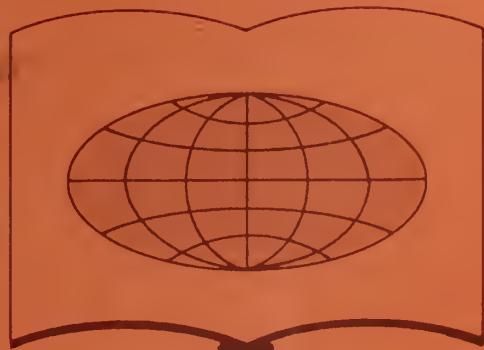


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# Pesticides DOCUMENTATION BULLETIN

U.S. DEPT. OF AGRICULTURE  
BUREAU OF ENTOMOLOGY AND  
PLANT PATHOLOGY  
1968  
PESTICIDES BULLETIN



Volume 4 Number 12  
JUNE 7, 1968



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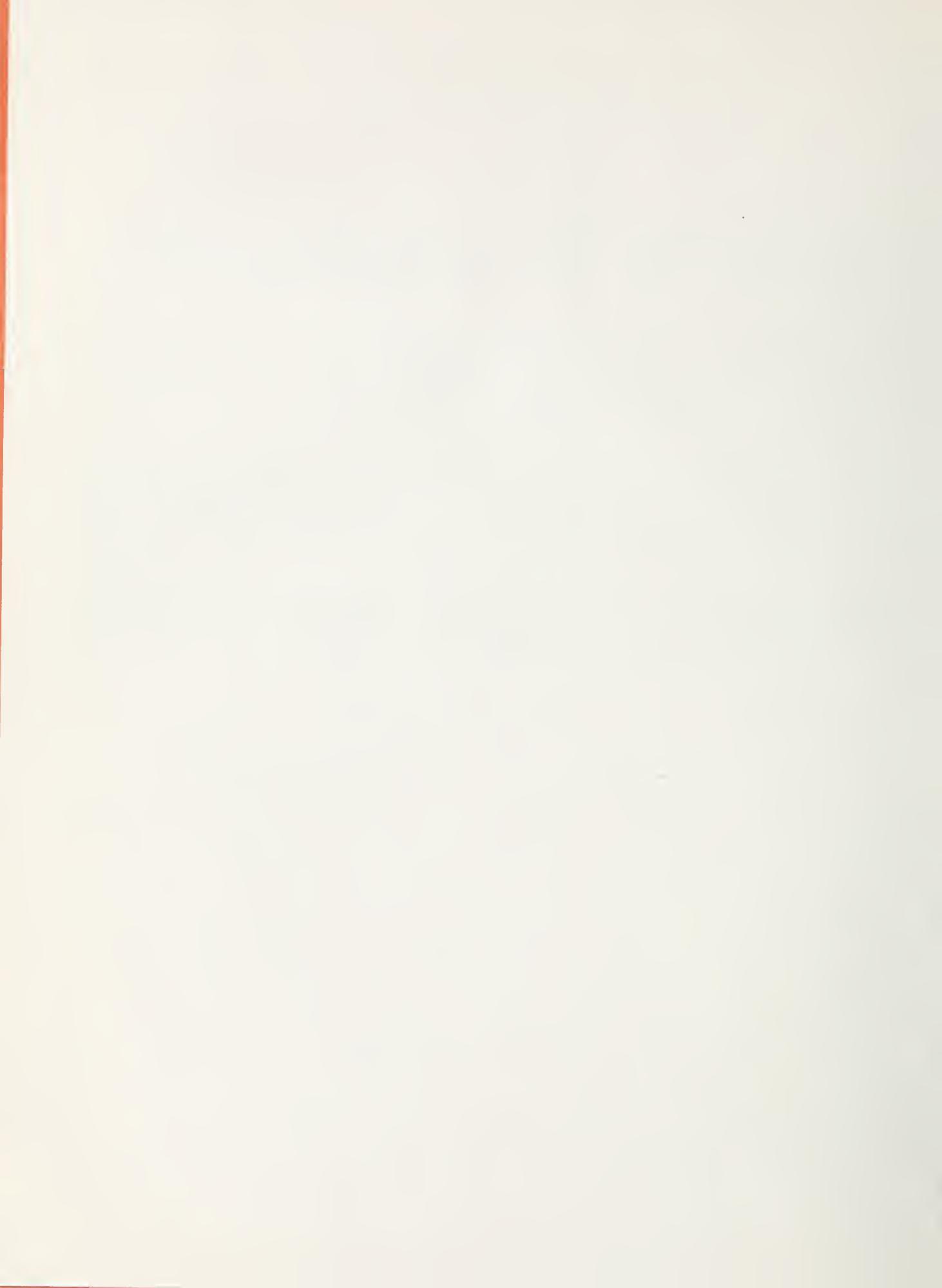
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Since retrospective information was not previously published in searchable form, the next several issues of the Bulletin will contain selected coverage of pest control literature issued between 1960 and 1966. Additional retrospective material will be incorporated in future bulletins through the special bibliographies prepared by the Center. Current pest control literature will receive comprehensive coverage. Future expansion will include selected abstracts when such abstracts appear in the source document.

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*Blanche L. Oliveri*

Blanche L. Oliveri  
Acting Director  
National Agricultural Library



# PESTICIDES DOCUMENTATION BULLETIN

A BI-WEEKLY PUBLICATION OF

U. S. DEPARTMENT OF AGRICULTURE

Volume 4

June 7, 1968

Number 12

## OBJECTIVES AND SCOPE

The Pesticides Documentation Bulletin is compiled by the Pesticides Information Center, the first of its kind to be established within a national library. It is a bi-weekly index to the literature on pests and their control and the impact on the economy and man's total environment. The index includes literature on diseases, insects, nematodes, parasites, weeds, and other pests affecting plants, animals, man, our natural resources, and other values in man's environment. Literature on biological, chemical, cultural ecological, mechanical, and integrated methods of pest control will be included. Special emphasis is given to the literature on the toxicological, physiological and epidemiological aspects of pests and their control by chemical and nonchemical methods.

For broader coverage of literature on agriculture and related subjects, please consult the Bibliography of Agriculture, a monthly publication of the National Agricultural Library.

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- 10 Entomology
- 20 Crop Protection
- 30 Livestock Protection
- 40 Commodity Protection
- 50 Environmental Contamination
- 55 Residues
- 60 Toxicology
- 65 Plant Physiology & Biochemistry
- 70 Chemistry
- 80 Engineering
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Citations: Each citation consists of an accession number assigned serially with the last two digits representing the Bulletin's issue year, i.e. 3286-67. The citation number (minus the year) is used

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## ACKNOWLEDGMENT

The Pesticides Information Center, National Agricultural Library, gratefully acknowledges the cooperation and assistance of the Department of Defense; Health, Education, and Welfare; and Interior; the Federal Committee on Pest Control, and state and industrial organizations in the development of the Center and preparation of this Bulletin. Special thanks are expressed to the Federal Committee on Pest Control for its suggestions and support. We hope the Bulletin will serve as an example of the effectiveness of interdepartmental cooperation and the speed with which effective services can be developed through a coordinated and cooperative interdepartmental effort.

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Feeding, Insect behavior.

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Insect populations.

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Aorta, Insect physiology, Nervous system, Secretion.

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Anoxia, Insect physiology, Mortality, Musca domestica,

Nitrogen, Senescence, Sex.

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Anteraea pernyi, Biochemistry, Blood, Phenolases.

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Anteraea eucalypti, Anteraea pernyi, Biochemistry, Blood,

Melanins, Phenolases, Pupae, Tyrosine.

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Biochemistry, Nasonia vitripennis, Phenolases, Temperature.

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Cells, Legs, Mechanoreceptors, Periplaneta americana, Reflexes.

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Jul 1967 464.6 P56  
Beneficial insects, Cyperaceae, Fungus diseases (plants),  
Grasses, Mites, Predaceous fungi, Uredinales.

13222-68  
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POPULATIONS OF SOIL MICROORGANISMS INCLUDING THOSE ANTAGONISTIC  
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Plant Dis Rep 45(7):517-519  
15 Jul 1961 1.9 P69P  
Forage plants, Irrigation, Sclerotium rolfsii Sacc.,  
Soil microorganisms, White clover.

13223-68  
ELECTRON MICROSCOPIC OBSERVATIONS ON HAUSTORIA ISOLATED  
FROM CUCUMBER LEAVES INFECTED WITH POWDERY MILDEW.  
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Neth J Plant Pathol 73(4):121-125 REF  
1967 464.8 T44  
Cucumbers, Electron microscopy, Fungus diseases (plants),  
Powdery mildew (cucumbers).  
English and Dutch summaries  
Abstract

13224-68  
INFLUENCE OF CERTAIN EXOASCIDS ON DEVELOPMENT OF THE EPIDERMIS AND THE PLATE STOMATIC APPARATUS OF THEIR HOSTS. (FR )  
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Marcellia 34(1):31-44  
Mar 1967 421 M33  
Epithelium, Fungus diseases (plants), Plant physiology,  
Stomata.

13225-68  
PHYSIOLOGY OF WILT DISEASE. IN: MIROCHA, C. J., AND UREITANI, I., ED. THE DYNAMIC ROLE OF MOLECULAR CONSTITUENTS IN  
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Cotton, Plant water relations, Tomatoes, Wilt, Xylem.

13226-68  
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PARASITES: EFFECT ON THE MOVEMENT OF SOLUTES AND WATER. IN:  
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CEDINGS, CONFERENCE HELD MAY 15-21, 1966, GAMAGORI,  
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Beans, Parasitism, Plant diseases, Plant translocation,  
Plant water relations.

13227-68  
FACTORS DETERMINING RESISTANCE OF ULMUS TO CERATOCYSTIS  
ULMI.  
D M Elgersma  
Phytopathology 57(6):641-642  
Jun 1967 464.8 P56  
Ceratocystis ulmi, Dieback (ulmus), Plant disease resistance,  
Tree diseases, Ulmus hollandica.

13228-68  
REACTIVITY OF TOBACCO MOSAIC VIRUS AND ITS PROTEIN TOWARD  
ACETIC ANHYDRIDE.  
H Fraenkel-Conrat M Colloms  
Biochemistry 6(9):2740-2745  
Sep 1967 387 B523  
Acetic anhydride, Glycyltyrosine, Mosaic (tobacco), Proteins,  
Tobacco mosaic virus, Virus diseases (plants).  
Abstract

13229-68  
THE SMALL BERRY SAWFLY (PRISTIPHORA PALLIPES LEP.), A  
LESSER KNOWN PEST OF GOOSEBERRIES. (DU )  
A V Frankenhuizen  
Entomol Ber 27(2):21-24  
01 Feb 1967 420 N38B  
Gooseberries, Holocremnus canaliculatus, Parasitic insects,  
Pristiphora pallipes.  
English summary.

13230-68  
EFFECTS OF TOMATO RINGSPOT VIRUS PLANT AND FRUIT  
DEVELOPMENT OF RASPBERRIES.  
J A Freeman R Stace-Smith  
Can J Plant Sci 48(1):25-29  
Jan 1968 450 C16  
Plant physiology, Raspberries, Ring spot (raspberries),  
Virus diseases (plants).

13231-68  
MICRO-ORGANISMS IN THE ROOT REGION OF WHEAT. LITERATURE  
REVIEW. (GE )  
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Jun 1967 410.9 G31M  
Fungus diseases (plants), Reviews, Soil microorganisms, Wheat.  
English summary  
Abstract

13232-68  
SOME ASPECTS OF THE BARLEY YELLOW DWARF VIRUS DISEASE IN  
MANITOBA.  
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Entomol Soc Manitoba Proc 22:25  
1966 420 EN88  
Barley, Canada, Virus diseases (plants),  
Yellow dwarf (barley).

13233-68  
RUTT ROT IN YELLOW-POPLAR SEEDLING-SPROUT STANDS.  
J H Ginn R P True  
13(4):440-447 REF  
Dec 1967  
Butt rot (trees), *Liriodendron tulipifera*, Seedlings,  
Tree diseases.  
Abstract

13234-68  
THE BIOCHEMISTRY AND PHYSIOLOGY OF INFECTIOUS PLANT DISEASE.  
SR601 .G6.  
R N Goodman Z Kiraly M Zaitlan  
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Plant biochemistry, Plant diseases, Plant physiology.

13235-68  
TIME OF STEM RUST APPEARANCE ON WHEAT IN THE WESTERN  
MISSISSIPPI BASIN IN RELATION TO THE DEVELOPMENT OF  
EPIDEMICS FROM 1921 TO 1962.  
L M Hamilton E C Stakman  
Phytopathology 57(6):609-613  
Jun 1967 464.8 P56  
*Puccinia graminis tritici*, Stem rust (wheat).  
Minnesota Agricultural Experiment Station cooperating.  
Abstract:  
annual dates are listed for the first appearance of stem  
rust on wheat in six selected areas. epidemics did not occur  
in all early-rust years because of lack of one or more of  
the variables conducive to severe rust.

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270-2B2 REF AMERICAN PHYTOPATHOLOGICAL SOCIETY  
1967  
Mitochondria, Tobacco mosaic virus.

13237-68

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1968 464.8 144  
Heat, Plant disease control, Tissue culture,  
Virus diseases (plants).  
Dutch summary  
Abstract

13238-68

HISTOLOGY OF CERONARTIUM QUERCUM GALLS ON SHORTLEAF PINE.  
P F Jewell N M Walker  
Phytopathology 57(6):545-550 REF  
Jun 1967 464.8 P56  
Ceromitium quercum, Pinus echinata, Plant galls,  
Tree diseases.  
Abstract

13239-68

EFFECT OF FUCCINIA RECONDITA INFECTION ON THE RNA COMPOSITION OF WHEAT LEAVES.  
L B Johnson F P Zscheile B L Brannaman  
Phytopathology 57(6):632-638 REF  
Jun 1967 464.8 P56  
Fungus diseases (plants), Puccinia recondita,  
Ribonucleic acid, Stem rust (wheat), Wheat.  
Abstract:  
as disease developed, total RNA nucleotide content dropped below that of healthy leaves. individual RNA nucleotide contents changed differently with rust development.

13240-68

POLYMERIZATION-DEFOLYMERIZATION OF TOBACCO MOSAIC VIRUS PROTEIN. X. EFFECT OF D20.  
M T M Khalil M A Lauffer  
Biochemistry 6(8):2474-2480 REF  
Aug 1967 381 E523  
Heavy water, Mosaic (tobacco), Polymerization, Proteins, Viruses.  
Abstract

13241-68

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Vienna Bundesanst Pflanzenschutz Flugbl 22, 3 P.  
1966 464.9 V672F  
Cercospora beticola, Fungus diseases (plants),  
Leaf spot (sugar beets).

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V D Kushner H W Crittenden  
Phytopathology 57(7):646  
Jul 1967 464.8 P56  
Alfalfa, Fungus diseases (plants), Fusarium, Meloidogyne incognita acrita, Plant nematodes, Potassium chloride.

13243-68

SOYBEAN BOOT AND STEM ROT CAUSED BY RHIZOCTONIA SOLANI, 1966.  
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Plant Dis Rep 51(10):872  
Oct 1967 1.9 E69P  
Rhizoctonia solani, Boot rot (soybeans), Soybeans, Stem rot (soybeans)..

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R P Line C E Feet C H Kingsolver  
Phytopathology 57(7):647  
Jul 1967 464.8 P56  
Humidity, Stem rust (wheat), Temperature.

13245-68

EFFECT OF THIELAVIOPSIS BASICOLA ROOT ROT OF COTTON ON INCIDENCE AND SEVERITY OF VERTICILLIUM WILT.  
D E Mathre B H Garber A V Ravenscroft  
Phytopathology 57(6):604-608 REF  
Jun 1967 464.8 P56  
Root rot (cotton), Thielaviopsis basicola, Verticillium albo-atrum, Wilt (cotton).  
Abstract:  
field studies confirmed greenhouse results that low to medium levels of *T. basicola* do not increase the incidence or severity of *Verticillium* wilt symptoms in *Acala* 4-42 cotton.

13246-68

EFFECT OF SOIL MOISTURE AND SOIL TEMPERATURE ON BLACK SHANK DISEASE DEVELOPMENT IN TOBACCO.  
S M McCarter  
Phytopathology 57(7):691-695 REF  
Jul 1967 464.8 P56  
Black shank (tobacco), Crop varieties, Phytophthora parasitica nicotianae, Plant disease resistance, Soil moisture, Soil temperature.  
Abstract

13247-68

DIFFERENTIAL RESISTANCE OF CELL WALLS OF ACER PSEUDO-PLATANUS, TRITICUM VULGARE, HORDEUM VULGARE, AND ZEA MAYS TO POLYSACCHARIDE-DEGRADING ENZYMES.  
J M McNab D J Nevins P Albersheim  
Phytopathology 57(6):625-631 REF  
Jun 1967 464.8 P56  
Barley, Cell wall, Colletotrichum lindemuthianum, Corn, Enzymes, Plant disease resistance, Polysaccharides, Wheat.  
Abstract:  
it was found that these enzymes degrade the various samples differently removing specific sugars in each case. thus, cell walls with similar compositions are differentially attacked by enzymes, a factor which may contribute to variable disease resistance.

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Black shank (tobacco), Calcium, Fungus diseases (plants), Phytophthora parasitica nicotianae, Plant disease resistance, Tobacco.

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EXPERIMENTS ON CONTROLLING STRAWBERRY BOTRYTIS ROT BY SPRAY-ING. SB953.M6.  
M H Moore A H M Kirby M Bennett  
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Botrytis, Fungicides, Plant disease control, Rot (strawberries), Strawberries.

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Botrytis allii, Botrytis cinerea, Culture media, Onions.

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FACTORS AFFECTING TRANSMISSION OF TRISTEZA VIRUS BY MELON Aphids.  
P A Norman  
*J Econ Entomol* 61(1):238-242 REF  
Feb 1968 421 J822  
Aphis gossypii, Food plants, Host indexing (plants), Indicator plants, Insect behavior, Insect populations, Insect vectors, Plant disease transmission, Tristeza (citrus), Virus diseases (plants).  
Abstract

13255-68  
ROLE OF PARASITE ENZYME AND TOXINS IN DEVELOPMENT OF CHARACTERISTIC SYMPTOMS IN PLANT DISEASE. IN: MIROCHA, C. J., AND UETANI, I., ED. THE DYNAMIC ROLE OF MOLECULAR CONSTITUENTS IN PLANT-PARASITE INTERACTION. PROCEEDINGS, CONFERENCE HELD MAY 15-21, 1966, GAMAGORI, JAPAN. S8611.C6.  
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237-255 REF AMERICAN PHYTOPATHOLOGICAL SOCIETY  
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Enzymes, Parasitism, Plant diseases, Toxins.

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C M Oisen N T Flentje K F Baker  
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Rhizoctonia solani, Soil microbiology, Steam, Thanatephhrus cucumeris.

Abstract:  
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Agricultural education, Plant diseases.

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Fungus diseases (plants), Fusarium, Helminthosporium, Roots, Seedlings, Soil fungi, Thielaviopsis.

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Phytophthora fragariae, Plant disease resistance, Rosaceae.  
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Chlorotic leafspot (apples), Virus diseases (plants).  
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Abstract

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Barley, Crop varieties, Fungous diseases (plants), Net blotch (barley), Nitrogen, Phosphorus, Potassium, Pyrenophaora teres.

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Dimethyl sulfoxide, Formaldehyde, Necrotic ring spot (peaches), Peaches, Viricides, Virus diseases (plants).  
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Agricultural education, Plant diseases.

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Plant growth inhibitors, Puccinia sorghi.  
A self-inhibitor.

13265-68  
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Mosaic (tomatoes), Tobacco mosaic virus, Tomatoes, Virus diseases (plants).  
English and Dutch summaries  
Abstract

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A T 8 Rast  
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Crop yields, Greenhouse culture, Mosaic (tomatoes), Tobacco mosaic virus, Tomatoes, Virus diseases (plants).  
Dutch summary  
Abstract

13267-68  
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Streak (peas).  
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English summary  
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Light scattering, Mosaic (tobacco), Polymerization, Proteins, Viruses.  
Abstract

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Enzymes, Host specificity, Parasitism, Plant disease resistance, Plant proteins, Sweetpotatoes.

13275-68

INFLUENCE OF LIGHT INTENSITY ON THE REACTIONS OF WHEAT AND BARLEY SEEDLINGS TO PUCCINIA STRIIFORMIS.  
R W Stuhs  
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Jun 1967 464.8 P56  
Barley, Fungus diseases (plants), Light, Puccinia striiformis, Stripe rust (grain), Wheat.  
Abstract:  
light intensity, both of daylight and of artificial lights influences the response of some wheat varieties to infection with *Puccinia striiformis*. the effect is an increase in infection type by reduction of light intensity, as displayed by the wheat varieties Carsten's V. Chinese Spring, and Cappelle Desprez. a reverse effect is shown by the barley variety Topper when daylight decrease in autumn and winter.

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Dwarf disease (rice), Ribonucleic acid, Rice, Virus diseases (plants).

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FRASER OATS.  
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Crop varieties, Fungus diseases (plants), Oats, Plant disease resistance, Smut (oats), Stem rust (oats).

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G M Tichelaar  
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Rotrytis allii, Fungus diseases (plants), Neck rot (onions), Onions.  
Dutch summary  
Abstract

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1967 464.8 T44  
Fungus diseases (plants), Fusarium, Phenols, Plant biochemistry, Tomatoes, Wilt (tomatoes). English and Dutch summaries  
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 Abstract:  
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 E Y Endc G W Schaeffer  
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## 30 LIVESTOCK PROTECTION

## Diseases

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 Stored products, Thoricide.

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Feb 1968 421 JB22  
Amyloses, Corn, Insect physiology, Longevity,  
Rhizopertha dominica, Sitophilus granarius, Sitophilus oryzae,  
Sitotroga cerealella, Stored products, Tripholium castaneum.  
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INSECT CONTROL WITH HIGH FREQUENCY ELECTRIC FIELDS.  
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Electric fields, Insect control, Stored products.

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Insect control, Irradiation, Rhizopertha dominica,  
Sitophilus granarius, Tripholium castaneum, Tripholium confusum.  
Abstract

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Appl Microbiol 16(1):82-89 BEF  
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Clostridium perfringens, Culture media, Food contamination,  
Spore germination.

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Barley, Gamma rays, Lactic acid bacteria, Malt,  
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Appl Microbiol 16(1):102-105  
Jan 1968 44B.3 AP5  
Biological assay, Clostridium botulinum, Convenience food,  
Fluorescent antibody technic, Food analysis,  
Food contamination, Growth factors, Poultry products, Toxins,  
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Tests were made with turkey rolls.  
Abstract

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Appl Microbiol 16(1):21-24 BEF  
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Clostridium botulinum, Food analysis, Food contamination,  
Toxins.  
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Crop losses, Food, India, Bats.

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Laboratory animals, Livestock, Rodenticides, Toxicology,  
Wildlife.

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SALMONELLA ASSOCIATED WITH FURTHER-PROCESSED TURKEY PRODUCTS.  
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Appl Microbiol 16(1):1-9 REF  
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Food contamination, Poultry products, Salmonella, Turkey meat.  
Abstract

13504-68

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L N Christiansen J Deffner E M Foster A Sngitama  
Appl Microbiol 16(1):133-137 BEF  
Jan 1968 44B.3 AP5  
Clostridium botulinum, Fish, Food contamination,  
Smoking (preservation), Spore germination.  
Smoked chnt  
Abstract

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S589.S9.

R C Ball F H Hooper  
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1966 Aquatic plants, Chemical control (weeds), Herbicides, Metabolism, Ferns, Sodium arsenite.

Abstract

13510-68

RESIDUES OF ORGANIC CHLORINE INSECTICIDES AND THEIR METABOLITES IN SOILS IN THE ATLANTIC PROVINCES OF CANADA.

T R Duffy N Weng  
J Agric Food Chem 15(3):457-464

May 1967 361 J8223

Aldrin, Canada, Chlorinated hydrocarbons, Chromatography, Ddt, Dieldrin, heptachlor, Insecticide residues, Metabolites, Soil contamination.

Abstract

objectives of this project were to establish quantitatively the extent to which residues of the organochlorine insecticides - heptachlor, dieldrin, aldrin, DDT, chlordane - were occurring in Canadian Atlantic soils and the nature of the metabolites resulting from them.

13511-68

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O L Freeman  
Nat Agric Chec Ass News Pesticide Rev 26(1):11

Oct 1967 421 AG8

Decontamination, Environment, Pesticides, Policies.

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POTENTIAL USE OF TRACER METALS ESPECIALLY AUTORADIOGRAPHY IN THE STUDY OF THE RELATION OF HERBICIDES TO SOIL BIOLOGY IN: ISOTOPES IN WEED RESEARCH; PROCEEDINGS OF A SYMPOSIUM VIENNA 25-29 OCTOBER 1965 S589.S9.

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1966

Autoradiography, Herbicides, Radioactive tracers, Soil biology, Soils.

Abstract

13513-68

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Water Pollut Contr Fed J 39(8):1259-1277 REF

Aug 1967 293.8 SE8

Aldrin, Anaerobic bacteria, Biochemistry, Chlorinated hydrocarbons, Ddt, Degradation, Dieldrin, Endrin, Heptachlor, Reptachlor epoxide, Lindane, Pesticides, Sludge, Tde, Water pollution.

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Water Pollut Contr Fed J 40(2):531-R41

Feb 1968 293.8 SE8

Aquatic insects, Fonds, Waste disposal.  
Lagoons for municipal, residential, trailer park, and poultry-processing structures

13515-68

ANAEROBIC LAGOON TREATMENT OF MILKING-PARLOR WASTES.

R C Leehr J A Rnf  
Water Pollut Contr Fed J 40(1):83-94 REF

Jan 1968 293.8 SE8

Anaerobic bacteria, Milking barns, Waste disposal, Water treatment.

13516-68

TRAVEL OF NITROGEN IN SOILS.  
B C Freul G J Schroeffer  
Water Pollut Contr Fed J 40(1):30-48  
Jan 1968 293.8 SE8  
Enclosures, Nitrogen, Privies, Septic tanks, Soil contamination.

13517-68

DETERMINATION OF THE HERBICIDE TORDON (4-AMINO-3,5,6-TRICHLOROPICOLINIC ACID) IN SOIL BY ELECTRON CAPTURE GAS CHROMATOGRAPHY.  
J G Saba L A Gadallah  
Ass offic Anal Chem J 50(3):637-641  
Jan 1967 381 AS7  
Chromatography, Electron capture, Herbicide residues, Picloram, Soil contamination.

13518-68

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A Suss G Schurmann G Pfann  
125-134 REF INTERNATIONAL ATOMIC ENERGY AGENCY

1966 Carbon isotopes, Diesel fuels, Isotopes, Radioactive tracers, Soil adsorption, Soils.

Abstract

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DESIGN OF A MODERN MEAT-PACKING WASTE TREATMENT PLANT.  
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Costs, Slaughterhouses, Waste disposal.

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Agricultural industries, Industrial wastes, Sewage disposal, Water pollution.

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ALDRIN ADSORPTION BY SOILS AND CLAYS.

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J Agric Food Chem 15(4):671-675

Jnl 1967 381 J8223

Adsorption, Aldrin, Chromatography, Clay soils, Pesticide analysis, Pesticide residues, Radioactive tracers, Sand, Soil contamination, Spectrometry.

Abstract

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Inspection (agricultural products), Manuals, Pesticides.

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THE JCINT FAO/ WHC PROGRAMME ON THE TOXICITY OF PESTICIDE RESIDUES IN FOOD. IN: RADIOISOTOPES IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS OF A PANEL VIENNA 12-16 APRIL 1965. SE953.P32.

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Food contamination, Pesticide residues.

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DETERMINATION OF ECGOE AND CICIDAL BY THE ISOTOPE DILUTION METHOD. IN: RADIOISOTCPES IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS OF A PANEL, VIENNA, 12-16 APRIL 1965. SE953.F32.

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Apples, Dimethoate, Olive oil, Pesticide residues, Phenthroate.

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J Agr Food Chem 15(4):676-678  
Jul 1967 381 J8223  
Chlorinated hydrocarbons, Insecticide residues, Milk fat, Molecular distillation.

Abstract

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PLANT GROWTH REGULANTS. BIOCHEMICAL BEHAVIOR OF 2-CHLOROETHYL TRIMETHYLAMMONIUM CHLORIDE IN WHEAT AND IN RATS.  
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J Agr Food Chem 15(6):984-988  
Nov 1967 381 J8223  
Chloroethyltrimethylammonium chloride, (2-, Metabolism, Plant regulators, Radioactive tracers, Rats, Wheat.

Abstract

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POTENTIAL OF NEUTRON ACTIVATION ANALYSIS OF PESTICIDES AND METABOLITES. IN: RADIOISOTOPES IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS OF A PANEL VIENNA, 12-16 1965. SE953.P32.

R L Egner  
78-89 IAEA INTERNATIONAL ATOMIC ENERGY AGENCY

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Metabolites, Neutron activation analysis, Pesticide residues, Spectrometry.

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GAS CHROMATOGRAPHIC ANALYSIS OF 3-HYDROXY-N-METHYL-CIS-CROTONAMIDE DIMETHYL PHOSPHATE (AZODRIN) AND 3-HYDROXY-N,N-DIMETHYL-CIS-CROTONAMIDE DIMETHYL PHOSPHATE (BIDRIN).  
M C Bowman M Beroza  
J Agr Food Chem 15(3):465-468  
May 1967 381 J8223  
Azodrin, Bidrin, Chromatography, Corn, Insecticide residues, Pesticide analysis, Photometry.

Abstract

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M C Bowman M Beroza  
Ass Offic Anal Chem J 50(6):1228-1236  
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Chromatography, Corn, Insecticide residues, Milk, Organophosphorus compounds, Pesticide analysis, Silage.

Abstract

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J Agr Food Chem 15(5):894-897  
Sep 1967 381 J8223  
Renzo(b)thien-4-yl methylcarbamate, Renzo(b)thiophene-4-ol, Chromatography, Cynodon dactylon, Insecticide residues, Milk, Pesticide analysis.

Abstract

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RAPID METHOD FOR SURFACE RESIDUES OF ORGANOPHOSPHORUS PESTICIDES BY TOTAL PHOSPHORUS.  
E J Broderick E F Taschenberg L J Hicks A W Avens J E Bourke  
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May 1967 381 J8223  
Azinphosmethyl, Diazinon, Fruit, Imidan, Insecticide residues, Microanalysis, Organophosphorus compounds, Pesticide analysis, Phosphates.

Abstract

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DDT PROBLEM AT A GLANCE.  
A W A Brown  
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Chlorinated hydrocarbons, Ddt, Insecticide residues, Organophosphorus compounds, Toxicity, Wildlife.

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Extraction, Food moisture, Insecticide residues, Kale, Pesticide analysis, Tde.

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Food contamination, Mercury compounds, Neutron activation analysis, Pesticide analysis, Pesticide residues, Pheasants, Spectrometry.

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J Agr Food Chem 15(5):902-910  
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Carbon isotopes, Cotton, Decomposition, Insecticide residues, Metabolites, Radioactive tracers, Soils, Temik.

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Ddt, Feed contamination, Pisus, Insecticide residues, Mortality.  
English and French abstracts

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J G Cummings K T Zee  
Ass Offic Anal Chem J 50(6):1262-1265  
Dec 1967 381 AS7  
Chlorinated hydrocarbons, Colorimeters, Food contamination, Hydrochloric acid, Pesticide residues, Statistical analysis.  
Abstract:  
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A REPORT ON RESIDUES IN FOOD.  
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 Blattidae, Chromatography, Ddt, Dichloro-2,2'-bis(p-chlorophenyl) ethylene, 1,1-, Radioactive tracers, Rats, Tetrachloro-2,2'-bis(para-chlorophenyl)ethane, 1,1,1,2-, Tissues, Toxicity.  
 Abstract:  
 Sephadex chromatography of tissue homogenates incubated with C-14-DDT provided apparent evidence of binding of DDT with cockroach nerve cord and rat liver, muscle, and brain.

13585-68  
 THE RETENTION OF TRIPHENYLTIN AND DIELDRIN AND ITS BELE-  
 VANCE TO THE TOXIC EFFECTS OF MULTIPLE DOSING. IN: RADIO-  
 ISOTOPES IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS  
 OF A FANAL, VIENNA, 12-16 APRIL 1965. S953.P32.  
 O P Reath  
 18-26 INTERNATIONAL ATOMIC ENERGY AGENCY  
 1966  
 Dieldrin, Laboratory animals, Triphenyl tin.

13586-68  
 HAZARDS OF HERBICIDE DRIFT.  
 R E Higgins  
*Agr Chem* 23(2):43,46-47  
 Feb 1968 381 AG8  
 Accident prevention, D, 2,4-, Herbicides, Livestock, Spraying, Volatile substances.

13587-68  
 STUDIES ON EXPERIMENTAL POISONING OF AGRICULTURAL CHEMICALS IN DOGS. 1. EXPERIMENTAL POISONING OF LOWLY TOXIC HERBICIDE IN DOGS. (JA )  
 B Kaneda  
*Jap Vet Med Ass J* 20(11):462-465,468  
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 Dogs, Feeding, Ecdenticides.

13588-68  
 DISPOSAL AND DECONTAMINATION OF AG CHEMICAL CONTAINERS.  
 T Bays  
*Aerial Appl* 5(7):6-9  
 Jul 1967 333.8 AE8  
 Chemicals, Containers, Decontamination, Industrial wastes, Pesticides, Waste disposal.

13589-68  
 HERBICIDES AND THEIR TOXICITY TO LIVESTOCK.  
 I G McIntosh  
*New Zeal Vet J* 15(4):70-73 REP  
 Apr 1967 41.8 N483  
 Herbicides, Livestock, Poisoning, Reviews, Toxicity.

13590-68  
 HISTOLOGICAL STUDIES OF TESTS IN BATS TREATED WITH CERTAIN INSECT CHENICERILAMIS.  
 B D Pate B L Bays  
*J Econ Entomol* 61(1):32-34  
 Feb 1968 421 J822  
 Animal histology, Chemosterilants, Hydroxyurea, Bats, Testes, Triphenyltin acetate, Triphenyltin chloride.  
 Abstract

13591-68  
 VASACTIVE PEPTIDES IN VENOMS.  
 J J Pisano  
*Ped Amer Soc Exp Biol Fed Proc* 27(1):58-62 REP  
 Jan 1968 442.5 P31P  
 Hymenoptera, Kinins, Peptides, Venoms.

13592-68  
 CONTACT AVICIDES. PATENT 3,340,142.  
 A J Heinert K E Cantrel  
 US Patent Office Offic Gaz 842(1):290  
 05 Sep 1967 156.65 OF2

Absorption, Acetic acid, Avicides, Chloroacetic acid, Cyanohydrins, Patents, Phosphoric acid, Pigeons, Skin, Sparrows, Starlings, Wildlife pests.

13593-68  
 DYNAMICS OF ORGANOCHLORINE INSECTICIDES IN VERTEBRATES AND ECOSYSTEMS.  
 J Robinson  
*Nature* 215(5096):33-35 REP  
 01 Jul 1967 472 N21  
 Chlorinated hydrocarbons, Ddt, Dieldrin, Ecology, Insecticides, Vertebrates.

13594-68  
 COMPARATIVE PHARMACOLOGY OF SOME ANIMAL TOXINS.  
 P E Hunsell  
*Ped Amer Soc Exp Biol Fed Proc* 26(4):1206-1224 REP  
 Jul 1967 442.9 P31P  
 Animals, Arthropoda, Bee venom, Pharmacology, Toxins, Venoms.

13595-68  
 DDT-INDUCED METABOLIC CHANGES IN BAT LIVER.  
 E Sanchez  
*Can J Biochem* 45(12):1809-1817 REP  
 Dec 1967 470 C162  
 Ddt, Enzymes, Lencine, Liver, Metabolism, Proteins, Bats, Bihonucleic acid.  
 Abstract

13596-68  
 TOXICITY EVALUATION OF AIR POLLUTANTS BY USE OF LUMINESCENT BACTERIA.  
 W P Serat P E Budinger P K Mneller  
*Atmos Environ* 1(1):21-32  
 Jan 1967 TD881.A8  
 Acetal, Air pollution, Bacteria, Luminescence, Oxidation, Ozone, Photochemistry, Toxicity.  
 Abstract:  
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13597-68  
 METABOLISM OF C-14-ZEDOTHALL IN BATS.  
 A Soo I Tinsley S C Fang  
*J Agr Food Chem* 15(6):1018-1021  
 Nov 1967 381 J8223  
 Carbon isotopes, Feces, Herbicide residues, Metabolism, Radioactive tracers, Bats, Urine.  
 Abstract

13598-68  
 POSSIBLE REACTIONS FOR AFLATOXIN DETOXIFICATION.  
 W Trager L Stoloff  
*J Agr Food Chem* 15(4):679-681  
 Jul 1967 381 J8223  
 Aflatoxin, Aspergillus flavus, Chromatography, Detoxification, Toxicity.  
 Abstract

13599-68  
 DISTRIBUTION AND EXCRETION OF DICAMBA BY BATS AS DETERMINED BY RADIOTRACE TECHNIQUE.  
 B Tye D Engel  
*J Agr Food Chem* 15(5):837-840  
 Sep 1967 381 J8223  
 Carbon isotopes, Dicamba, Excreta, Herbicide residues, Metabolism, Radioactive tracers, Bats.  
 Abstract

13600-68  
 EFFECTS OF PESTICIDES ON OSMOREGULATORY ABILITY OF ESTUARINE FAUNA.  
 260:14  
 Jun 1967 156.2 C49  
 Crabs, Fish, Organophosphorus compounds, Osmosis, Pesticides, Shrimps.

13601-68  
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 C P Weidenbach B L Yonnger  
*J Econ Entomol* 55(5):793  
 Oct 1962 421 J822  
 Livestock, Phosphates, Shell compound 4294, Toxicology.

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 BIOTRANSITION OF VAPOURIZED LINDANE BY PLANTS AND ANIMALS.  
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*J Agr Food Chem* 15(3):492-496  
 May 1967 381 J8223  
 Animals, Fish, Insecticide residues, Lindane, Plants,  
 Toxicity, Vapors.  
 Abstract

13603-68  
 PROBLEMS IN FAO ON HUMAN AND ANIMAL INTOXICATION. IN: RADICALISATION IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS OF A PANEL VIENNA 12-16 APRIL 1965. SB953.P32.  
 P W Whittemore  
 106-107 INTERNATIONAL ATOMIC ENERGY AGENCY  
 1966  
 Animals, Humans, Pesticide residues.

13604-68  
 BIOCHEMICAL TOXICOLOGY.  
 R T Williams  
*Sci J* 2(1):57-61  
 Jan 1966 61.S34  
 Biochemistry, Food additives, Humans, Pesticides, Poisoning, Toxicology.

13605-68  
 TOXICITY OF SOME GOLDENRODS.  
 E G Worthley C D Schott G A Raupmann  
*Econ Bot* 21(3):238-242 REF  
 Jul 1967 450 EC7  
 Alkaloids, Flavonoids, Mice, Poisonous plants, Saponins, Solidago, Tannins.  
 Abstract

13606-68  
 GAS CHROMATOGRAPHIC MEASUREMENT OF DISAPPEARANCE RATES OF 2,4-D AND 2,4,5-T ACIDS AND 2,4-D ESTERS IN MICE.  
 W L Zielinski L Fischbein  
*J Agr Food Chem* 15(5):841-844  
 Sep 1967 381 J8223  
 Chromatography, D, 2,4-, Decomposition, Herbicide residues, Mice, T, 2,4,5-.  
 Abstract

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13607-68  
 EFFECT OF ENVIRONMENTAL AND BIOLOGICAL FACTORS ON PERSISTENCE OF MALATHION APPLIED AS ULTRA-LOW-VOLUME OR EMULSIFIABLE CONCENTRATE TO COTTON PLANTS.  
 T M Awad S B Vinson J R Brazzel  
*J Agr Food Chem* 15(6):1009-1013  
 Nov 1967 381 J8223  
 Cotton, Emulsions, Formulations, Insecticide residues, Malathion, Metabolism, Persistence, Ultra low volume application.  
 Abstract

13608-68  
 METABOLISM OF AMINO ACIDS IN AGROBACTERIUM TUMEFACIENS. III. UPTAKE OF L-PROLINE.  
 B M Behki  
*Can J Biochem* 45(12):1819-1834 REF  
 Dec 1967 470 C16E  
 Agrobacterium tumefaciens, Amino acids, Carbon isotopes, Plant metabolism, Proline, Radioactive tracers.  
 Abstract

13609-68  
 INFLUENCE OF DAYLENGTH ON AOXIN PRODUCTION IN FLOWER BUDS OF THE LOWBUSH BLUEBERRY.  
 W R Collins K B Irving  
*Can J Plant Sci* 47(6):709-710  
 Nov 1967 450 C16  
 Blueberries, Gibberellic acid, Photoperiodism, Plant extracts, Plant regulators.

13610-68  
 TECHNIQUES USED IN THE APPLICATION OF A <sup>14</sup>C LABELED HERBICIDE. IN: ISOTOPES IN WEED RESEARCH; PROCEEDINGS OF A Symposium, VIENNA, 25-29 OCTOBER 1965. S589.S9. (SP )  
 J J Costa R A Ghelfi E Q Bronzoni  
 9-16 INTERNATIONAL ATOMIC ENERGY AGENCY  
 1966  
 Chenopodium, C14, Datura ferox, Herbicide application, Radioactive tracers.  
 English summary  
 Abstract

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 THE SELECTION OF A SOLVENT FOR USE WITH LOW VOLUME AERIAL SPRAYING OF COTTON PLANTS.  
 R R Coutts B R Parish  
*Arusha Trop Pesticides Res Inst Misc Rep* 611,4 P  
 Mar 1967 423.92 G7922  
 Cotton, Ddt, Low volume application, Mineral oil, Particle size determination, Solvents, Spraying, Toxic effects (scorching) cotton

13612-68  
 BIOSYNTHESIS OF NICOTINIC ACID BY *PAECARIA OXYSPORUM* SCRLC87.  
 D Desaty L C Vining  
*Can J Biochem* 45(12):1953-1959 REF  
 Dec 1967 470 C16E  
 Fungi diseases (plants), *Pascaria oxysporum*, Nicotinic acid, Plant biochemistry.  
 Abstract

13613-68  
 THE EFFECT OF VARIOUS NITROGEN SOURCES ON GROWTH OF *BOTRYOSPHAERIA RIBIS* IN VITRO. (ABSTRACT).  
 C B Drake L D Moore  
*Phytopathology* 57(7):645  
 Jul 1967 464.8 P56  
 Botryosphaeria ribis, Growth factors, Nitrogen.

13614-68  
 PROCESS FOR PLANT DEPOLARIZATION. PATENT 3,359,092.  
 M L Dunham Jr F M O'Connor  
 US Patent Office Offic Gaz 645(3):1069  
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 Defoliation, Ethylene, Patents.

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D F Fan G A MacLachlan  
Can J Bot 45(10):1837-1844 REF  
Oct 1967 470 C16C  
Cellulase, Enzymes, Indoleacetic acid, Peas, Plant physiology, Plant regulators.  
Abstract

13616-68  
EFFECT OF ALAR ON WINTERHARDINESS OF RASPBERRIES.  
B L Granger E J Bogne  
Can J Plant Sci 48(1):100-102  
Jan 1968 450 C16  
Plant hardiness, Raspberries, Succinic acid, 2,2-dimethylhydrazide.

13617-68  
PECTINAS AND CATALASE ISOENZYMES FROM FUSARIUM SOLANI AND THEIR TAXONOMIC SIGNIFICANCE.  
R Ball  
Australian J Biol Sci 20(2):419-428 REF  
Apr 1967 442.8 AU72  
Catalase, Coenzymes, Electrophoresis, Fusarium solani, Plant taxonomy, Proteins.  
Abstract

13618-68  
EFFECT OF GLYCEROLYLIN ON THE FREE AUXIN CONTENT IN THE PERIOD OF SPIKE DIFFERENTIATION OF BARLEY. (KO )  
H B Im C J Sin  
Seoul Univ J Biol Agr Ser (k) 17:111-117 REF  
Sep 1966 442.9 SOE4  
Barley, Gibberellins, Indoleacetic acid, Plant regulators. English summary  
Abstract

13619-68  
HEAT-INSTABLE GROWTH-INHIBITING FACTORS IN BEANS (PHASEOLUS VULGARIS).  
W G Jaffe I Vega Lette  
J Nutr 94(2):203-210 REF  
Feb 1964 369.6 J82  
Beans, Biochemistry, Plant growth inhibitors.  
Abstract

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THE EFFECTS OF INDOLEACETIC ACID AND 2,4-DICHLOROPHOENOXYACETIC ACID ON INTERMEDIARY METABOLISM OF 14C-LABELLED ORGANIC ACIDS BY PEA ROOT TIPS.  
W K Kim B G S Bidwell  
Can J Bot 45(10):1789-1796 REF  
Oct 1967 470 C16C  
Acetic acid, Carbon isotopes, D, 2,4-, Glutamic acid, Indoleacetic acid, Peas, Plant metabolism, Pyruvic acid, Radioactive tracers, Succinic acid.  
Abstract

13621-68  
SHIFTS IN OXIDATIVE METABOLISM DURING PATHOGENESIS. IN: MIROCHA, C. J., AND UBITANI, I., ED. THE DYNAMIC ROLE OF MOLECULAR CONSTITUENTS IN PLANT-PARASITE INTERACTION. PROCEEDINGS, CONFERENCE HELD MAY 15-21, 1966, #GAMAGOBI, JAPAN. SB611.C6.  
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183-202 REF AMERICAN PHYTOPATHOLOGICAL SOCIETY  
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Oxidation, Plant disease resistance, Plant metabolism.

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BIOCHEMICAL INVESTIGATIONS INTO THE EFFECT OF DDT ON BARLEY.  
P D Lawler L J Rogers  
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Barley, Ddt, Plant biochemistry.

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CHEMICAL AND PHYSICAL NATURE OF PLANT CUTICLES IN RELATION TO THE DEPOSITION AND PENETRATION OF PESTICIDES. IN: BADISOTOCES IN THE DETECTION OF PESTICIDE RESIDUES; PROCEEDINGS CP A FAMEL, VIENNA, 12-16 APRIL 1965 SB953. P32.  
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59-66 REF INTERNATIONAL ATOMIC ENERGY AGENCY  
1966  
Cutin, Pesticide analysis, Pesticide residues, Waxes.

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ISOLATION OF A NOVEL AUXIN, METHYL 4-CHLOROINDOLEACETATE FROM IMMATURE SEEDS OF PISUM SATIVUM.  
S Maruo H Abe R Battori K Monakata  
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Peas, Plant regulators, Seeds.

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METABOLIC SHIFTS DURING INFECTION. III. CARBON DIOXIDE FIXATION IN THE DARK AS A NUTRITIONAL FACTOR IN PARASITISM. IN: MIROCHA, C. J., AND UBITANI, I., ED. THE DYNAMIC ROLE OF MOLECULAR CONSTITUENTS IN PLANT-PARASITE INTERACTION. PROCEEDINGS, CONFERENCE HELD MAY 15-21, 1966, #GAMAGOBI, JAPAN. SB611.C6.  
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Carbon dioxide, Host specificity, Parasitism, Plant metabolism, Plant nutrition.

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EFFECT OF BENZIMIDAZOLE AND KINETIN ON THE NICOTINAMIDE NUCLEOTIDE CONTENT OF SENESCING WHEAT LEAVES.  
D Mishra P B Waygood  
Can J Biochem 46(2):167-178 REF  
Feb 1968 470 C16E  
Benzimidazole, Kinetin, Nicotinamide, Nucleotides, Plant senescence, Wheat.  
Abstract

13627-68  
DERIVATIVES OF (+)-LIMONENE. DETECTION AND TRANSLOCATION OF QUATERNARY AMMONIUM PLANT GROWTH RETARDANTS IN YOUNG GRAPEFRUIT AND BEAN SEEDLINGS.  
W P Newball A P Pieringer  
J Agr Food Chem 15(3):488-491  
May 1967 381 J8223  
Ammonium compounds, Chromatography, Limonene, Pesticide analysis, Pesticide residues, Plant growth inhibitors, Plant translocation, Quaternary ammonium compounds.  
Abstract

13628-68  
DEGRADATION OF AROMATIC AMINO ACIDS BY FUNGI. II. PURIFICATION AND PROPERTIES OF PHENYLALANINE AMMONIA-LYASE FROM USTILAGO HORDEI.  
P V S Rao K Moore G R N Towers  
Can J Biochem 45(12):1863-1872 REF  
Dec 1967 470 C16E  
Amino acids, Degradation, Enzymes, Fungi diseases (plants), Plant metabolism, Ustilago hordei.  
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13629-68  
POSSIBLE APPEARANCE OF DEGRADATION PRODUCTS OF PARAQUAT IN CROPS. IN: ISOTOPES IN WEED RESEARCH; PROCEEDINGS OF A SYMPOSIUM, VIENNA, 25-29 OCTOBER 1965. S589.S9.  
P Slade  
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Degradation, Herbicides, Isotopes, Paraquat, Plant injuries, Vegetables.  
Abstract

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FATTY ALCOHOL INHIBITION OF TOBACCO AUXILIARY AND TERMINAL BUD GROWTH.  
G L Steffens T C Tso D W Spanning  
J Agr Food Chem 15(6):972-975  
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Alcohols, Desuckering, Plant growth inhibitors, Plant regulators, Snackers, Tobacco.  
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13631-68  
EVALUATION OF REGRWTH POTENTIAL OF PERENNIAL FORAGE CROPS USING TRIPHENYLTETRAZOLIUM CHLORIDE.  
M Suzuki  
Can J Plant Sci 48(1):113  
Jan 1968 450 C16  
Forage plants, Plant regulators, Triphenyltetrazolium chloride.

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DISTRIBUTION AND CONCENTRATION OF BCN IN A SORGGRUM-SUDAN-GRASS HYBRID.  
D D Wolf W W Washko  
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 H Beckman K Carroll et. al.  
*Ass Offic Anal Chem J* 50(6):1251-1257  
 Dec 1967 381 AS7  
 Chlorinated hydrocarbons, Crops, Florisil PB, Insecticide residues, Pesticide analysis, Programming (computers), Statistical analysis.  
**Abstract:**  
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 PURIFICATION OF A PROTEIN FROM BACILLUS THURINGIENSIS TOXIC TO LABVAE OF LEpidoptera.  
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 Jan 1968 382 B52  
 Bacillus thuringiensis, Biological assay, Caterpillars, Pieris brassicae, Proteins, Toxins.
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 P H Cornwell J O Hall  
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*Aspergillus flavus*, Assay, Chromatography, Synthesis.
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 GAS CHROMATOGRAPHIC ANALYSIS OF THE INSECT ATTRACTANT CUE-LUHE AND RELATED COMPOUNDS.  
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 Attractants, Chromatography, *Cne-lnre*, *Dacns cncharhitae*, Pesticide analysis.  
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 Activated sludge, Carcinogens, Herbicides, Pesticides.
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 Chemical control (weeds), Halogenated hydrocarbons, Herbicides, Norbornene, Patents, Weed control.
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 Halocyclopentadienes, Patents, Pesticides.

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Antibiotics, Bactericides, Microorganisms, Patents,  
Streptomyces bottropensis, Streptomyces flocculus,  
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B L Metcalf T R Fukuto  
J Agr Food Chem 15(6):1022-1029  
Nov 1967 381 J8223  
Carbamates, Cholinesterases, Insecticides, Phenolases,  
Phenyl N-methylcarbamates.  
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ANTIBIOTIC CIFOLEBOSUS AND PROCESS FOR PRODUCING THE SAME.  
PATENT 3,345,262.  
C E Meyer E K Bhuyan  
Us Patent Office Cffice Gaz 843(1):256  
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Absorption spectra, Aerobic bacteria, Antibiotics, Bacteria,  
Circles, Molecular weight, Patents, Properties,  
Streptomyces bellinis.

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Chromatography, Insecticide synergists, Piperonyl butoxide,  
Pyrethrum.  
Abstract

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Ass Offic Anal Chem 40(4):999-1029  
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Chromatography, Ddt, Food analysis, Food contamination,  
Pesticide analysis.

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HERBICIDAL COMPOSITION AND METHOD EMPLOYING SUBSTITUTED CARBANILATES. PATENT 3,333,947.  
B P Neighbors  
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Carbanilates, Chemical control (weeds),  
Cyclopropyl carbanilates, Herbicides, Patents.

13648-68  
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B F Neighbors  
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Carbanilates, Chemical control (weeds), Herbicides, Patents,  
Substituted cyclopropyl carbanilates.

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PREPARATION AND BIOLOGICAL ACTIVITY OF THE ISOMERS OF DIMETHYL-1,3-DICARBOXYLIC ACID MONOPHOSPHATE (DMOM).  
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J Agr Food Chem 15(5):940-942  
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Cholinesterases,  
Dimethyl 3-hydroxyglutamate dimethyl phosphate,  
Insecticides, Isomers, Organophosphorus compounds, Synthesis,  
Toxicity.  
Abstract

13650-68  
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J F Clin  
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Anilides, Chemical control (weeds), Herbicides, Patents.

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L K Payne H W Stollings C B Strow  
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Acaricides, Insecticides, Isomers,  
Methylcarbamoyl)-oximes, O-(-, Properties, Synthesis, Tranid.  
Abstract

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Formamido-1-naphthyl N-methylcarbamate, 5-, Insecticides,  
Patents.

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Sulfur.  
Abstract

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DETERMINATION OF RESIDUES OF CHLORONEB AND A METABOLITE BY MICROCOPOLYMERIC GAS CHROMATOGRAPHY.  
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Chloroneb, Chromatography, Fungicide residues, Metabolites,  
Pesticide analysis.  
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