrylonitrile graft copolymers. Brit. Pat. 943,171. Dec. 4, 1963.
Chem. Abstr. 60:12166e

1374. UTSUMI, I. Amino acids mixture. Jap. Pat. 4395. June 11, 1956.
Chem. Abstr. 51:15074g
To Tanabe Drug Manufacturing Company.

1375. WAJAROFF, T. Hair-decurling compositions. Ger. Pat. 1,126,071. Mar. 22, 1962.
Chem. Abstr. 57:976b
To Wella, A. G.
Soybean meal may also be used.

1376. YOUNG, H. H., SPITZMUELLER, K. H. Acylated polypeptide amides. U. S. Pat. 3,138,581. June 23, 1964.
Chem. Abstr. 61:7238h
Surfactants produced.
To Swift & Company.

1377. YOUNG, H. H., and CHRISTOPHER, E. F. Urea derivatives of proteins for glue manufacture. U. S. Pat. 2,816,099. Dec. 10, 1957.
Chem. Abstr. 52:5867b
Soybean protein used in the product.
To Swift & Company.

Coatings

1378. BAIN, W. M., CIRCLE, S. J., and OLSON, R. A. Isolated soy proteins for paper coating from a manufacturer's viewpoint. TAPPI Monogr. Ser. 22: 206-241. Ref. 1961. 302.9 T22T
A discussion of the commercial soy proteins available for paper coating. There is included a discussion of the chemical and physical properties of soy protein.

1379. ERRATT, R. L., JAHN, R. G., and SILVERNAIL, L. H. Basic properties of pigmented coatings bound with Dow Latex 512-R, casein, and isolated soybean protein. Tappi 42(3):142A-148A. Mar. 1959. 302.8 T162
Chem. Abstr. 53:14514i
Gives adhesive ratio for soy protein and soy protein relationship to ink receptivity.

1380. GENIN, G. Casein in mixtures with a synthetic latex base for the manufacture of coated paper. Lait 40(399/400):627-633. Nov./Dec. 1960. 44.8 L143
Chem. Abstr. 55:9872c
Soybean proteins used.

1381. HALL, H. R. The use of isolated soybean protein in paper coatings. Tappi 38:249-252. Ref. Apr. 1955. 302.8 T162
Chem. Abstr. 49:8599f
The unmodified protein can be expected to be cheaper than the modified. However, the unmodified may require special formulas and techniques.

1382. MEYER, E. W., and CIRCLE, S. J. Paper coatings. U. S. Pat. 2,932,589. Apr. 12, 1960.
Chem. Abstr. 55:5955c
To Glidden Company.

1383. OXFORD PAPER CO. Paper coatings based on water-insoluble protein adhesives. Fr. Pat. 1,343,098. Nov. 15, 1963.
Chem. Abstr. 60:12228a

1384. ROWE, S., and NUGENT, C. T. Unhydrolyzed protein from soybeans for paper coating. U. S. Pat. 2,887,395. May 19, 1959.
Chem. Abstr. 53:16540a
To Buckeye Cellulose Corporation.

1385. SKIDMORE, G. Use of soy protein in coating paper and board. Pap. Trade J. 146(35):32-34. Aug. 27, 1962. 302.8 P196
Chem. Abstr. 58:11569b
Discusses range of viscosities, preparation of high solids coatings, protein-latex combinations and use of insolubilizing agents.

1386. WARREN (S. D.) CO. Coating of paper. Belg. Pat. 612,462. July 9, 1962.
Chem. Abstr. 58:1637a

1387. WEBER, R. E. The effect of pigment binders on paper gloss, printed gloss, and oil absorption. Tappi 43(10):833-836. Oct. 1960. 302.8 T162
Chem. Abstr. 55:9872f
Soybean protein discussed.

1388. YOUNG, R. V., and DUNDON, G. S. Quick-drying liquid coatings containing proteins. U. S. Pat. 2,710,815. June 14, 1955.
Chem. Abstr. 49:13000f
Photographic emulsions.
To Eastman Kodak Company.

UTILIZATION OF OIL FOR INDUSTRIAL USES

General

1389. ADAMS, B. F. Vinyl covering. U. S. Pat. 2,920,977. Jan. 12, 1960.
Chem. Abstr. 54:9321f
To Armstrong Cork Company.

1390. AITKEN, R. R., and DADSON, L. M. Poly (vinyl chloride) compositions. Brit. Pat. 830,810. Mar. 23, 1960.
Chem. Abstr. 54:16024a
To Imperial Chemical Industries.

1391. ALLIED CHEMICAL CORPORATION. Epoxides. Brit. Pat. 933,697. Aug. 8, 1963.
Chem. Abstr. 60:1700g

1392. ALMEDA, A. F. Emulsion of vegetable fats. Span. Pat. 239,270. Aug. 9, 1958.
Chem. Abstr. 54:11520d

1393. ANDERSEN, H. C., and ROMEO, P. L. Decomposition of peracetic acid with platinum or ruthenium catalyst on a carbon powder. U. S. Pat. 3,146,243. Aug. 25, 1964.
Chem. Abstr. 61:11376e
Samples of epoxy soybean oil used.
To Engelhard Industries.

1394. ANDERSON, D. L. Inhibiting the corrosion of steel in aquous media. U. S. Pat. 2,926,108. Feb. 23, 1960.
Chem. Abstr. 54:10812e
To General Mills.

1395. AOYANAGI, Y., and others. Fat emulsions suitable for intravenous injection. Jap. Pat. 1848. Mar. 8, 1960.
Chem. Abstr. 54:20100c
Y. Higasa, H. Kotera, and K. Kishida, joint inventors.
To Dai-Nippon Drug Manufacturing Company.

1396. ARCHER-DANIELS-MIDLAND CO. Slowly soluble fertilizers. Brit. Pat. 954,555. Apr. 8, 1964.
Chem. Abstr. 61:1224b
Soy alkyd used in the preparation of the fertilizer.

1397. ARGUS CHEMICAL CORPORATION, Poly (vinyl chloride) stabilizer. Brit. Pat. 841,890. July 20, 1960.
Chem. Abstr. 55:4054a

1398. ARIGA, N., UEKI, K., and KANAI, T. Vehicle for paint. Jap. Pat. 16,040. Sept. 11, 1961.
Chem. Abstr. 56:10317g
To Japan Reichhold Chemicals.

1399. ARMOUR & CO. Inhibitors. Brit. Pat. 951,729. Mar. 11, 1964.
Chem. Abstr. 61:5302h
Quaternary ammonium compounds derived from soybean oils removes scale and oxide from metal surfaces.

1400. AYRES, E. B. Polyolefinic alcohols of increased conjugation from soybean and menhaden oil. U. S. Pat. 2,819,317. Jan. 7, 1958.
Chem. Abstr. 52:7742c
To Ethyl Corporation.

1401. BADISCHE ANILIN SODA FABRIK. Unsaturated polyester resins and copolymers therefrom. Brit. Pat. 806,730. Dec. 31, 1958.
Chem. Abstr. 53:9727b

1402. BALTES, J., WEGHORST, F., and MAKUS, Z. Mixtures of polyamides and hardenable epoxy compounds in the preparation of molded articles, including surface structures. Ger. Pat. 1,158,255. Nov. 28,

1963.
Chem. Abstr. 60:5714b
To Harburger Fettechemie Brinkman & Mergell.

1403. BATAAFSE PETROLEUM MAATSCHAPPIJ. Adhesives and coating materials from epoxy resins. Neth. Pat. 98,389. July 17, 1961.
Chem. Abstr. 59:8945h

1404. BATAAFSE PETROLEUM MAATSCHAPPIJ. Alkyd coating resins from epoxy resins. Brit. Pat. 858,827. Jan. 18, 1961.
Chem. Abstr. 55:12888i

1405. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Curing compound having internal epoxy groups. Brit. Pat. 812,735. Apr. 29, 1959.
Chem. Abstr. 53:14589e

1406. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Epoxy compounds. Brit. Pat. 794,373. Apr. 30, 1958.
Chem. Abstr. 53:3065a

1407. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Film forming epoxy resins compositions. Neth. Pat. 96,555. Jan. 16, 1961.
Chem. Abstr. 58:4708b

1408. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Mixed esters and coating compositions containing esters. Dutch Pat. 76,235. Oct. 15, 1954.
Chem. Abstr. 49:6622i

1409. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Paint base. Neth. Pat. 99,271. Sept. 19, 1955.
Chem. Abstr. 56:8874f

1410. BATAAFSCHE PETROLEUM MAATSCHAPPIJ. Peroxide treatment of fatty oils. Dutch Pat. 79,636. Nov. 15, 1955.
Chem. Abstr. 51:4024a
Soybean oil is converted into a product which dries hard and is free of tack and stickiness.

1411. BAUR, F. J. Glyceride oil crystalization. U. S. Pat. 3,059,011. Applied Dec. 6, 1961.
Chem. Abstr. 58:2576h
To Proctor & Gamble Company.

1412. BAUR, F. J. Glyceride oil crystallization. U. S. Pat. 3,059,008. Oct. 16, 1962.
Chem. Abstr. 58:2576h
To Proctor & Gamble Company.

1413. BEISWANGER, J. P. G., and BURNARD, J. W. Synergistic corrosion-inhibiting compositions for gasoline. U. S. Pat. 2,883,277. Apr. 21, 1959.
Chem. Abstr. 53:13573f
To Aniline & Film Corporation.

1414. BELANGER, W. J. Epoxide resins. U. S. Pat. 2,947,726. Aug. 2, 1960.
Chem. Abstr. 54:21856a
To Devoe & Raynolds Company.

1415. BERGER, JENSON & NICHOLSON. Multi-color paint. Brit. Pat. 916,496. Jan. 23, 1963.
Chem. Abstr. 58:10402c

1416. BEYER, R. L. Some comments on linseed, soybean and castor oil. Amer. Paint J. Conv. Daily 45 (7A):27-28. Oct. 28, 1960. 306.8 Am32A

1417. BLOCH, H. S. Insecticides. U. S. Pat. 2,771,479. Nov. 20, 1956.
Chem. Abstr. 51:4640i
Refined soybean oil used in the product.
To Universal Oil Products Company.

1418. BOELHOUWER, C., and others. Transformations of semi-drying oils. J. Appl. Chem. (London) 8(6): 387-390. June 1958. 382 J82
Chem. Abstr. 53:20832e
D. Martin Garcia, J. J. de Ruiter, and H. I. Waterman, joint authors.
Directed inter-esterification (Eckey's process) and elaidinization of soybean oil included.

1419. BOLTON, B. A. Oil-modified alkyd resins. U. S. Pat. 2,856,374. Oct. 14, 1958.
Chem. Abstr. 53:1834i
To Standard Oil Company (Indiana).

1420. BOSTIK LTD. Adhesives for bonding cardboard trays. Brit. Pat. 941, 387. Nov. 13, 1963.
Chem. Abstr. 60:8202d

1421. BRADLEY, J. A., and WOLFF, H. Polymers from polyepoxy acid esters and boric acid. U. S. Pat. 3,030,392. Apr. 17, 1962.
Chem. Abstr. 57:3631a
To Staley (A. E.) Manufacturing Company.

1422. BRINBERG, S. L. Effect of oils on fermentation process in biosynthesis of streptomycin. (Rus) Antibiotiki 3(4):29-33. July/Aug. 1958. 396.8 An84
Chem. Abstr. 53:2356e

Influence of soybean and sunflower oils in fermentation process.

1423. BROCKMAN, F. J., MURDOCK, J. D., and MELAN, N. Coating compositions. Ger. Pat. 1,122,647. Jan. 25, 1962.
Chem. Abstr. 57:4793e
To Canadian Industries.

1424. BUCKWALTER, F. H. Repository of bismuth subsalicylate. U. S. Pat. 2,710,020. July 12, 1955.
Chem. Abstr. 49:15184f
To Bristol Laboratories.

1425. BUDDE, W. M. Waterproof poly (vinyl alcohol) films. U. S. Pat. 3,043,717. July 10, 1962.
Chem. Abstr. 57:13999f
To Archer-Daniels-Midland Company.

1426. BURKE, O. W. Pigmented polymers. Brit. Pat. 937,971. Sept. 25, 1963.
Chem. Abstr. 60:738e

1427. BURKHART, R. K., VOGEL, W. J., and BLACK, J. M. Manufacturing poly (vinyl chloride) wrapping web. U. S. Pat. 3,039,147. June 19, 1962.
Chem. Abstr. 57:7473d
To Reynolds Metal Company.

1428. CIBA. Wool dyeing. Belg. Pat. 618,053. Nov. 26, 1962.
Chem. Abstr. 59:8929c

1429. CAMPBELL, C. J. Film-forming partial allyl ether esters of pentaerythritol. U. S. Pat. 2,885,375. May 5, 1959.
Chem. Abstr. 53:14542i
To Hercules Powder Company.

1430. CARLIN, W. W. Asbetos diaphragms for chlorine-alkaline electrolysis cells. Ger. Pat. 1,123,305. Feb. 8, 1962.
Chem. Abstr. 57:1986f
To Pittsburgh Plate Glass Company.

1431. CARLIN, W. W. Electrolytic cell diaphragm. U. S. Pat. 3,057,794. Oct. 9, 1962.
Chem. Abstr. 58:2146h
To Pittsburgh Plate Glass Company.

1432. CARLISLE CHEMICAL WORKS. Halogen-containing synthetic resin compositions and their stabilization. Brit. Pat. 803,082. Oct. 15, 1958.
Chem. Abstr. 53:8704c

1433. CARLSTON, E. F. Acidolysis of vegetable and marine oils with phthalic acids. Amer. Oil Chem. Soc. J. 37(7):366-371. July, 1960. 307.8 J82
Chem. Abstr. 54:17919d
Soybean oil included. Purpose of process is to produce a homogeneous oil-modified alkyd resin.

1434. CARMODY, R. F. Alkyd resins from isophthalic acid. U. S. Pat. 2,884,390. Apr. 28, 1959.
Chem. Abstr. 53:18548b
To Socony Mobil Oil Co.

1435. CHADWICK, A. F., and others. Theory and practice of resin-catalyzed epoxidation. Amer. Oil Chem. Soc. J. 35(7):355-358. July 1958. 307.8 J82
Chem. Abstr. 52:15095g
D. O. Barlow, A. A. D'Addieco and J. G. Wallace, joint authors.
Study of method for the continuous operation of the resin-catalyzed epoxidation process. Soybean oil used as an ingredient.

1436. CHADWICK, D. H., and REETZ, T. Stabilization of poly (vinyl chloride) resins. U. S. Pat. 2,934,507. Apr. 26, 1960.
Chem. Abstr. 54:16926c
To Monsanto Chemical Company.

1437. CHAPIN, E. C. Modified alkyd resins. U. S. Pat. 2,862,898. Dec. 2, 1958.
Chem. Abstr. 53:7667d
To Monsanto Chemical Company.

1438. CHATFIELD, H. W. Drying oil compounds. U. S. Pat. 2,909,537. Oct. 20, 1959.
Chem. Abstr. 54:1894e
To Boake (A.), Roberts & Company.

1439. CHESTER, A. E. Oxyalkylated fatty amine salts. Brit. Pat. 772,104. Apr. 10, 1957.
Chem. Abstr. 51:11741i
The product a cationic wetting agent.
To Poor & Company.

1440. CHIOFFI, V. Modified aniline paint applied to olive and seed oils and to esterfield oils. (It) Boll. Lab. Chim. Prov. Bologna 12(2):111-122. 1961. Center Res. Libraries
Chem. Abstr. 56:14415d

1441. CORNES, L. G. Organic binders for exothermic liners of feeding-head cavities in foundry molds. Brit. Pat. 812,583. Apr. 29, 1959.
Chem. Abstr. 53:13972h
To Foundry Services.

1442. COWAN, J. C. Soybean utilization research. Cotton Gin Oil Mill Press 59(25):7, 27-28. Dec. 13, 1958. 304.8 C822
Discussion of new industrial uses, and food and feed uses for oil, meal, and whole beans.

1443. CREWS, L. T., and KALINOWSKI, M. L. Asphalt compositions. U. S. Pat. 2,759,839. Aug. 21, 1956.
Chem. Abstr. 50:17422b
To Standard Oil Company (Indiana).
Polymerized unsaturated fatty acids of vegetable oil used.

1444. CROSTON, C. B., TEETER, H. M., and COWAN, J. C. Unsaturated carboxylic acid polymers. U. S. Pat. 2,729,658. Jan. 3, 1956.
Chem. Abstr. 50:6071b
These polymers from soybean oil are useful as additives in asphalt road compounds.
To U. S. Dept. of Agriculture.

1445. DANIEL, J. H. Styrenated nondrying-and (or) semidrying oil-modified alkyd resins. U. S. Pat. 2,986,543. May 30, 1961.
Chem. Abstr. 55:25290d
To American Cyanamid Company.

1446. DAZZI, J. Plasticized poly (vinyl chloride) U. S. Pat. 2,757,151. July 31, 1956.
Chem. Abstr. 51:762f
To Monsanto Chemical Company.

1447. DEAN, R. T., and MANASIA, J. P. Resinous products from polycarboxylic acids and polymeric polyhydric alcohols. U. S. Pat. 2,848,431. Aug. 19, 1958.
Chem. Abstr. 52:21234i
To Interchemical Corporation.

1448. DEGROOTE, M., and CHENG, J. P. Inhibiting the growth of sulfate-reducing bacteria in water flooding process. U. S. Pat. 3,049,492. Aug. 14, 1962.
Chem. Abstr. 57:14234h
Soybean oil as a pesticide.

1449. DEGROOTE, M., and CHENG, J. P. Reaction product of epoxidized glycerides and polyamino compounds. U. S. Pat. 3,148,199. Sept. 8, 1964.
Chem. Abstr. 61:14912c
To Petrolite Corporation.

1450. DEGROOTE, M., and CHENG, J. P. Surfactants. U. S. Pat. 2,956,067. Oct. 11, 1960.
Chem. Abstr. 55:4016e
To Petrolite Corporation.

1451. DEHYDAG DEUTSCHE HYDRIERWERKE. Epoxy-containing organic compounds. Belg. Pat. 635,527. Nov. 18, 1963.
Chem. Abstr. 61:12151f

1452. DELIUS, H. Polycondensation products. Ger. Pat. 1,039,746. Sept. 25, 1958.
Chem. Abstr. 54:20343b
To Reichhold Chemie.

1453. DETRICK, S. R., and BARTHEL, E. Condensation products of hydroxy-containing fatty acid glycerides and arylene diisocyanates. U. S. Pat. 2,787,601. Apr. 2, 1957.
Chem. Abstr. 51:10130c
A cellular plastic material useful as a foam.
To E. I. du Pont de Nemours & Company.

1454. DIECKELMANN, G. Epoxidation of unsaturated compounds. Ger. Pat. 1,075,614. Feb. 18, 1960.
Chem. Abstr. 55:11368b
To Deutsche Hydrierwerke.

1455. DIECKELMANN, G. Higher-molecular weight epoxy fatty acid esters. Ger. Pat. 1,084,712. July 7, 1960.
Chem. Abstr. 55:21144e
To DEHYDAG Deutsche Hydrierwerke.

1456. DIECKELMANN, G., and HEYDEN, R. Rubber-like compounds. Ger. Pat. 969,930. July 31, 1958.
Chem. Abstr. 54:13710a
To Henkel & Cie.

1457. DIPIAZZA, J. T. Antistatic hydrocarbon oils. U. S. Pat. 2,974,027. Mar. 7, 1961.
Chem. Abstr. 55:16992b
To Esso Research and Engineering Company.

1458. DORST, W. Glossy coatings from aqueous dispersion of alkyd resins. Brit. Pat. 896,743. May 16, 1962.
Chem. Abstr. 57:8692c
Baked enamel from soybean fatty acids.

1459. DRUBEL, P. B., CIPRIANO, A. L., and HENSON, W. A. A new resinous polyalcohol for the coatings industry. Amer. Paint J. 39(25):84, 86-87, 90, 92, 94, 102, 104. Mar. 7, 1955. 306.8 Am32
Chem. Abstr. 49:7870f
Superior finishes at reasonable cost levels. Spar, varnishes, and chemical resistant finishes.

1460. DUFEK, E. J., and others. Reactions of unsaturated fatty alcohols. VII. Polymerization of vinyl ethers catalyzed by stannic and ferric chlorides. Amer. Oil Chem. Soc. J. 37(1):37-40. Jan. 1960. 307.8 J82
Chem. Abstr. 54:5125c
R. A. Awl, L. E. Gast, J. C. Cowan, and H. M. Teeter, joint author.

1461. DUFEK, E. J.,GAST, L. E., and TEETER, H. M. Reactions of unsaturated fatty alcohols. XIII. Copolymers of unsaturated fatty vinyl ethers and cylic monomers. Amer. Oil Chem. Soc. J. 39(5):238-241. Ref. May 1962. 307.8 J82
Chem. Abstr. 57:2358a
Conjugated linseed, conjugated soybean, and nonconjugated linseed vinyl esters were copolymerized with various cyclic comonomers. Drying oils.

1462. DUNLAP, L. H., and REIFF, R. H. Floor-covering binders. U. S. Pat. 2,767,151. Oct. 16, 1956.
Chem. Abstr. 51:1625f
To Armstrong Cork Company.

1463. DYBALSKI, J. N., BERENSCHOT, D. J., and RIEGLER, W. L. Water-wet pigments for oil systems. U. S. Pat. 3,014,810. Dec. 26, 1961.
Chem. Abstr. 58:12774a
To Armour & Company.

1464. EASTMAN KODAK CO. Solubilization of complex molecules for use as drugs. Fr. Pat. 1,330,108. June 21, 1963.
Chem. Abstr. 59:11198f

1465. EBERHARD, J. F. Well fracturing fluid. U. S. Pat. 3,022,249. Feb. 20, 1962. Applied Aug. 12, 1959.
Chem. Abstr. 56:15729e
To Dow Chemical.

1466. ELDRIDGE , A. C., and MCKINNEY, L. L. S-(1,2-Dichlorovinyl) glutathione. U. S. Pat. 2,849,434. Aug. 26, 1958.
Chem. Abstr. 53:3085h
To U. S. Department of Agriculture.

1467. FAIRWEATHER, H. G. C. Quaternary ammonium polyoxyalkylenated amino diamide corrosion inhibitors and surface-active agents. Brit. Pat. 816, 617. July 15, 1959.
Chem. Abstr. 53:21583d
To General Aniline & Film Corporation.

1468. FARERI, E L., and PELLEGRINI, J P. Copolymeric additives for liquid hydrocarbon fuels. U S. Pat. 3,020,135. Feb. 6, 1962.
Chem. Abstr. 56:11902d
To Gulf Research & Development Company.

1469. FARSTAD, D. K. New and improved oils for glazing and caulking compounds. Paint Indus. Mag. 72(11):37, 82. Nov. 1957. 306.8 D84
Soybean oils today are the backbone of the caulking compound industry since they provide excellent low cost vehicles that are available in volume for all general types of caulks.

1470. FENSKE, D. H. Ore beneficiation process. U. S. Pat. 3,032,195. May 1, 1962.
Chem. Abstr. 57:5588f
To International Minerals & Chemical.

1471. FINDLEY, T. W., and OHLSON, J. L. Cross-linked reaction product. U. S. Pat. 2,964,484. Dec. 13, 1960.
Chem. Abstr. 55:8889e
To Swift & Company.

1472. FINDLEY, T. W. Epoxy fatty hydrazides. U. S. Pat. 2,892,848. June 30, 1959.
Chem. Abstr. 53:20088d
To Swift & Company.

1473. FINDLEY, T. W., and ROBIN, B. H. Hydroxy hydroxyalkylamides of fatty acids. U. S. Pat. 2,993,919. July 25, 1961.
Chem. Abstr. 55:27924f
To Swift & Company.

1474. FINDLEY, T. W. Phosphorylated fatty oils. U. S. Pat. 2,965,657. Dec. 20, 1960.
Chem. Abstr. 55:6894g
To Swift & Company.

1475. FINDLEY, T. W., OHLSON, J. L., and KUESTER, F. E. Polyesters from epoxy-containing oleaginous materials. U. S. Pat. 3,006,936. Apr. 10, 1957.
Chem. Abstr. 56:4957g
To Swift & Company.

1476. FINDLEY, T. W. Solvent and heat resistant polyepoxides by irradiation. U. S. Pat. 2,964,454. Dec. 13, 1960.
Chem. Abstr. 55:8935g
To Swift & Company.

1477. FINDLEY, T. W., OHLSON, J. L., and KUESTER, F. E. Treatment of epoxy fatty compositions. U. S. Pat. 3,035,069. May 15, 1962.
Chem. Abstr. 57:16776c
To Swift & Company.

1478. FINK, C. K., and BROWN, K. L. Polyesters from 2,4-dimethyl-4-hydroxy ethoxymethyl-1, 5-pentanediol. Ger. Pat. 946,665. Aug. 2, 1956.
Chem. Abstr. 53:9694d
To Union Carbide.

1479. FLOYD, D. E. Phenol-formaldehyde resins esterified with higher unsaturated fatty acids and dimerized rosin. U. S. Pat. 2,730,511. Jan. 10, 1956.
Chem. Abstr. 50:13474c
To General Mills.

1480. FOOD MACHINERY AND CHEMICAL CORPORATION. Epoxidizing organic esters. Brit. Pat. 739,609. Nov. 2, 1955.
Chem. Abstr. 50:9765i
Soybean oil yielded epoxidized organic esters.

1481. FORSTER, W. Polyamide like condensation products. U. S. Pat. 2,890,228. June 9, 1959.
Chem. Abstr. 53:17582e
To Reichhold Chemicals.

1482. FORSYTHE, A. K. Linoleum cement. U. S. Pat. 2,815,295. Dec. 3, 1957.
Chem. Abstr. 52:4212e
A tough linoleum binder mixture gel forms on oxidation.
To Armstrong Cork Company.

1483. FULMER, R. W. Condensation products of an epoxidized fatty oil and an alkylene polyamine. U. S. Pat. 3,035,000. May 15, 1962.
Chem. Abstr. 57:8679c
To General Mills.

1484. FUSKA, J., and HROMSKA, H. The effect of wetting agents on the production of penicillin. V. (Cz) Chem. Zvesti 17(3):170-176. 1963. 385 C4232
Chem. Abstr. 59:14533f
German summary.
Sulfonated soybean oil used in the fermentation process.

1485. FYSH, D. Reaction products of epoxidized oils. Brit. Pat. 854,961. Nov. 23, 1960.
Chem. Abstr. 55:10927g
To Boake (A.) Roberts & Company.
Organic compounds from soybean oil used as intermediates in the production of paints, textile finishes, and synthetic resins.

1486. GAST, L. E., and others. Reactions of unsaturated fatty alcohols. VI. Guerbet reaction of soybean and linseed alcohols. Amer. Oil Chem. Soc. J. 35(12): 703-707. Dec. 1958. 307.8 J82
E. D. Bitner, J. C. Cowan, and H. M. Teeter, joint authors.
Chem. Abstr. 53:2648h
Infrared spectroscopic studies of soybean and linseed alcohols.

1487. GELB, L. L., and others. Epoxy resins from fats. I. Epoxidized glycerides cured with phthalic anhydride. Amer. Oil Chem. Soc. J. 36(7):283-286. July, 1959. 307.8 J82
Chem. Abstr. 53:16580g
W. C. Ault, W. E. Palm, L. P. Witnauer, and W. S. Port, joint authors.

1488. GERHART, H. L. Copolymers of cyclopentadiene for drying oils. Ger. Pat. 1,099,174. Feb. 9, 1961.
Chem. Abstr. 55:26475b
To Pittsburgh Plate Glass Company.

1489. GOLDEN GATE PAINT AND VARNISH PRODUCTION CLUBS. Exposure characteristics of clear finishes for exterior wood surfaces. Federation Paint, Varnish Prod. Clubs. Offic. Digest 28(382):1001-1020. Nov. 1956. 306.9 F31
Chem. Abstr. 51:17195h
Finishes containing soybean oil included.

1490. GOLDSMITH, W. F., and MARPLES, D. F. Stabilization of epoxide compositions. U. S. Pat. 3,142,687.
Chem. Abstr. 61:9638b
To Union Carbide Corporation.

1491. GOODING, C. M., and MELNICK, D. Preventing polymer formation in the frying oil during potato chip manufacture. U. S. Pat. 2,973,268. Feb. 28, 1961.

Chem. Abstr. 55:10743h
To Corn Products Company.

1492. GOTTHARDT, H., GREULICH, J., and RUNGE, W. Stable polyvitamin preparations. Ger. (East) Pat. 19,845. July 16, 1958.
Chem. Abstr. 56:7446e

1493. GRACE (W. R.) AND CO. Plasticizer-stabilizer compositions for vinyl chloride polymers. Brit. Pat. 942,619. Nov. 27, 1963.
Chem. Abstr. 60:8198g

1494. GRANT (F.) CO. Thermoplastic polymer compositions. Belg. Pat. 622,500. Mar. 14, 1963.
Chem. Abstr. 60:737d

1495. GREENLEE, S. O. Glycidyl ethers of hydroxphenylated petroleum resins. U. S. Pat. 3,010,920. May 4, 1960.
Chem. Abstr. 56:7608a

1496. GREENLEE, S. O. Partial esters of epoxide resins. U. S. Pat. 2,754,901. Aug. 21, 1956.
Chem. Abstr. 51:2308b
To Devoe & Raynolds Company.

1497. GREENLEE, S. O., and PEARCE, J. W. Polyepoxide-unsaturated acid baked coatings. U. S. Pat. 3,023,178. Feb. 27, 1962.
Chem. Abstr. 56:15632d
To Johnson (S. C.) & Son.

1498. GREENSPAN, F. P., and GALL, R. J. Epoxidation of unsaturated higher fatty acid esters with ion-exchange resins. U. S. Pat. 2,919,283. Dec. 29, 1959.
Chem. Abstr. 54:7189a
To Food Machinery & Chemical Corporation.

1499. GREENSPAN, F. P., and GALL, R. J. Polyvinyl resins plasticized with partially expoxidized fatty acid esters. U. S. Pat. 2,857,349. Oct. 21, 1958.
Chem. Abstr. 53:1847a
To Food Machinery and Chemical Corporation.

1500. GREENSPAN, F. P., and GALL, R. J. Stabilization of polyvinyl chloride with salts of epoxy fatty acids. U. S. Pat. 2,684,353. July 20, 1954.
Chem. Abstr. 49:11321h
To Buffalo Electro-Chemical Company.

1501. HANSEN, F. R., and ZAREMSKY, B. Vinyl chloride resins stabilized with 2-ethylhexylaryl phosphites. U. S. Pat. 2,867,594. Jan. 6, 1959.
Chem. Abstr. 53:7671h
To Ferro Chemical Corporation.

1502. HANSEN, L. I. Plasticizers for nitro cellulose lacquers. U. S. Pat. 2,754,306. July 10, 1956.
Chem. Abstr. 50:15099b
To Archer-Daniels-Midland Company.

1503. HARBURGER FETTCHEMIE BRINCKMAN & MERGELL. Catalytic isomerization of compounds of unconjugated polyethenoid acids. Brit. Pat. 925,148. May 1, 1963.
Chem. Abstr. 59:11267c

1504. HARBURGER FETTCHEMIE BRINCKMAN & MERGELL. Fatty acid ester copolymers with vinyl-aromatic compounds. Belg. Pat. 627,128. Apr. 30, 1963.
Chem. Abstr. 60:8158a

1505. HARBURGER FETTCHEMIE BRINCKMAN & MERGELL. Styrenated fatty polyamides. Belg. Pat. 627,129. Apr. 30, 1963.
Chem. Abstr. 60:9433e

1506. HARRISON, S. A. Copolymers of phenolic resin esters and compounds containing a vinylbenzene nucleus. U. S. Pat. 2,731,428. Jan. 17, 1956.
Chem. Abstr. 50:6097g
To General Mills.

1507. HAUCK, K. H., HECKER-OVER, F. Alkyd resin treatment for use in laquers. Ger. Pat. 1,045,652. Dec. 4, 1958.
Chem. Abstr. 55:2138i
Soybean oil used in the process.

1508. HEMPEL, A. R., and MARLING, P. E. Drying oils. U. S. Pat. 2,754,307. July 10, 1956.
Chem. Abstr. 50:15097f
To Monsanto Chemical Company.

1509. HIRAKI, I. Plaster containing soybean-hydrolysis. Jap. Pat. 5637. Sept. 6, 1954.
Chem. Abstr. 49:14292f
Three S Gypsum Company.

1510. HOLMAN, G. W., and SANDERS, J. H. Stable pourable oleaginous suspensions. U. S. Pat. 2,815,285. Dec. 3, 1957.
Chem. Abstr. 52:5007b

To Proctor & Gamble Company.
Hydrogenated soybean oil is used.

1511. HOSKING, A. H., and LAMBOURNE, R. Drying oils. Brit. Pat. 854,231. Nov. 16, 1960.
Chem. Abstr. 55:13873b
To Imperial Chemical Industries.

1512. HOWARD, H. W., and SOMERVILLE, G. R. Varnishes from epoxy resins and fatty oils. Ger. Pat. 1,043,555. Nov. 13, 1958.
Chem. Abstr. 55:2137c
To Bataafsche Petroleum Maatschappij.

1513. HUBER, W. F. Fatty acid esters of hexitols. U. S. Pat. 2,997,490. May 8, 1959.
Chem. Abstr. 56:1546i
To Proctor & Gamble Company.

1514. HUNTER, E. A., and SMALL, A. B. Aqueous resin dispersions from cracked petroleum fractions. Ger. Pat. 1,148,380. May 9, 1963.
Chem. Abstr. 59:6188c
To Esso Research and Engineering Company.

1515. ISHIGURO, T., and others. Small particle pharmaceutical preparations. Japan Pat. 17,600. Nov. 30, 1960.
Chem. Abstr. 55:20340g
Nobuyuki Kato, Nobuo Kato, T. Usuki, and S. Kishi, joint inventors.
To Tanabe Seiyaku Company.

1516. JAFFE, F. Lacquers. Belg. Pat. 539,195. July 15, 1955.
Chem. Abstr. 54:11514a

1517. JOHNSON, K. L. New nonionic detergents derived from epoxidized oils. Amer. Oil Chem. Soc. J. 41(3):191-198. Mar. 1964. 307.8 J82
Chem. Abstr. 60:10931b
New class of nonionic detergents from oils having an oxirane oxygen content of 6-10 percent. Soybean oil included.

1518. KAMMERER, W. Diglycidyl compounds in preparation of alkyd resins. U. S. Pat. 2,951,049. Aug. 30, 1960.
Chem. Abstr. 55:2142e
To American Cyanamid Company.

1519. KAUFMANN, H. P., and GROTHUES, B. Interesterification in fats. III. (Ge) Fette, Seifen, Anstrichmittel 61(6):425-429. June 1959. 384 C422
Chem. Abstr. 54:927c
English summary.
Soybean oil interesterificated under experimental conditions.

1520. KAUFMANN, H. P., and BALTES, J. Monoglycerides of hydroxy acids. Ger. Pat. 1,148,224. May 9, 1963.
Chem. Abstr. 59:10353d

1521. KAUFMANN, H. P., and BUSCHER, F. J. The paper chromatography of fats. XLII. (Ge) Fette, Seifen, Anstrichmittel 62(12):1141-1143. Dec. 1960. 384 C422
Chem. Abstr. 55:11881i
English summary.
The analysis of alkyd resins.

1522. KAZANSKAIA, T. B. The effect of soybean oil and of its components upon the production of streptomycin. (Rus) Akad. Nauk SSR. Dok. 123(3):561-563. Nov. 21, 1958. 511 P444A
This article will appear in English translation in Doklady: biological sciences sections (511 P444Aeb).

1523. KHAN, N. A. Unsaponifiable matter: properties, isolation, and determination. Oleagineux 15(2): 85-90. Feb. 1960. 77.8 O12
Chem. Abstr. 54:16875c
Soybean oil included.

1524. KINCL, J., and DITRYCH, Z. Epoxy resins esters. Czech. Pat. 101,431. Oct. 15, 1961.
Chem. Abstr. 58:674g

1525. KIRSCH, A. Preparation of styrenated oil-modified alkyd resins with pinane hydroperoxide as catalyst. U. S. Pat. 2,743,249. Apr. 24, 1956.
Chem. Abstr. 50:11054f
To American Cyanamid Company.

1526. KOLINSKY, J., and WIESNER, I. Amino amide resins. Czech. Pat. 98,573. Feb. 15, 1961.
Chem. Abstr. 57:7469f

1527. KOLINSKY, J., and WIESNER, I. Amino imine resins. Czech. Pat. 106,101. Dec. 15, 1962.
Chem. Abstr. 60:4311a

1528. KOMORI, S., and SHIGENO, Y. Plasticization of vinyl chloride resins. Jap. Pat. 11,683. Aug. 22, 1960.
Chem. Abstr. 55:10976b

1529. KOYANO, K., and NAGAO, H. The change of birefringence sign, density, and opacity of an acrylic fiber. Kolloid Z. 177(1):30-35. Ref. July 1961. 384 Z315
Chem. Abstr. 55:25262c
Acrylic fiber stretched in soybean oil.

1530. KRAFT, W. M., METZ, H., and ROBERTS, G. T. Considerations in the processing of PE Alkyds. Paint Varnish Prod. 47(8):29-32. July 1957. Libr. Cong.
Chem. Abstr. 51:15145f
Preferred alcoholysis catalyst was soybean oil.

1531. KRAUS, A. The behavior of resins nitrocellulose lacquers. 7. Alkyd resins. (Ge) Farbe Lack 68(6): 381-387. June 1962. Libr. Cong.
Chem. Abstr. 57:9980h
Soybean alkyds included.

1532. KUESTER, F. E. Dioxolated fatty acid esters. U. S. Pat. 3,127,418. Mar. 31, 1964.
Chem. Abstr. 61:3113f
To Swift & Company.

1533. KUESTER, F. E., and OHLSON, J. L. Selective alcoholysis of epoxy fatty acid esters. U. S. Pat. 3,070,608. Dec. 25, 1962.
Chem. Abstr. 58:11328h
To Swift & Company.

1534. KUMANOTANI, J., CHEN, L. W., and KUWATA, T. Studies of the cross-linking and glass transition of fatty acid-modified alkyd resins. Chem. Soc. Jap. Bull. 35(8):1341-1349. Aug. 1962. 385 T57B
Chem. Abstr. 57:13912f
Soybean oil fatty acids were used as reagents.

1535. LANSON, H. J. Selective acidolysis, a method for the segregation of drying oils. Amer. Oil Chem. Soc. J. 33(2):68-71. Ref. Feb. 1956. 307.8 J82
Chem. Abstr. 50:6067i
Soybean fatty acids.

1536. LARRIEU, L. J. Protective composition for metals. U. S. Pat. 3,035,926. May 22, 1962.
Chem. Abstr. 57:6968i
To Kirk (M. P.) & Son, Incorporated.

1537. LARSON, V. J. Coating compositions containing chlorinated rubber. U. S. Pat. 2,798,056. July 2, 1957.
Chem. Abstr. 51:14289e
To Hercules Powder Company.
Soybean oil varnish used as an ingredient.

1538. LAYMAN, R. E. Aqueous melamine-fatty acid primers and enamels. U. S. Pat. 3,025,251. Mar. 13, 1962. Applied Aug. 10, 1959.
Chem. Abstr. 56:15631h
To American Cyanamid Company.

1539. LEDERMAN, B. E. Hammered metal finish compositions. U. S. Pat. 2,873,261. Feb. 10, 1959.
Chem. Abstr. 53:8662e
To Commonwealth Engineering Corporation.

1540. LINK, W. E., HICKMAN, H. M., and MORRISSETTE, R. A. Gas-liquid chromatography of fatty derivatives. I. Separation of homologous series of a-Olefins, n-Hydrocarbons, n-Nitriles, and n-Alcohols. Amer. Oil Chem. Soc. J. 36(1):20-23. Jan. 1959. 307.8 J82
Chem. Abstr. 53:4773i
Study includes an alcohol derived from soybean oil.

1541. LOFGREN, C. S., BARTLETT, F. J., and STRINGER, C. E. Imported fire ant, Solenopsis saevissima richteri, toxic bait studies, further tests with granulated mirex soybean oil bait. J. Econ. Ent. 57(5):695-698. Oct. 1964. 421 J822

1542. LOLKEMA, J., and MOES, G. Water-in-oil drilling emulsion. Ger. Pat. 1,071,624. Dec. 24, 1959.
Chem. Abstr. 55:19220f
Emulsion obtained was very stable with excellent sealing properties.
To Scholten's (N. V. W. A.) Chemische Fabrieken.

1543. LONGMAN, G. F. The analysis of monoglyceride and related emulsifiers. In Boekenoogen, H. A. Analysis and characterization of oils, fats and fat products. p. 233-280. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1544. LOWES, F. J. Inhibition of gelling of vinyltoluene alkyd varnishes modified with glyceride oils. U. S. Pat. 3,075,933. Jan. 29, 1963.
Chem. Abstr. 58:8141c
To Dow Chemical Company.

1545. LUBOWE, I. I. Solubilizing cosmetic pharmaceutical, and industrial oils in low-molecular alcohols. U. S. Pat. 2,865,859. Dec. 23, 1958.
Chem. Abstr. 53:6551c

1546. LUMMUS, J. L., and ANDERSON, D. B. High temperature emulsion drilling fluid. U. S. Pat. 3,041,275. June 26, 1962.
Chem. Abstr. 57:14059h
To Pan American Petroleum Corporation.

1547. LYNESS, H. S. Patent leather. U. S. Pat. 2,937,957. May 24, 1960.
Chem Abstr. 54:17932i

1548. MCKEE, A. W. Thermoplastic nondusting compositions for stencelling floor coverings. U. S. Pat 3,101,241. Aug. 20, 1963.
Chem. Abstr. 59:10346f
To Armstrong Cork Company.

1549. MCKINNEY, L. L., WEAKLEY, F. B., and ELDRIDGE, A. C. S-(1,2-dichlorovinyl)-cysteine and method for its preparation. U. S. Pat. 2,890,246. June 9, 1959.
Chem. Abstr. 53:19917e
To U. S. Department of Agriculture.

1550. MACMORINE, H. G. Some factors influencing the production of certain biosynthetic penicillins. Appl. Microbiol. 5(6):386-391. Nov. 1957. 448.3 Ap5
Chem. Abstr. 52:5542b
Using soybean oil as an antifoam agent.

1551. MAERKER, G., SAGGESE, E. J., and PORT, W. S. Glycidyl esters. II. Synthesis of esters of commercial and pure fatty acids. Amer. Oil Chem. J. 38(4):194-197. Apr. 1961 307.8 J82
Chem. Abstr. 55:13878i
Study of glycidyl esters derived of the fatty acids of soybean oil.

1552. MAERKER, G., and PORT, W. S. Hydroxy esters. U. S. Pat. 3,069,441. Dec. 18, 1962.
Chem. Abstr. 59:11270e
To U. S. Department of Agriculture.

1553. MALYAN, C. R. The methyl ester route. Paint, Oil Colour J. 138(3241):1228-1230. Nov. 25, 1960. 306.8 Oi52
Chem. Abstr. 55:5985d
For the utilization of glyceride oils including soybean oil.

1554. MARSH, B. E., and TUCEK, D. J. Gasoline anti-icing additives. U. S. Pat. 3,115,399. Dec. 24, 1963.
Chem. Abstr. 60:15664f
To Armour & Company.

1555. MARTINEZ MORENO, J., ESTABLIER TORREGROSA, R., and VASZQUEZ RONCERO, A. Influence of pressure on the isomerization of polysaturated fatty acids. (Sp) Grasas Aceites 10(6):279-282. Nov./Dec. 1959. 307.8 G76
Chem. Abstr. 55:1031h

1556. MARTINEZ MORENO, J. M., VAZQUEZ RONCERO, A., and ESTABLIER TORREGROSA, R. Preparation of unsaturated fatty alcohols at high pressure. II. (Sp) Grasas Aceites 10(2):55-60. Mar./Apr. 1959. 307.8 G76
Chem. Abstr. 54:14727e

1557. MARZOCCHI, A., and RAMMEL, G. E., and CHARON, C. W. Finish for staple glass fibers and yarns. U. S. Pat. 3,066,383. Dec. 4, 1962.
Chem Abstr. 58:8086h
To Owens-Corning Fiberglass Corporation.

1558. MARZOCCHI, A., RAMMEL, G. E., and CHARON, C. W. Finishing of textiles. Ger. Pat. 1,127,321. Apr. 12, 1962.
Chem. Abstr. 57:16923a
To Owens-Corning Fiberglass Corporation.
Sizing agent for glass fibers.

1559. MASTERS, J. E. Epoxy resin varnishes. Ger. Pat. 966,039. July 4, 1957.
Chem. Abstr. 54:10348g
To Devoe & Raynolds Company.

1560. MASUYAMA, S., and YASUHARA, S. Higher fatty alcohols. XI-XII. (Ja) Agr. Chem. Soc. Jap. J. 32(6):440-445. 1958. 385 Ag8
Chem. Abstr. 54:11561i
Glycol ethers of fatty alcohols produced from soybeans and corn.

1561. MATAGRIN, A. Soya phytosterols. Manufacturing Chem. 26(5):201-202. May 1955. 396.8 M31
Chem. Abstr. 49:11951e
Suggests that phytosterols could be used for cosmetics, soaps, ointments and vehicles for insecticides.

1562. MAYHEW, R. L., and OTTLEY, N. F. Foam suppressing compositions. U. S. Pat. 3,000,835. Sept. 19, 1961.
Chem. Abstr. 55:27928e
To General Aniline & Film Corporation.

1563. MEYER, C. E., FANCHER, J. A., and SCHNURR, P. E. Phosphatide emulsifying agent. U. S. Pat. 2, 945, 869. July 19, 1960.
Chem. Abstr. 54:20257b
To Upjohn Company.

1564. MIKUSCH, J. D. v. Alkylpyrones as effective constitutents of new condensation products. Deut. Farb. Z. 14(1):19-20. Jan. 1960. Libr. Cong.
Chem. Abstr. 54:9325i
Soybean fatty acids used.

1565. MIKUSCH-BUCHBERG, J. D. VON, MILLS, M. R., and MEBES, K. H. Fatty acid condensation products for lacquers, varnishes, and plastics. Ger. Pat. 1, 118, 910. Dec. 7, 1961.
Chem. Abstr. 58:673d
To Unilever.

1566. MIKUSCH-BUCHBERG, J. D. VON. Fatty acid condensation products, especially for use as driers. U. S. Pat. 2, 923, 718. Feb. 2, 1960.
Chem. Abstr. 54:25886i
To Lever Brothers Company.

1567. MILLER, S. E., BERRY, D. M. Isolation of sterols from fatty oils. U. S. Pat. 2, 729, 655. Jan. 3, 1956.
Chem. Abstr. 58:6819gh
To General Mills.

1568. MINER, C. S., and HIND, J. D. Glycerine alkyds using isophthalic acid. Federation Paint Varnish Prod. Clubs Offic. Digest 28(372):17-26. Jan. 1956. 306.9 F31
Chem. Abstr. 51:8451b
Critical amounts of isophthalic acid necessary depend on oil length and have been determined for a series of soy oil resins.

1569. MITCHELL, H. L., and SILKER, R. E. Effects of anti-dust oils on stability of carotene in dehydrated alfalfa meal. J. Agr. Food Chem. 3(1):69-71. Jan. 1955. 381 J8223
Experiments with various vegetable oils, including soybean oil, as dust-control agents in pelleted alfalfa feed.

1570. MIZRAHI, B. Z. Slabs and tiles. Israel Pat. 11, 868. Mar. 19, 1959.
Chem. Abstr. 53:15526c
Soybean oil used.

1571. MORRIS, G. E. Skin cleaners. U. S. Pat. 2, 809, 166. Oct. 8, 1957.
Chem. Abstr. 52:1656h

1572. MORRIS, T. C., and CHAPLICK, A. M. Thermoplastic polyamide-epoxy adhesives. U. S. Pat. 2, 867, 592. Jan. 6, 1959.
Chem. Abstr. 53:6694c
To B. B. Chemical Company.

1573. MURATA, H., and GOTO, F. Epoxy resins. Jap. Pat. 1070. Feb. 19, 1955.
Chem. Abstr. 50:17529i
Product obtained with 72.7 percent epoxylation and an I number of 44.3.
To Asahi Electrochemical Industries Company.

1574. MUROMZEV, G. S., and DUBOVAYA, L. N. On the use of oil and fatty acids as carbon source for growth of Fusarium moniliforme in gibberellin biosynthesis. (Rus) Mikrobiologiya 33(6):1048-1055. Nov./Dec. 1964. 448.3 M582

1575. NAKANE, T., KUBOTA, T., and UMEZAWA, Y. Tire cord treatment. U. S. Pat. 3, 135, 624. June 2, 1964.
Chem. Abstr. 61:7213c
Improves tire wearing qualities.

1576. OWENS-CORNING FIBERGLAS CORPORATION. Finishing compositions for glass fibers. Brit. Pat. 938, 642. Oct. 2, 1963.
Chem. Abstr. 60:714f

1577. PERRI, J. M., and SLOVITER, B. Fire-extinguishing foam forming composition. U. S. Pat. 2, 748.078. May 29, 1956.
Chem. Abstr. 50:14231a

1578. PIECHOTA, H., and others. Polyurethan foams. Belg. Pat. 628, 045. May 29, 1963.
Chem. Abstr. 61:5781h
R. Merten, V. Trescher, and H. Wirtz, joint inventors.
To Farbenfabriken Bayer, A. G.
High heat and flame-resistant foams using sorbitol.

1579. PIGOTT, G. M., and STANSBY, M. E. Iron sulfide discoloration of tuna cans. 5. Effect of salt, oil, and miscellaneous additives. Commerical Fisheries Rev. 19(2)7-9. Feb. 1957. 157.5 F532
Chem. Abstr. 51:17009c
Soy oil without salt caused no discoloration.

1580. RAIFSNIDER, P. J. Corrosion prevention. U. S. Pat. 2,756,210. July 24, 1956.
Chem. Abstr. 50:15052h
To Shell Development Company.

1581. RAMOS, F. On soybean oil; its composition and chief applications. (Sp) Grasas Aceites 14(3):122-125. May/June 1963. 307.8 G76

1582. RICHARDSON, J. H. A laboratory screening test of bactericides for use in sheep-pelt soaking pits. Appl. Microbiol. 6(2):142-145. Mar. 1958. 448.3 Ap5
Chem. Abstr. 52:12437i
3-soya tetrahydropyrimidine reduced bacterial count.

1583. ROBESON, C. D. Sterol-piperazine complexes. U. S. Pat. 3,092,624. June 4, 1963.
Chem. Abstr. 59:12886d
To Eastman Kodak Company.

1584. ROBITSCHEK, P. Polyurethan foams. U. S. Pat. 3,058,925. Oct. 16, 1962.
Chem. Abstr. 58:8109e
To Hooker Chemical Corporation.

1585. ROSENBERG, A. Stabilized fat-soluble vitamins. U. S. Pat. 2,828,206. Mar. 25, 1958.
Chem. Abstr. 52:14985g
Vitamins are dispersed in hydrogenated soybean oil.

1586. ROWLAND, C. S., and ZUCKER, H. D. Textile printing emulsions. U. S. Pat. 2,897,165. July 28, 1959.
Chem. Abstr. 53:20820d
To Interchemical Corporation.

1587. RUDNER, B. Alcohols. U. S. Pat. 3,091,627. May 28, 1963.
Chem. Abstr. 60:2829a
To Koppers Company.

1588. SCHNEIDER, W. J., and others. Reactions of unsaturated fatty alcohols. II. Amer. Oil Chem. Soc. J. 34(5):244-247. May 1957. 307.8 J82
Chem. Abstr. 51:10114a
L. E. Gast, E. H. Melvin, C. A. Glass, and H. M. Teeter, joint authors.
Polymerization of vinyl ethers and film properties of polymers. Films of soybean and linseed polyvinyl ethers containing driers were cast from toluene solution.

1589. SCHOLFIELD, C. R., and DUTTON, H. J. Fluorescence as a measure of brown substances in soybean lecithin. Amer. Oil Chem. Soc. J. 32(3):169-170. Mar. 1955. 307.8 J82
Food Sci. Abstr. 27:2293
The fluorescense of soybean lecthin increases in a linear fashion with an increase in brown substances.

1590. SCHOLFIELD, C. R., NOWAKOWSKA, J., and DUTTON, H. J. Preparation of pure fatty acid methyl esters by countercurrent distribution. Amer. Oil Chem. Soc. J. 37(1):27-30. Ref. Jan. 1960. 307.8 J82
Chem. Abstr. 54:5126a
Soybean methyl esters included.

1591. SCHOLFIELD, C. R., and others. Reactions of conjugated fatty acids. VIII. Dibasic acids by hydrogenation and oxidative cleavage. Amer. Oil Chem. Soc. J. 35(8):405-409. Aug. 1958. 307.8 J82
E. P. Jones, J. A. Stolp, and J. C. Cowan, joint authors.

1592. SEIFERT, E., and SEIP, D. Modified alkyd resins. Ger. Pat. 1,004,379. Mar. 14, 1957.
Chem. Abstr. 54:2812g
To Rohm & Haas Company.

1593. SEREBRENNIKOVA, G. A., SARYCHEVA, I. K., and PREOBRAZHENSKII, N. A. Lipids. XI. Synthesis of triglycerides of soybean oil. Zh. Obshch Khim. 32(7):2208-2210. July 1962. 385 Z6
Chem. Abstr. 58:8898b

1594. SEREBRENNIKOVA, G. A., and others. Total synthesis of triglycerides of soybean oil. (Rus) Akad. Nauk. Dokl. S. S. S. R. 140(4):1083-1086. 1961. 511 P444A
Chem. Abstr. 56:11732c
T. K. Mitrofanova, A. A. Kraevskii, I. K. Sarycheva, and N. A. Preobrazhenskii, joint authors.

1595. SHULMAN, S., FORMO, M. W., and RHEINECK, A. E. Aliphatic urethanes effect of chain length on some physical properties. Amer. Oil Chem. Soc. J. 38(4):205-208. Apr. 1961. 307.8 J82
Chem. Abstr. 55:13877e
A study of the thixotropic behavior of certain fatty materials including soybean oil.

1596. SMITH, A. K. Isolation and utilization of vegetable proteins. Econ. Bot. 8(4):291-315. Oct./Dec. 1954. 450 Ec7
Chem. Abstr. 49:1989i
Soybean protein is the only industrial protein isolated

from oilseeds in the United States. Soy protein has several advantages over other oilseed proteins in that it is obtained in a higher yield and has a better color; also its present state of development for many special applications in indsutry has given it a head start which will be difficult to overcome by other oilseed proteins.

1597. SOCONY MOBIL OIL CO. Lubricating greases. Brit. Pat. 794,882. May 14, 1958.
Chem. Abstr. 52:21053b
Hydrogenated soybean fatty acids used.

1598. SPELLBURG, N. Short oil modified styrenated alkyd resins. U. S. Pat. 2,749,320. June 5, 1956.
Chem. Abstr. 51:1626c
The material had a mineral spirits tolerance of 300 percent, was clear, and had a Gardner-Holdt color of 6.
To Sherwin-Williams Company.

1599. SREENIVASAN, B., and BROWN, J. B. Isomerization of linoleic, linolenic, and other polyunsaturated acids with potassium tertiary butoxide and its application in the spectrophotometric estimation of these acids. Amer. Oil Chem. Soc. J. 33(11):521-526. Ref. Nov. 1956. 307.8 J82
Chem. Abstr. 51:741g

1600. STALEY (A. E.) MANUFACTURING CO. Polymerizable vinyl compounds. Belg. Pat. 622,253. Mar. 7, 1963.
Chem. Abstr. 59:10263f

1601. STANDARD PHARMACEUTICAL WORKS. Process and nutrient medium for penicillin. Brit. Pat. 786,117. Nov. 13, 1957.
Chem. Abstr. 52:7624a

1602. STANTON, J. M., ROHOLT, D. M., and WIFF, J. Isophthalic alkyds in architectural finishes. Paint. Indus. Mag. 74(2):7-8, 10. Feb. 1959. 306.8 D84
Chem. Abstr. 53:8660c

1603. STEIN, W., BROCKMANN, R., and DIECKELMANN, G. Epoxidation of alkenes. Ger. Pat. 1,152,415. Aug. 8, 1963.
Chem. Abstr. 60:2889g
To Henkel & Cie.

1604. STEPHAN, J. T. Polymeric alkylene oxide defoamers for alkaline aqueous adhesive solutions. U. S. Pat. 2,937,104. May 17, 1960.
Chem. Abstr. 54:17971b

1605. STOCK, E., and GOERGENS, D. The determination of the bromine number of oils. (Ge) Deut. Farb. Zeitschrift 8(11):426-427. Nov. 1954. Libr. Cong.
Chem. Abstr. 49:2757h
Soybean oil included.

1606. SUEHIRO, K., and ISHIZAKI, I. Refining sulfur. Jap. Pat. 4719. Apr. 16, 1964.
Chem. Abstr. 61:6656b
To Noguchi Research Foundation.

1607. SULZER, G., and others. Dyeing of textiles with pigments. U. S. Pat. 2,888,420. May 26, 1959.
Chem. Abstr. 53:22975e
To CIBA.
Soybean fatty acid used.

1608. SWIFT & CO. Prepolymers from epoxidized oils and polyamines. Fr. Pat. 1,295,619. June 8, 1962.
Chem. Abstr. 58:7043f

1609. TAKEUCHI, K. Insolubilized carrier for soluble vitamins. Jap. Pat. 2142. Mar. 28, 1961.
Chem. Abstr. 56:11726b

1610. TAUFEL, K., and VOGEL, R. Analytical signs of the tendency to oxidation of unsaturated fats. (Ge) Eernahrungsforschung 1(1):142-148. 1956. 386.3 P84
Chem. Abstr. 51:15969f
Refined soybean oil investigated for peroxide and acid development.

1611. TESS, R. W. Oleoresinous varnishes from epoxy resins and drying oils. Amer. Oil Chem. Soc. J. 32 (5):291-295. May 1955. 307.8 J82
Chem. Abstr. 49:9289i
Epoxy resins converted into air-drying varnishes by cooking with vegetable oil.

1612. THURMAN, B. H. Lecithin products from soapstocks. U. S. Pat. 2,970,910. Feb. 7, 1961.
Chem. Abstr. 55:12892f
To Benjamin Clayton (trading as Refining, Unincorporated).

1613. THURMOND, G. I. Manufacture of viscose products using cationic compounds. Ger. Pat. 954,547. Dec. 20, 1956.
Chem. Abstr. 53:9685d
To Algemeene Kunstzidje Unie N. V.

1614. TISCHBIREK, G., SPERLING, G., and STRAUSS, W. Wetting agent for galvanization baths. Ger. Pat. 1,130,242. May 24, 1962.
Chem. Abstr. 57:5720a
To DEHYDAG Deutsche Hydrierwerke.

1615. TRIMETHYLOLPROPANE in alkyd resins. Paint Manufacture 33(12):471-478. Dec. 1963. 306.8 P162
Chem. Abstr. 60:7026g
Formulations given for short-oil soybean oil alkyds.

1616. TRITSCH, L. Adhesives. U. S. Pat. 3,027,337. Mar. 27, 1962.
Chem. Abstr. 57:1097b
To Kendall Company.
Vinyl-backing pressure sensitive tapes.

1617. TROMMSDORF, E., GRIMM, O., and ABEL, G. Emulsifiers for fatty substances for the treatment of leather. Ger. Pat. 971,898. Apr. 9, 1959.
Chem. Abstr. 55:4022b
To Rohm & Haas.

1618. UNGER, M. B. Lecithin-modified alkyd varnishes. U. S. Pat. 2,738,337. Mar. 13, 1956.
Chem. Abstr. 50:12503f
To Sherwin-Williams Company.

1619. UNION CARBIDE & CARBON CORPORATION. Vinyl-compatible polyester resins. Brit. Pat. 755,176. Aug. 15, 1956.
Chem. Abstr. 51:7764f

1620. U. S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Chemically modified oil products and industrial uses; a list of publications and patents for 1964 of the Division. U. S. Agr. Res. Serv. ARS-71-27-3, 3 p. Feb. 1965. A381 R31Ac

1621. VAN HOOK, J. O. N-Arylamides. U. S. Pat. 3,095,428. June 25, 1963.
Chem. Abstr. 59:12705c
To Rohm & Haas Company.

1622. VAN STRIEN, R. E. Oil-modified alkyd resins made with tribasic acids. U. S. Pat. 2,870,102. Jan. 20, 1959.
Chem. Abstr. 53:7627b
To Standard Oil Company (Indiana).

1623. VAUGHAN, C. L. P., and SCHMITT, F. E. The chemical mathematics of phthalic alkyd resins. Federation Paint Varnish Prod. Clubs Offic. Digest 30 (405):1131-1147. Oct. 1958. 306.9 F31
Chem. Abstr. 55:2135d

1624. VINALS SOLER, R. Epoxy-resin plasticizers. Span. Pat. 285,464. Mar. 9, 1963.
Chem. Abstr. 60:1897h

1625. VOOGT, P. The use of ion-exchangers for the analysis of detergents. In Boekenoogen, H. A. Analysis and characterization of oils, fats and fat products. p. 329-395. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1626. VROOM, R. A. Threads or films from viscose. Ger. Pat. 1,132,684. July 5, 1962.
Chem. Abstr. 57:16916c
To Onderzoekingsinstituut Research.

1627. VUILLEMENOT, J., TROUSSIER, M., and GRIMAUD, E. Self-extinguishing epoxy resins with halogenated polyphenols. Fr. Pat. 1,309,346. Nov. 16, 1962.
Chem. Abstr. 58:6997f
To Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine.

1628. WALDMANN, H., and STEIN, W. Formaldehyde adducts of unsaturated fatty substances. Ger. Pat. 1,054,444. Apr. 9, 1959.
Chem. Abstr. 55:6378g
To Henkel & Cie.

1629. WALTON, H. M., and NEVIN, C. S. Copolymerizable monomers. Belg. Pat. 618,255. Nov. 29, 1962.
Chem. Abstr. 59:8600h
To Stanley (A. E.) Manufacturing Company.

1630. WEAR, R. L., OIYE, B., and WINTHROP, A. S. Tacky, semisolid, epoxy-resin compositions. U. S. Pat. 2,970,972. Feb. 7, 1961.
Chem. Abstr. 55:9949d
To Minnesota Mining and Manufacturing Company.

1631. WEIL, C. S., and others. Experimental carcinogenicity and acute toxicity of representative epoxides. Amer. Indus. Hyg. Ass. J. 24(4):305-324. Ref. July/Aug. 1963. Libr. Cong.
Chem. Abstr. 59:13253g
N. Condra, C. Haun, and J. A. Striegel, joint authors.
Epoxidized soybean oil included.

1632. WILHELMY, O., and BARR, H. W. The market potential for fats and oils in drying-oil uses. U. S. D. A. Marketing Res. Rep. 90, 126 p. Apr. 1955
1 Ag84Mr

A study by the Battelle Memorial Institute revealed that soybean oil find maximum usefulness in industry in alkyl vehicles, particularly for paints, because of its semidrying nature, its color-retention properties, and its relative cheapness. Although in 1954 soybean oil constituted only 21 percent of all oils used in drying-oil products, compared to 47 percent for linseed oil, comparison with the 1931 figures showed a gradual increase in the use of soybean oil: 1.6 percent for soybean, compared with 76.8 percent for linseed.

1633. WILLIAMS, G. T., and COX, P. D. An investigation into drying phenomena experienced with alkyd resins based on soya bean oil. Oil Colour Chem. Assoc. J. 44(12):851-868. Dec. 1961. 306.9 Oi5
Chem. Abstr. 56:7460g

1634. WILSON, G. R., and BAYLERIAN, M. S. High-molecular weight alcohols from fatty acid esters. U. S. Pat. 2,809,206. Oct. 8, 1957.
Chem. Abstr. 52:1655c
To Ethyl Corporation.

1635. WITTCOFF, H. Polyamide and polyamide polyester suspensoids. U. S. Pat. 2,728,737. Dec. 27, 1955.
Chem. Abstr. 50:6098h
To General Mills.
Soybeans used. The emulsion gave a continuous tacky film which could be used as a wet-stick adhesive.

1636. ZANKL, E., and HEBERMEHL, R. Thixotrpic urethan oils. Ger. Pat. 1,049,575. Jan. 29, 1959.
Chem. Abstr. 55:4007h
To Farbenfabriken Bayer.

1637. ZIMPEL, C. F. Quenching-oil compositions for steel. U. S. Pat. 2,866,729. Dec. 20, 1958.
Chem. Abstr. 53:6978i
To Shell Development Company.

1638. ZWEIFEL, H. C., HULL, D. H., and HART, W. C. Sealing compositions or pipe dopes. U. S. Pat. 2,886,457. May 12, 1959.
Chem. Abstr. 53:19226f
To Richfield Oil Corporation.

Coatings

1639. AGENS, M. C. Oil-modified glycerol-glycol-terephthalate resins. U. S. Pat. 2,905,650. Sept. 22, 1959.
Chem. Abstr. 54:25894g
To General Electric Company.
Magnetic wire insulation coating material.

1640. ARAI, M., and TAGA, T. Coating leather exposed to solvent vapor. Jap. Pat. 8059. July 12, 1962.
Chem. Abstr. 59:7764d
To Ogura, S.

1641. BERENSCHOT, D. J., PINHASIK, S. N., and BIERMAN, K. M. Freeze stabilization of polymeric latex coating compositions. U. S. Pat. 2,884,397. Apr. 28, 1959.
Chem. Abstr. 53:14540h
To Armour & Company.

1642. BOBALEK, E. G., and BRAZET, E. L. Styrene resins used in surface coatings and finishes. U. S. Pat. 2,990,387. June 27, 1961.
Chem. Abstr. 55:24118d
To American-Marietta Company.

1643. BOLTON, B. A., VAN STRIEN, R. E. Oil-modified alkyd coating resins from phthalic and tribasic acids. U. S. Pat. 2,960,485. Nov. 15, 1960.
Chem. Abstr. 55:4009e
To Standard Oil Company (Indiana).

1644. BRAND, B. G., and others. Evaluation of fatty vinyl ether polymers and styrenated polymers and styrenated polymers for metal coatings. Amer. Oil Chem. Soc. J. 41(9):597-599. Sept. 1964. 307.8 J82
Chem. Abstr. 61:12203a
H. O. Schoen, L. E. Gast, J. C. Cowan, joint authors.

1645. BUDDE, W. M. Hard coatings from epoxidized drying oils. U. S. Pat. 3,050,480. Aug. 21, 1962.
Chem. Abstr. 57:15277f
To Archer-Daniels-Midland Company.

1646. CARNEY, R. J., and HAHN, F. J. Oil-in-water coating emulsions. U. S. Pat. 3,069,368. Dec. 18, 1962.
Chem. Abstr. 58:8144d
To Monsanto Chemical Company.

1647. CHATFIELD, H. W. Reduction of free acidity in surface coating materials. Brit. Pat. 859,466. Jan. 25, 1961.

Chem. Abstr. 55:20456d
To Boake (A.), Roberts & Company.

1648. CHRISTENSON, R. M., and BORMAN, R. F. Coating composition vehicles from acidulated soap stocks. U. S. Pat. 2,891,919. June 23, 1959.
Chem. Abstr. 53:17534d
To Pittsburgh Plate Glass Company.

1649. CHRISTENSON, R. M. Interpolymer coating agents. U. S. Pat. 2,926,153. Feb. 23, 1960.
Chem. Abstr. 55:15958f
To Pittsburgh Plate Glass Company.

1650. CHRISTENSON, R. M. Interpolymers of ethylenic monomers and ethylenic esters of alcohols from reduction of fatty acidsof glyceride oil acids. U. S. Pat. 2,946,774. July 26, 1960.
Chem. Abstr. 55:2140h
To Pittsburgh Plate Glass Company.

1651. CHRISTENSON, R. M. Interpolymers of vinyl esters, conjugated diene hydrocarbons, and ethylenically unsaturated monomers for coatings. U. S. Pat. 2,861,050. Nov. 18, 1958.
Chem. Abstr. 53:5706d
To Pittsburgh Plate Glass Company.

1652. CHRISTENSON, R. M. Interpolymers of vinyl halides, ethylenically unsaturated esters, and glycidyl polyethers. U. S. Pat. 2,882,251. Apr. 14, 1959.
Chem. Abstr. 53:16557e
To Pittsburgh Plate Glass Company.

1653. COWAN, J. C. Are "tinless tin cans" from soybeans possible. Chemurg. Digest 16(10):9. Oct. 1957. 381 N213Na
Copolymers of soybean vinyl ethers considered for many industrial uses such as coatings which withstand bending and crimping.

1654. COWAN, J. C., and TEETER, H. M. Coating compositions based on homopolymers of vinyl ethers of unsaturated fatty alcohols. U. S. Pat. 2,901,469. Aug. 25, 1959.
Chem. Abstr. 53:22998h
To U. S. Dept. of Agriculture.

1655. GAST, L. E., COWAN, J. C., and TEETER, H. M. Coating compositions from aliphatic, condensed, polyunsaturated fatty alcohols and their esters. U. S. Pat. 2,952,556. Sept. 13, 1960.
Chem. Abstr. 55:2141h
To U. S. Dept. of Agriculture.

1656. GENERAL ELECTRIC CO. Oil-modified polyester resins for wire coating. Brit. Pat. 808,102. Jan. 28, 1959.
Chem. Abstr. 55:2140g

1657. GLIDDEN CO. Esters of epoxidized hydrocarbon drying oils. Brit. Pat. 874,868. Dec. 21, 1959.
Chem. Abstr. 56:7465d

1658. INGALA, F. J. Coatings for molds for steel ingots. U. S. Pat. 3,037,873. June 5, 1962.
Chem. Abstr. 57:6969a

1659. JARUSEK, J., and MLEZIVA, J. Preparation of thixotropic alkyds. (Cz) Chem. Prumysl 14(4):184-188. 1964. 385 C4294
Chem. Abstr. 61:3304f
English summary.

1660. KAUFMANN, H. P., and GRUBER, H. Copolymers in the field of surface coating materials. II. (Ge) Fette, Seifen, Anstrichmittel 62(7):607-610. July 1960. 384 C422
Chem. Abstr. 55:5985f
English summary.
Copolymers of cyclopentadeine and drying oils. Cydic oils were prepared from soybean oil.

1661. KINGSTON, J. G., and SCHWARTZ, R. F. Emulsion coating compositions from heat bodied glyceride oils and vinyl monomers. U. S. Pat. 2,926,151. Feb. 23, 1960.
Chem. Abstr. 54:16872h
To Glidden Company.

1662. KOHN, L. S., and HORNER, A. H. Curing of epoxy resins for electrical insulation. Ger. Pat. 1,084,916. July 7, 1960.
Chem. Abstr. 55:25290c
To General Electric Company.

1663. KRAFT, W. M. Drying oils and acids in alkyds. Amer. Oil Chem. Soc. J. 36(11):583-586. Nov. 1959. 307.8 J82
Chem. Abstr. 54:921a
Soybean oil in surface coatings.

1664. KRAFT, W. M. Pentaerythritol condensation products and alkyd resins therefrom for coatings. U. S. Pat. 3,126,356. Mar. 24, 1964.
Chem. Abstr. 60:14736d
To Heyden Newport Chemical Corporation.

1665. KRESS, B. H. Silicone-alkyd coating compositions. U. S. Pat. 2,735,825. Feb. 21, 1956.
Chem. Abstr. 50:8228i
To Allied Chemical & Dye Corporation.
The product has a Gardner-Holdt viscosity of T, and an acid number of 3.3.

1666. LABARRE, G. D. Coating compositions. U. S. Pat. 3,014,881. Applied Sept. 15, 1959.
Chem. Abstr. 56:10321e
To Du Pont (E. I.) de Nemours & Company.

1667. MCKENNA, J. F. Water-dispersible interpolymers for coating compositions. U. S. Pat. 2,941,968. June 21, 1960.
Chem. Abstr. 54:18985i
To Pittsburgh Plate Glass Company.

1668. MCKNIGHT, G. S., and BROWN, R. C. Coating compositions for paper. U. S. Pat. 2,865,773. Dec. 23, 1958.
Chem. Abstr. 53:11838d
To Oxford Paper Company.

1669. MATHIESON (O.) CHEMICAL CORPORATION. Thixotropic agents for paints. Brit. Pat. 897,993. June 6, 1962.
Chem. Abstr. 57:8690g

1670. MATSUSKITA, K. Coating material for baking pans. Jap. Pat. 3535. May 9, 1958.
Chem. Abstr. 53:8663a
Soybean oil fatty acid used.

1671. NORTON, J. A. Coatings for lubricating oil filters. U. S. Pat. 2,875,899. Mar. 3, 1959.
Chem. Abstr. 53:10736d
To General Motors Corporation.

1672. OLSON, M. M., and CHRISTENSON, R. M. Alkoxypoly siloxanes for use in coating compositions. U. S. Pat. 2,917,467. Dec. 15, 1959.
Chem. Abstr. 54:7182d
To Pittsburgh Plate Glass Company.

1673. OLSON, M. M., and CHRISTENSON, R. M. Modified fatty acid ester coating compositions. U. S. Pat. 2,894,922. July 14, 1959.
Chem. Abstr. 53:20838i
To Pittsburgh Plate Glass Company.

1674. PANSING, H. E. Chemistry and theory of polyurethan coatings. Offic. Digest Federation Paint Varnish Prod. Clubs 30(396):37-48. Jan. 1958. 306.9 F31
Chem. Abstr. 53:20834e
A review of the chemistry of the urethanes.

1675. PERKINS, G. H. Coating composition for paper. U. S. Pat. 3,125,455. Mar. 17, 1964.
Chem. Abstr. 60:14737d
To Oxford Paper Company.

1676. POLYMER CORPORATION. Resinous coating materials suitable for the fluidized-bed process. Brit. Pat. 941,066.
Chem. Abstr. 60:4342h

1677. RINSE, J. Alkyd gels for coatings. U. S. Pat. 2,835,685. June 30, 1959.
Chem. Abstr. 53:22999h
Ayers (J. W.) & Company.

1678. ROHM & HAAS CO. Polyesters and amine modified polyester coating compositions. Brit. Pat. 815,179. June 17, 1959.
Chem. Abstr. 53:20840d

1679. ROSENBERG, J. Epoxy-resin compositions of high impact strength for coatings. U. S. Pat. 3,098,054. July 16, 1963.
Chem. Abstr. 59:10345a
To General Electric Company.

1680. SALGADO, A., and MANYAK, A. R. Unsaturated polyester resins for coatings and laminating. Ger. Pat. 1,138,931. Oct. 31, 1961.
Chem. Abstr. 58:7043g
To Reichhold Chemie, A. G.

1681. SCHERING A.-G. Polyamidopolyesters for thixotropic agents. Brit. Pat. 952,987. Mar. 18, 1964.
Chem. Abstr. 61:3308a

1682. SCHMIDLE, C. J. Coating compositions containing addition polymers of alkyd resins with ethylenic compounds. Belg. Pat. 627,770. July 30, 1963.
Chem. Abstr. 60:12236g
To Rohm & Haas Company.

1683. SCHMITZ, J. V., and BLACKINTON, R. J. Thixotropic coating solutions. U. S. Pat. 3,098,052. July 16, 1963.
Chem. Abstr. 59:10347h
To California Research Corporation.

1684. SHAW, R. S., and DUPONT, J. A. Modified vinyl polymer coating compositions. Belg. Pat. 631,720. Nov. 18, 1963.
Chem. Abstr. 61:3308b

1685. SPILLER, L. L. Electrostatic spraying composition. U. S. Pat. 3,112,218.
Chem. Abstr. 60:7028f
To Ransburg Electro-Coating Corporation.

1686. SWANSON, R. G. Coating compositions. Belg. Pat. 623,997. Apr. 24, 1963.
Chem. Abstr. 60:14734f
To Dupont (E. I.) de Nemours Company.

1687. TAGGART, M. F. Soyabean, chemurgic coatings. Chemurg. Digest 18(10):4-6. Oct. 1959.
381 N213Na
Soybean oil used to produce vehicle for bright color, air-drying trim paints; used for lacquers of the nitrocellulose type; used in paints exposed to the rays of the sun.

1688. TAWN, A. R. H., and NORTH, A. G. Thixotropic coating compositions. Brit. Pat. 915,702. Jan. 16, 1963.
Chem. Abstr. 58:8143a
To Coates Brothers & Company.

1689. TEETER, H. M., SCHNEIDER, W. J., and GAST, L. L. Alkali-resistant coating compositions. U. S. Pat. 2,889,309. June 2, 1959.
Chem. Abstr. 53:15600b
To U. S. Dept. of Agriculture.

1690. TEETER, H. M., GAST, L. E., and COWAN, J. C. Promising materials for protective coatings. Indus. Eng. Chem. 50(11):1703-1704. Nov. 1958.
381 J825
Chem. Abstr. 53:3732f
Polymers of vinyl ethers from soybean oils dry to films that adhere well to metal and are alkali-resistant.

1691. TEETER, H. M., GAST, L. E., and COWAN, J. C. Vinyl ether copolymers, new potential coatings from soybean and linseed oils. Paint Indus. Mag. 74 (1):13-14, 16-17. Ref. Jan. 1959. 306.8 D84
Includes tables giving the typical properties for linseed and soybean alcohols and properties of typical preparations of linseed and soybean vinyl ethers.

1692. VASTA, J. A. Interpolymer coating composition for baking enamels. U. S. Pat. 2,967,162. Jan. 3, 1961.
Chem. Abstr. 55:8889b
To Du Pont de Nemours (E. I.) & Company.

1693. WRIGHT, H. J., MCGUIRE, D. R., and WESTFALL, P. F. Thixotropic coating compositions. U. S. Pat. 2,861,048. Nov. 18, 1958.
Chem. Abstr. 53:13624e
To Cook Paint & Varnish Company.

1694. ZIELINSKI, W. L., MOSELEY, W. V., and BRICKER, R. C. A critical examination of the use of gas chromatography for the qualitative determination of the oil content of organic coatings. (It) Riv. Ital. Sostanze Grasse 39(1):9-14. Ref. Jan. 1962.
307.8 OL3
Chem. Abstr. 61:3303e

Drying oils

1695. ABRAMO, J. G., and CHAPIN, E. C. Copolymers of styrene, vinyl benzyl alcohols, and allyl alcohol. U. S. Pat. 3,069,399. Dec. 18, 1962.
Chem. Abstr. 58:9334b
To Montsanto Chemical Company.

1696. AMERICAN SOCIETY FOR TESTING MATERIALS, 1957 SUPPLEMENT PART 4. Paint, naval stores, celluslose, wax polishes, wood, acoustical materials, sandwich and building constructions, fire tests. 216 p.
290.9 Am34S
Chem. Abstr. 52:11316c
Under section: Drying oils, paint driers, and thinners.

1697. ARIMUNE, K. Improvement of drying or semi-drying oils. Jap. Pat. 5390. Aug. 26, 1954.
Chem. Abstr. 49:14342g
Soybean oil used; its water repellency was better than the product which used linseed oil.
To Bureau of Industrial Technics.

1698. DOW CHEMICAL CO. Phenolic-resin drying oils. Brit. Pat. 811,568. Apr. 8, 1959.
Chem. Abstr. 53:14544b

1699. ECKEY, E. W., ALDERSON, R. O., and WOESTMAN, R. J. Production of polyvinyl esters by ester interchange. Amer. Oil Chem. Soc. J. 32(4): 185-191. Ref. Apr. 1955. 307.8 J82
Chem. Abstr. 49:6887c
Soybean fatty acids suggested for use in the drying industries.

1700. ERNST, J. L., and BETTS, J. L. Ammonia treatment of synthetic drying oils to increase viscosity. U. S. Pat. 2,719,163. Sept. 27, 1955.
Chem. Abstr. 50:585h
To Esso Research & Engineering Company.

1701. GRUMMITT, O. J. Bodying of drying and semidrying oils. U. S. Pat. 2,754,308. July 10, 1956.
Chem. Abstr. 50:15097i
To Sherwin-Williams Company.

1702. KAUFMANN, H. P., and BRUNING, H. Copolymerization in the paint field. IV. Fette, Seifen, Anstrichmittel 64(12):919-921. 1962. 384 C422
Chem. Abstr. 58:5819d
The reaction of drying oils with phenylacetylene.

1703. MATTIKOW, M. Refining methods for drying oils. Amer. Oil Chem. Soc. J. 36(10):491-495. Oct. 1959. 307.8 J82
Chem. Abstr. 59:22989e
Including soybean oil.

1704. MUSTAKAS, G. C., RAETHER, M. C., and GRIFFIN, E. L. Improved process for the preparation of conjugated soybean and lower alkyl vinyl ether copolymers by flash polymerization. Amer. Oil Chem. Soc. J. 37(2):68-72. Feb. 1960. 307.8 J82
Chem. Abstr. 54:722li
Baked films obtained were hard and wrinkle-free and showed good resistance to acids, alkalies, and ordinary solvents.

1705. NAKAMURA, M. Drying oils from semidrying oils. Jap. Pat. 3931. May 28, 1956.
Chem. Abstr. 51:13419b
The product is filtered to obtain an isomerized soybean oil containing conjugated double bond.

1706. PAUKNER, O., and SMALLWOOD, B. Drying oils. Paint Indus. Mag. 75(6):10-11. June 1960. 306.8 D84
Although soya oil is only a semidrying oil, it can be chemically modified to take the place of linseed oil as a fast-drying base in oil paints. However, the most important factor in the increased use of soy oil has been the production of alkyd resins from it, with their many applications in both industry and architecture.

1707. PITTSBURGH PLATE GLASS CO. Drying oil-maleic anhydride aqueous coatings. Brit. Pat. 941,425. Nov. 13, 1963.
Chem. Abstr. 60:4344c

1708. RENFREW, M. M., and others. Drying oils. Amer. Oil Chem. Soc. J. 35(1):19-25. Jan. 1958. 307.8 J82
H. M. Schroeder, H. M. Hauge, and D. J. Waythomas, joint authors.
Discuss some economic factors of the present value of drying oils as chemical intermediates and will consider two chemical reactions of current importance in making more useful industrial products out of fats and oils. Soybean oil included in the study.

1709. RIGAMONTI, R., and SPACCAMELA MARCHETTI, E. Improvement in drying properties of vegetable oils by furfural treatment. (It) Chim. Indus. (Milan) 39(4):261-264. Apr. 1957. 385 G43
Chem. Abstr. 51:13416b
Soybean oil heated improves drying time by 50 percent.

1710. RIZZO, J. W. Fatty alcohol esters. U. S. Pat. 2,801,934. Aug. 6, 1957.
Chem. Abstr. 51:18645c
To Chempatents Incorporated.

1711. RUSHMAN, D. F. The action of X-Rays on drying oil and related products. (Ge) Fette, Seifen, Anstrichmittel 60(3):185-189. Mar. 1958. 384 C422
Chem. Abstr. 52:14190e
Treatment produces lighter color in soybean oil and shorter drying time.

1712. SCHROEDER, H. M., and WAYTHOMAS, D. J. Urethan-modified drying oils. U. S. Pat. 3,022,326. Feb. 20, 1962.
Chem. Abstr. 56:13045c
To Textron, Incorporated.

1713. SCHWARCMAN, A. Drying oil preparation by modification and copolymerization of soybean oil with vinyl monomers. U. S. Pat. 2,912,396. Nov. 10, 1959.
Chem. Abstr. 54:6154b
To Spencer Kellogg & Sons.

1714. SOLVAY & CIE. Manufacture of drying oils of high epoxy-oxygen content. Belg. Pat. 634,507. Jan. 6, 1964.
Chem. Abstr. 61:836g
Soybean epoxidized unsaturated oils used as well as linseed oil. Linseed oil better for the purpose.

1715. TAKESHITA, T. Modification of drying oils. I. Synthesis of ethylen glycol-d-glucoside and glycerol-d-

glucoside and properties of the drying oils synthesised from these glucosides and drying oil fatty acids. (Ja) J. Jap. Oil Chem. Soc. (Yushi Kagaku Kyokai Shi) 4(5):245-250. 1955. Libr. Cong.

Chem. Abstr. 50:4527d

The synthesized drying oils were superior to the original oil in drying properties. Soybean oil included in the modifications.

1716. TANABE, K. Catalysts for isomerization of oils. Jap. Pat. 8056. Nov. 7, 1955.

Chem. Abstr. 51:18645f

To Agency of Industrial Science and Technology.

The catalysts suitable for transferring the double bonds in the acid radicals of soybean oil to make drying oils.

1717. TESS, R. W. Synthetic drying oils and vehicles from unsaturated acids and synthetic polyols. Amer. Oil Chem. Soc. J. 36(10):496-503. Oct. 1959. 307.8 J82

Experiments with soybean oil as a drying oil.

1718. WILSON, G., and STANTON, J. M. Reactions of isocyanates with drying oils. Offic. Digest. Federation Paint Varnish Prod. Clubs. 32(421):242-250. Feb. 1960. 306.9 F31

Chem. Abstr. 54:18983a

Urethane oils prepared from alkali refined soybean oils showed superior dry and film hardness properties.

1719. WINGARD, M. R. Extraction methods for drying oils. Amer. Oil Chem. Soc. J. 36(10):483-490. Oct. 1959. 307.8 J82

Including soybean oil.

1720. YOUNGS, C. G., and SALLANS, H. R. Acetone as a selective solvent for vegetable oils. Amer. Oil Chem. Soc. J. 32(7):397-400. July 1955. 307.8 J82

Chem. Abstr. 49:12858a

Drying-oils research on soybean and linseed oil.

Paints

1721. AUSTERWEIL, G. V. Catalytic epoxidation. Fr. Pat. 1,216,317. Apr. 25, 1960.

Chem. Abstr. 55:18138g

To Manufacture de Rueil.

1722. BLOOMQUIST, S. L. A study of alkyd-modified house paints. By Gum 28(1):9-11, 14. Jan./Feb. 1957. 309.8 B99

Chem. Abstr. 51:8449c

Specific results of tests of soya-alkyd vehicles used with a series of paints with high and low levels of zinc oxide are shown.

1723. BROADHEAD, R. L. Water-base alkyd resin paint using a lithium hydroxide dispersion agent. U. S. Pat. 2,985,602. May 23, 1961.

Chem. Abstr. 55:24046b

To Standard Oil Company (Indiana).

1724. COMMERCIAL SOLVENTS CORPORATION. Alkyd resins for paints. Belg. Pat. 613,028. Feb. 15, 1962.

Chem. Abstr. 57:11339a

1725. GARDNER, C. Driers for drying oils. Amer. Oil Chem. Soc. J. 36(11):568-574. Nov. 1959. 307.8 J82

Metallic driers that accelerate the drying time of paint and printing-ink oils, such as soybean oil, include lead, cobalt, and manganese.

1726. HENKEL & CIE. Polymerization of unsaturated fatty alcohols. Belg. Pat. 618,582. Dec. 6, 1962.

Chem. Abstr. 59:14207d

1727. HOSKING, A. H., LAMBOURNE, R. Film-forming dehydrocopolymers. Brit. Pat. 889,792. Feb. 21, 1962.

Chem. Abstr. 56:11747i

To Imperial Chemical Industries.

1728. IDE, F., and NARABA, T. Denatured oil paint containing titanium. Jap. Pat. 5549. July 26, 1958.

Chem. Abstr. 53:1775a

To Nippon Telegraph & Telephone.

1729. JACQUIER, R., and MEUNIER, P. Gelled thixotropic resins for paints and varnishes. Fr. Pat. 1,260,161. Mar. 24, 1960.

Chem. Abstr. 56:8878i

1730. KANTOR, M., and WILSON, S. G. Polymerized unsaturated fatty oils. U. S. Pat. 2,838,551. June 10, 1958.

Chem. Abstr. 52:15923b

Nonpenetrating paint vehicles are made from soybean oil.

To Cargill, Incorporated.

1731. KAUFMANN, H. P., and BRUNING, H. Copolymerization in the paint field. III. (Ge) Fette, Seifen, Anstrichmittel 62(12):1146-1152. Dec. 1960.

384 C422
Chem. Abstr. 55:17037d
English summary.
The reaction between drying oils and indene. Soybean oil used.

1732. LEWIS, A. J., and others. Evaluation of "hysoy" in exterior paints. Amer. Oil Chem. Soc. J. 32(5): 300-302. May 1955. 307.8 J82
Chem. Abstr. 49:9290b
H. M. Teeter, W. T. Walton, and R. S. Haines, joint authors.
Paints containing soybean oil.

1733. MATHIESON (O.) CHEMICAL CORPORATION. Resin pastes for oil-based paints. Fr. Pat. 1,323,106. Apr. 5, 1963.

1734. MATHIESON (O.) CHEMICAL CORPORATION. Thixotropic agents for paints. Brit. Pat. 897,994. June 6, 1962.
Chem. Abstr. 57:8690g

1735. NIEDERHAUSER, W. D., and KORCLY, J. E. Epoxy esters of oleic and (or) linoleic acid. Ger. Pat. 837,364. Nov. 27, 1952.
Chem. Abstr. 52:4210c
To Rohm & Haas Company.

1736. ROBITSCHEK, P., and SCHOEPFLE, B. O. Weather resistance of unsaturated halogen-containing polyester resins. Brit. Pat. 874,546. Aug. 10, 1961.
Chem. Abstr. 55:10963i
To Hooker Chemical Corporation.

1737. ROLLES, R. Stable leafing aluminum paints. U. S. Pat. 3,085,890. Apr. 16, 1963.
Chem. Abstr. 59:3009b
To Aluminum Company of America.

1738. SCHUMACHER, E. F., and MOSES, J. N. Paints for poor paint-holding woods. U. S. Pat. 2,915,411. Dec. 1, 1959.
Chem. Abstr. 54:7180c
To Devoe & Reynolds Company.
Esters of soybean oil acids.

1739. SILBERT, L. S., and PORT, W. S. Epoxidized esters of fatty acids as internal and external plasticizers for polyvinyl acetate. Amer. Oil Chem. Soc. J. 34(1):9-11. Jan. 1957. 307.8 J82
Chem. Abstr. 51:4754d
Epoxidized soybean oil as plasticizer.

Plastics

1740. AULT, W. C., and FEUGE, R. O. Expoxidized monoglyceride diacetates as plasticizers for poly (vinyl chloride). U. S. Pat. 3,050,481. Aug. 21, 1962.
Chem. Abstr. 57:15368b
To U. S. Dept. of Agriculture.

1741. AULT, W. C., and FEUGE, R. O. Monoglyceride diacetates as plasticizer and stabilizers for synthetic resins. U. S. Pat. 2,895,966. July 21, 1959.
Chem. Abstr. 53:23074d
To U. S. Dept. of Agriculture.

1742. BATAAFSE PETROLEUM MAATSCHAPPIJ. Epoxidized polymers. Neth. Pat. 103,509. Jan. 15, 1963.
Chem. Abstr. 60:4305c

1743. BECKER, E. G., and WIESKE, T. Vinyl derivatives. Brit. Pat. 964,669. July 22, 1964.
Chem. Abstr. 61:9635h
To Unilever .
Isomerized soybean oil.

1744. BERGER (L) & SONS. Vinyl copolymers. Brit. Pat. 711,538. July 7, 1954.
Chem. Abstr. 49:4306b
Applications include coatings, impregnating varnishes, painting inks, linoleums, plasticizers, and adhesives.

1745. BROJER, Z., PENCZEK, P., and PENCZEK, S. Epoxy resins from unsaturated compounds, synthesis and properties. II. (Pol) Przemysl Chem. 41(12):684-687. Ref. Dec. 1962. 385 P952
Chem. Abstr. 58:11525b
Epoxidized soybean oil used.

1746. DANZIG, M. J., and others. Reactions of conjugated fatty acids. V. Preparation and properties of Diels-Alder adducts and their esters from transconjugated fatty acids derived from soybean oil. Amer. Oil Chem. Soc. J. 34(3):136-138. Ref. Mar. 1957. 307.8 J82
J. L. O'Donnell, E. W. Bell, J. C. Cowan, and H. M. Teeter, joint authors.
Chem. Abstr. 51:16286c
All of the esters (except allyl) appeared to be primary plasticizers for this plastic.

1747. DAZZI, J. Condensation products of fumarates and unsaturated oils. U. S. Pat. 2,862,012. Nov. 25, 1958.
Chem. Abstr. 53:7662c
To Monsanto Chemical Company.

1748. DVORAK, J., and NEJEDLY, E. Epoxide plasticizers for poly (vinyl chloride). Chem. Prumysl (Cz) 8(33):209-212. Apr. 1958. 385 C4294
Chem. Abstr. 52:19234d
English summary.
Fatty acids from soybean oil epoxidized.

1749. FORE, S. P., MAGNE, F. C., and BICKFORD, W. G. Epoxidized jobula oil as a stabilizer for vinyl chloride containing plastics. Amer. Oil Chem. Soc. J. 35(9):469-472. Sept. 1958. 307.8 J82
Chem. Abstr. 52:19229f
Epoxidized soybean oil compared to epoxidized jobula oil as a light and heat stabilizer for plastics.

1750. GAST, L. E., and others. Reactions of unsaturated fatty alcohols. V. Preparation and properties of some copolymers of unsaturated fatty vinyl ethers with lower alkyl vinyl ethers. Amer. Oil Chem. Soc. J. 35(7):347-350. July 1958. 307.8 J82
Chem. Abstr. 52:15095d
W. J. Schneider, J. L. O'Donnell, J. C. Cowan, and H. M. Teeter, joint authors.
Soybean vinyl ethers derived from soybean alcohols were copolymerized with lower alkyl vinyl ethers.

1751. GUILLET, J. E., COMBS, R. I., and THOLSTRUP, C. E. Polyethylene containing unsaturated monoesters. U. S. Pat. 3,057,810. Oct. 9, 1962.
Chem. Abstr. 58:2552h
To Eastman Kodak Company.

1752. HECKER, A. C., and POLLOCK, M. W. Prevention of color development in vinyl plastics containing iron compounds. U. S. Pat. 2,943,070. June 28, 1960.
Chem. Abstr. 54:20335c
To Argus Chemical Corporation.

1753. HEIDE, R. F. VAN DER. Thin-film chromatographic analysis of organic stabilizers in hard poly (vinyl chloride) (PVC). (Ge) Z. Lebensmittel-Untersuch. Forsch 124(3):198-200. 1964. 384 Z39
Chem. Abstr. 61:3256g

1754. HENSCH, E. J., and WILBUR, A. G. Expoxidized esters of glycols and pentaerythritol. Applications as plasticizers for poly (vinyl chloride). Indus. Eng. Chem. 50(6):871-872. June 1958. 381 J825
Chem. Abstr. 52:17782i
Gives tables with properties of poly (vinyl chloride) with expoxidized esters.

1755. HOMBERG, O. A. Stabilized olefin polymers. Belg. Pat. 622,031. Dec. 28, 1962.
Chem. Abstr. 59:820b
To Deutsche Advance Production.

1756. HOPF, P. P., and SULLY, B. D. Some polyvinyl chloride resin systems containing epoxidized oil. J. Polymer Sci. 48(150):367-370. 1960. 381 J829
Chem. Abstr. 55:25339b
Rigid resin systems containing epoxidized soybean oil are described.

1757. IACOVIELLO, J. G., and ROSENTHAL, R. Purification of soybean oil epoxides. Belg. Pat. 620,392. Aug. 14, 1962.
Chem. Abstr. 58:10359h
To Allied Chemical Corporation.

1758. ILARDO, C. S., and SCHOPEFLE, B. O. Epoxy resin systems based on epoxidized soybean oil and HET anhydride. Indus. Eng. Chem. 52(4):323-324. Apr. 1960. 381 J825
Chem. Abstr. 54:15993g
Presents a system by which homogeneous epoxy resin formulations can be derived from epoxidized plasticizers and the epoxy resin harderner, chlorendic anhydride.

1759. ILARDO, C. S., BEAN, C. T., and ROBITSCHEK, P. Polyepoxide-dicarboxylic anhydride compositons. U. S. Pat. 2,992,196. July 11, 1961.
Chem. Abstr. 55:25362b
To Hooker Chemical Corporation.

1760. KAWAI, K., NAKAMURA, H., and SHIGANO, Y. Plasticizers. Jap. Pat. 2605. Mar. 13, 1964.
Chem. Abstr. 61:3265h
To Dainippon Ink & Chemicals.

1761. KIMURA, T., and YOSHIDA, K. Polymerization of vinyl choloride. XI. (Ja) Sci. Indus. (Osaka) 35(11):19-23. Ref. 1961. 330.9 K11
Chem. Abstr. 56:14416b
English summary.
Copolymerization and acrylate of long chain fatty alcohols. These alcohols prepared by reduction of soybean oil and poppyseed oil.

1762. KOMORI, S., and SHIGENO, Y. Epoxidation of soybean oil esters. Jap. Pat. 1114. Apr. 30, 1962.
Chem. Abstr. 59:6581g
To Riken Vitamin Oil Company.

1763. KRIMM, H., and SCHNELL, H. Epoxidized polyesters as plasticizers with improved migration resistance. Ger. Pat. 974,868. Applied June 10, 1954.
Chem. Abstr. 56:2575c
To Farbenfabriken Bayer.

1764. LARSON, P. S., and others. Chronic toxicity studies on two epoxidized soybean oils in the rat and dog. Toxicol. Appl. Pharmacol. 2(6):649-658. Nov. 1960. 381 T662
Chem. Abstr. 55:3849i
J. K. Finnegan, H. B. Haag, R. Blackwell Smith, and G. R. Hennigar, joint authors.
Soybean oil plastic films used in food packaging.

1765. LATOURETTE, H. K., and others. A novel continuous countercurrent epoxidation process. Amer. Oil Chem. Soc. J. 37(11):559-563. Nov. 1960. 307.8 J82
Chem. Abstr. 55:2148b
H. M. Castrantas, R. J. Gall, and L. H. Dierdorff, joint authors.
Epoxidized fatty esters derived from soybean oil find use principally as secondary plasticizers for polyvinyl chloride and copolymers, to which they impart heat and light stability, superior aging, and low-temperature flexibility.

1766. LEVY, L. E., and MOSS, J. G. Epoxy resin for metal filling. Brit. Pat. 918,373. Feb. 13, 1963.
Chem. Abstr. 59:4139e
To Kelsey Industries & Levy West Laboratories.

1767. MLEZIVA, J., and JARUSEK, J. Thixotropic bonding agents. Czech. Pat. 101,934. Dec. 15, 1961.
Chem. Abstr. 59:4129a

1768. MOORE, W. G. Epoxides for binder-filler systems for foundry cores. U. S. Pat. 3,107,403. Oct. 22, 1963.
Chem. Abstr. 60:736f
To Dow Chemical Company.

1769. MUSTAKAS, G. C. Air-drying copolymers of conjugated soybean vinyl ether and iso-butyl vinyl ether. U. S. Pat. 3,085,079. Apr. 9, 1963.
Chem. Abstr. 59:1805c
To U. S. Dept. of Agriculture.

1770. MUSTAKAS, G. C., and GRIFFIN, E. L. Copolymerization of conjugated soybean vinyl ether and lower alkyl vinyl ethers. U. S. Pat. 2,967,166. Jan. 3, 1961.
Chem. Abstr. 55:8889g
To U. S. Dept. of Agriculture.

1771. MUSTAKAS, G. C., RAETHER, M. C., and GRIFFIN, E. L. Preparation of vinyl ether monomers from conjugated soybean alcohol. Amer. Oil Chem. Soc. J. 37(2):100-103. Feb. 1960. 307.8 J82
Chem. Abstr. 54:7211d
New processing method for the polymerization of vinyl ether monomers from conjugated soybean fatty alcohol described.

1772. NEVIN, C. S. Aliphatic long-chain compounds substituted with acryloxy and halogen groups and their polymers and copolymers. Belg. Pat. 627,293. July 18, 1963.
Chem. Abstr. 60:10881c
To Staley (A. E.) Manufacturing Company.

1773. NEVIN, C. S., and MOSER, B. F. Vinyl oil monomers. I. Vicinal methacryloxy-hydroxy soybean oils. J. Appl. Polymer Sci. 7(5):1855-1868. Sept. 1963. Libr. Cong.
Chem. Abstr. 59:12929g
Synthetic high polymers. Vinyl soy oil monomers have caused no observed toxicity symptoms or any allergic skin reactions.

1774. NISHIMURA, S. Hardening of epoxides. Jap. Pat. 14,838. Aug. 14, 1963.
Chem. Abstr. 59:14174h
To Asahi Electrochemical Company.

1775. NISHIMURA, S., and HATA, N. Inner epoxides. Jap. Pat. 11,289. July 5, 1963.
Chem. Abstr. 59:12984e
To Asahi Electrochemical Company.

1776. RIENER, E. F. Vicinal acyloxy-halogen derivatives of aliphatic fatty acids with 16-22 carbon atoms, or their esters, suitable as plasticisers. Ger. Pat. 1,041,029. Oct. 16, 1958.
Chem. Abstr. 55:16015g
To Rohm & Haas Company.

1777. ROHM & HAAS CO. Acetoxy derivatives of unsaturated esters. Brit. Pat. 805,367. Dec. 3, 1958.
Chem. Abstr. 53:12180e

1778. ROHM & HAAS CO. Epoxidizing esters of unsaturated fatty acids. Brit. Pat. 790,063. Feb. 5, 1958.
Chem. Abstr. 52:14218g
Process suitable for use with fatty acids of soybean oil.

1779. ROHM & HAAS CO. Epoxidation of esters. Brit. Pat. 811,852. Apr. 15, 1959.
Chem. Abstr. 54:2355g

1780. ROHM & HAAS CO. Improving the plasticizing properties of epoxidized esters. Brit. Pat. 815,301. June 24, 1959.
Chem. Abstr. 53:23074h

1781. ROWLAND, S. P., and WHITE, R. G. Acylation of epoxy plasticizers. Ger. Pat. 1,001,979. Feb. 7, 1957.
Chem. Abstr. 54:5160e
To Rohm & Haas Company.

1782. ROWLAND, S. P., and CONYNE, R. F. Epoxyidized vegetable oil plasticisers for resins and rubbers. U. S. Pat. 2,822,368. Feb. 4, 1958.
Chem. Abstr. 52:7767b
To Rohm & Haas Company.

1783. ROWLAND, S. P. Polymers suitable as plasticizers for vinyl resins. Ger. Pat. 1,035,898. Aug. 7, 1958.
Chem. Abstr. 55:17080d
To Rohm & Haas Company.

1784. SAKAKIBARA, S., and YAMANISHI, N. Modified xylene-formaldehyde resin. Jap. Pat. 16,196. Oct. 10, 1962.
Chem. Abstr. 59:6589g
To Japan Reichhold Chemicals.

1785. SALYER, I. O., HERBIG, J. A., and DASSI, J. Styrene polymers containing diakyl fumarate-soybean oil adducts. U. S. Pat. 2,824,846. Feb. 25, 1958.
Chem. Abstr. 52:9662e
To Monsanto Chemical Company.

1786. SCHLEIPEN, R. Plasticisers for water and alcohol-soluble phenol-aldehyde resins. Ger. Pat. 1,071,945. Dec. 24, 1959.
Chem. Abstr. 55:14977i

1787. STALEY (A. E.) MANUFACTURING CO. Ethylenically polymerizable long-chain compounds. Brit. Pat. 944,322. Dec. 11, 1963.
Chem. Abstr. 61:794d
Epoxidized soybean oil used.

1788. STEIN, W., and OFFERMANN, W. Plasticizers and gelatin agents. Ger. Pat. 973,398. Feb. 11, 1960.
Chem. Abstr. 55:22906f
To DEHYDAG Deutsche Hydrierwerke.

1789. TEETER, H. M., DORMAN, L. C., and HARRIS, L. Reactions of polyunsaturated fatty alcohols. IX. Molecular weight distribution of some conjugated soybean vinyl ether homopolymers. Amer. Oil Chem. Soc. J. 37(11):552-555. Nov. 1960. 307.8 J82
Chem. Abstr. 55:4983i
The molecular-weight distributions of several conjugated soybean vinyl ether homopolymers were studied by means of the integral fractionation technique.

1790. TINSLEY, S. W., and STARCHER, P. S. Ethylene oxide adducts of epoxy-containing fatty alcohols and acids. U. S. Pat. 3,129,231. Apr. 14, 1964.
Chem. Abstr. 61:3072g
To Union Carbide Corporation.

1791. TUCHSCHEERER, T. "Anomalous scattering" during electron irradiation of vegetable oil-plastics-systems. (Ge) Naturwissenschaften 51(3):60. Feb. 1, 1964. 474 N213
Chem. Abstr. 60:13460d
Soybean oil in plastic packaging.

1792. UNION CARBIDE CORPORATION. Plasticized, heat and light stabilized vinyl halide polymers. Brit. Pat. 793,595. Apr. 16, 1958.
Chem. Abstr. 52:21246g

1793. UNION CARBIDE CORPORATION. Thermosetting compositions from polyesters and diglycidylethers. Brit. Pat. 939,358. Oct. 16, 1963.
Chem. Abstr. 60:8204d

1794. WITNAUER, L. P., and others. Expoxy esters as plasticizers and stabilizers for vinyl chloride polymers. Indus. Eng. Chem. 47(11):2304-2311. Ref. Nov. 1955. 381 J825
Chem. Abstr. 51:12538f
H. B. Knight, W. E. Palm, R. E. Koos, W. C. Ault, and D. Swern, joint authors.
Efficient plasticizers of low volatility and migration loss were obtained. Epoxidized soybean oil included in the experiments.

1795. AELONY, D. Esters of alkyl phenol-formaldehyde resins. U. S. Pat. 2,891,021. June 16, 1959.
Chem. Abstr. 53:16603e
To General Mills.

1796. AELONY, D. Esters of phenolformaldehyde resins. Brit. Pat. 300,998. Sept. 3, 1958.
Chem. Abstr. 53:7674gi
To General Mills.

1797. AELONY, D. Esters of phenylphenol-formaldehyde resins. U. S. Pat. 2,891,022. June 16, 1959.
Chem. Abstr. 53:16558g
To General Mills.

1798. ALLIED CHEMICAL CORPORATION. Oil modified alkyd resins. Brit. Pat. 963,969. July 15, 1964.
Chem. Abstr. 61:12158h

1799. BERGLUND, L. W., CAPENER, E. L., and HARRISON, S. A. Azeotropic esterification of phenolic resins. U. S. Pat. 3,041,298. June 26, 1962.
Chem. Abstr. 57:8739c
To General Mills.

1800. CALIFORNIA RESEARCH CORP. Oil-modified alkyd resins. Brit. Pat. 796,355. June 11, 1954.
Chem. Abstr. 52:21236b
Alkali refined soybean oil used.

1801. EDELMAN, L. E., and FORBES, J. W. Thermoplastic vinyl resin and filter cake. U. S. Pat. 2,980,643. Apr. 18, 1961.
Chem. Abstr. 57:4885d
To Westinghouse Electric Corporation.

1802. GELB, L. L., and others. Epoxy resins from fats. III. Preparation and properties of resins from blends of a commercial diglycidyl ether and epoxidized glycerides cured with phthalic anhydride. Amer. Oil Chem. Soc. J. 37(2):81-84. Ref. Feb. 1960. 307.8 J82
Chem. Abstr. 54:7218d
W. C. Ault, W. E. Palm, L. P. Witnauer, and W. S. Port, joint authors.
Soybean fats included.

1803. KRAFT, W. M., and METZ, H. M. Benzoic acid modified alkyd resins. U. S. Pat. 2,915,488. Dec. 1, 1959.
Chem. Abstr. 54:6195c
To Heyden Newport Chemical Corporation.

1804. KRAFT, W. M. Catalysts for the preparation of pentaery thritol alkyd resins. U. S. Pat. 2,945,830. July 19, 1960.
Chem. Abstr. 54:25983i
To Heyden Newport Chemical Corporation.

1805. KRAFT, W. M. Dehydration of pentaery thritol esters, and preparation of resins therefrom. U. S. Pat. 2,985,601. May 23, 1961.
Chem. Abstr. 55:19329e
To Heyden Newport Chemical Corporation.

1806. KUESTER, F. E., and FINDLEY, T. W. Complex epoxy fatty ester plasticizers for thermoplastic resins. U. S. Pat. 2,978,463. Apr. 4, 1961.
Chem. Abstr. 55:16006i
To Swift & Company.

1807. LEWIS, J. R. Copolymers of oil-modified alkyd resins and vinyl compounds. Brit. Pat. 841,700. July 20, 1960.
Chem. Abstr. 55:1089g
To Imperial Chemical Industries.

1808. MCNABB, J. W. Copolymers of vinyl compounds polyphenyl, ether alcohols and unsaturated fatty acids. U. S. Pat. 2,689,834. Sept. 21, 1954.
Chem. Abstr. 49:2119b
Products esterified with soybean and other acids.

1809. MILLER, W. R., and others. Alkyd resins modified with cyclic fatty acids. Amer. Oil Chem. Soc. J. 39(3):173-176. Mar. 1962. 307.8 J82
H. M. Teeter, A. W. Schwab, and J. C. Cowan, joint authors.
Soybean fatty acids included.

1810. MLEZIVA, J., and JARUSEK, J. Polamide resins derived from dimeric fatty acids and their applications in the production of thixotropic alkyds. (Ge) Fette, Seifen, Anstrichmittel 65(6):500-506. June 1963. 384 C422
Chem. Abstr. 59:10300a
English summary.
Soybean fatty acids used.

1811. MOHR, R. A., and CAPENER, E. L. Phenol-aldehyde resins esterified with fatty acids. U. S. Pat. 2,878,199. Mar. 17, 1959.
Chem. Abstr. 53:10850h
To General Mills.

1812. MURATA, H., and HIGO, F. Epoxidized fatty acids, alcohols and esters. U. S. Pat. 3,112,235.
Chem. Abstr. 60:7040d
To Asahi Electro-Chemical Company.

1813. NEVIN, C. S. Polymerizable vinylated compounds. U. S. Pat. 3,125,592. Mar. 17, 1964.
Chem. Abstr. 60:14633g
To Staley (A. E.) Manufacturing Company.

1814. NEWEY, H. A. Curing materials having internal epoxy groups. U. S. Pat. 2,935,492. May 3, 1960.
Chem. Abstr. 54:19023e
To Shell Oil Company.

1815. NISHIMURA, S., and HATA, N. Synthetic resin from epoxy soybean oil. Jap. Pat. 2746. Mar. 29, 1963.
Chem. Abstr. 59:6583b
To Asahi Electrochemical Company.

1816. NISHIMURA, S., and HATA, N. Thermosetting epoxy resin. Jap. Pat. 26,572. Dec. 20, 1963.
Chem. Abstr. 60:8200g
To Asahi Electric Industry Company.

1817. PEERMAN, D. E., and FLOYD, D. E. Polyamide resins and their reaction products with epoxy resins. U. S. Pat. 2,881,194. Apr. 7, 1959.
Chem. Abstr. 53:13673e
To General Mills.

1818. POSNANSKY, K. W. Plastic materials prepared with polyisocyanates. U. S. Pat. 2,882,249. Apr. 14, 1959.
Chem. Abstr. 53:15623d
To Stamford Rubber Supply Company.

1819. PRYDE, E. H., and ANDERS, D. E. Unsaturated aldehyde oils. U. S. Pat. 3,112,329. Nov. 26, 1963.
Chem. Abstr. 60:10938h
To U. S. Dept. of Agriculture.

1820. RENFREW, M. M., and WITTCOFF, H. Thermosetting mixtures of epoxy resins and polymeric fatty acid amides. U. S. Pat. 2,705,223. Mar. 29, 1955.
Chem. Abstr. 50:2206i
To General Mills.

1821. RHODES, P. H., and IMES, P. L. Mixed diester plasticizers of thermoplastic resins. U. S. Pat. 2,886,545. May 12, 1959.
Chem. Abstr. 53:17574e
To Rhodes, P. H.

1822. SAMPLE, J. H. Modified alkyd resins reacted with a vinyl aromatic compound, a vinyl cyanide and an acrylate. U. S. Pat. 2,890,186. June 9, 1959.
Chem. Abstr. 53:19410c
To Sherwin-Williams Company.

1823. SCHLENKER, F. Drying properties of autoxidizable drying resins, oils, paints, cements, and adhesives. Ger. Pat. 975,321. Nov. 9, 1961.
Chem. Abstr. 56:14429h
To Chemische Werke Albert.

1824. SCHMUTZLER, A. F. Resinous compositions and printing inks containing them. U. S. Pat. 2,816,874. Dec. 17, 1957.
Chem. Abstr. 52:5853h
Soybean oil fatty acids used in the product.
To American Cyanamid Company.

1825. SECREST, P. J., and KAPRIELYAN, M. K. Changes in the iodine value and refractive index of fatty acids during alkyd resin manufacture and analysis. Amer. Oil Chem. Soc. J. 37(9):451-452. Sept. 1960. 307.8 J82
Chem. Abstr. 54:23371g
Fatty acids of soybean oil included.

1826. STECKLER, R. Epoxy resin. U. S. Pat. 2,972,589. Feb. 21, 1961.
Chem. Abstr. 55:16005f
The Food Machinery and Chemical Corporation.

1827. STEPHENS, J. R., and VAN STREIN, R. E. Air-drying epoxy resins. U. S. Pat. 3,012,979. Dec. 12, 1961.
Chem. Abstr. 56:13042b
To Standard Oil Company of Indiana.

1828. SWIFT & CO. Polyepoxide-thermoplastic compositions. Brit. Pat. 861,971. Mar. 1, 1961.
Chem. Abstr. 55:20507h

1829. TONNER, F. I., and DISON, G. F. Curable resin products from epoxy esters and acrylic ester copolymers. U. S. Pat. 3,107,226. Oct. 15, 1963.
Chem. Abstr. 60:728a
To Glidden Company.

1830. VRANY, M., PANEK, A., and DITRYCH, Z. Polyamide resin varnish compositions. Czech. Pat. 98,434. Feb. 15, 1961.
Chem. Abstr. 56:3593b

1831. WEAR, R. L. Aromatic epoxidized polyesters. U. S. Pat. 2,944,035. July 5, 1960.
Chem. Abstr. 54:21852a
To Minnesota Mining and Manufacturing Company.

1832. WOLFF, H. Plasticizer-stabilizer compositions for resinous products. U. S. Pat. 2,971,012. Feb. 7, 1961.
Chem. Abstr. 55:9946g
To Staley (A. E.) Manufacturing Company.

Soaps

1833. ESTABLIER TORREGROSA, R., and CARAVACA BARROSA, R. Preparation of soaps under pressure. (Sp) Grasas Aceites 10(4):202-206. July/Aug. 1959. 307.8 G76
Chem. Abstr. 54:13695i
Soap prepared from soybean oil.

1834. HENKEL & CIE. Alkali soaps of unsaturated fatty acids. Brit. Pat. 713,257. Aug. 11, 1954.
Chem. Abstr. 49:2762c

1835. KAIRSY, S., and others. Fractionation of fatty acid mixtures. U. S. Pat. 2,895,976. July 21, 1959.
Chem. Abstr. 54:4007d
E. M. Meade, W. O. Munns, and D. A. Walder, coinventors.
To Canada Packers.

1836. KAWAKAMI, Y. Liquid soap. Jap. Pat. 2379. Apr. 18, 1957.
Chem. Abstr. 52:4218b
Soybean oil fatty acids are used to make a transparent soap product.
To Kawakami Research Institute.

1837. MUNNS, W. O., and others. The separation of solid fatty acids from liquid fatty acids by the formation of acid soaps. II. Pilot plant studies. Amer. Oil Chem. Soc. J. 39(4):192-193. Apr. 1962. 307.8 J82
S. Kairys, D. A. Manion, and E. M. Meade, joint authors.
Soybean fatty acids included.

1838. NAUDET, M., PERROT, M. J., and VERMIN, G. Titers and kraft points of some mixtures of fatty acids. Rev. Franc. Corps Gras 8(4):254-257. Apr. 1961. 307.8 R32
Chem. Abstr. 55:15961g
Data for use in soapmaking from fatty acids derived from soybean oil mixtures.

1839. STEIN, W., and HARTMANN, H. Decomposition of unsaturated fatty acids. U. S. Pat. 2,694,081. Nov. 9, 1954.
Chem. Abstr. 49:2760e
To Henkel & Cie.
The products are Na salts which are very useful as soaps.

UTILIZATION OF BEANS FOR INDUSTRIAL USES

1840. ARMOUR & CO. Diamine hydrohalide salts as fungicides. Brit. Pat. 820,676. Sept. 23, 1959.
Chem. Abstr. 54:11367c
Soybean ingredient in fungicide.

1841. CHRISTIAN, M. B., and LADD, H. F. Glue. U. S. Pat. 2,784,106. Mar. 5, 1957.
Chem. Abstr. 51:7768c
An adhesive compound for paper covered wood veneer prepared from soybean flour and other ingredients.
To Chicago Mill & Lumber Company.

1842. DIETRICH, K. R. Production of vitamin B12 containing feed supplements from distillery slops. (Ge) Branntweinwirtschaft 79(10):196-200. May 1957. 390.8 B7322
Chem. Abstr. 51:12379h
Soybeans included.

1843. DRUGGE, C. E., and HINE, J. M. Glue mixtures, especially for paper-wood laminates. U. S. Pat. 2,963,454. Dec. 6, 1960.
Chem. Abstr. 55:6898h
To Borden Company.

1844. FURNELLE, J. The causes of yeast cell gradation in bottom fermentations. Rev. Ferment. Indus. Aliment. 9(4):187-195. Aug. 1954. 390.08 R32
Chem. Abstr. 49:9878bd
Influence of soybeans on the fermentation.

1845. GLASS, C. A., and MELVIN, E. H. Determination of composition of vinyl copolymers by infrared. Amer. Oil Chem. Soc. J. 36(3):100-101. Mar. 1959.
Chem. Abstr. 53:10009h
From soybeans. An infrared method to determine

copolymer composition from the intensity of the absorption.

1846. HENNESSY, D. J., and KUPSTAS, E. E. Treatment of phosphatide emulsions. U. S. Pat. 2,882,285. Apr. 14, 1959.
Chem. Abstr. 53:14551f
To American Lecithin Company.

1847. HENNIG, H. The soybean: chemical and technical utilization. (Ge) Chem. Ztg. 81(19):639-642. Ref. Oct. 5, 1957. 384 C427

1848. HODDS, W. G. Bacitracin. Ger. Pat. 1,026,484. Mar. 20, 1958.
Chem. Abstr. 54:18879c
To Glaxo Laboratories.

1849. IKEDA, T., and YAMAMOTO, R. Water insoluble vitamin B1 powder. Jap. Pat. 3400. May 20, 1955.
Chem. Abstr. 51:13324c
To Shionogi Drug Manufacturing Company.
A decoction from soybeans can be used instead of gelatin.

1850. KUCERA, C. H., and BARRON, A. N. Fluid loss control in hydraulic cement slurries. U. S. Pat. 3,104,704. Sept. 24, 1963.
Chem. Abstr. 59:13680d
To Dow Chemical Company.

1851. KUEHL, F. A., and others. Identification of N-(2-hydroxyethyl) palmitamide as a naturally occurring anti-inflammatory agent. Amer. Chem. Soc. J. 79(20):5577-5578. Oct. 20, 1957. 381 Am33J
Chem. Abstr. 52:2276h
T. A. Jacob, O. H. Ganley, R. E. Ormond, and M. A. P. Meisinger, joint authors.
Crystalline anti-inflammatory factor from soybean lecithin.

1852. MURATA, H., and BINGO, F. Plasticizer from soy sauce oil. Jap. Pat. 7522. Aug. 30, 1956.
Chem. Abstr. 52:10639i
A cold weatherproof plasticizer.
To Asahi Electrochemical Company.

1853. NAFFZIEGER, T. R., and others. Agricultural residues as raw materials for viscose-grade pulp. Tappi 42(7):609-612. Ref. July 1959. 302.8 T162
Chem. Abstr. 53:22929a
R. S. Matuszewski, G. H. Nelson, and T. F. Clark, joint authors.
Six agricultural residues are studied for yield and chemical characteristics. Soybean stalks included in the study.

1854. PREUSSER, H. M. Soybean adhesive composition. U. S. Pat. 2,810,657. Oct. 22, 1957.
Chem. Abstr. 52:19200b
To American Marietta Company.

1855. RESEARCH ASSOCIATION OF BRITISH PAINT, COLOUR AND VARNISH MANUFACTURERS. Development of new uses for soya beans and linseed oils through investigations of organometallic derivatives and complexes as components of protective coatings having improved properties. Paint Res., Sta, Teddington, Middlesex, Engl. 1965. 195 p. Ref. 307 R312

1856. RIENKS, L., and PATTERSON, G. B. Antitryptic substance from soybean. U. S. Pat. 2,794,800. June 4, 1957.
Chem. Abstr. 51:12445e
To Armour & Company.
The final product is a nontoxic trypsin inhibitor of high potency and quality.

1857. SAKURADA, S., and YAMAGUCHI, M. Molded raw material for brewing. Jap. Pat. 1598. Mar. 7, 1958.
Chem. Abstr. 53:2534a
To Honen Oil Manufacturing Company.

1858. SHEERAN, N. J. Blood adhesive compositions. U. S. Pat. 3,058,835. Oct. 16, 1962.
Chem. Abstr. 58:3624b
To Martin-Marietta Corporation.

1859. SHEERAN, N. J. Waterproof adhesive for lamination of insulation boards. U. S. Pat. 2,788,305. Apr. 9, 1957.
Chem. Abstr. 51:17240a
To American-Marietta Company.

1860. SHELTON, F. J., and CHERVENKA, C. H. Proteinaceous plywood adhesives containing urea-formaldehyde resins. U. S. Pat. 2,872,421. Feb. 3, 1959.
Chem. Abstr. 53:8716g
To Reichhold Chemicals.

1861. STEPHAN, J. T. Antifoaming and dust inhibiting agents for proteinaceous adhesives. U. S. Pat.

3,056,687. Oct. 2, 1962.
Chem. Abstr. 57:16948h

1862. TAKAHASHI, T. Glutamic acid hydrochloride by fermentation. Jap. Pat. 1088. Feb. 15, 1957.
Chem. Abstr. 52:7614e
Defatted soybeans used in the process.

1863. THEIMER, L. D. Thermosetting and thermoplastic plates, tubes, bars, and molding powder based on soybean flour or its proteins. Sp. Pat. 262,450. Nov. 18, 1960.
Chem. Abstr. 56:11828a

1864. WERSHAW, I. B. Dermatological preparations containing defatted soybean flour. U. S. Pat. 2,876,164. Mar. 3, 1959.
Chem. Abstr. 53:11772h
To Dome Chemicals.

1865. WERSHAW, I. B., and LOGUN, J. E. Proteintar acid dermatological preparations. U. S. Pat. 3,071,510. Jan. 1, 1963.
Chem. Abstr. 58:5452f
To Dome Chemicals.
Contains defatted colloidal soybean flour.

1866. WHISTLER, R. L., and SAARNIO, J. Galactomannan from soy bean hulls. Amer. Chem. Soc. J. 79(22):6055-6057. Nov. 20, 1957. 381 Am33J
Chem. Abstr. 52:6199b
Experiments at the Department of Biochemistry, Purdue University, Lafayette, Ind., have resulted in the extraction of galactomannan, a hemicellulose of significant industrial importance, from soybean hulls.

1867. WRIGHT, R. E. Water-resistant adhesive compositions. U. S. Pat. 2,894,847. July 14, 1959.
Chem. Abstr. 53:23114a
To Philadelphia Quartz Company.

CHEMISTRY AND RESEARCH

Amino acids

1868. IKENAKA, T., SHIMADA, K., and MATSUSHIMA, Y. The N-terminal amino acid sequence of soybean trypsin inhibitor. J. Biochem. (Tokyo) 54(2):193-195. Aug. 1963. 385 J822
Chem. Abstr. 10959c

1869. MATSUSHITA, A. Studies on the variation of the free amino acid contents in soya beans, red beans, pumpkins and cucumbers during their ripening period. (Ja) Jap. Soc. Food Nutr. J. 17(6):76-81. 1965. 389.9 J27

1870. TAIRA, H., and others. Studies on amino acid contents of processed soybean. I-II. (Ja) Jap. Soc. Food Nutr. J. 11(6):351-357. Ref. 1959. 389.9 J27
H. Ebisawa, K. I. Sugimura, and Y. Sakurai, joint authors.
English summary.
Chem. Abstr. 59:4480a
The content of total amino acid in 16 kinds of soybean products were determined by microbiological assay method.

Bibliography

1871. AMERICAN OIL CHEMISTS' SOCIETY. Lectures of the 1959 Short Course on Drying Oils. Amer. Oil Chem. Soc. J. 36(10):477-483. Ref. Oct. 1959. 307.8 J82
Soybean oil included. Also an extensive bibliography.

1872. INTERNATIONAL NUTRITION RESEARCH FOUNDATION. Review of literature on the nutritional value of soy milk, by H. W. Miller. n. p., 1957. 19 p. 389.1 In85
Text and over 100 references.

1873. KAUFMANN, H. P. Interesterification in fats. I. Theoretical background and literature. Interesterification by hydrogenation. (Ge) Fette, Seifen, Anstrichmittel. 60(10):919-930. Oct. 1958. 384 C422
Chem. Abstr. 53:5705g
Over 150 items in the bibliography. Soybean oil included.

1874. MCDOWALL, F. H., REID, C. S. W., and PATCHELL, M. R. Bloat in cattle: Effect of ingestion of linseed oil, soya-bean oil, mixed beef and mutton tallow, and peanut oil on production and properties of milk and butterfat. VI. New Zeal. J. Sci. Tech. 38A (1):1054-1080. June 1957. 514 N48B
Chem. Abstr. 52:11199f
Soybean oil gave a hay like off-flavor to the milk. Eighty-eight references.

1875. MEHLENBACHER, V. C. Standard methods in the fat and oil industry. Progr. Chem. Fats Other Lipids 5:3-29. Ref. 1958. 307.8 P942
Chem. Abstr. 52:11443e
Includes an extensive bibliography.

1876. PISKUR, M. M. Annual review of the literature of fats, oils, and detergents. 1-II. Amer. Oil Chem. Soc. J. 32(5):255-271; (6):319-341. May-June 1955. 307.8 J82

Continued annually in:
33(5):203-218.; (6):240-263. Ref. May-June 1956.
34(5):222-239.; (6):264-293. May-June 1957.
35(5):208-225.; (6):288-316. May-June 1958.
37(5):223-242.; (7):329-358. May-July 1960.
38(7):339-360.; (8):423-442. July-Aug. 1961.
39(8):351-372. (9):383-410. Ref. Aug.-Sept. 1962.
40(8):372-394.; (9):472-496. Aug.-Sept. 1963.
41(8):559-584.; (9):623-648. Aug.-Sept. 1964.
42(7):364A-381A Ref. July 1965.

I. I. Rusoff, V. Mahadevan, joint authors.

1877. PISKUR, M. M. Bibliography on oils and fats. Amer. Oil Chem. Soc. J. 33(5):22-23. Ref. May 1956. 307.8 J82

Biochemistry

1878. ASKELSON, C. E., and BALLOUN, S. L. Influence of age and dietary protein on certain free amino acids in chick blood plasma. Poultry Sci. 42 (1):140-146. Ref. Jan. 1963. 47.8 Am33P

Chem. Abstr. 59:4320e

Study of blood content of the plasma amino acids: lysine, histidine, arginine, and ornithine.

1879. BAHADUR, K., and CHANDRA, V. Studies on the influence of stannous chloride on the decomposition of soyabean (glycine soja) urease. Enzymologia 22(1): 60-72. 1960. 390.08 En9

Chem. Abstr. 55:11494g

1880. BAHADUR, K., and CHANDRA, V. A study of the decomposition of urea by the aqueous extract of glycine sojabeans. Enzymologia 21(4):209-215. 1960. 390.08 En9

Chem. Abstr. 55:11494fg

1881. BARNES, R. H. Experimental studies on soybeans. Cornell Nutr. Conf. Feed Mfr. Proc. 1960: 45-47. 389.79 C81

Laboratory tests on rats.

1882. BERGNER, H., HOCK, A., and LEHMANN, H. Urea administration to sheep with simultaneous feeding of soybean urease. (Ge) Arch. Tierernahr. 13(2):83-90. Feb. 1, 1963. 389.78 Ar22

1883. BIRK, Y. Purification and some properties of a highly active inhibitor of trypsin and alpha-chymotrypsin from soybeans. Biochim. et Biophys. Acta. 54 (2):378-381. Dec. 9, 1961. 381 B522

Chem. Abstr. 10566c

1884. BLOCK, R. J., and others. The curative action of iodine on soybean goiter and the changes in the distribution of iodoamino acids in the serum and in thyroid gland digests. Arch. Biochem. Biophys. 93(1): 15-24. Apr. 1961. 381 Ar2

Chem. Abstr. 55:17782e

R. H. Mandl, H. W. Howard, C. D. Bauer, and D. W. Anderson, joint authors.

Goitrogenic activity of raw soybeans destroyed during processing.

1885. BROWN, L. R., and POTTS, T. J. Urease activity in soybean products. Cereal Sci. Today 3(1):15-16. Jan. 1958. 59.8 C333

Chem. Abstr. 52:56941

As a measure of the degree of heat treatment the soybean protein has received.

1886. CIRCLE, S. J., MEYER, E. W., and WHITNEY, R. W. Rheology of soy protein dispersions. Cereal Chem. 41(3):157-172. Ref. May 1964. 59.8 C33

Chem. Abstr. 61:5941e

Rheological properties of relatively concentrated aqueous dispersions of a commercial edible isolated soy proteinate preparation were studied.

1887. CROSTON, C. B., SMITH, A. K., and COWAN, J. C. Measurement of urease activity in soybean oil meal. Amer. Oil Chem. Soc. J. 32(5): 279-282. Ref. May 1955. 307.8 J82

Chem. Abstr. 49:9082b

Food Sci. Abstr. 28:829

Research indicates that the maximum precision is obtained by the conductimetric method.

1888. DAVIS, P. N., NORRIS, L. C., and KRATZER, F. H. Iron deficiency in chicks. J. Nutr. 84(1):93-94. Sept. 1964. 389.8 J82

Chem. Abstr. 61:15098a

Isolated soybean protein.

1889. HORHAMMER, L., WAGNER, H., and HOLZL, J. Inositol phosphatides of ox brain and of soybean. (Ge) Biochem. Z. 330(7):591-594. 384 B522

Chem. Abstr. 56:1740i

1890. JACOBSSON, K. Effect of urea on the inhibition of trypsin by soybean trypsin inhibitor. Biochim. Biophys. Acta 16(2):264-267. Feb. 1955. 381 B522
Chem. Abstr. 49:6341i
The soybean inhibitor trypsin complex dissociates at pH 7.6 in the presence or urea.

1891. JIRGENSONS, B. Effect of detergents on the conformation of proteins. 1. An abnormal increase of the optical rotatory dispersion constant. Arch. Biochem. Biophys. 94(1):59-67. Ref. July 1961. 381 Ar2
Chem. Abstr. 55:26059d
Discusses the soybean trypsin inhibitor.

1892. KATES, M. Hydrolysis of glycerolphosphatides by plastid phosphatidase C1, 2. Can. J. Biochem. Physiol. 34(5):967-980. Sept. 1956. 470 C16E
Chem. Abstr. 50:16925h
Soybean phosphatide contains a substance that stimulates enzymatic hydrolysis.

1893. KUKSIS, A. Hydrocarbon composition of some crude and refined edible seed oils. Biochemistry 3 (8):1086-1093. Ref. Aug. 1964. 381 B523
Chem. Abstr. 61:6040g

1894. MIDDENDORF, D. F. Studies of partial replacement of dietary protein with crystalline amino acids. Diss. Abstr. 21(7):1741. Jan. 1961. 241.8 M58
Chem. Abstr. 55:9591a
Abstract of thesis (Ph. D.)-University of Maryland. 87 p.

1895. MILSTONE, J. H. Effect of blood thrombokinase, as influenced by soybean trypsin inhibitor, ultracentrifugation and accessory factors. J. Gen. Physiol. 38(6):757-769. Ref. July 20, 1955. 447.8 J822
Chem. Abstr. 50:15632a
Crystallized soybean trypsin inhibitor suppressed production of thrombin.

1896. MORRIS, C. J., and THOMPSON, J. F. The isolation and characterization of γ-L-glutamyl-L-tyrosine and γ-L-glutamyl-L-phenylalanine from soybeans. Biochemistry 1(4):706-709. Ref. July 1962. 381 B523

1897. NAISMITH, W. E. F. Ultracentrifuge studies on soya bean protein. Biochim. Biophys. Acta 16: 203-210. Feb. 1955. 381 B522
Chem. Abstr. 49:6341d
Examination of the fractions revealed four sedimenting components.

1898. NORDSIEK, F. W., and SEBRELL, W. H. Effects of added casein on the goitrogenic action of different dietary levels of soybeans. Soc. Exper. Biol. Med. Proc. 110(3):417-420. July 1962. 442.9 Sol
Chem. Abstr. 57:12985a
Addition of casein effective.

1899. NOYAN, A., and DREPPER, K. Microelectrophoresis and paper electrophoresis with protein fractions from soybean extracts. (Ge) Zentbl. Vetmed. 4(4): 369-378. Ref. May 1957. 41.8 Z5
English summary.
Chem. Abstr. 51:13975e
Cattle. A contribution to study of Durener's disease.

1900. NYREK, S. Cobalt compounds and their role in biochemistry. Med. Weter. (Warsaw) 10(3):121-125. Mar. 1954. 41.8 M463
Chem. Abstr. 50:1110c
Cobalt contents of soybeans is high.

1901. OKUDA, Y., SAKKA, A., and TOMINAGA, S. Digestibility and absorption coefficient of soybean protein. (Ja) Fukuoka Igaku Zasshi 52(1):52-54. 1961. Nat. Libr. Med.
Chem. Abstr. 61:8683d

1902. PARTHASARATHY, H. N., and others. The effect of fortification of processed soya flour with dl-methionine hydroxy analogue or dl-methionine on the digestibility, biological value, and net protein utilization of the proteins as studied in children. Can. J. Biochem. 42(3):377-384. Ref. Mar. 1964. 470 C16E
Chem. Abstr. 60:14899c
T. R. Doraiswamy, M. Panemangalore, M. N. Rao, B. S. Chandrasekhar, M. Swaminathan, A. Sreenivasan, and V. Subrahmanyan, joint authors.
Gives the biological value and net protein utilization of various proteins.

1903. PLACER, Z., and SLABOCHOVA, Z. Metabolic effect of saturated and unsaturated fatty acids. I. (Ge) Nahrung 8(4):291-303. Ref. 1964.
Chem. Abstr. 61:6110a
English summary.
Weight curves and fat absorption in rats after starvation.

1904. PLATT, B. S. Biological ennoblement: improvement of the nutritive value of foods and dietary regimens by biological agencies. Food Tech. 18(5):

68-76. Ref. May 1964. 389.8 F7398
Fermented soy products included. An extensive bibliography.

1905. POTTER, G. C., and KUMMEROW, F. A. Chemical similarity and biological activity of the saponins isolated from alfalfa and soybeans. Science 120(3110):224-225. Aug. 6, 1954. 470 Sci2

1906. PUCHAL, F. Blood plasma free amino acid studies in swine. Diss. Abstr. 23(2):378-379. Aug. 1962. 241.8 M58
Chem. Abstr. 57:17246g
Ph. D. (Thesis)-Iowa State Univ. Sci. Tech. 1962. 234 p.
Soybean meal used as one of the sources of proteins.

1907. PUCHAL, F., and others. The free blood plasma amino acids of swine as related to the source of dietary protèins. J. Nutr. 76(1):11-16. Ref. Jan. 1962. 389.8 J82
Chem. Abstr. 60:11129g
V. W. Hays, V. C. Speer, J. D. Jones, and D. V. Catron, joint authors.
Soybean meal used as one of the sources of proteins.

1908. RACKIS, J. J., and ANDERSON, R. L. Isolation of four soybean trypsin inhibitors by DEAE-Cellulose chromatography. Biochem. Biophys. Res. Commun. 15(3):230-235. Ref. Mar. 26, 1964. 442.8 B5236
Chem. Abstr. 61:4645d

1909. RACKIS, J. J., and others. Soybean trypsin inhibitors: isolation, purification and physical properties. Arch. Biochem. Biophys. 98(3):471-478. Ref. Sept. 1962. 381 Ar2
H. A. Sasame, R. K. Mann, R. L. Anderson, and A. K. Smith, joint authors.
Chem. Abstr. 58:707f
An analysis of commercial SBTI preparations which may contain as much as 50 percent impurities. Many previous research used these preparations which may account for conflicting findings.

1910. ROBERTS, R. C., and BRIGGS, D. R. Characteristics of the various soybean globulin components with respect to denaturation by ethanol. Cereal Chem. 40(4):450-458. Ref. July 1963. 59.8 C33
Chem. Abstr. 59:11780a
Use of the analytical ultracentrifuge show the various components of soybean globulins are denatured at different rates when they contact aqueous ethanol solutions.

1911. ROGERS, Q. R., and others. Observations on protein digestion in vivo. J. Nutr. 72(3):331-339. Ref. Nov. 1960. 389.8 J82
Chem. Abstr. 56:15927e
M. L. Chen, C. Peraino, and A. E. Harper, joint authors.
Recovery of nitrogen from the stomach and small intestine at intervals after feeding diets containing different proteins. Soybean proteins included in the study.

1912. RUZICKA, L. Perspectives of the biogenesis and chemistry of terpenes. (Ge) Pure Appl. Chem. 6(4):493-522. 1963. 382 P97

1913. SCHNEIDER, G., and SPARMANN, G. Separation of plant proteins by high pressure paper electrophoresis. (Abstr) Naturwissenschaften 42(13):391. July 1955. 474 N213
Chem. Abstr. 51:18066c

1914. SCHOLFIELD, C. R., and DUTTON, H. J. Method of purifying phosphatidyl ethanolamine, U. S. Pat. 2,801,255. July 30, 1957.
Chem. Abstr. 52:2992h
To U. S. Dept. of Agriculture.

1915. SCHOLFIELD, C. R., and DUTTON, H. J. Preparation of phosphatidyl ethanolamine from soy bean phosphatides. J. Biol. Chem. 214(2):633-638. Ref. June 1955. 381 J824
Chem. Abstr. 49:11061h
The product is almost free of other phospholipides. Sterol glycosides cannot be removed.

1916. SCHOLFIELD, C. R., and DUTTON, H. J. Separations of soy bean inositide fractions of low partition coefficient. J. Biol. Chem. 208(1):461-469. Ref. May 1954. 381 J824
Food Sci. Abstr. 27:2292.

1917. SMITH, A. K., BELTER, P. A., and ANDERSON, R. L. Urease activity in soybean meal products. Amer. Oil Chem. Soc. J. 33:360-363. Aug. 1956. 307.8 J82
Chem. Abstr. 50:15649g
Variety and location show variations of 20 percent in the urease of beans produced. Urease content decreased rapidly with increasing frost damage.

1918. SPAET, T. H., and KROPATKIN, M. Effect of intravenous soy bean phosphatides on blood coagulation in rabbits. Soc. Exp. Biol. Med. Proc. 95(3):492-495.

July 1957. 442.9 Sol
Chem. Abstr. 51:16905c
Changes resulted from direct anticoagulent activity. Inosithin is a commercial preparation of alcohol soluble phosphatides derived from soybeans.

1919. STALLCUP, O. T. The release of ammonia nitrogen from urea, ammoniated molasses, and soybean oil meal in the presence of rumen microorganisms. J. Dairy Sci. 37(12):1449-1460. Ref. Dec. 1954. 44.8 J822
Chem. Abstr. 49:4819d

1920. STEINER, R. F , and EDELHOCH, H. Structural transitions of soybean trypsin inhibitor. I. The native protein in water. II. The denatured state in urea. J B ol. Chem. 238(3):925-938. Ref. Mar. 1963. 381 J824
Chem. Abstr. 58:8165ab
The molecular properties of soybean trypsin inhibitor have been studied fluorescence polarization, ultraviolet fluorescence, different spectra, and optical rotation.

1921. THOMAS, W. E., and others. Erythrocyte fragility as affected by soybean products. (Abstr) J. Anim. Sci. 14:1258. Nov. 1955. 49 J82
R. D. Mochrie, W. W. G. Smart, and G. Matrone, joint authors.
In sheep. Effects of soybean hay on calf blood were not conclusive.

1922. THOMASSON, H. J. The biological value of oils and fats. IV. J. Nutr. 59(3):343-352. Ref. July 10, 1956. 389.8 J82
Chem. Abstr. 50:17024e
Deals with the rate of intestinal absorption. After butterfat soybean oil was in the highest category in rate of absorption.

1923. THOMASSON, H. J. The biological value of various natural oils and fats. Biochemical Problems of Lipids. Int. Conf. 2nd, Univ. of Ghent, July 27-30, 1955. pub. 1956. 452-462. 386.2 In86
Chem. Abstr. 52:12117t
Growth studies on rats using 20 edible oils.

1924. WETTERAU, H., and HOLZSCHUH, W. Degradation of nonprotein nitrogen compounds in the rumen or grazing ruminants. II. Arch. Tierernaehr. 13(1): 21-35. Ref. 1963. 389.78 Ar22
Chem. Abstr. 60:2106e
In vitro experiments on urease activity of extracted soybean groats.

1925. WOLFF, R., and BRIGNON, J. J. Experimental study of intestinal absorption of cholesterol. (Fr) Bull. Soc. Chim. Biol. 38(1):99-109. Apr. 25, 1956. 383 Sel
Chem. Abstr. 50:13219b
English summary.
The inhibitive effect of soybean sterols on intestinal absorption of cholesterol was demonstrated.

1926. WU, F. C., and LASKOWSKI, M. Action of the naturally occurring trypsin inhibitors against chymotrypsins alpha and beta. J. Biol. Chem. 213(2): 609-619. Ref. Apr. 1955. 381 J824
Chem. Abstr. 49:9068b
Half inhibition of alpha chymotrypsin was attained with a lesser concentration of a given inhibitor with the exception of soybean inhibitor which was more active toward chymotrypsin beta.

1927. YEH, S. D. J. Effect of some physiologic factors on the absorption of vitamin B12 in rats. Amer. J. Clin. Nutr. 12(3):180-193. Ref. Mar. 1963. 389.8 J824
Chem. Abstr. 58:12903d
Prefeeding of a soybean diet and resin can enhance vitamin B12 absorption in rats.

Chromatography

1928. BLANK, M. L., SCHMIT, J. A., and PRIVETT, O. S. Quantitative analysis of lipids by thin-layer chromatography. Amer. Oil Chem. Soc. J. 41(5): 371-376. Ref. May 1964. 307.8 J82

1929. COSME, L. L., LACEBAL, L. O., and ARIDA, V. P. Chromatographic determination of glutamic acid in some Philippine edible beans and nuts. Philippine J. Sci. 90(4):447-456. Ref. Dec. 1961. 475 P53
Chem. Abstr. 58:2781g
Includes soybeans.

1930. KWAPNIEWSKI, Z., and SLIWIOK, J. Thin-layer chromatography of glycerides. Mikrochimica Ichnoanalytica Acta 1964(5):616-619. (Ge) 384 M58
Chem. Abstr. 61:12603a
English summary.

1931. ZIELINSKI, W. L. Evaluation of the internal standard method for the estimation of oil polymer content by gas chromatography. Amer. Oil Chem. Soc. J. 41(4):249-251. Apr. 1964. 307.8 J82
Chem. Abstr. 61:843h

1932. AHLUWALIA, V. K., BHASIN, M. M., and SESHADRI, T. R. Isoflavons of soyabeans. Curr. Sci. (Bangalore) 22(12):363-364. Dec. 1953. 475 Sci23
Chem. Abstr. 49:2430h
Experiments show soybeans contain only genistein and daidzein and support contention that 8-methyl genistein, isogenistein, and 8-methyl-isogenistein are genistein of varying degrees of purity.

1933. BALTES, J. CIassical methods in fat analysis. In Boekenoogen, H. A. Analysis and characterization of oils, fats, and fat products. p. 1-58. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1934. BIRD, G. W. G. Specificity of glycine soya agglutinins. Experientia 19(12):625. 1963. 475 Ex7
Chem. Abstr. 60:4630a
Seeds contain anti-T agglutinin of Friedenreich.

1935. BIRK, Y., and others. Thermostable haemolytic factor in soybeans. Nature 197(4872):1089-1090. Ref. Mar. 16, 1963. 472 N21
Chem. Abstr. 59:5413e
A. Bondi, B. Gestetner, and I. Ishaaya, joint authors.
Saponins, the anti-nutritional factor in soybeans and its response to heat treatment.

1936. BOEKENOOGEN, H. A. Analysis and characterization of oils, fats and fat products. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1937. BOLLEY, D. S. Chemical determination of unsaturation of fats and derivatives. Amer. Oil Chem. Soc. J. 32(4):235-240. Ref. Apr. 1955. 307.8 J82
Chem. Abstr. 49:8614d
A progress report on the chemical determination of unsaturation of fats and derivatives.

1938. BUDSLAWSKI, J., and FLANZY, J. Application of ultraviolet spectrophotometry to the study of autoxidation of fatty substances. (Fr) Acad. Pol. Sci. BulI. Ser. Sci. Biol. 10(7):233-238. 1962. 512 W262
Tests with tallow and soybean oil.

1939. CAINELLI, G., and others. Toward an understanding of triterpenes. CXCVI. The construction of soya-sapogenols A, B, C, and D. (Ge) HeIv. Chim. Acta 4I(7):2053-2058. 1958. 385 H36
Chem. Abstr. 53:12341d
J. J. Britt, D. Arigoni, and O. Jeger, joint authors.

1940. CAPELLA, P., and others. Chromatography on silicic acid of the unsaponifiable matter of fats. Amer. OiI Chem. Soc. J. 37(II):564-567. Ref. Nov. 1960. 307.8 J82
Chem. Abstr. 55:2143d
G. de Zotti, G. S. Ricca, A. F. Valentini, and G. Jacini, joint authors.
Fatty materials separated into their major components, according to their polarity.

194I. CONCEPCION, I., and CRUZ, I. S. Amino-acid composition of some Philippine plant foods. Philippine J. Sci. 90(4):497-517. Ref. Dec. 1961. 475 P53
Soybeans included.

1942. DELVAUX, E. L., and BERTRAND, J. E. The determination of foots in oils, especially in linseed oils. In Boekenoogen, H. A. Analysis and characterization of oils, fats, and fat products. p. 28I-307. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1943. DI CARLO, F. J., SCHULTZ, A. S., and KENT, A. M. Soybean nucleic acid. Arch. Biochem. Biophys. 55(1):253-256. Ref. Mar. 1955. 38I Ar2
Chem. Abstr. 52:4059h
Food Sci. Abstr. 28:402
Soybean and soybean meal was tested spectrophotometrically for nucleic acid.

1944. GESTETNER, B., and others. Soybean saponins. III. Fractionation and characterization. Israel J. Chem. 1(4):460-467. Ref. Dec. 1963. 385 Is7
I. Ishaaya, Y. Birk, and A. Bondi, joint authors.
Chem. Abstr. 60:14743c
Soybean saponin extract separated into five fractions.

1945. HANNEWIJK, J., HAIGHTON, A. J., and HENDRIKSE, P. W. Dilatometry of fats. In Boekenoogen, H. A. Analysis and characterization of oils, fats and fat products. p. 1I9-182. New York, Interscience Publishers, 1964. 42I p. Libr. Cong.

1946. INAM-Ul-HAQ. Influence of variety and locality on the chemical composition of soybean. Pakistan J. Sci. Res. 15(4):123-127. Ref. Oct. 1963. 475 P173
Chem. Abstr. 6l:I101la

1947. INGRAM, W. P. The physicochemical and nutritional properties of riboflavin-active substances in soybean-oil meal. Diss. Abstr. 20(7):2529-2430. Jan. 1960. 241.8 M58

Chem. Abstr. 54:9326t

Thesis (Ph. D.)-North Carolina State College. 115 p.

Greater part of riboflavin activity due to riboflavin, but some may be due to unknown substances.

1948. INTENGAN, C. L. , and others. Composition of Philippine foods. II. Philippine J. Sci. 83(2):187-216. 1954. 475 P53

Chem. Abstr. 49:8513c

I. Concepcion, R. D. Salud, J. Manalo, I. Del Rosario, R. Gomez, V. Arzaga, and L. G. Alejo, joint authors.

Analysis of 120 foods for moisture, nitrogen, crude fiber, fat, ash, calcium, phosphorous, iron, carotene, thiamine, riboflavin, niacin, and ascorbic acid.

1949. JACINI, G., and ZOTTI, G. DE. Study of the composition of phosphates of the soybean. (Fr) Indus. Parfum. Cosmet. 12(12):389, 391-392. Ref. Dec. 1957. 308.8 In2

1950. KATCHMAN, B. J. Some observations on the photochemistry of soybean trypsin inhibitor. Radiat. Res. 2(5):467-474. Ref. July 1955. 334.8 R11

Chem. Abstr. 49:13325f

1951. KEUNING, R. Nuclear magnetic resonance spectroscopy as a tool in fat chemistry. In Boekenoogen, H. A. Analysis and characterization of oils, fats and fat products. p. 309-328. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1952. KOPECKY, A. Paper chromatography of tocopherols. (Pol) Prumsyl Potravin. 7(6):267-269. Ref. June 1956. Libr. Cong.

Chem. Abstr. 50:15349c

Determination of tocopherols in soybean oil.

1953. KROBER, O. A., and GIBBONS, S. J. Nonprotein nitrogen in soybeans. J. Agr. Food Chem. 10 (1):57-59, maps. Jan./Feb. 1962. 381 J8223

Chem. Abstr. 57:12968h

High protein soybeans were not high in nonprotein nitrogen. Strains high in Kjeldahl nitrogen were high in actual protein.

1954. LETTERS, R. The application of a two-dimensional paper-chromatographic technique to the analysis of phospholipids. Biochem. J. 93(2):313-316. Ref. Nov. 1964. 382 B52

Chem. Abstr. 61:13617e

Analysis of phospholipids of soybean given.

1955. MARTINEZ MORENO, J. M., and VAZQUEZ ROCERO, A. The application of urea inclusion compounds in fat analysis. In Boekenoogen, H. A. Analysis and characterization of oils, fats, and fat products. p. 95-118. New York, Interscience Publishers, 1964. 421 p. Libr. Cong.

1956. OHIO STATE UNIVERSITY RESEARCH FOUNDATION. Hydrazinium salts. Brit. Pat. 824,357. Nov. 25, 1959.

Chem. Abstr. 54:9964i

1957. PANT, R., and KAPUR, A. S. A comparative study of the chemical composition and nutritive value of some common Indian pulses and soya bean. Annu. Biochem. Exp. Med. 23(11):457-460. Ref. Nov. 1963. 448.8 An73

Chem. Abstr. 60:11286h

Soybeans considered in this study were unprocessed.

1958. RACKIS, J. J., and SMITH, A. K. Isolation of soybean trypsin inhibitors. U. S. Pat. 3,049,530. Aug. 14, 1962.

Chem. Abstr. 58:1311c

To U. S. Dept. of Agriculture.

1959. RHODES, M. B., HILL, R. M., and FEENEY, R. E. Spectrophotometric determination of trypsin and trypsin inhibitors. Anal. Chem. 29(3):376-378. Ref. Mar. 1957. 381 J825A

Chem. Abstr. 51:7465g

Method is accurate and simple.

1960. SHURPALEKAR, S. R., and others. Chemical composition and nutritive value of soyabean and soyabean products. Food Sci. 10(3):52-64. Ref. Mar. 1961. 389.9 M99

M. R. Chandrasekhara, M. Swaminathan, and V. Subrahmanyan, joint authors.

Chem. Abstr. 55:20248b

A review with 178 references.

1961. SMITH, H. M., SMITH, J. M., and SPRING, F. S. The constitution and stereochemistry of the soyasapogenols. Chem. Indus. 28:889-890. July 12, 1958. 382 M31C

Chem. Abstr. 53:12341i

1962. TAKAICHI, K., and ISHIKAWA, H. Lignin and lignification. 3. A new quantitative method of lignin determination by means of spectrophotometer. J. Jap. Forest. Soc. 36(10):294-300. Oct. 25, 1954. 99.8 N62

Chem. Abstr. 50:3757h

In this way lignin was determined in soybeans.

1963. TAUFEL, K., and MAUNE, R. Alkylated dihydroxnaphthalenes fat-antioxidants. (Ge) Fette, Seifen, Anstrichmittel 66(4):260-265. Ref. Apr. 1964. 384 C422

English summary.

1964. TAUFEL, K., and SERZISKO, R. Tocopherol content of some fats and oils. II. Distribution of tocopherol in selected products. (Ge) Nahrung 6(5): 413-422. Ref. 1962. Libr. Cong.

Chem. Abstr. 58:7299a

Soybean oil included.

1965. TAUFEL, K., and SERZISKO, R. Tocopherol content of some fats and oils. III. Paper chromatographic analyses of some Hungarian oils. (Ge) Nahrung 7(8):606-611. 1963. Libr. Cong.

Chem. Abstr. 60:5759h

English summary.

Description and determination of tocopherol and its homologues.

1966. U.S. AGRICULTURAL RESEARCH SERV. NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIV. Composition of oilseeds; a list of publications for 1964 of the Division. U. S. Agr. Res. Serv. ARS-71-23-3, 2 p. Feb. 1965. A381 R31Ac

1967. VRZALOVA, J. Study on the relations of certain quantitative and qualitative properties of soyabeans. (Cz) Czech. Min. Zemedel. Lesn a Vodniho Hospodar. Ust. Vedtech. Inform. Rostlinna Vyroba 9(2):143-156. Ref. Feb. 1963. 64.9 C33

German summary.

1968. WADA, S., PALLANSCH, M. J., and LIENER, I. E. Chemical composition and end groups of the soybean hemagglutinin. J. Biol. Chem. 233 (2):395-400. Ref. Aug. 1958. 381 J824

Soybean hemagglutinin appears to be composed of at least two peptide chains with N terminal alanine residues.

1969. WEAKLEY, F. B., ELDRIDGE, A. C., and MCKINNEY, L. L. The alleged "thiamine-destroying factor" in soybeans. J. Agr. Food Chem. 9(6):435-439. Ref. Nov./Dec. 1961. 381 J8223

Chem. Abstr. 57:12968i

Study shows that the reported loss of thiamine is based on unreliable thiochrome assay procedure.

1970. WEINTRAUB, I. A. N-terminal amino acids of soybean seed globulins. 8 p. Ref. Transl. 13675

Translation from Kishinev. State University. Transactions on Chemistry of Natural Compounds. 4. 1961.

1971. WEINTRAUB, I. A. A study of the globulins of soybean seeds through paper electrophoresis. 11 p. Ref. Transl. 13676

Translation from Kishinev. State University. Transactions on Chemistry of Natural Compounds. 3. 1960.

1972. YOUNGS, C. G. Glyceride structure of fats. Amer. Oil Chem. Soc. J. 36(12):664-667. Dec. 1959. 307.8 J82

Including soybean whole fat.

1973. ZOTTI, G. DE Chromatography of soybean phospholipides soluble in alcohol. Olii Mineral, Grassi, Saponi, Colori Vernici 36(4):114-117. Apr. 1959. 307.8 OL3

Chem. Abstr. 53:23007b

Enzymes

1974. BANGA, I., and MAYLATH-PALAGYI, J. Effect of inhibitors on the activity of trypsin and collagen mucoproteinase. Acta Physiol. Acad. Sci. Hung. 24(2):151-156. 1963. 448 Ac84

Chem. Abstr. 60:16145d

1975. BIRK, Y., GERTLER, A., and KHALEF, S. A pure trypsin inhibitor from soya beans. Biochem. J. 87(2):281-284. May 1963. 382 B52

Chem. Abstr. 60:9542g

Further fractionation of the purified inhibitor on a carboxymethyl cellulose column.

1976. FRANEK, F. Contribution toward the protease inhibitor from soybeans. (Ge) Collect. Czechoslovak Chem. Commun. 24(5):1734-1737. May 1959. 385 C68

1977. JOOSTE, J. W. VAN DER, and MOREHEAD, D. E. Preliminary characterization of some plant carboxylic ester hydrolases. Phytochemistry 2(3):July/ Aug. 1963. 450 P5622

Chem. Abstr. 59:15541d

Carboxylic ester hydrolases obtained from soybean.

1978. JOOSTE, J. VAN DER W., and MORELAND, D. E. Soybean phenoxyesterase. Nature 195(4844):907-908. 472 N21
Chem. Abstr. 57:12879b

1979. KOCH, R. B., and FERRARI, C. G. Investigations of proteolytic enzymes by a gelatin viscosity technique. Cereal Chem. 32(4):254-269. July 1955. 59.8 C33
Chem. Abstr. 49:13538i
The gelatin viscosity procedure for estimating proteinase activity meets requirements of a good research and control method.

1980. KUMAR, K. S. V. S., SUNDARARAJAN, T. A., and SARMA, P. S. Dephosphorylation of casein by plant phosphatases. Enzymologia 18(4):228-233. 1957. 390.08 En9
Chem. Abstr. 51:15640b
A phosphatase obtained from soybean seeds.

1981. MAYER, F. C., and others. Soybean phosphatase. Purification and properties. Arch. Biochem. Biophys. 94(2):301-307. Ref. Aug. 1961. 381 Ar2
Chem. Abstr. 56:711b
R. E. Campbell, A. K. Smith, and L. L. McKinney, joint authors.
Study indicates that soybeans may contain four different phosphatases.

1982. PAGE, A. C., and others. Coenzyme Q. IX. Coenzyme Q9 and Q10 content of dietary components. Arch. Biochem. Biophys. 85(2):474-477. Ref. Dec. 1959. 381 Ar2
Chem. Abstr. 54:10020e
P. H. Gale, F. Koniuszy, and K. Folkers, joint authors.
Q10 found in crude soybeans, soybean oil, and isolated soybean protein.

1983. SHIMAHARA, K. Peroxidation of soybean oil by lipoxygenase-forming bacteria (gram negative, rod-shaped) isolated from garbage. (Ja) Kogyo Kagaku Zasshi (J. Chem. Soc. Jap. Indus. Chem. Sect.) 67 (8):1164-1168. Aug. 1964. 385 J82
Chem. Abstr. 61:14961h
Title page translated.

Fatty acids

1984. ALFIN-SLATER, R. B., and MELNICK, D. Essential fatty acid contents of various fats. Amer. Oil Chem. Soc. J. 41(2):145-150. Ref. Feb. 1964. 307.8 J82
Chem. Abstr. 60:8241c
Interpretations of values of physico-chemical tests. Soybean fatty acids included.

1985. ASAHARA, T., and HAYANO, S. Polarography of fatty acids in nonaqueous solvents. Fette, Seifen, Anstrichmittel 63(1):1-8. Jan. 1961. 384 C422
Chem. Abstr. 55:11883f
Fatty acids of soybean oil included.

1986. BAKER, D. A colorimetric method for determining free fatty acids in vegetable oil. Amer. Oil Chem. Soc. J. 40(1):21-22. Jan. 1964. 307.8 J82
Chem. Abstr. 60:9491c
Soybean oil included.

1987. BALTES, J., WEGHORST, F., and WECHMANN, O. The catalytic alkalie isomerization of polyenes. (Ge) Fette, Seifen, Anstrichmittel 63 (5):413-420. May 1961. 384 C422
Chem. Abstr. 55:18139i
English summary.
Process for the conversion of nonconjugated fatty acids into conjugated acids.

1988. COLAKOGLU, M. Fatty acids in vegetable oils produced in Turkey. (Tu) Ankara Univ. Ziraat Fak. Yayinlari 116(70):1-71. Ref. 1957.
Chem. Abstr. 54:8111h
Oleic acid, linoleic acid, and linolenic acid content of soybean oil.

1989. HENSON, E. V. Toxicology of the fatty acids. J. Occup. Med. 1(6):339-345. Ref. June 1959. Libr. Cong.
Chem. Abstr. 53:15329e
Thirty references in the bibliography.

1990. INOUE, Y., NODA, M., and HIRAYAMA, O. Paper chromatography of unsaturated fatty acid esters as their mercuric acetate addition compounds. Amer. Oil Chem. Soc. J. 32(3):132-135. Mar. 1955. 307.8 J82
Chem. Abstr. 49:6783h
Method described by which unsaturated fatty acid esters can be separated and identified.

1991. JAKY, M. Paper chromatography of fatty acids and glycerides. (Hu) Elelmezesi Ipar 15(10):289-294. Oct. 1961. 290.9 M57
Chem. Abstr. 57:54c
English table of contents.

1992. JOHNSON, L. F., and SHOOLERY, J. N. Determination of unsaturation and average molecular weight of natural fats by nuclear magnetic resonance. Anal. Chem. 34(9):1136-1139. Aug. 1962. 381 J825A
Chem. Abstr. 57:10680b

1993. KIRJAKKA, P., and NIEMINEN, M. The oxidation of unsaturated fatty acids with molecular oxygen. (Fi) Suomen Kenistilehti 27A(9):207-215. 1954. 385 Su7
Chem. Abstr. 51:8646b

1994. KUEMMEL, D. F. Direct determination of saturated fatty acids in fats, oils, and methyl esters. Amer. Oil Chem. Soc. J. 35(1):41-45. Jan. 1958. 307.8 J82
A direct gravimetric method for the determination of saturated fatty acids in fats, oils, and methyl esters. Soybean oil included.

1995. KUEMMEL, D. F. Minor component fatty acids of common vegetable oils. Amer. Oil Chem. Soc. J. 41(10):667-670. Oct. 1964. 307.8 J82
Chem. Abstr. 61:14907e

1996. REISER, R., and WILLIAMS, M. C. The assay of essential fatty acids. In Boekenoogen, H. A. Analysis and characterization of oils, fats, and fat products. p. 59-94. New York, Interscience Publishers. 421 p. 1964. Libr. Cong.

1997. SIMMONS, R. O., and QUACKENBUSH, F. W. Comparative rates of formation of fatty acids in the soybean seed during its development. Amer. Oil Chem. Soc. J. 31(12):601-603. Ref. Dec. 1954. 307.8 J82
Chem. Abstr. 49:2573d
Lincoln soybeans harvested at sucessive stages of maturity showed continuous increases in amounts of each of the saturated fatty acids: oleic, linoleic, and linolenic.

1998. SIMMONS, R. O., and QUACKENBUSH, F. W. The sequence of formation of fatty acids in developing soybean seeds. Amer. Oil Chem. Soc. J. 31(11): 441-443. Ref. Nov. 1954. 307.8 J82
Chem. Abstr. 49:1158a
Consistent presence of highest specific activity in the oleic acid fraction indicated that oleic acid may be converted to the other acids.

1999. SREENIVASAN, B. S., and BROWN, J. B. Further studies on the isomerization of polyunsaturated fatty acids by potassium tertiary butoxide. Amer. Oil Chem. Soc. J. 35(2):89-93. Feb. 1958. 307.8 J82
Chem. Abstr. 52:5856g
Technique makes possible the highest degree of conjugation of linoleic, linolenic, arachidonic and higher polyunsaturated fatty acids so far reported.

2000. TELS, M., and others. The specific refraction of fatty oils. Amer. Oil Chem. Soc. J. 35(4):163-166. Ref. Apr. 1958. 307.8 J82
Chem. Abstr. 52:8591i
A. J. Kruidenier, C. Boelhouwer, and H. I. Waterman, joint authors.
It is shown that atomic and group refractions, obtained from data on hydrocarbons, may be used in calculating the Lorenz-Lorentz molar refraction of fatty acid esters. Soybean oil included.

2001. UKSILA, E. Fractionation of soybean and linseed oil fatty acids by crystallization. Suomalainen Tiedeakatemia. Ann. Ser. A, II. Chem. 119, 74 p. Ref. 1963. 385 H362
Chem. Abstr. 59:14205d
Object was to find possible way of preparing pure linoleic and linolenic acids or their concentrates without using large volumes of solvent or very low temperaures.

2002. VANDER WAL, R. J. Calculation of the distribution of the saturated and unsaturated acyl groups in fats, from pancreatic lipase hydrolysis data. Amer. Oil Chem. Soc. J. 37(1):18-20. Jan. 1960. 307.8 J82
Chem. Abstr. 54:5125b
Soybean oil included.

2003. WHEELER, D. H. Purification of fatty acids. U. S. Pat. 2,862,943. Dec. 2, 1958.
Chem. Abstr. 53:4778g
To General Mills.

Lecithin

2004. DUCHANGE, G. Extraction of lecithin from soybean oil. Fr. Pat. 1,235,902. Nov. 10, 1960.
Chem. Abstr. 55:27706c

2005. HALL, L. A., and CLARK, G. L. The detection of chemical reactions in complex mixtures of food antoxidants by infrared spectrometry. Food Technol. 10(8):384-386. Aug. 1956. 389.8 F7398
Chem. Abstr. 50:15979d
Infrared spectrum is highly characteristic for each blend and there is clear evidence of the formation of lecithin citrate.

2006. PARDUN, H. Isolation and purification of soya lecithin. (Ge) Fette, Seifen, Anstrichmittel 64 (6):536-541. June 1962. 384 C422
English summary.
Chem. Abstr. 57:7403d
Discusses the use of a ternary hydrocarbon acetone water solvent.

2007. PARDUN, H. Methods of analysis for the quality determination of soybean lecithin. (Ge) Fette, Seifen, Anstrichmittel 66(6):467-476. June 1964. 384 C422

2008. YEADON, D. A., GOLDBLATT, L. A., and ALTSCHUL, A. M. Lecithin in oil-in-water emulsions. Amer. Oil Chem. Soc. J. 35(8):435-438. Aug. 1958. 307.8 J82
Chem. Abstr. 52:16698f
Natural soybean phosphatides as effective emulsifiers.

2009. ZOTTI, G. DE, and JACINI, G. Column chromatography of soybean phosphatides. (It) Olii Miner. Grassi Saponi, Colori Vernici 34(12):533-535. Ref. Dec. 1957. 307.8 OL3
English summary.
Chem. Abstr. 52:10613b
Chromatography on the alcohol soluble soybean phosphatide fractions to isolate lecithins having a high choline content.

Lipides

2010. HAWTHORNE, J. N. A further study of inositol-containing lipides. Biochim. Biophys. Acta 18(3): 389-393. Ref. Nov. 1955. 381 B522
Chem. Abstr. 50:4260g
Food Sci. Abstr. 28:1158
The inositol phosphatides of soybean and ground nut appear to be identical.

2011. HAWTHORNE, J. N., and CHARGAFF, E. A study of inositol-containing lipides. J. Biol. Chem. 206(1):27-37. Ref. Jan. 1954. 381 J824
Food Sci. Abstr. 27:194
Results of an orienting comparison of the inositol lipides of soybean with brain diphosphoinos diphosphoinositide.

2012. KAUFMANN, H. P., MAKUS, Z., and DEICKE, F. Thin-layer chromatography of lipides. II. (Ge) Fette, Seifen, Anstrichmittel 63(3):235-239. Mar. 1961. 384 C422
Chem. Abstr. 55:24052g
The separation of cholesterol esters.

Lipoxidase

2013. ANDRE, E., and HOU, K. W. Lipoxidase: its discovery in the by-products of soybean milk production. (Fr) Oleagineux 19(3):187-193. Mar. 1964. 77.8 OL2
English summary, p. XXVII.

2014. ANDRE, E. The lipoxidase of soybean seeds. The present state of our knowledge. Oleagineux 19 (7):461-463. July 1964. 77.8 OL2
Chem. Abstr. 61:10934a

2015. BLAIN, J. A., and TODD, J. P. Lipoxidase activity by cup-plate techniques. J. Sci. Food Agr. 9(4):235-241. Ref. Apr. 1958. 382 So12
Chem. Abstr. 52:13137b
Conditions for assay of soy lipoxidase-activity examined by using a linoleate-carotenoid system.

2016. BLAIN, J. A., and TODD, J. P. The lipoxidase activity of wheat. J. Sci. Food Agr. 6(8):471-479. Aug. 1955. 382 So12
Food Sci. Abstr. 28:396
Soybeans included in the study.

2017. KOCH, R. B., STERN, B., and FERRARI, C. G. Linoleic acid and trilinolein as substrates for soybean lipoxidase (s). Arch. Biochem. Biophys. 78(1): 165-179. Ref. Nov. 1958. 381 Ar2
Chem. Abstr. 53:3334a
Study indicates that lipoxidases may occur as two groups-those active on triglycerides and those active on fatty acids.

Organic chemistry

2018. CAMPBELL, J. A., and others. Purification of steroids. U. S. Pat. 2,816,119. Dec. 10, 1957.
Chem. Abstr. 52:8215g
D. A. Shepherd, A. C. Ott, B. A. Johnson, joint inventors.
To Upjohn Company.

2019. PENNINO, C. J. Quaternary ammonium xanthates. U. S. Pat. 2,813,332. Nov. 5, 1957.
Chem. Abstr. 52:6400a
To Goodrich (B. F.) Company.

2020. RUSSO, F. X. Stabilizing laurylpyridinium chloride. U. S. Pat. 2,776,291. Jan. 1, 1957.

Chem. Abstr. 51:8808h
To Vitogen Products.

Pesticide Residues

2021. IWATA, I., SAKURAI, Y., and UTIDA, Y. Action of fumigants on the components of cereals. 2-3. (Ja) Jap. Soc. Food Nutr. J. 11(4):175-179. 1958. 389.9 J27
English summary.
2, Action of chloropicrin; 3, Action of halogen compounds.
Soybean flour.

2022. SZARO, S. S. Determination of 2-4-D residues in soybeans. Weeds 13(1):76. Jan. 1965. 79.8 W41

Phosphatides

2023. CARTER, H. E., and others. Biochemistry of the sphingolipides. X. Phytoglycolipide, a complex phytosphingosine-containing lipide from plant seeds. Amer. Oil Chem. Soc. J. 35(7):335-343. Ref. July 1958. 307.8 J82
Chem. Abstr. 52:14768g
W. D. Celmer, D. S. Galanos, R. H. Gigg, W. E. M. Lands, J. H. Law, K. L. Mueller, T. Nakayama, H. H. Tomizawa, and E. J. Weber, joint authors.
A new complex lipide, phytoglycolipide has been isolated from soybean phosphatides.

2024. CARTER, H. E., and others. Biochemistry of the sphingolipides. VIII. J. Biol. Chem. 206(2):613-623. Ref. Feb. 1954. 381 J824
Food Sci. Abstr. 27:195
W. D. Celmer, W. E. M. Lands, K. L. Mueller, and H. H. Tomizawa, joint authors.
Occurrence of along chain base in plant phosphatides. Study of purified inositol lipides from corn or soybean given.

2025. CARTER, H. E., GALANOS, D. S., and FUJINO, Y. Chemistry of the sphingolipides. Can. J. Biochem. Physiol. 34(2):320-333. Ref. Mar. 1956. 470 C16E
Food Sci. Abstr. 28:1520
The study of the complex sphingolipides: ganglioside, hematoside, globoside, strandin, and polycerebroside.

2026. IRODOV, M. V., and ELISEEVA, N. S. The effect of phosphatides on the cleavage products of vegetable oils. (Rus) Masl. Zhir. Prom. 30(5):14-17. 1964. 307.8 M37
Chem. Abstr. 61:9691e

2027. JAKUBOWSKI, A. Hydration of soybean phosphatides. (It) Riv. Ital. Sostanze Grasse 39(10):512-516. Ref. Oct. 1962. 307.8 OL3
English summary.
Amount of water required to hydrate and precipitate soybean phosphatides. Water increases hydration proceeds.

2028. KROG, N., and TOLBOE, O. About the binding of copper with soybean phosphatides. (Ge) Fette, Seifen, Anstrichmittel 65(9):732-736. Sept. 1963. 384 C422
English summary.
Chem. Abstr. 60:4699c
Soybean phosphatides fractionated.

2029. LEVER, W. F., and BASKYS, B. Effects of intravenous administration of fat emulsions and their emulsifying agents. 1. Effects on clearing factor activity, electrophoretic pattern and clotting time of blood of dogs. J. Invest. Dermatol. 28(4):317-320. Apr. 1957. Libr. Cong.
Chem. Abstr. 51:18304b
Soybean phosphatide used as one of the emulsifying agents.

2030. TING, H. S., and others. Studies on soybean steroids. 1. Chromatographic separation of gamma-sitosterol from crude soybean phosphatides. Acta Chim. Sinica 22(4):288-291. 1956. 385 Ac86
Chem. Abstr. 52:6463e
Y. Wang, W. Y. Ting, and Y. T. Huang, joint authors.

2031. WAGNER, H., and WOLFF, P. The isolation and analysis of vegetable phosphatides and sphingolipids. (Ge) Fette, Seifen, Anstrichmittel 66(6):425-429. Ref. June 1964. 384 C422
Chem. Abstr. 61:12213d
English summary.

2032. WAGNER, H. Phosphatides of soybeans. (Ge) (Abstr) Pharm. Zenthalle. Deut. 98(11):628-639. Nov. 1959. 396.8 P492

Proteins

2033. ALIKONIS, J. J. Those new soy proteins. Food Eng. 31(4):104-105. Apr. 1959. 389.8 F737
A study of the isolation of soybean proteins and a table showing the amino acid content of these proteins.

34. BARRETT, R. E. Physicochemical studies of ybean proteins. Ohio. State Univ. Abstr. Doctoral ss. 1950/51(67):29-37. 1957. 241.8 Oh3
Theory of adhesion for soybean protein advanced; perimental verification obtained.

035. BRIGGS, D. R., and WOLF, W. J. Studies on ie cold-insoluble fraction of the water-extractable ybean proteins. I. Arch. Biochem. Biophys. 72):127-144. Ref. Nov. 1957. 381 Ar2
Chem. Abstr. 52:3050e
Gives the nature of the cold-insoluble fraction of ybean protein under ultracentrifugal studies.

036. BROCK, T. D. Effect of oils and fatty acids on he production of filipin. Appl. Microbiol. 4(3):131-33. May 1956. 448.3 Ap5
Chem. Abstr. 50:12182e
Production of filipin grown on soybean oil media.

2037. CALET, C., and MELOT, M. Comparison of efficiency for growth of methionine and calcium hydroxymethylthiobutryate. (Fr) Znn. Zootech. 10 (3):205-213. Ref. 1961. 49 F84
Chem. Abstr. 57:17161g
English summary.
Soy protein supplemented with lysine, threonine and valine.

2038. EDWARDS, C. H., and ALLEN, C. H. Cystine, tyrosine, and essential amino acid content of selected foods of plant and animal origin. J. Agr. Food Chem. 6(3):219-223. Ref. Mar. 1958. 381 J8223
Chem. Abstr. 52:14881b

2039. IOFFE, K. G., and ERMAKOVA, E. A. Comparison of proteins of the bean (Phaseolus aureus Piper) with soybean proteins. (Rus) Biokhimiia 19: 561-564. Sept./Oct. 1954. 385 B523
Chem. Abstr. 49:1883i
The proteins of mung bean could be utilized commercially in the same way as soybean proteins.

2040. KAMADA, H., and WATANABE, T. The study on the soybean protein. (Ja) Tokyo. Food Res. Inst. Rep. 9:121-126. Apr. 1954. 389.9 T57

2041. KIMURA, S. Studies on Japanese food. 24. The amino acid composition of cereal and soybean proteins by column chromatographic analysis. (Ja) Jap. Soc. Food Nutr. J. 9(2):75-80. Ref. 1956. 389.9 J27

2042. KONDO, K., MORI, S., and KAJIMA, M. Studies on proteins. 61-62. On the components of soybean protein. 2-3. (Ja) Kyoto U. Res. Inst. Food Sci. B. 15:37-55. Aug. 1954. 389.9 K99R
English summary.

2043. KRETOVICH, V. L., SMIRNOVA, T. I., and FRENKEL', S. IA. Analysis of the reserve proteins of soybeans in ultracentrifuge. (Rus) Biokhimiia 2(6): 842-847. Ref. Nov./Dec. 1956. 385 B523
This journal in English translation 385 B523Ae.
Chem. Abstr. 51:9741d

2044. KRETOVICH, V. L., SMIRNOVA, T. I., and VEINOVA, M. K. Electrochemical properties of soybean and hemp seed proteins. (Rus) Akad. Nauk SSSR. Inst. Biokhim. im. A. N. Bakha. Biokhim. Zerna. Sborn. 4:5-21. Ref. 1958. 59 Ak1
Chem. Abstr. 53:477i

2045. KROBER, O. A., and CARTTER, J. L. Quantitative interrelations of protein and nonprotein constituents of soybeans. Crop Sci. 2(2):171-172. Mar./Apr. 1962. 64.8 C883
Chem. Abstr. 57:3785i
High protein soybeans averaged 48.3 percent protein; low protein samples averaged 32.4 percent and 31.3 percent protein.

2046. LIKES, C. J. Aggregation studies of soybean protein. (Abstr) Va. J. Sci. (n.s. 9(4):398. Sept. 1958. 470 V81
Ultracentrifugal studies on soybean protein extracts.

2047. LONGWELL, J. H. Research gives new worth to long neglected crop; the soybean. Better Crops Plant Food 41(8):36-37. Oct. 1957. 6 B46
The heated soybean protein has feeding value equal to animal protein.

2048. RABINOVICH, V. M. Extending the culture of grain crops and perennial grasses as means of increasing plant proteins in feed rations. Zemledelie 4(12):53-58. Dec. 1956. 20 Z44
Chem. Abstr. 51:9971b
Data on percentage of digestible protein in soybeans.

2049. RACKIS, J. J., and others. Chromatography of soybean proteins. I. Amer. Chem. Soc. J. 81(23): 6265-6270. Dec. 5, 1959. 381 Am33J
H. A. Sasame, R. L. Anderson, and A. K. Smith, joint authors.
Chem. Abstr. 54:15555e

2050. VAN ETTEN, C. H., and others. Amino acid composition of soybean protein fractions. J. Agr. Food Chem. 7(2):129-131. Ref. Feb. 1959. 381 J8223

J. E. Hubbard, J. M. Mallan, A. K. Smith, and C. W. Blessin, joint authors.

Chem. Abstr. 53:18330a

Amino acid analyses on soluble soybean protein and on acid-precipatated, heat-coagulated fractions by ion exchange chromatography.

2051. WADA, S. Structural studies on soybean hemagglutinin. Diss. Abstr. 18(4):1239-1240. 1958.

Chem. Abstr. 12962a

Thesis (Ph. D.)-University of Minneosta, 1957. 128 p.

Soybean hemagglutinin is a toxic protein. It was isolated in a state of 95 percent electrophoretic purity.

2052. WATANABE, T., and others. A study of soybean protein. I-III. (Ja) Rep. Food Res. Inst. (Tokyo) 5:51-57. Mar. 1951.

Chem. Abstr. 49:16257i

English summary.

A. Hayakawa, H. Kamata, and Y. Sakurai, joint authors.

Effect of heating, solvent treatment and storage on soybean properties. Effect of pressing on soybean protein during storage.

2053. WATANABE, T., and others. The study of the soybean protein. VII. (Ja) Tokyo. Food Res. Inst. Rep. 9:99-105. Apr. 1954. 389.9 T57

A. Hayakawa, H. Kamada, and Y. Sakurai, joint authors.

2054. WATANABE, T., and NAKAYAMA, O. Study of water-extracted protein of soybean. (Ja) Agr. Chem. Soc. Jap. J. 36(1):890-895. Ref. 1962. 385 Ag8

2055. WOLF, W. J., and others. Behavior of the 11S protein of soybeans in acid solutions. I. Amer. Chem. Soc. J. 80(21):5730-5735. Nov. 5, 1958. 381 Am33J

J. J. Rackis, A. K. Smith, H. A. Sasame, and G. E. Babcock, joint authors.

Chem. Abstr. 53:5364f

Ultracentrifugal and optical rotatory measurements were made to determine the effect of pH, ionic strength and time on the behavior of the 11S protein of soybeans in acid solutions.

2056. WOLF, W. J., SLY, D. A., and BABCOCK, G. E. Denaturation of soybean globulins by aqueous isopropanol. Cereal Chem. 41(5):328-339. Sept. 1964. 59.8 C33

Chem. Abstr. 61:14930c

Study of soybean proteins.

2057. WOLF, W. J. Physical and chemical studies on soybean proteins. Diss. Abstr. 17(5):969-970. May 1957. 241.8 M58

Thesis (Ph. D.)-University of Minnesota. 217 p.

Chem. Abstr. 51:11601c

Ultracentrifugal analyses show that the decreased extractibility of soybean protein is due to the decreased solubility of the 11Sand 15S fractions.

2058. WOLF, W. J., ELDRIDGE, A. C., and BABCOCK, G. E. Physical properties of alcohol-extracted soybean proteins. Cereal Chem. 40(5):504-514. Ref. Sept. 1963. 59.8 C33

Chem. Abstr. 60:3217e

Study of the effects of alcohols on the physical properties of soybean proteins.

2059. WOLF, W. J., and BRIGGS, D. R. Purification and characterization of the 11S components of soybean proteins. Arch. Biochem. Biophys. 85(1):186-199. Nov. 1959. 381 Ar2

Chem. Abstr. 54:8943c

Several fractionation procedures investigated for the purification of 11S protein.

2060. WOLF, W. J., BABCOCK, G. E., and SMITH, A. K. Purification and stability studies of the 11S component of soybean proteins. Arch. Biochem. Biophys. 99(2):265-274. Ref. Nov. 1962. 381 Ar2

Chem. Abstr. 58:2651g

The 11S protein is sensitive to freezing, freeze-drying, or storage as a moist curd precipitated by ammonium sulfate. The question of identical subunits in soybean globulins is discussed.

2061. WOLF, W. J., and BRIGGS, D. R. Studies on the cold-insoluble fraction of the water-extractable soybean proteins. II. Arch. Biochem. Biophys. 76 (2):377-393. Ref. Aug. 1958. 381 Ar2

Ultracentrifugal studies of the 11S globulin indicates changes involving dissociation into subunits half the size of the 11S molecule.

2062. WOLF, W. J., BABCOCK, G. E., and SMITH, A. K. Ultracentrifugal differences in soybean protein composition. Nature [London] 191(4796):1395-1396. Ref. Sept. 30, 1961. 472 N21

Chem. Abstr. 57:2593d

As in other plants location of growth effects protein composition.

Research

2063. HILBERT, G. E. Foreign research program of U. S. Department of Agriculture on soybean protein products under Public Law 480. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:93-98. 1962. A389.9 C76

One hundred ninety three grants or research agreements have been executed in 20 countries in Europe, Asia, and Latin America. Funds are available for 6 additional programs.

2064. JOSLYN, M. A. Research in food science and food technology. Advance. Food Res. 10:1-21. 1960. 389 M87

Chem. Abstr. 55:9703i

A status report.

2065. MCVAY, M. D. The need for soybean research. Chemurg. Digest 19(9):4-6. Sept. 1960. 381 N213Na

2066. MARKLEY, K. S. Soybeans and soybean products. New York, Intersci. Publ., 1950-1951. 2 v. 60.3 M34

Sterols

2067. CAMPBELL, J. A., and others. Separation of stigmasterol from soybean sterols. Amer. Chem. Soc. J. 79(5):1127-1129. Mar. 5, 1957. 381 Am33J

Chem. Abstr. 51:9654i

D. A. Shepherd, B. A. Johnson, and A. C. Ott, joint authors.

Several new esters of stigmasterol and a new process for isolation presented.

2068. CLARKSON, T. B., KING, J. S., and WARNOCK, N. H. The hypocholesterolizing effect of gallogen and its potentiation of soybean sterols. Circulation Res. 4(1):54-56. Jan. 1956. Libr. Cong.

Chem. Abstr. 50:6684c

Soybean sterols slightly inhibited cholesterol; with gallogen inhibition is greatly increased.

2069. DONIA, R. A., OTT, A. C., and DRAKE, N. Determination of stigmasterol in soy sterols by radioactive isotope dilution. Anal. Chem. 29(4):464-467. Ref. Apr. 1957. 381 J825A

Chem. Abstr. 51:9091a

Sterol mixtures were assayed for stigmasterol by an isotope dilution technique.

2070. EISNER, J., and FIRESTONE, D. Gas chromatography of unsaponifiable matter. II. J. Ass. Offic. Agr. Chem. 46(3):542-550. Ref. June 1963. 381 As7

Identification of vegetable oils by their sterols. Soybean oil included.

2071. HOFFMAN, R. L., EVANS, C. D., and COWAN, J. C. Soybean unsaponifiables: chromatographic investigation of shell drain condensate from a commercial deodorizer. Amer. Oil Chem. Soc. J. 41(2):116-119. Feb. 1964. 307.8 J82

Chem. Abstr. 60:12245a

Soy sterols obtained as a by product.

2072. THOMPSON, M. J., ROBBINS, W. E., and BAKER, G. L. The nonhomogeneity of soybean sterol gamma-sitosterol. Steroids 2(5):505-512. Ref. Nov. 1963. 381 St4

Chem. Abstr. 60:4382e

MISCELLANEOUS

Argentina

2073. HOUGEN, V. H. The Argentine soybean venture. Foreign Agr. 21(9):13-14. Sept. 1957. 1.9 Ec7For

This history and future prospects for soybeans in the Argentine.

Australia

2074. GRAY, S. G. Experiments with soybeans in Australia. Australian Commonwealth Sci. Indus. Res. Organ Div. Plant Indus. Tech. Paper 4, 18 p. Ref. 1955. 23 Au7322T

Varieties. Report on soybean growth feasibility study for Australia.

Brazil

2075. GOMES, P. Cultural characteristics of soybeans-their value as feed. (Por) Sitios Fazendas 20 (4):66-70. Apr. 1954. 9.2 Si8

Includes the nutritive value of the soybean.

2076. MELO, M. DE L. Nutritive value of soybeans and the importance of their cultivation in the North and Northeast of Brazil. (Por) Minas Gerais. Dept. Prod.

Veg. Bol. Agr. 4(5/6):53-64. Ref. May/June 1955. 9.2 M663

2077. PAIXAO, J. S. DA. Considerations on the soybean as food capable of balancing the nutrition of the Brazilian. (Por) Minas Gerais. Dep. Prod. Veg. Bol. Agr. 5(9/10):51-57. Ref. Sept./Oct. 1956. 9.2 M663

2078. PAIXAO, J. S. DA. Considerations on the soybean as an element in balancing the Brazilian diet. (Por) Brazil. Div. Fomento Prod. Veg. Sec. Fomento Agr. Ceara. Publ. 1957(10):32-38. Ref. Mar. 9.2 B7368

California

2079. KNOWLES, P. F., EDWARDS, R. T., and MILLER, M. D. Soybeans in California. Cotton Gin Oil Mill Press 59(5):14, 28-30. Mar. 8, 1958. 304.8 C822

Culture, varieties, and production costs. Soybeans have proven very sensitive to salts. Several soybean varieties have shown considerable salt tolerance.

Canada

2080. ROYTENBERG, M. M., and HUGHES, R. G. Soybean prices: some relationships between Canadian and United States markets. Econ. Ann. 32(3):61-65. June 1962. 281.8 Ec72

Canadian soybean prices, production, imports, exports, net imports and domestic utilization for 1956-1961.

China

2081. SUN, H. T. Soia [Soybeans]. Moskva, Gosudarstvennoe Izdatel'stvo Sel'skokhoziaistvennoi Literatury, 1958. 248 p. 60.3 Su7Ar

Translation of his Ta-tou. A biological and economic study with special reference to conditions in China. For college students and technical workers.

2082. SUN, H. T. Soybeans. (Ch) Peiping, Sci. Press, 1956. 171 p. 60.3 Su7

A biological and economic study with special reference to conditions in China. For college students and technical workers.

2083. YANG, H. J. The development and rational utilization of soyabean. U. S. Joint Publ. Res. Serv. Transl. Communist China's Agr. Anim. Husb. Mater. 41:39-51. Apr. 22, 1963. 173 J663Trc

Translation from Ta-kung Pao, Mar. 11, 1963, p.3. A general article about the problems connected with the utilization of soybeans as food, feed and for industrial purposes.

Congo

2084. PATZSCH, H. Analysis and trade classification of the vegetable oils from the Belgium Congo. Seifen-Ole-Fette-Wachse 80(23):613-614, 638-639, 664. Nov. 10, 1954. 307.8 Se4

Chem. Abstr. 49:5004g

Soybean oil included.

2085. U. S. FOREIGN OPERATIONS ADMIN. OPERA-OPERATIONS MISSION TO BELGIUM AND LUXEMBOURG. Report on proteins of cottonseed and soybeans in human nutrition in the Belgium Congo and of Ruanda Ur, (Fr), by E. Delvaux, Louvaine? 1953. 22 p. 173.2 F762Re

Cookbooks

2086. LAGER, M. M., and JONES, D. VAN, G. The soybean cookbook. Rev. ed. New York, Devin-Adair, 1963. 240 p. 389.25 L13

Soy soups, cereals, desserts, candies, pastries, cookies, and spreads are included plus a chapter on the nutritional value of soy products.

Costs & Returns

2087. BACHMURA, F. T. Crop alternatives to cotton in the Arkansas-Mississippi "Delta"-A prognosis. J. Farm Econ. 39(4):942-950. Nov. 1957. 280.8 J822

Costs and returns for cotton, soybeans, and corn. Cotton-soybean agriculture may dominate within the next 15 to 20 years.

2088. BELAN, G. A., and MOLCHANOV, P. I. Certain economic data on the production and utilization of fats in USA and in the capitalist countries of Western Europe. (Rus) Masl.-Zhir. Promysh. 24(11):43-48. Ref. 1958. 307.8 M37

2089. BREWSTER, J. M., MITCHELL, J. A., and CLARK, S. P. Size of soybean oil mills and returns to growers. U. S. D. A. Marketing Res. Rep. 121, 99 p. Nov. 1956. 1 Ag84Mr

Includes the design of mills.

2090. BURNETT, A. A., ed. Production and utilization of soybeans in Canada. Ontario Farm Bus., Fall 1962:4-5. 281.8 On82

Indicates that soybean meal is more important than oil in the determination of price.

2091. DOUGHTY, H. N. Pricing soybeans; an economic appraisal of alternative methods. U. S. Agr. Marketing Serv. AMS-229, 8 p. Feb. 1958. A280.39 M34Am

2092. FARNWORTH, V., and JACKSON, D. Marketing margins, practices, and costs for soybean and cottonseed oils. U. S. D. A. Marketing Res. Rep. 231, 46 p. May 1958. 1 Ag84Mr

2093. FARNWORTH, V. M. Returns from marketing cottonseed and soybean oils in margarine. U. S. D. A. Marketing Res. Rep. 503, 39 p. Oct. 1961. 1 Ag84Mr

2094. GENEVOIS, L. The economic and agronomic problem of the soybean. (Sp) Rev. Int. Produits Trop. Materiel Trop. 32(336):177-178. Oct. 1957. 286.8 R326

2095. HENEBRY, W. J. Country elevator operator who stores soybeans is losing his shirt. Grain Feed J. Consolidated 113(6):33-34. Mar. 28, 1956. 298.8 G762

2096. HOUCK, J. P. A statistical model of the demand for soybeans. J. Farm Econ. 46(2):366-374. May 1964. 280.8 J822

Statistical analysis of pricing. Further improvements in available data needed before a model of this type can qualify as a predictive device.

2097. HOUCK, J. P. Demand and price analysis of the United States' soybean market. Diss. Abstr. 24 (1):111-112. July 1963. 241.8 M58

Abstract of thesis (Ph. D.)-University of Minnesota. 227 p.

2098. JUILLERAT, M. E. The pricing structure for soybeans at country elevators and processors in Indiana. Diss Abstr. 20(5):1615. Nov. 1959. 241.8 M58

Abstract of thesis (Ph. D.)-Purdue University. 147 p.

Improvement of market needs more careful buying and selling.

2099. JUILLERAT, M. E., and FARRIS, P. L. Soybean pricing and grading at Indiana country elevators and processing plants. Ind. Agr. Exp. Sta. Res. Bull. 700, 12 p. Aug. 1960. 100 In2P

2100. KROMER, G. W. When should you sell your soybeans? Agr. Situation [Washington] 44(8):12-14. Aug. 1960. 1 Ec7Ag

With reference to prices. Export demand for soybeans is an important price-making force as 20 percent of production goes into the world market. Soybean seed used for planting requires about 6 percent of the U. S. crop annually.

2101. KUTISH, F. A. Soybean and soybean meal price outlook. Feedstuffs 26(40):20, 23-24, 26. Oct. 2, 1954. 286.81 F322

2102. MCHALE, J. E. The economics of processing soybeans. Amer. Oil Chem. Soc. J. 36(4):6. Apr. 1959. 307.8 J82

A discussion of conversion, the relationship between cash soybean cost and product sales value. Includes a table: Changes in conversion in Spring and Summer months.

2103. MORAWETZ, G. DE. Soya, great profit and little trouble. II. Rev. Nac. Agr. 51(622): 31-33. Feb. 1957. 9.4 R32

Use of soybean flour.

2104. MORRISON, W. R. Costs and use of storage for soybeans, oats and wheat in Arkansas. Ariz. Agr. Exp. Sta. Bull. 562, 27 p. Dec. 1955. 100 Ar42

2105. NAKAMURA, H., HIERONYMUS, T. A., and JUDGE, G. G. Interregional analyses of the soybean sector. Ill. U. Col. Agr. Dep. Agr. Econ. Res. Rep. AERR 67, 52 p., map. Dec. 1963. 281.9 I162

Geographical flows and pricing of soybeans, soybean meal, and soybean oil. As the industry expands shifts in the geography of processing have taken place.

2106. PRICE, V. I. Soybeans-an economist views outlook for the year ahead. Cotton Farming 6(5):22-23. Sept./Oct. 1962. 72.8 C8296

A discussion of the oversupply of soybean and other oils.

2107. SCHAFFNER, L. W., TAYLOR, F. R., and PAULUS, L. Potentials for a soybean processing plant for southeastern North Dakota. N. Dak. Agr. Exp. Sta. Agr. Econ. Rep. 29, 47 p., map. Mar. 1963. 281.9 N814A

Includes resource requirements for a soybean oil

processing plant, utilization of products, potential markets for the products and estimated investment return.

2108. SHARP, J. W., and ECKER, H. J. Price spreads for wheat and soybeans. Ohio. Agr. Exp. Sta. Res. Circ. 56, 17 p., map. Sept. 1958. 100 Oh3R

Statistics of the price spread given for 1951 through 1955.

2109. SORKIN, M., and SCOVILLE, O. J. Feed grains, soybeans and livestock: a situation paper. Iowa. State Univ. Sci. Technol. Cent Agr. Econ. Adjustment CAEA Rep. 7:83-106. 1961. 281.9 Io93

Price supports of feed grains and soybeans and livestock programs. A discussion of price supports and their impact on producers, consumers, and foreign trade.

2110. U. S. COMMODITY EXCHANGE AUTHORITY. Soybean futures market, 1960-61. Washington, 1962. 29 p. A284.360 C73

2111. VEGETABLE oil war-can soybeans steal your market? Farm Manage. 3(11):23-26. Nov. 1954. 281.8 F2225

Soybean oil versus cottonseed oil. The conflict between market prices and price supports in the struggle between the two oils for the market.

2112. VELASCO, J. Improved techniques in neutral oil determination. Amer. Oil Chem. Soc. J. 42(2): 160. Feb. 1965. 307.8 J82

Neutral oil adopted as a basis for price settlement of crude soybean oil.

2113. VENNES, L. A. The Ohio Valley Soybean Cooperative. Rur. Kentuckian 8(11):16-17, 20. Nov. 1955. 335.8 K41

The cooperative crushing plant was a success.

2114. WILLS, W. J., THOMAS, D., and CZAJKOWSKI, A. Effect of variability in moisture testing of grains, oil content of soybeans and other quality factors on pricing of farm products. South. Ill. Univ. Sch. Agr. Publ. 15, 16 p., map. Ref. May 1963. 276 So83A

Reports on factors affecting the pricing of soybeans and other grains.

Far East

2115. RYKOVSKII, P. I. An important reserve for the production of protein feed in the Far East. (Rus) Zhivotnovodstvo 18(11):13-17. Nov. 1956. 49 Z6

Soybeans for forage.

Government Loans

2116. U. S. CONGRESS. HOUSE. COMMITTEE ON AGRICULTURE. ARA loan for construction of soybean processing plant. Hearing, 88th Congr., 1st sess., May 16, 1963. Washington, 1963. 61 p. 284 Un34A

India

2117. DESIKACHAR, H. S. R., SANKARAN, A. N., and SUBRAHMANYAN, V. The comparative value of soybean and bengal gram as supplements to the poor South Indian rice diet. Indian J. Med. Res. 44(4):741-748. Ref. Oct. 1956. 448.8 In22

At present levels of soybean processing they would not supplement the poor rice diet in India.

2118. PANEMANGALORE, M., and others. The metabolism of nitrogen and the digestibility coefficient and biological value of the proteins and net protein utilization in poor rice diet supplemented with methionine-fortified soya flour or skim milk powder. Can. J. Biochem. 42(5):641-650. Ref. May 1964. 470 C16E

H. N. Parthasarathy, K. Joseph, A. N. Sankaran, M. N. Rao, and M. Swaminathan, joint authors.

Methionine fortified soy flour almost as good as skim milk and superior to soy flour as a supplement to rice diets.

Industry

2119. ALLEN, E. E., and WACH, G. J. Treatment of vegetable-oil wash waters. U. S. Pat. 2,993,006. July 18, 1961.

Chem. Abstr. 55:25115d

To Staley (A. E.) Company.

2120. AMERICAN SOYBEAN ASSOCIATION. The soybean bluebook. Hudson, Iowa, Association, 1964. 178 p. 60.39 So92

Issued annually to all members of the Association.

A directory and compendium of useful information. Gives names of processors, both American and foreign, exporters, prices, utilization, supply and distribution of cake, meal, and oil. Includes a glossary of soybean terms.

2121. ANDERSON, L. V. The U. S. soybean story. Chemurg. Digest 21(8):3-4. Nov./Dec. 1963. 381 N213Na
Industry.

2122. DUFFY, M. The American soybean industry. Agr. Merchant 42(5):77-78. May 1962. 10 Ag89
A review of the industry using as an illustration two of the leading companies in the field.

2123. MCLOUTH, M. E., and PAULUS, H. J. Air pollution from the grain industry. J. Air Pollut. Contr. Ass. 11(7):313-371. Ref. July 1961. Libr. Cong. Chem. Abstr. 55:20273h
An evaluation of soybean oil processing pollution in the Minneapolis, Minnesota area. Asthma causing factors.

2124. MISSOURI. DEPT. OF BUSINESS ADMIN. DIV. OF RESOURCES AND DEVELOPMENT. Missouri and the soybean processing industry, by C. C. Harper. Jefferson City, 1958. 61 p. 307 M693

2125. MOORE, W. B. Soybeans; southern oil mills can help expand this crop. Cotton Gin Oil Mill Press 59(3):9, 38. Feb. 8, 1959. 304.8 C822
Soybeans can expand and cotton oil mills need to encourage the milling of soybeans.

2126. NAKAMURA, H. Structure of the soybean processing industry in the United States. Diss. Abstr. 24 (7):2720. Jan. 1964. 241.8 M58
Thesis (Ph. D.)-University of Illinois. 290 p.
Includes review of growth of industry, cost analysis of soybean processing, locational analysis of soybean processing, and use of the Chicago futures market by soybean processors.

2127. NATIONAL SOYBEAN PROCESSORS ASSOCIATION. Year book, 1963-1964. Chicago, 1963. 65 p. 60.39 N21
Issued annually to all members of the association. Contains the constitution, by laws, code of ethics, officers, directors. Also includes trading rules.

2128. SENTI, F. R. We're learning more every year about how to use soy beans. Co-op Grain Quart. 21 (3):52-56. Fall 1963. 280.28 C7898
Utilization research. Of the ten most valuable cash crops in the United States, the soybean ranks No. 4. Yet this crop has the lowest investment in research dollars.

2129. TROUVE, C. Soybean production in the United States: soybean utilization. (Fr) Agriculture [Paris] 25(242):53-55, map. Feb. 1962. 14 Ag823
Map and statistical tables.

International trade

2130. SRIRAM, K. V. The possible effects of freer trade on the United States soybean producer. Diss. Abstr. 15(5):654-655. May 1955. 241.8 M58
Thesis (Ph. D.)-Purdue University. 122 p.
Freer trade would lower price levels; produce higher standards of living in all nations.

2131. STRAYER, G. M. American soybeans. Int. Assoc. Seed Crushers. Cong. 1960:65-73. 307.9 In8
Exports of soybeans, soybean oil and soybean meal from U. S. (1954-1959) with destinations.

2132. STRAYER, G. M. Communist China courts Japanese soybean market. Foreign Agr. 20(3):6-7. Mar. 1956. 1.9 Ec7For
American soybeans are selling for less at Japanese ports than soybeans from other sources.

Japan

2133. HAYASHI, S. Problems involved in increasing world-wide use of soybean products as foods in Japan. Conf. Soybean Prod. Protein Human Foods. Proc. 1961: 200-206. A389.9 C76

2134. NAKAMURA, H. The Japanese soybean market. Ill. Agr. Econ. 1(2):7-13. July 1961. 281.9 IL61

2135. SMITH, A. K. Use of United States soybeans in Japan. U. S. Agr. Res. Serv. ARS-71-12, 36 p. Apr. 1958. A381 R31A c
Japanese use of soybeans described including the following products: aburage, natto, hamanatto and kinako.

2136. SMITH, A. K. Foreign uses of soybean protein foods. Cereal Sci. Today 8(6):196, 198, 200, 210. Ref. July 1963. 59.8 C333
Japan. Consumption of soybeans and soybean meal in Japan given for 1960-1962. Broken down in the following uses: oil, food, chemical industry, and feed and fertilizer.

Laws and Legislation

2137. RINGUETTE, A. L. Industry's legislative

position today. Anim. Health Inst. Proc. 20:15-38. Ref. 1960. 41.9 An54P

The medicated animal feed industry and the Food Additives Amendment.

2138. TAYLOR, A. M. M. Additives in meat products. Food Manufacture 38(10):551-557, 566. Oct. 1963. 389.8 F736

Legal aspects of food additives from the point of view of English law regarding color, shrinkage, and preservation. Soy proteins included.

Markets & Marketing

2139. ALLEWELT, R. W. Japanese boom sparks U. S. soybean gains. Foreign Agr. 26(3):11. Mar. 1962. 1.9 Ec7For

Japanese-American Soybean Institute contributed to the growth of this market for U. S. soybeans.

2140. ARESPACOCHAGA Y FELIPE, J. Outlook for U. S. soybean oil in Spain. Soybean Digest 18(2):17-18. Dec. 1957. 60.38 So9

Trading soybean oil for olive oil. The scarcity of olive oil in Spain, and the inelastic supply makes demand for substitutes climb.

2141. BATEMAN, D. U. S. soybeans and cottonseed in world markets. Cotton Gin & Oil Mill Press 58(19): 14-15, 28-30. Sept. 21, 1957. 304.8 C882

A plea against support prices which repress demand.

2142. BERG, E. R. Structure of the soybean oil export market. Ill. Agr. Exp. Sta. Bull. 674, 92 p. Aug. 1961. 100 Il6S

A study to estimate availability of food and soap fats between 1960-1965 and an effort to appraise foreign demand.

2143. BISSON, F. C. Soybeans--a market problem. Nowest. Miller 263(14):10, 46-47. Apr. 5, 1960. 298.8 N81

Sluggish demand for oil discussed.

2144. BRESLIN, P. J. R. The market for soyabeans, safflower seed, sunflower seed, sesame seed and their oils. Trop. Sci. 4(2):87-102. 1962. 26 T756

Internation trade. Changes in the pattern of consumption of oils and fats used in margarine are also examined.

2145. BRINE, C. L. The institutional market potential for oilseed proteins. U. S. D. A. Marketing Res. Rep. 151, 21 p. Dec. 1956. 1 Ag84 Mr

Soybean utilization. Most dramatic rise in soybean protein use has been by pet food manufacturers because of their high nutritional value in relation to cost.

2146. BUNNELL, D. J. U. S. soybean oil in world markets. Amer. Oil Chem. Soc. J. 36(9):10, 12, 14, 17. Sept. 1959. 307.8 J82

Deals with the problem of soybean oil over-production.

2147. BUTZ, E. L. Growth without ceiling! Prosperity in the industry depends on producing for a growing market and not for the government. Soybean Digest 17(12):12-13. Oct. 1957. 60.38 So9

A plea against government production and marketing controls.

2148. CAIN, D. W. Soybeans--the "growth" crop. Doane's 2(8):11-15. Aug. 1962. 281.8 D652

Takes a look into the future of soybean processors. Includes marketing charts from 1945 to the present.

2149. CALL, D. L. The future demand for animal products and its impact on the feed industry. Cornell Nutr. Conf. Feed Manufacturers. Proc. 1963:12-17. 389.79 C81

Projections made to the year 2000.

2150. CHATTERJI, N. P. Some aspects of marketing oilseeds and their products in India. (Abstr) Amer. Oil Chem. Soc. J. 41(3):42 Abstr. Mar. 1964. 307.8 J82

2151. CLARKSON, A. A. Problems in handling soybeans for export in a port elevator. Grain Feed Rev. 44(4):22, 63-64. Dec. 1954. 280.28 C78

2152. CRAVENS, W. W. Soybean oil meal-research emphasizes energy value of different products. Amer. Feed Grain 40(10):23. Nov. 1956. 298.8 C83

Soybeans provide about 40 percent of high protein feeds used in poultry and livestock feeding.

2153. CRAVENS, W. W. Soybean oil meal-a versatile product for feed manufacturer. Amer. Feed Grain 41(10):46-47. Nov. 1957. 298.8 C83

Supplies of soybean oil meal would be inadequate if all farm animals were fed properly balanced rations.

2154. DULUTH. BOARD OF TRADE. Annual report; list of members and firm and corporation members, and individuals who do business in their own names,

for the year ending December 31, 1962. Duluth, 1963. 36 p. 287 D88R

Includes grain, flax, and soybean statistics.

2155. FAURE, J. C. A. U. S. soya beans. Int. Ass. Seed Crushers. Congr. 36:24-25. 1958. 307.9 In8

A report to English importers of understandings reached with American exporters about the quality and standards for soybean products.

2156. FERRARA, A. Soybean seed and oil in the world. (It) Olearia 11(9/10):218-228. Sept./Oct. 1957. 307.8 OL2

English summary.

Examined soy products and their uses; the chief producing countries and the world trade in seeds and oil. Studies 1951-55 and makes projection of future trends.

2157. GUYOT, S. The American soybean in the conquest of Europe. (Fr) Oleagineux 16(11):693-698. Ref. Nov. 1961. 77.8 OL2

American exports of soybeans and soybean oil to Europe.

2158. HAFNER, F. H. How much soybean oil meal can we utilize? Feedstuffs 27(41):38-40. Oct. 8, 1955. 286.81 F322

Includes consumption. Consumption of soybean oil meal will continue to increase.

2159. HAFNER, F. H. Problems involved in increasing world-wide use of soybean products as foods in the Near East and India. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:195-199. 1962. A389.9 C76

2160. HAFNER, F. H. How much soybean meal can we utilize in animal feeds? Grain Feed Rev. 45(3): 8, 64. Nov. 1955. 280.28 C78

Factors making for future soybean demand.

2161. HAYWARD, J. W. Soybean oil meal-current developments in its use in formula feeds. Feedstuffs 28(6):26, 28, 32, 34-36, 58, 60, 62-63. Feb. 11, 1956. 286.81 F322

Longtime outlook for soybean oil meal appears bright. Due to recognition of protein feed deficits for present farm population.

2162. HAYWARD. J. W., and HANSON, L. E. Soybean oil meal in livestock and poultry feeds. Soybean Digest 18(3):14-19. Jan. 1958. 60.38 So9

Present projections of increases in soybean production exceeds projections for population growth. Therefore exports must continue to grow.

2163. HENDRICKSON, R. F. Searching the Orient for soybean sales. Co-op Grain Quart. 15(4):20-24. Mar. 1958. 280.28 C7898

2164. HOLZ, A. E. U. S. exports of soybeans, cakes, meal maintain record pace but oils are down. Foreign Agr. Incl. Foreign Crops Marketing 1(38):7. Sept. 23, 1963. A281.9 F76Fo

2165. HOUGEN, V. H. Activities of the Foreign Agricultural Service in developing markets for U. S. soybeans and soybean products. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:38-41. 1962. A389.9 C76

Over 100 trade fair exhibits have been held in the last five years. These exhibits have been seen by 45 million visitors representing industry and consumers.

2166. HOUGHTLIN, R. G. The soybean program within U. S. Chemurg. Digest 20(6):8-9. June 1961. 381 N213Na

2167. HUGE, W. The case for multiple deliveries on soybeans futures contracts. Grain Feed Rev. 45(2): 18, 63-64. Oct. 1955. 280.28 C78

2168. JACKSON, H. Timing soybean sales for highest profits. Ark. Agr. Exp. Sta. Spec. Rep. 2, 17 p. Aug. 1957. 100 Ar42Sp

U. S. Agricultural Research Service, cooperating. Although storage has been profitable in the past, elimination of excessive profit margins is expected. This is related to improvement in marketing.

2169. JAMES, E. M. Role of soyabean oil in the fats and oils economy of the U. S. Oils Oilseeds J. 15(10): 5-8. (Cont.) Apr. 1963. 307.8 Oi54

A general article to a foreign audience by the Technical Consultant of the Soybean Council of America.

2170. JAMES, E. M. Soybean oil in India. Amer. Oil Chem. Soc. J. 40(7, news sect.):9-10. July 1963. 307.8 J82

India, a great potential market, for U. S. soybean oil.

2171. JOINT, U. S. A. SOYABEAN INVESTIGATION PANEL. Final report and comments of the German seed crushers thereon. Int. Ass. Seed Crushers Congr. 1956:81-88. 307.9 In8

Reports of German processors of careless transportation practices which result in losses to them.

2172. LIGHTER, W. C. The case against multiple deliveries on soybeans futures contracts. Grain Feed Rev. 45(2):19, 64-65. Oct. 1955. 280.28 C78

2173. MCKERRIGAN, A. A. Some aspects of the edible fat industry in the United Kingdom. Amer. Oil Chem. Soc. J. 41(4):56, 59-60, 62-63. Apr. 1964. 307.8 J82

2174. ORVILLE L. Freeman talks to the miller. Nowest. Miller 270(1):7-8. Jan. 6, 1964. 298.8 N81
Interview with A. L. Davis.
On the wheat, feed grains, and soybean policy.

2175. PAULSEN, A. An appraisal of the situation and programs in feed grain, soybeans and livestock. Iowa State Univ. Sci. Technol. Cent. Agr. Econ. Adjust. CAEA Rep. 7:111-120. 1961. 281.9 Io93

2176. POATS, F. J., and SILLS, M. W. Trends in industrial markets for fats and oils and derivatives. Amer. Oil Chem. Soc. J. 38(8):23-28. Aug. 1961. 307.8 J82
Continual growth of chemical industry reflected in need for fat derivatives. Soybean oil discussed.

2177. RACLIN, R. L. The future market in soybeans and their products. Int. Ass. Seed Crushers. Congr. 1963:48-55. 307.9 In8
A discussion of the American soybean market to a European audience.

2178. REED, R. H. The miracle crop, soybeans; a glowing future is predicted for the fifth most important cash crop in the United States. Foreign Agr. 25(7):3, 16. July 1961. 1.9 Ec7For
The Soybean Council, incorporated in 1956, sends marketing teams to over 57 countries to expand the use of soybeans and soybean products.

2179. ROACH, H. L. Distribution of production. Amer. Soc. Farm Managers Rural Appraisers J. 27(1): 37-39. Apr. 1962. 281.8 Am32
Soybeans. Exports are necessary if the soybean industry is to remain healthy.

2180. ROACH, H. L. Problems involved in increasing world-wide use of soybean products as foods in Europe. Conf. Soybean Prod. Protein Human Foods Proc. 1961:207-209. 1962. A389.9 C76

2181. SCHMIDT, S. C. Factors influencing the world market for U. S. soybeans. Ill. Res. 3(3):5-6. Summer 1961. 100 I164
A study of 12 economic factors which account for changes in soybean exports.

2182. SHAW, E. A. Study of sampling and grading of U. S. soybeans for export. U. S. Foreign Agr. Serv. FAS-M-8, 14 p. June 1956. A281.9 F76Fm
This soybean sampling and grading project has cleared up some of the misunderstandings involved in the movement of soybeans from the United States to Europe.

2183. SMITH, A. K. Problems involved in increasing world-wide use of soybean products as foods-technical assistance in developing soybean markets. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:214-216. 1962. A389.9 C76
Suggests research teams be sent to help export programs.

2184. SMITH, L., and HULL, D. Cottonseed and competing vegetable oils. Amer. Oil Chem. Soc. J. 35(1):14-19. Jan. 1958. 307.8 J82
Since 1951 soybean-oil consumption by food factories has been greater than that of any other vegetable oil. Over 66 percent of all oils used in shortening, and over 72 percent of those used in margarine, were soybean oil.

2185. SPILSBURY, C. C. Southeast Asia as a market for U. S. soybeans and vegetable oils. U. S. Foreign Agr. Serv. FAS-M126, 41 p. Feb. 1962. A281.9 F76Fm

2186. SPILSBURY, C. C. Western Europe, a growing market for U. S. soybeans and soybean meal. U. S. Foreign Agr. Serv. FAS-M-153, 145 p. Oct. 1963. A281.9 F76Fm
West Germany, France, United Kingdom, Denmark, Italy, The Netherlands, Belgium, and Spain.

2187. STRAYER, G. M. Europe views U. S. soybeans. Grain Feed J. Consolidated 112(1):30-32. Jan. 12, 1955. 298.8 G762
Quality. Exported soybeans must be cleaned to remove foreign matter if they are to be acceptable by European standards.

2188. STRAYER, G. M. Market development on U. S. soybeans and soybean products. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:29-37. 1962.

A389.9 C76
Developing trade.

2189. STRAYER, G. M. Tomorrow's soybean market. Amer. Paint J. 45(6):26, 33-36. Oct. 17, 1960. 306.8 Am32
A market analysis.

2190. THOMPSON, W. H. Transportation of poultry feed ingredients from the North Central States. S. Dak. Agr. Exp. Sta. Bull. 485, 43 p., maps. May 1960. 100 So82
Agricultural Experiment Stations of Illinois, Indiana, lowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin and U. S. Department of Agriculture, cooperating.
Corn and soybean oilmeal. The problem of the regulated versus the non-regulated carrier on grain movements is considered.

2191. WANAMAKER, G. E. Marketing soybean oil, soybeans, and soybean meal in Cyprus, Lebanon, and Malta. U. S. Foreign Agr. Serv. FAS-M-141, 43 p., map. Sept. 1962. A281.9 F76Fm
U. S. foreign trade.

2192. WELLS, C. M. The expanding soybean meal market; how changes in feeding practices and growth of the formula feed industry have affected demand. Ill. Agr. Exp. Sta. Bull. 620, 24 p. Ref. Oct. 1957. 100 IL6S

2193. WELLS, C. M. Factors in the market for soybean oil meal in the United States. Urbana, 1956. 126 p. (University Microfilms, Ann Arbor, Mich. Publ. No. 21, 424) 60.3 W46
Thesis (Ph. D.)-University of Illinois.
Also in Diss. Abstr. 17(3):518. Mar. 1957. 241.8 M58
Supplies of soybean oilmeal are more responsive to price changes than supplies of other high protein food.

2194. WILLIAMS, R. How a soybean processor makes use of futures markets. Chicago Bd. Trade Annu. Symposium. Commod. Marketing Pub. Interest. Proc. 9:41-50. 1956. 287 G762
Includes discussion.
The use of futures market does not entirely eliminate risks nor does it assure profits. Its function is to reduce the chance of loss due to price decline.

Nutrition

2195. ANDRE, E. On use of soybeans for human consumption by the population of the Far East. (Fr) Oleagineux 19(1):37-39. Jan. 1964. 77.8 OL2
English summary, p. xxviii.
Author gives research on lipoxidase.

2196. AUTRET, M., and VEEN, A. G. VAN. Possible sources of proteins for child feeding in underdeveloped countries. Amer. J. Clin. Nutr. 3(3):234-243. May/June 1955. 389.8 J824
Chem. Abstr. 49:9829d
Soybeans can help fill protein need but must be processed in well-controlled processing plants.

2197. BRIGGS, D. R. Soybean proteins and their utilization. Minn. Farm Home Sci. 16(1):8-9. Oct. 1958. 100 M668
Human and animal nutrition. Gives minimum daily requirements of essential amino acids for adult human diet and lists the various sources for these requirements.

2198. CHAMBERS, J. A. Soya as a foodstuff. Arkady Rev. 39(3):39-41. Sept. 1962. 389.8 Ar4
Mentions soy sauce, Tempeh and tofu.

2199. CHANG, Y. O. Soybean products as supplements to rice in Chinese diets with special reference to their protein and calcium content. Diss. Abstr. 14(8): 1201. Aug. 1954. 241.8 M58
Abstract of Thesis (Ph. D.)-Columbia University. 67 p.
Soybean curd production encouraged where animal proteins are in short supply.

2200. HAYWARD, J. W., and DISER, G. M. Soy protein as soy flour and grits for improving dietary standards in many parts of the world. (It) Riv. Ital. Sostanze Grasse 39(7):353-361. Ref. July 1962. 307.8 OL3
English summary.
Soybean flour and soybean grits, a source of inexpensive high quality protein, to supplement cereal foods.

2201. HERB-MULLER, L. The soybean and nutrition problems in developing countries. (Ge) Ernahr.-Umschau 9(5):143-146. July 1962. 389.8 Er66
Nutritive value of soybean products.

2202. HOUGHTLIN, R. G. Many changes in soya industry since "birth" in World War II. Flour Feed 57 (4):3-4. Apr. 1956. 298.8 F66

Soybean industry is the largest domestic source of vegetable oil and protein meals for feed, food, and industrial uses.

2203. HOUGHTLIN, R. G. Soybean oil meal. Amer. Feed Grain 38(10):46, 48. Nov. 1954. 298.8 C83
One half of all proteins ingredients used in manufactured feeds consists of soybean oil meal.

2204. HUGE, W. E. Present and potential uses of soybean flour, grits, and protein concentrates in foods. Conf. Soybean Prod. Protein Human Foods. Proc. 1961: 45-51. 1962. A389.9 C76
Discusses promine versus soy flour.

2205. MCNAUGHTON, J. W. The soya-bean-its properties and nutritive values. Rural Missions 112:8. Winter 1960. 281.28 Ag8
As human populations increase animal populations decrease increasing the need for plant proteins.

2206. MAEYER, E. M. DE., and VANDERBORGHT, H. A. A study of the nutritive value of proteins from different sources in the feeding of African children. J. Nutr. 65(2):335-352. June 10, 1958. 389.8 J82
Chem. Abstr. 52:20466i
Including soybean flour.

2207. MILLER, T. B., RAINS, A. B., and THROPE, R. J. The nutritive value and agronomic aspects of some fodders in Northern Nigeria. Brit. Grassland Soc. J. 19(1):77-80. Ref. Mar. 1964. 60.19 B773
Chem. Abstr. 61:8688d
Digestibility data for soybeans as fodder.

2208. PALACIO DEL VALLE, G. The importance of cultivating soybeans-a first source of nourishment. (Sp) Soc. Antioquena Agr. Bol. Agr. 415:4857-4860. Nov. 1954. 9.4 So1

2209. PLATT, B. S. The soya bean in human nutrition. Chem. Indus. 32:834-837. Ref. Aug. 18, 1956. 382 M31C
Soybean curd superior over soy milk for feeding of young children.

2210. VEEN, A. G. VAN. Panel discussion on problems involved in increasing world-wide use of soybean products as foods-possible contribution of FAO. Conf. Soybean Prod. Protein Human Foods. Proc. 1961:210-213. 1962. A389.9 C76

Pesticide Residues

2211. FEDERAL REGISTER. Tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities. As contained in Federal Register Oct. 4, 1961, 26 F. R. 9337. L1.451
Chem. Abstr. 56:3853i
Tolerances for residues of 1-naphthyl N-methylcarbamate.
For further information see Code of Federal Regulations:21:1-129. LI.452 Ti21 1-129.

2212. FEDERAL REGISTER. Tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities. As contained in Federal Register Oct. 6, 1961, 26 F. R. 9409-9410. L1.451
Chem. Abstr. 56:3853i
Tolerances for residues of 1-naphthyl N-methylcarbamate.

2213. FEDERAL REGISTER. Tolerances and exemptions from tolerances for pesticide chemicals in or on raw agricultural commodities. As contained in Federal Register June 1, 1963, 28 F. R. 5423. L1.451
Chem. Abstr. 59:5686h
Tolerance for residues of linuron.

Varieties

2214. COLLINS, F. I., and SEDGWICK, V. E. Fatty acid composition of several varieties of soybeans. Amer. Oil Chem. Soc. J. 36(12):641-644, map. Ref. Dec. 1959. 307.8 J82
Chem. Abstr. 54:2789c
Fatty acid composition of soybean oil of 18 important varieties from 43 locations of the U. S. ranged from about 5 percent to 11 percent in linolenic, 43 percent to 56 percent in linoleic, 15 percent to 33 percent in oleic, and 11 percent to 26 percent in saturated acids.

2215. COLLINS, F. I., and HOWELL, R. W. Variability of linolenic and linoleic acids in soybean oil. Amer. Oil Chem. Soc. J. 34(10):491-493. Ref. Oct. 1957. 307.8 J82
Chem. Abstr. 52:756h
Soybean oil from all locations and varieties have been analyzed for linolenic and linoleic acid by an improved spectrometric method.

2216. KROBER, O. A. Methionine content of soybeans as influenced by location and season. J. Agr. Food Chem. 4(3):254-257. Mar. 1956. 381 J8223

2217. KROBER, O. A. Nutritive quality of crops:

methionine content of soybeans as influenced by location and season. J. Agr. Food Chem. 4(3):254-256. Ref. Mar. 1956. 381 J8223

Results obtained by chemical methods show that there are some consistent varietal differences.

2218. MATVIENKO, L. N. On using soybeans for fodder. (Rus) Trudy Prikl. Bot. Genet. Selek. 34 (1):72-76. 1962. 451 R92

English summary.

Varieties.

Numbers refer to items in list.

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