EXTENSION SERVICE CIRCULAR 41

FEED RESOURCES

Eleven Western States

UNITED STATES DEPARTMENT OF AGRICUL
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Extension Service Circular 41 May, 1927

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F O R E W O R D

Since 1922 the eleven Western States have been developing a regional range livestock extension program. This has required the bringing together of all the facts relating to range livestock and its sources of feed. There was an abundance of information relating to the harvested feeds, but nothing on the quantity of feed secured by grazing. The data in this circular grew out of an effort to find a method of evaluating the feeds secured by grazing in the eleven Western States.

Mr. E. Merritt, Field Agent of this service for the eleven Western States, in cooperation with the Crops and Livestock Departments of the Washington State College developed the plan of measuring feed resources in terms of the amount of feed furnished a cow for a day, or "an animal unit day" as a unit of measure.

Mr. W. R. Chapline of the Forest Service, made available data based upon the carrying capacity of the National Forest Ranges, supplemented by data from observations and a general knowledge of the Forest Service of the carrying capacity of adjacent lands.

Mr. V. V. Parr of the Bureau of Animal Industry likewise contributed data from his studies of the systems of range beef management in the different areas in the West.

Mr. H. V. Vinall of the Bureau of Plant Industry generously contributed basic material and formula used in compiling Year Book article on, "Our Forage Resources."

Mr. C. L. Harlan of the Bureau of Agricultural Economics lent his knowledge of livestock and pasture statistics.

This circular is being issued with the hope that it will contribute not only to a better knowledge of the relative importance of the various sources of feed in the eleven Western States but will indicate a method that may be used in evaluating the feed resources of the various agricultural areas within the States by county agents and others having to do with determining local agricultural policies.

C. B. Smith, Chief
Office of Cooperative Extension Work.

FEED RESOURCES

Eleven Western States

One-third of the gross farm income of the West comes from the sale of livestock or livestock products. Livestock is the only means whereby crops from vast areas can be turned into a product useful to man. If one is to get a correct picture of the agriculture of the West, the contribution of the various types of range have to be evaluated.

METHOD USED

To obtain a unit of measure of the carrying capacity of the range the feed furnished an animal such as a cow or horse for a day was used and entitled "Animal Unit Day".

Swine were reduced to a cow equivalent by dividing by five, and sheep by dividing by six. In case of sheep the ratio of 6 to 1 was assumed to be an average of the generally lower ratio between cattle and sheep on the range which in places is found by the Forest Service to be as low as 3.5 to 1 and the higher ratio between cattle and sheep in the feed lot used by animal husbandmen.

Checks of the number of days feed used by the different classes of livestock in the Western States, considering sales and production of young, indicated that for practical purposes and with only two exceptions 365 days of feed was furnished the total number of each class given in the census for 1925.

Multiplying the number of animal units by the days fed gave total animal units days feed furnished each class of stock and total for the State.

To obtain the days fed harvested crops the best judgment of the animal husbandmen and Forest Service men was checked against the feed available, using the formula found on Page 332 of the 1923 Year Book.

AMOUNT NECESSARY TO CARRY ANIMAL UNIT FOR A YEAR

Concentrated feeds:	Tons
Cottonseed or flaxseed meal and peanuts	2.10
Corn, barley, rye, emmer and spelt	2.65
Wheat, mixed grains, dry beet pulp	2.75
Oats, sorghum, rice	2.85
Hay and fodder:	
Alfalfa, annual legumes, clover	5.00
Corn fodder and small-grain hays	7.00
Timothy, wild hay, miscellaneous tame hay and sorghum fodder	8.00
Straws and stovers:	
Corn and sorghum stover	10.00
Oats and rice straw	11.00
Cottonseed hulls	12.00
Barley straw	13.00
Wheat, rye and flax straw	15.00
Silage and roots:	
Silage and sweet potatoes	16.00
Potatoes	20.00
Wet beet pulp and roots	32.00

Thus if it takes 5 tons of legume hay to carry a cow or horse for a year, one ton is equivalent to 73 days. Since the hays used in the West consist of wild and grain hays it was assumed that 60 days to a ton was a fair estimate.

The days fed harvested feeds assume that the livestock were on full feed whereas it is the practice to feed a partial ration of harvested crops and allow the livestock to pick up the remainder either from the meadows or range. For example: livestock may get an average of one-half ration for four months. This would mean when expressed in equivalent days fed harvest-

ed crops only sixty animal unit days. In getting at the state averages consideration had to be given not only to the practices on the more ideal ranges and to the more ideal locations but also to these more unfavorably located, i. e. the actual practice. In order to make sure that the livestock were not being fed too few days the quantity of feeds produced in 1925 was reduced to an animal unit days feed basis, based upon the formula used in the Year Book article "Our Forage Resources". For example, it was assumed that a ton of hay furnished the equivalent of sixty animal unit days feed. Hay furnishes two-thirds of the harvested livestock feeds in the eleven Western States. For the entire area there is only one ton per animal unit. For the entire area there is available the equivalent of ninety animal unit days harvested feeds.

After computing days fed harvested crops it was assumed that the remaining feed requirements were obtained by grazing.

The census defines plowable pasture as land being used exclusively for pasture that might have been cropped. Other land controlled by the ranchmen and used for pasture purposes has been designated "Other Farm Pasture". For example, in Oregon the census reports 600,000 acres of plowable pasture and 8,200,000 acres of other types of farm pasture. The total farm area was taken from the total land area of the State and the balance was divided into three classes of "Non-Farm Land", (1) Non-grazing Land, (2) National Forest and (3) Other. The total land in farms in Oregon is 14,000,000 acres and the total land area is the state 61,000,000 acres. This left 47,000,000 acres of "non-farm land". Of this area, 9,000,000 acres is land that is too rough to be used for grazing purposes, or on which the timber is too dense, or where the vegetation is so sparse that it could not be profitably

grazed. Of this over 5,000,000 acres are dense timber lands or barren areas within National Forests. Of the land in the National Forests in Oregon, 8,000,000 acres are being used for grazing purposes. This left 30,000,000 acres in the State designated as "other non-farm pasture" which consists principally of uncontrolled open range, public domain and intermingled unregulated state and private holdings. The "other non-farm pasture" includes also the Indian reservations and some large private holdings that are controlled and not enumerated in the farm census records. The forest range land and the actual number of animals with periods of grazing are known and give a very accurate estimate of the feed resources from the National Forests. For example, in Utah approximately one million acres of the total net National Forest area of seven and one-half million acres in the state are unusable for grazing. The range capacity of the remaining six and one-half million acres is about 28 million cattle and horse days and 84½ million sheep and goat days, equivalent to over 42 million animal unit days of feed annually. Since calves and lambs grazing with their mothers are not counted in the National Forest permit and range capacity records the feed furnished them had to be added in order to make the records comparable to the census and state totals. On the basis of their eating one-half as much during the grazing season as grown stock, it required the addition of 10 million animal unit days to take care of the calves and lambs grazed. Thus the 6½ million acres of National Forest grazing land in Utah furnish 52 million animal unit days of feed annually or at the rate of 8 animal unit days per acre.

Items under the caption "Sources of Pasture", are the combined judgment of animal husbandmen, Forest Service men, statisticians, etc. The data used was based primarily upon the number of livestock on hand January 1, 1925 and the crops harvested during the same census year. It is recognized that

during drought years the range is not always sufficient for the animal population on hand and feed is shipped in or animals are shipped out of the state.

FEED REQUIREMENTS

The total animal unit days required to feed the livestock in the eleven Western States is 6,400,000,000. Beef cattle require nearly one-half of the feeds available, the sheep about 20 per cent, dairy cattle about 15 per cent and swine slightly over 2 per cent. It is also interesting to note that horses and mules require 17 percent or more feed than dairy cattle. In only three states do dairy cattle consume more feed than horses and mules. These states are California, Oregon and Washington. (See Chart I next page).

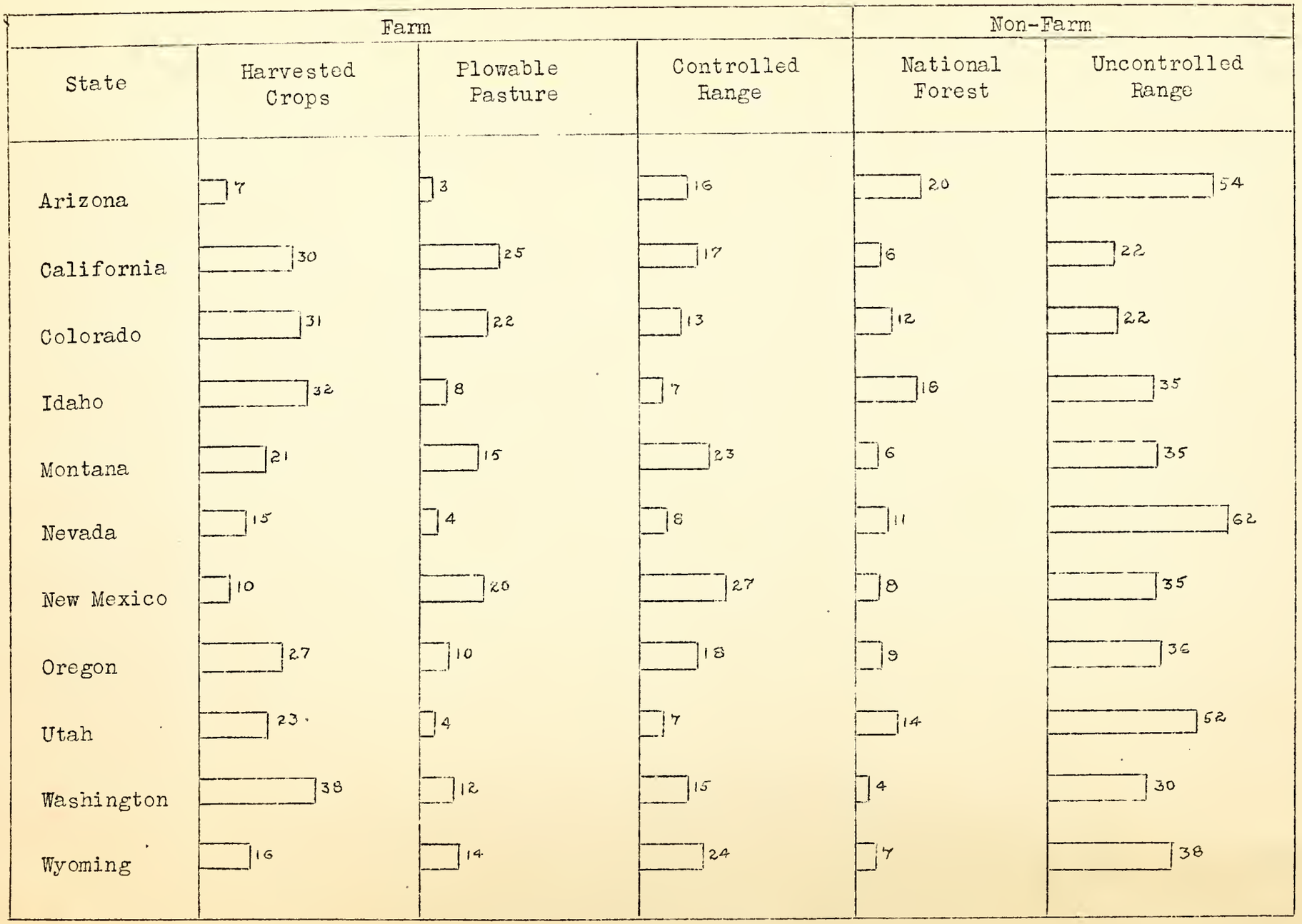
TOTAL ANIMAL UNIT DAYS -----FEED REQUIRED

(000,000 omitted)

	Total	Horses and Mules	Dairy Cattle	Beef Cattle	Swine	Sheep
Arizona	500	45	20	365	2	68
California	990	130	310	375	30	145
Colorado	809	150	96	440	36	87
Idaho	468	90	85	135	20	138
Montana	958	278	60	425	20	155
Nevada	228	20	7	146	2	53
New Mexico	697	80	23	450	4	140
Oregon	512	85	115	175	17	120
Utah	367	42	38	146	4	137
Washington	362	100	146	65	16	35
Wyoming	533	73	20	273	7	160
TOTAL	6404	1093	920	2995	158	1238

In two states there was a deviation from the use of 365 days as the average number of days feed required. In California the cattle were shown

Chart 1. - Percent of the Total Livestock
Feeds Derived from Specified Sources



as 350 days because of the importation of feeders prior to January 1, which were held only for short winter feeding prior to being slaughtered. In Colorado sheep were shown as fed 200 days because of the heavy importation of feeders for the same purpose. In Nevada it was considered that there was a compensation between Utah, Idaho and California sheep which come into the state for winter range and Nevada sheep which go into these states for summer grazing.

SOURCES OF LIVESTOCK FEED

Over one-third of the livestock feeds in the eleven Western States comes largely from the open uncontrolled range. One-half this much comes from the controlled, deeded or fenced range in farms. When we include with these two classes the feed obtained from the National Forest we find that sixty per cent of the feeds come from strictly range pasture and forty per cent from harvested crops or from pasture lands that might be used for the production of crops. A considerable part however, of the plowable pasture in the states bordering the Great Plains is also range land. Farms produce only 55 per cent of the total feed requirements. Harvested crops produce less than one-fourth of the total feeds used. If horses, mules and swine were given no pasture and were fed entirely on harvested crops the eleven Western States would scarcely produce enough to meet their feed requirements.

The total column gives an index of the relative aggregate quantity of livestock feeds used in the different states. The states arranged in order of magnitude are California, Montana, Colorado, New Mexico, Wyoming, Oregon, Arizona, Idaho, Utah, Washington and Nevada.

SOURCES OF LIVESTOCK FEEDS
Animal Unit Days
(000,000 omitted)

State	Total	FARM			NON-FARM	
		Harvested Crops	Plowable Pasture	Other Farm Pasture	National Forest	Other
Arizona	500	37	14	80	99	270
California	990	300	250	170	60	210
Colorado	809	255	178	110	95	171
Idaho	468	150	36	32	84	166
Montana	958	200	145	212	56	325
Nevada	228	35	10	18	24	141
New Mexico	697	65	141	187	58	246
Oregon	512	140	50	90	48	184
Utah	367	85	14	24	52	192
Washington	362	136	45	56	15	110
Wyoming	533	85	72	130	36	210
Total	6404	1488	955	1109	627	2225

RELATIVE IMPORTANCE OF THE SOURCES OF FEED

In Arizona, Nevada and Utah over one-half of the livestock feeds come from the uncontrolled open range and over one-third from the same source in Idaho, Montana, New Mexico, Oregon and Wyoming. In only one of the eleven Western States does more than one-third of the feed come from harvested crops, namely Washington. In California, Colorado, Idaho and Oregon between one-fourth and one-third of the total livestock feed comes from harvested crops. In eight of the states the controlled range furnishes more feed than the plowable pasture and in four states the same range furnishes more feed than harvested crops. In four states the National Forests furnish more feed than obtained from plowable pastures and in three more than the two classes of farm pasture combined. From the standpoint of the range as a whole both in farms and out including dry land plowable pasture Arizona and New Mexico have approximately 90 per cent of their feed requirements furnished by range land;

Nevada and Wyoming nearly 80 per cent; Montana but slightly less; and Colorado, Idaho, Oregon and Utah over 60 per cent.

HARVESTED FEEDS

Harvested feeds in Western agriculture play a very secondary part as far as the total feed requirements is concerned. As has already been indicated only 23 per cent of the total requirements come from this source.

SOURCES OF HARVESTED FEEDS
(000,000 omitted)

State	Total Millions of Animal Unit Days from Harvested Crops	Millions of Animal Unit Days from Hay	Other Important Sources than Hay
Arizona	37	23	Cotton
California	300	220	Barley, Sugar-Beet and Corn
Colorado	255	150	Wheat, Barley, Corn and Sugar-Bee
Idaho	150	115	Wheat, Oats, Barley and Corn
Montana	200	125	Oats, Wheat and Corn
Nevada	35	28	
New Mexico	65	30	Corn, Sorghum and Cotton
Oregon	140	90	Wheat, Oats and Corn
Utah	85	70	Wheat, Oats and Sugar-Beet
Washington	136	88	Corn, Wheat and Oats
Wyoming	85	70	Corn and Oats
Total	1488	1009	

Of the total animal unit days furnished by harvested crops, two-thirds comes from hay. This hay includes not only tame and wild hay but that obtained from grain cut green. In many of the states a considerable portion of the cash grain crops is retained on the ranch for consumption of livestock. This is especially true in the areas where it is practically the only crop grown. In the case of cotton and sugar-beet the by-products furnish an important local source of feed.

USES

Dairy cattle receive more of the harvested crops than any other types of livestock. This in spite of the fact that there are one-third as many dairy animals as beef animals. In two states one-half of the total harvested

crops are consumed by dairy cattle. If we omit the dairy cattle from consideration, in California, Idaho, Oregon and Washington the horses and mules take the next largest proportion of harvested crops. Although sheep in the aggregate require 25 per cent more feed thandairy cattle they derive less than half as much from harvested crops.

TOTAL ANIMAL UNIT DAYS ON HARVESTED FEEDS BY CLASSES OF LIVESTOCK
(000,000 omitted)

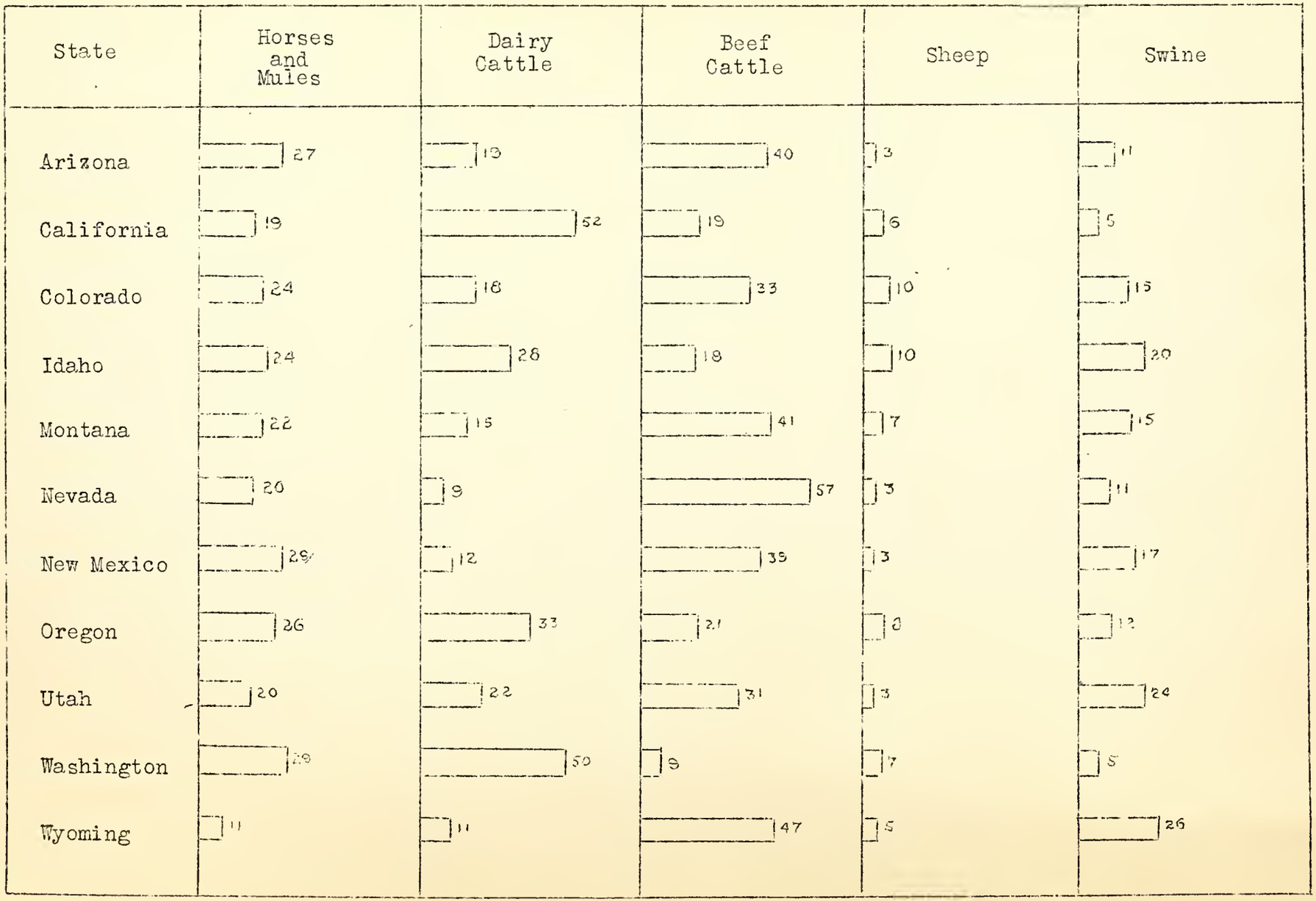
State	Total	Horses and Mules	Dairy Cattle	Beef Cattle	Swine	Sheep
Arizona	37	10	7	15	1	4
California	300	55	155	55	20	15
Colorado	255	61	46	84	25	39
Idaho	150	37	42	27	15	29
Montana	200	45	30	82	14	29
Nevada	35	7	3	20	1	4
New Mexico	65	19	8	25	2	11
Oregon	140	36	46	30	11	17
Utah	85	17	19	26	3	20
Washington	136	40	68	12	10	6
Wyoming	85	9	9	40	5	22
Total	1488	336	433	416	107	196

(See Chart II)
(Next page)

PERIODS FED

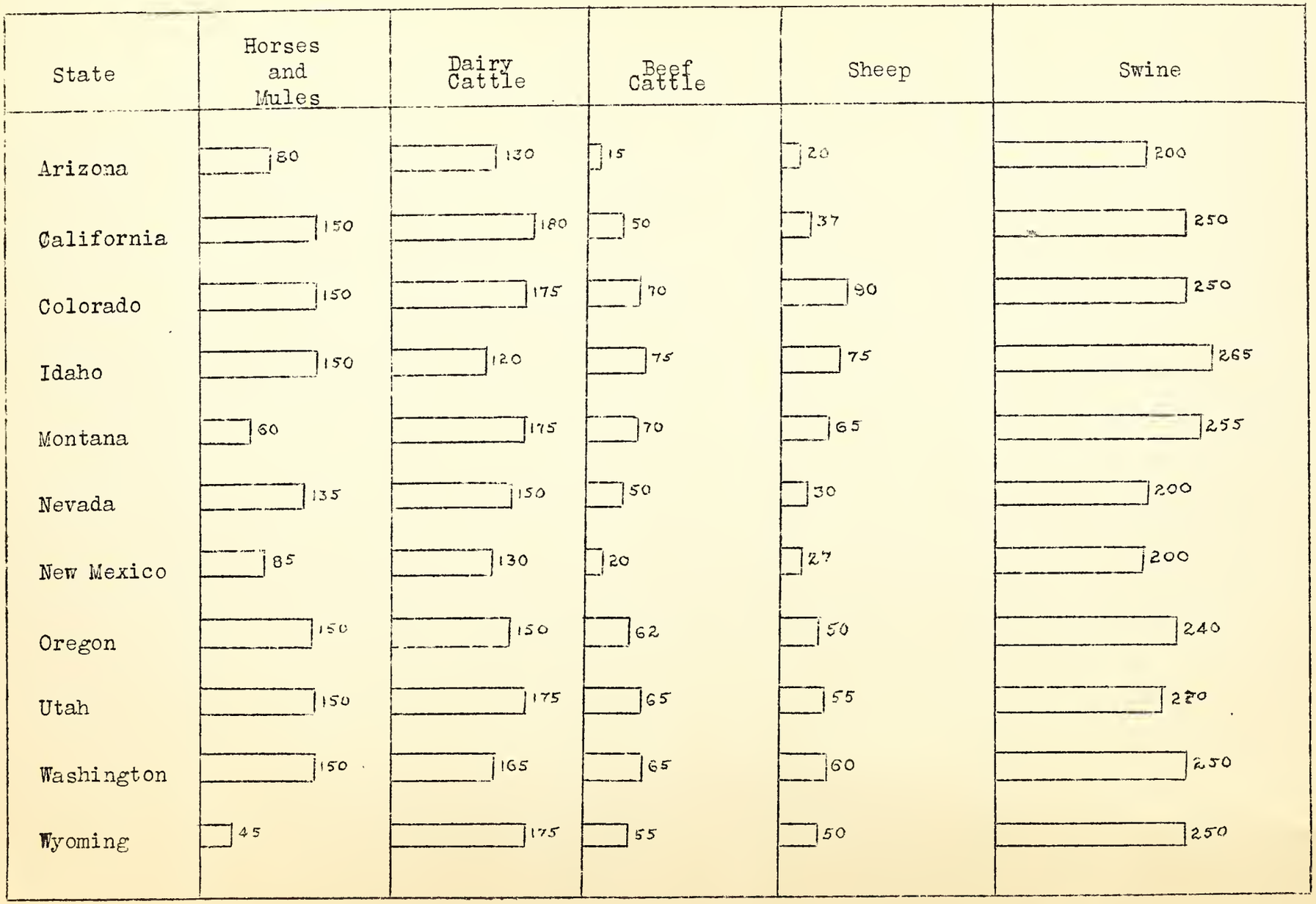
It is difficult to work out state averages as to the equivalent period that the different types of livestock are on full feed of harvested crops. However, with the total available feeds fairly well known the total number of days that the livestock can be fed must agree with the total number of days the available feeds will support the number of animal units in the State. The swine were fed usually for the longest period but since there is such a relatively small number of swine in these states the quantity of feed that they consume is not an important element in the total. The equivalent number of

Chart 2. - Percent of Total Harvested Feeds
In State Consumed by Different Kinds of Livestock



days that sheep were on full feed varies from 20 to 90. In Arizona and New Mexico a large part of the sheep run on the range for practically the entire year with only concentrates as supplemental to the range during bad periods of winter and spring. In Colorado especially but also in Idaho and other states large numbers of lambs and sheep are fed out and leave the corrals as a finished product ready for slaughter. In the case of beef animals we have the same marked variation but largely due to maintaining breeding stock rather than fattening. In most parts of the west but especially in the northern part the ranchmen consider it necessary to furnish some feed during the winter period. It is generally the practice to have at least one ton of hay per beef animal. Good management would usually dictate more. Under most conditions this ton will carry an animal on one-half feed for a period of 100 to 120 days. In addition to this there are in most states limited areas where some finishing is done. In connection with dairy cattle it is far more important that they have an abundance of feed the year round. The location of the dairy industries is primarily in the irrigated valleys or along the west coast where the rainfall is high. In the irrigated valleys most of the farmers follow the practice of furnishing feed to their dairy stock as combination with irrigated pastures. Therefore we find that with the exception of swine the dairy cattle are fed the longest period. There are also wide variations in the methods used in feeding horses. In the irrigated areas the horses are fed rather than run on the pasture but in the range areas the horses are kept up for only a brief period. In some states, particularly Montana, large numbers of broom tail horses are on the range which receive practically no harvested feeds and therefore pull down the number of days fed harvested crops. The amount of livestock feed consumed by the wild horse is difficult to estimate and is a factor that might change these data if

Chart 3. - Equivalent Days
Harvested Crops Fed



their actual numbers were known. 150,000 horses were added to the census records for Montana in an effort to make the number of horses in the state more nearly in accordance with what is thought to be the true situation. (See Chart III next page)

PASTURE

Over 75 per cent of feeds for livestock of the west is harvested by the animals themselves and the most important part of this source of feed comes from range. Animal unit days per acre is obtained by dividing the length of the pasture season by the acres required to support a cow. For example, if it takes 40 acres to maintain a cow for 8 months the animal unit days per acre would be 240 days divided by 40 or 6 days per acre. No data is available to indicate the quantity of aftermath consumed or the quantity of feed secured from land from which a crop had been harvested during the year. This feed is considered as a part of the pasture resources.

PLOWABLE PASTURE

The plowable pasture is of two types. One the irrigated or humid pasture, the other dry land, both of which might be used for the production of crops. In California, Utah, Nevada, Idaho and Arizona the plowable pasture is principally irrigated pasture. In Washington and Oregon it is made up of both irrigated areas and pasture in the humid coast region. In Colorado, Wyoming, Montana and New Mexico the acreage of plowable pasture is so large that it could have been made up mainly of large areas of dry land used for pasture that might have been plowed. However, a small proportion of this large total is irrigated pasture. In the states where the principal part of the plowable pasture is dry land it takes slightly over 10 acres to carry an animal unit for a year in Montana, Colorado, and Wyoming and 13½ in New

Mexico. Whereas if the irrigated and humid pasture were capable of being used for a year it would only take 3½ to 4½ acres to carry an animal unit.

CONTROLLED RANGE IN FARMS

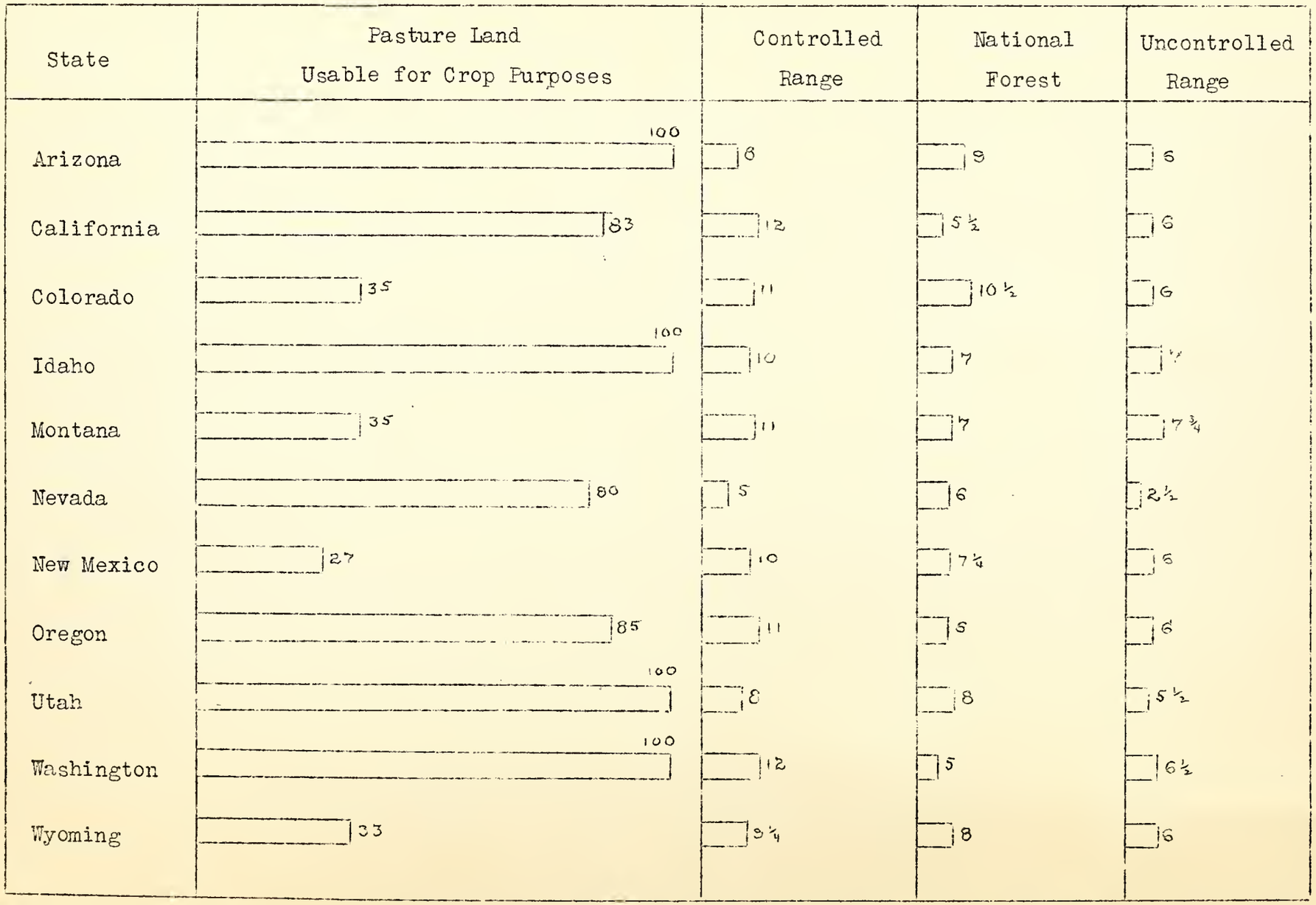
This acreage includes the acres reported to the census enumerator as a part of the farm or ranch over which he had control either through deed or lease. This pasture is usually of a more productive type than that which has not been controlled and generally has a longer pasture season than the range or the National Forest. Taking the states as a whole the number of acres per animal unit per year ranges from 30 to 73, equivalent to 2½ to 6 acres per month for the season used. The poorest pasture is found in Nevada and the best generally in the states along the coast or northern border.

(See Chart IV. next page)

NATIONAL FOREST RANGE

These data on the range capacity of the National Forest are the most accurate of any of the pasture data. These data were derived from the actual records of the number of animals admitted to the National Forests and the days they were on the range together with an intimate knowledge of the total range area. These figures have been used as an index in determining the range capacity of the other types of ranges. The number of animal unit days per acre is less in some of the states due to the fact that a part of the forest area supports so dense a stand of trees or brush that the grazing capacity is low. This is particularly true in Washington, Oregon, Idaho and Montana. Although there has been an improvement of approximately 25 per cent in the capacity of the National Forest ranges in the last 20 years there is still considerable opportunity for further improvement.

Chart 4. - Animal Unit Days Per Acre



UNCONTROLLED OPEN RANGE

The largest element as a source of feed in the Western States is the uncontrolled open range. It has the lowest range capacity. This is due in part to the fact that with the large acreage of unregulated public domain and its intermingled state and private land there is no opportunity of preventing overgrazing and depreciation, and in part to the fact that it has been land least desired for the making of settlements. Considerable improvement in range capacity is possible through the application of better methods of management.

SOURCES OF LIVESTOCK FEEDS

Feed Requirements

Item	ARIZONA			CALIFORNIA			COLORADO		
	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U. Days#
Horses & Mules	125	365	45,000	372	365	130,000	405	365	150,000
Dairy Cattle	55	365	20,000	836	365	310,000	260	365	96,000
Beef Cattle	1,000	365	365,000	1,072	350	375,000	1,200	365	440,000
Swine	5	365	2,000	80	365	30,000	100	365	36,000
Sheep	190	365	68,000	400	365	145,000	436	200	87,000
Total			500,000			990,000			809,000

Days Fed Harvested Crops

Item	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An. U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#
Horses & Mules	125	80	10,000	372	150	55,000	405	150	61,000
Dairy Cattle	55	130	7,000	836	180	155,000	260	175	46,000
Beef Cattle	1,000	15	15,000	1,072	50	55,000	1,200	70	84,000
Swine	5	200	1,000	80	250	20,000	100	250	25,000
Sheep	190	20	4,000	400	37	15,000	436	90	39,000
Total			37,000			300,000			255,000

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Sources of Pasture

Item	ARIZONA			CALIFORNIA			COLORADO		
	Acres#	An.U.Days Per.Yr.Per.A.	Total An.U.Days#	Acres	An.U.Days Per.Yr.Per.A.	Total An.U.Days#	Acres	An.U.Days Per.Yr.Per.A.	Total An.U .Days#
Farm									
Plowable	140	100	14,000	3,000	83	250,000	5,100	35	178,000
Other	10,000	8	80,000	14,000	12	170,000	10,000	11	110,000
Non-Farm									
Non-Grazing	5,000			26,000			5,000		
National Forest	11,000	9	99,000	11,000	5½	60,000	9,000	10½	95,000
Other	45,000	6	270,000	35,900	6	210,000	28,000	6	171,000
Total			463,000			690,000			554,000

000. Omitted.

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SOURCES OF LIVESTOCK FEEDS
Feed Requirements

Item	IDAHO			MONTANA			NEVADA		
	Animal Units#	Days Feed Required	Total An.U. Days#	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#
Horses & Mules	245	365	90,000	750	365	278,000	55	365	20,000
Dairy Cattle	237	365	85,000	170	365	60,000	20	365	7,000
Beef Cattle	372	365	135,000	1,175	365	425,000	400	365	146,000
Swine	55	365	20,000	55	365	20,000	5	365	2,000
Sheep	382	365	138,000	430	365	155,000	145	365	53,000
Total			468,000			938,000			228,000

Days Fed Harvested Crops

Item	IDAHO			MONTANA			NEVADA		
	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#
Horses & Mules	245	150	37,000	750	60	45,000	55	135	7,000
Dairy Cattle	237	170	42,000	170	175	30,000	20	150	3,000
Beef Cattle	372	75	27,000	1,175	70	82,000	400	50	20,000
Swine	55	265	15,000	55	250	14,000	5	200	1,000
Sheep	382	75	29,000	430	65	29,000	145	30	4,000
Total			150,000			200,000			35,000

Sources of Pasture

Item	IDAHO			MONTANA			NEVADA		
	Acres#	An.U.Days Per.Yr.Per.A.	Total An.U.Days#	Acres#	An.U.Days Per.Yr.Per.A.	Total An.U.Days#	Acres#	An.U.Days Per.Yr.Per.A.	Total An.U.Days#
Farm									
Plowable	360	100	36,000	4,125	35	145,000	125	80	10,000
Other	3,200	10	32,000	18,500	11	212,000	3,700	5	18,000
Non-Farm									
Non-Grazing	9,000			10,000			4,000		
National Forest	12,000	7	84,000	8,000	7	56,000	4,000	6	24,000
Other	24,000	7	166,000	42,000	7 3/4	325,000	57,000	2½	141,000
Total			318,000			738,000			193,000

≠ 000. Omitted.

SOURCES OF LIVESTOCK FEEDS

Feed Requirements

Item	NEW MEXICO			OREGON			UTAH		
	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#
Horses & Mules	220	365	80,000	243	365	85,000	115	365	42,000
Dairy Cattle	63	365	23,000	313	365	115,000	105	365	38,000
Beef Cattle	1,225	365	450,000	485	365	175,000	400	365	146,000
Swine	10	365	4,000	45	365	17,000	13	365	4,000
Sheep	393	365	140,000	335	365	120,000	375	365	137,000
Total			697,000			512,000			367,000

Days Fed Harvested Crops

Item	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#
Horses & Mules	220	85	19,000	243	150	36,000	115	150	17,000
Dairy Cattle	63	130	8,000	313	150	46,000	105	175	19,000
Beef Cattle	1,225	20	25,000	485	62	30,000	400	65	26,000
Swine	10	200	2,000	45	240	11,000	13	220	3,000
Sheep	393	27	11,000	335	50	17,000	375	55	20,000
Total			65,000			140,000			85,000

Sources of Pasture

Item	Acres#	An.U.Days Per.Yr.Per.A	Total An.U.Days#	Acres#	An.U.Days Per.Yr.Per.A	Total An.U.Days#	Acres#	An.U.Days Per.Yr.Per.A	Total An.U.Days#
Farm									
Plowable	5,400	27	141,000	600	85	50,000	138	100	14,000
Other	18,700	10	187,000	8,200	11	90,000	2,900	8	24,000
Non-Farm									
Non-Grazing	1,000			9,000			4,000		
National Forest	8,000	7¼	58,000	8,000	6	48,000	6,500	8 1/5	52,000
Other	41,000	6	246,000	30,0000	6	184,000	37,000	5 1/5	192,000
Total			632,000			372,000			282,000

000, Omitted.

SOURCE OF LIVESTOCK FEEDS

Feed Requirements

Item	WASHINGTON			WYOMING			11 WESTERN STATES		
	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#	Animal Units#	Days Feed Required	Total An.U.Days#
Horses & Mules	270	365	100,000	200	365	73,000	3,000		1,093
Dairy Cattle	410	365	146,000	53	365	20,000	2,522		920
Beef Cattle	180	365	65,000	740	365	273,000	8,249		2,995
Swine	40	365	16,000	20	365	7,000	428		158
Sheep	92	365	35,000	435	365	160,000	3,613		1,238
Total			362,000			533,000	17,812		6,404

Days Fed Harvested Crops

Item	Animal Units#	Equivalent Days Fed	Total An. U. Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#	Animal Units#	Equivalent Days Fed	Total An.U.Days#
Horses & Mules	270	150	40,000	200	45	9,000	3,000		336
Dairy Cattle	410	165	68,000	53	175	9,000	2,522		433
Beef Cattle	180	65	12,000	740	55	40,000	8,249		416
Swine	40	250	10,000	20	250	5,000	428		107
Sheep	92	60	6,000	435	50	22,000	3,613		196
Total			136,000			85,000	17,812		1,488

Sources of Pasture

Item	Acres#	An.U.Days Per.Yr.Per.A.	Total An.U.Days#	Acres#	An.U.Days Per.Yr.Per.A.	Total A.An.U.Days#	Acres#		Total An.U.Days#
Farm									
Plowable	450	100	45,000	2,200	33	72,000	21,638		955
Other	4,750	12	56,000	14,000	9¼	130,000	107,950		1,109
Non-Farm									
Non-Grazing	10,000			4,000			87,000		
National Forest	3,000	5	15,000	4,500	8	36,000	85,000		627
Other	17,000	6½	110,000	35,000	6	210,000	391,000		2,225
Total			226,000			448,000			4,916

000. Omitted

During x past few yrs x pronounced shift of farm pop from country to city has raised x question of x appeal of f life farming to f youth. Is x increasing drift of farm boys & girls to x city & to occupations other than farming due to a lack of appeal of farm life? How do farm y feel toward f life? Do they like or dislike their work their im ediate surroundings? To what extent does x presence or absence of social & recreational facilities in f com. affect x satisfaction of f youth for f life? Do f boys & girls prefer farm or do they prefer other occupations as a means of making their living their contribution to x community & to x nation? What bearings do some of x situations in wh f boys & girls find themselves have upon their attitudes toward f?

Light gained thru summary of data furnished by ca.8000 f village y during summer 1927. See Misc. Pub. Circ. 46

(75% [illegible] 4-H Club members)

[illegible] [illegible] in school, out of school,
Grade, (and not ages — those who seemed to be
older 10 and 20) Location of School attended,
residence, membership in church, kind
of home (rented, mortgaged, etc.), Teachers
[illegible] [illegible] (more than 1/5 [illegible]
activities