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MONTANA FARM REVIEW VOL 1

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and

MONTANA STATE DEPARTMENT OF AGRICULTURE
Division of Labor and Publicity
Co-Operating

MONTANA FARM REVIEW
VOLUME ONE

Issued by

THE MONTANA CO-OPERATIVE CROP REPORTING SERVICE

CHESTER C. DAVIS
Commissioner of Agriculture

H. C. TAYLOR
Chief of Bureau

Helena, Montana

JOINT BULLETIN

State Capitol

MONTANA
STATISTICAL HISTORY OF AGRICULTURE
ANNUAL CROP AND LIVESTOCK
REVIEW FOR 1922

By

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FOREWORD

In this, Volume I of the Montana Farm Review, the first publication of its kind relating to Montana Agriculture, an effort has been made to group under one cover in convenient form for ready reference all available accurate information properly embodied in such a booklet. In some cases historical data are incomplete, and it is not feasible to make such a publication altogether inclusive. Such statistics as are presented in this volume are not only interesting in themselves, but reflect the development of the various phases of agriculture, the changes which have taken place, the trend of activities, and form a basis upon which to lay plans for future developments of agriculture and other industries of the state. It is planned to make this an annual publication, subsequent issues to include only reports for the current year, with comparative data.

Records of the past and a knowledge of present conditions are necessary to all forms of business enterprises. This applies particularly to the business of farming, the largest of the nation's industries. Facts relative to acreage and production of crops, to live stock and live stock products, to the supply and demand for these commodities, to prices, markets, and other factors affecting general conditions, both past and present, should be available to farmers and their leaders, to assist them in determining proper and profitable courses to follow in the complex scheme of production of food and clothing. This booklet relates only to the production side of the problem in Montana.

**Bases
of the
Estimates** All figures in this volume are official estimates of the Division of Crop and Live Stock Estimates (formerly Bureau of Statistics and Bureau of Crop Estimates) of the Bureau of Agricultural Economics of the United States Department of Agriculture, except where otherwise noted. The bases for such estimates are the decennial Federal Census and the annual state farm census collected by county assessors, supplemented by various forms of checks and by monthly information furnished by a corps of more than 3,000 voluntary crop and live stock reporters within the state. It will be noted that some material has been taken from the statistics of the Federal Census Bureau. This has been done because the Census furnishes the most recent and reliable information available upon certain subjects.

The publication of estimates by counties of Montana is attempted for the first time in this volume. Immediately following the taking of each Federal Census, crop acreages and production by counties are available, but some other reliable sources of information must supply the information needed for making county estimates between the census years. This is made possible through the co-operation of the county assessors under the law providing for the collection of certain agricultural information at the time the annual assessments are taken. The value to the public of the county tables is in no small degree due to the good work of the county assessor in practically every county in the state.

The material collected by the assessors and their deputies is forwarded to the Commissioner of Agriculture. It is edited, tabulated, totaled, and analyzed, in the office of the Agricultural Statistician. County data has been found to be of much value to farmers and others in states where the information has been published for some time. It is hoped that the accuracy and detail of the county figures for Montana will be improved in the future by more generally complete returns from all counties through the assessors, and to this end farmers and others are urged to co-operate.

The regular reports rendered by the voluntary Crop and Live Stock Reporters within the state are also indispensable in making county facts available.

**The Montana
Co-Operative
Crop and Live
Stock Report-
ing Service.
What It Is and
What It Does.**

Sixty years ago Congress appropriated funds for the establishment and maintenance of a Federal Crop-reporting Service. This has grown until now it is recognized as the most efficient organization of its kind in the world. Formerly the work was carried on in each state independent of state organizations, but now most of the states work with the Federal Department under co-operative agreements. In Montana the State Department of Agriculture and the Extension Service of the State College co-operate with the Federal Bureau of Agricultural Economics in this work, which is in charge of a statistician employed by the Federal Department. Under such arrangement, this office is known as the Montana Co-operative Crop and Live Stock Reporting Service. Monthly reports on crops and live stock are issued, and from time to time special reports. Through this Service, besides data relating to the state, information concerning agricultural conditions over the entire country is made available to all who desire it.

While the Federal Census and the county assessors' farm census returns form the bases of estimates of this service, the monthly reports made by a corps of more than 3,000 active reporters are the principal sources of information by which seasonal reports are issued. The work of these voluntary reporters is done without pay, and the services that they render merit state-wide recognition and credit, for they are serving in a most worthy manner their state, country, and the farming and related industries.

More than ninety per cent of the reporters are farmers and stockmen, but bankers, managers of co-operative concerns and elevators, dealers, and others are represented. As a majority of them are veterans at the work, their judgment is highly respected.

Reports from them are received at the office of the statistician, where they are grouped according to districts and counties, edited, tabulated, averaged, weighted and analyzed. Coming from all sections of the state, reports upon varying conditions in different localities tend to balance one another, but distinctly show the trend of conditions. In effect, this system is a pooling of information by reporters, which is summarized by this office into reports for the entire state. By this method most of the so-called "guess-work" is eliminated. The consolidated state report goes to make up its part of the report for the whole United States.

In accordance with established system, all estimates of crop production for 1922 are subject to final revision in December, 1923. Livestock numbers are revised for previous year annually in January.

**Acknowledge-
ments**

The author is indebted to F. W. Beier, Jr., formerly Agricultural Statistician for Montana, who outlined the scope of this volume, and assisted in the preliminary preparation of part of the material.

Thanks are due Mr. C. C. Davis, Commissioner of Agriculture, for his valued suggestions and guidance in the organization and assemblage of the subject matter.

Mr. Chas. D. Greenfield, Jr., prepared the historical sketch, a large part of the matter pertaining to lands, the forest and timber data, and assisted with some other chapters. He also had charge of the details of publication.

Entire credit should be given to William T. Lathrop, of the Weather Bureau, for the well presented section on Montana climate and rainfall.

The Crop and Live Stock Reporters of the state deserve full recognition for their services, upon which reliable estimates depend.

Miss Rose A. Lacey, Miss Agatha Schulten, and Anna I. Seiler, of this and associated offices, are to be commended for their assiduous work in the preparation of tabular and other matter contained herein.

GEO. A. SCOTT,

Agricultural Statistician for Montana.

HISTORICAL SKETCH OF AGRICULTURE IN MONTANA

Though agriculture had its beginning in Montana seventy-eight years ago, it is only now slowly emerging from the formative period, fixing those types of farming best adapted to the various parts of the state. The comparatively little farming in the state prior to 1890 was subsidiary to the livestock industry. From that year to 1905 the expansion in the farm areas was chiefly on irrigated lands. Since 1905 the expansion has been on the non-irrigated lands. This has been a period of land acquisition rather than of farm-making. The present broad and growing interest in mixed farming, in hogs, dairy cattle, and cultivated crops, signalizes that the era of permanent agriculture has come. Significant of the new order is the marked growth of the acreage successfully devoted to corn. While wheat will probably continue to be the state's chief crop for some time to come, the frontiers of the northern corn belt already have been extended to include the eastern half of Montana.

Live stock in several forms has from the beginning played a prominent part in agriculture in Montana, and is covered more fully in a following section devoted to the live stock industry. The half century of live stock production has spanned the ebb and flow of the range cattle and sheep industry, and the commencement of the swell toward even greater production as a result of increased numbers of stock on fenced farms and ranges.

Montana's First Husbandman Father De Smet, a Catholic missionary to the Indians, was Montana's first husbandman. In 1845 he seeded a patch of ground to grains and vegetables at St. Mary's Mission in the Bitter Root Valley, near the present town of Stevensville. A few farms were established in the same valley in the next two decades. The first considerable influx of people to Montana Territory was precipitated by the Alder Gulch gold discovery in 1863. A few turned to agriculture.

In 1864 there were a few farms on the eastern slope of the Rockies, and a few in the Bitter Root valley. The first homestead entry in Montana was made by David D. Carpenter on an application to the Helena land office, filed August 1, 1868. Patent was issued February 10, 1871 for 150.55 acres. Part of this tract is now embraced in the grounds of the Lewis and Clark County hospital.

The first official mention of farm and live stock wealth for the state, is found in the first report of the territorial auditor, "up to December 4, 1865". In the counties of Madison, Edgerton (now Lewis and Clark), Beaverhead, and Gallatin, a total of 82,706 acres were "claimed".

Improvements were valued at \$128,369. These four counties returned for assessment purposes 4,325 head of oxen, 1,207 horses, 464 mules and asses, 1896 cows and calves, 1769 sheep and 249 head of swine. No returns were received from the counties of Jefferson, Deer Lodge, Missoula, Chouteau and Big Horn (later changed to Custer).

Mining Stimulates Agriculture By 1870 there were 851 farms in the territory, according to the federal census. They contained 139,537 acres of which 84,674 acres were reported improved. Only one-tenth of one per cent of the state's total area was devoted to agricultural purposes. This small fraction was divided among a few districts, most of them in close proximity to the mining camps. One was in the Bitter Root, another near Missoula, one near the Madison and another near the Beaverhead county mining camps. Farming had started in the Prickly Pear valley near Helena and on the Sun River near Fort Shaw. There were four farms in Chouteau county, near Fort Benton, and, according to the census returns, there was one lone farmer in Custer county which comprised at that time the eastern half of the

territory. He lived under the walls of Fort Peck where the Poplar river empties into the Missouri. The agricultural possibilities of the Gallatin were the first to be generally appreciated, in 1870 that county leading in the number of farms—178—as well as in the total value of farm products. Jefferson had 141 farms, Lewis and Clark 106, Deer Lodge 105 and Madison 102. Deer Lodge led in improved acreage, closely followed by Lewis and Clark and Meagher counties. Then came Jefferson, Missoula and Gallatin. In the cash value of farms, Lewis and Clark ranked first, followed by Deer Lodge and then Gallatin. Nearly half the total wheat and oat production of the territory in 1870 was from Gallatin county. There were three flour mills in that county, three in Missoula and one in Madison county.

During the next ten years the number of farms or more properly, ranches, in the territory more than doubled, the principal increases being in Madison, Missoula, Custer, Chouteau, Meagher and Lewis and Clark counties. The Fort Peck farmer abandoned operations, there was a net decline of three farms in Gallatin county in this decade and a pronounced decline in Jefferson county. The Meagher expansion was in the Judith Basin and the Custer along the Yellowstone. The production of ranch butter declined, probably because of the wane of the mining districts and the growth of transportation facilities. Wheat, which was the chief crop in 1870, was superseded by oats in 1880, the stage lines and military posts affording a home market for it.

Railroads	These ranch settlements were devoted chiefly to livestock raising, although the crop production of the territory was sufficient for the needs of the sparse population. Reports of the territorial governors and of the United States surveyor-generals mention the big agricultural possibilities of the territory but dwell upon the necessity of rail transportation to provide a market outlet before these possibilities could be realized upon. Farming remained at a standstill but stockraising developed. The building and operation of the Utah Northern from Ogden, Utah to Garrison in 1880 gave stock growing an impetus in the western part of the state, as did the construction in 1883 of the Northern Pacific to the industry in the eastern part of the state. Prior to the building of the Northern Pacific, marauding Indians made stock growing in eastern Montana a hazardous undertaking.
Benefit	
Stock Raising	

In the decade from 1880 to 1890 rural settlements spread out along the Yellowstone as far east as Glendive, through the Big Horn and Powder River regions, in two districts in the Milk River valley, and in the Flathead country around Kalispell.

One of the material factors in the development of the eastern part of the territory in this decade was the elimination of approximately 20,000,000 acres from Indian reservations. This acreage—a little less than one-fourth of the total for Montana—was added to the public domain. Stockmen seized the opportunity. Ranges were extensively stocked with cattle, and later, with sheep. It was a period of inflation when eastern and foreign capital was poured into the range herds. Bottom lands along the streams were acquired by big cattle concerns. As early as 1883 registers and receivers of U. S. Land offices in the state called attention to the practice by cattle companies of having their riders and friends file upon such lands under the desert land act. The company put the water upon the land, the entryman proved up, received his patent and then transferred the tract to the company. The desert land act was passed in 1877 and in the next four years there were 370 desert claim filings made in the territory of Montana, covering 122,461 acres. In the same period there were 608 homestead entries but covering only 93,671 acres. By 1890 most of the romance and much of the capital invested in the livestock business had been lost, and it was stabilized on a firm basis with fewer persons engaged in it. In the decade from 1890 to 1900 there was a decline of population in the livestock districts of eastern Montana, but the number of cattle marketed yearly held fairly uniform.

The Non-Irrigated Farmer Comes The number of farms increased from 851 in 1870 to 1,519 in 1880, to 5,603 in 1890 and to 13,370 in 1909. In the next decade the number of farms nearly doubled, and from 1910 to 1920 they more than doubled, the federal census for 1920 showing 57,677 farms. In 1880 there were 262,611 acres of improved farm land in the state which had increased to 915,517 acres in 1890, of which two-fifths were irrigated. In 1900 there were 1,736,701 acres of improved farm land, more than one-half of which was irrigated. During the course of the next ten years the non-irrigated farmer made his appearance, and of 3,640,309 acres of improved farm land, a trifle less than one-half was irrigated. By 1920 the federal census reported 11,007,278 acres of improved farm land in the state of which only fifteen per cent was under irrigation ditches.

In 1900 there was little farming done in Montana east of Yellowstone county, except for a narrow strip in the lower Yellowstone valley. There was practically no farming in northern Montana except in the Milk River valley. By 1910 the non-irrigated table lands back of the main valleys were being farmed. In the next ten years every county in the state, east of Flathead, Lewis and Clark, Broadwater and Park, with the exception of Cascade, showed an increase in rural population of 50 per cent or over. That year 37.5 per cent of the state's total area was devoted to farms, compared with one-tenth of one per cent in 1870.

Original homestead entries made in Montana reflect the development of agriculture. The number of entries by years and the total acreage covered by them are shown in tabular form in the section devoted to "Lands." It will be noted that filings increased following each new railroad built into or through the state, but the lands taken up were not confined to territory close to the rails. The year 1910 holds the record for homestead filings in the state, when 21,982 filings were recorded, covering 4,732,806 acres. Filings for the next seven years continued to be very large, but beginning with 1918, the number of filings markedly decreased.

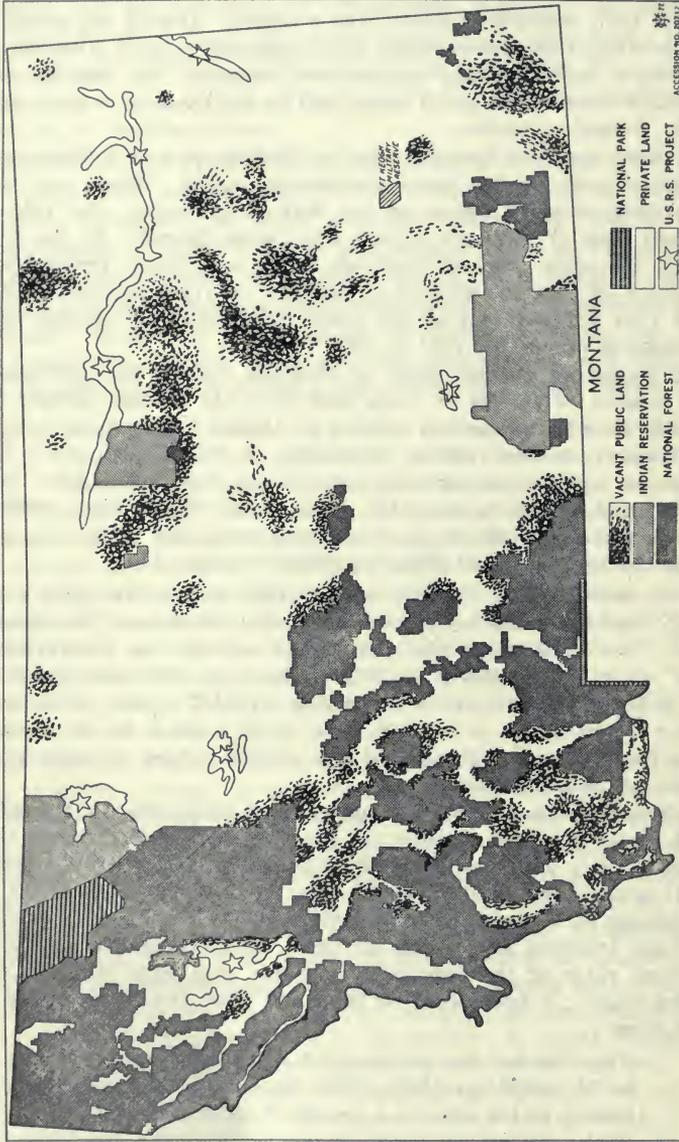
Land Filings in Montana Nearly all of the total acreage filed upon in the state for agricultural purposes has been taken up under the general homestead laws, and but little under the desert land act and the stockraising homestead act. From March 3, 1877 to June 30, 1922 only 14,495 final entries were allowed under the desert land act, covering 2,731,937 acres. From the passage of the stockraising homestead act to June 30, 1922, 10,835 original entries were made, covering 3,666,836 acres. Under the Homestead Act, 221,259 entries covering 47,882,838 acres have been made, all told, in Montana.

The earliest estimate available on agricultural production in Montana was made by the United States Surveyor General for the year 1869, and included the following: wheat, \$900,000; barley and oats, \$500,000; potatoes, \$1,000,000; hay, \$200,000; vegetables, \$75,000; poultry and eggs, \$100,000; dairy products, \$400,000; total, \$3,175,000.

The estimates of acreage and production made by the United States Department of Agriculture are available back as far as 1882. The acreage, average yield, total production, and farm value of the important crops for each year are given in the tables in the following pages. A brief study of them will show the expansion of the acreages of the various crops.

Montana Has Learned This increase has accompanied a gradual shaping of men and methods to fit conditions that attend farming in Montana. The agricultural history of the state is a record of advance out of successive periods of trial. Experience must be gained to make new land yield a safe living to families who farm the soil. Sometimes the evolution toward stable agriculture is a costly process, but the men and women who achieve success by proving their adaptability to their environment have all contributed toward the store of experience that makes farming less hazardous to those who join them or come after. Montana is better off in 1923 than in 1913, because of the lessons learned after the vast expansion that took place early in the decade.

TITLE LAND MAP OF MONTANA



(Courtesy U. S. Reclamation Service)

THE LANDS OF MONTANA

Montana, third in area of the states, is perhaps more diversified physically and topographically than even might be expected within its broad limits. The state averages 275 miles in width from north to south, and 535 miles in length. It contains 94,078,080 acres of which 589,440 acres are water surface, leaving a land area of 93,568,640 acres. Within the limits of Montana are the headwaters of three great drainage basins. The drainage of the western part of the state reaches the Pacific ocean through the Clark Fork of the Columbia river; the drainage of a portion of the northwestern part is into Hudson Bay through St. Mary's river; and the drainage of the central, southern, and eastern districts is into the Gulf of Mexico through the Missouri river and its tributaries.

The western two-fifths of the state is covered with numerous mountain ranges, with rather abrupt drops between into foot-hills and valleys, the altitude of the latter ranging, for the most part, between 2,000 and 5,000 feet. The eastern three-fifths of the state may be described as a rolling plain, with a general and gradual slope from the higher mountain altitudes to below 2,000 feet in places near the eastern border. But this plain is broken here and there by several groups of mountains and hills, and in the southern part by spurs from the main range of the Rockies, where, along the southern line some peaks reach an elevation in excess of 12,000 feet. In still other sections the plain is rough, and chiefly suitable for grazing purposes.

Altitude of Montana According to the Thirteenth Annual Report of the U. S. Geological Survey, Part II, the average altitude in Montana is 3,400 feet; while one-half of the state lies at an altitude of less than 3,000 feet, and three-fourths at less than 4,000 feet. Montana's average altitude is much lower than that of the other western states in the Rocky Mountain region, which largely offsets its disadvantage of being farther north, so that climatic conditions for agricultural purposes are more favorable in Montana than in many districts of the states to the south.

The land of the state has been roughly classified as follows: Farming land, 30,000,000 acres; mountain and forest lands, 26,000,000 acres; and grazing land, 37,000,000 acres. Of the 67,000,000 acres thus classified as farm and grazing land, the records of the State Board of Equalization, on the 1922 returns, show that 49,152,321 acres were assessed under such classifications at an average value of \$11.62 per acre or a total valuation of \$570,940,104. This is exclusive of the value of improvements, but the figures include some timbered areas that were returned and assessed as grazing lands.

Assessments on irrigated land in Montana in 1922 averaged \$51.38 an acre; on non-irrigated farming land, \$13.48 per acre; and on good grazing land, \$6.51 an acre. Because the classifications of lands were not uniformly adhered to in levying assessments, accurate data are lacking as to the acreage in the several different classes.

The areas in crops in this state for the past three years were: 6,702,000 acres in 1920; 6,399,000 acres in 1921; 6,872,000 acres in 1922.

Data covering the utilization and ownership of lands within the state, the number of farms by counties, with their total acreage and values, and other data, are shown in the tables in the following pages. Irrigated lands are taken up in a separate section.

Soil Survey Data Very few definite and reliable data covering the soils of Montana are to be had. However, a reconnaissance soil survey of the state was begun in 1921 by the U. S. Bureau of Soils in co-operation with the State Experiment Station. More than eleven million acres have been surveyed to the present time. The work in Sheridan, Daniels, Roosevelt and Valley counties and about one-third of Phillips county, has been completed. Reports for the first three of above will shortly be available for distribution, while that for Valley county will not appear until 1924, according to announcements. The reports will show the topography, soil character and classifications, areas under cultivation, and the county classification of lands, combined with topographical maps. A detailed soil survey of the Bitter Root Valley was made in 1917 by the U. S. Bureau of Soils.

Many types of soil are found in the state, variations being common in the same localities. The soils differ in mechanical composition, texture, source and method of formation. Yet all of these soils have been found to contain a rich store of the elements necessary for the proper growth of the crops which are adapted to the climatic conditions of the state.

HOW TITLE TO THE PUBLIC DOMAIN HAS PASSED IN MONTANA

(Total area land surface, 93,568,640 acres.)

Land grants to the state	5,869,618 acres
Original grants to Northern Pacific Ry. Co.....	17,576,672 acres
Original homestead entries from 1869 to 1922 inclusive. Number 221,259.....	47,882,838 acres
Final desert land entries from March 3, 1877, to June 30, 1922, inclusive. Number 14,495	2,731,937 acres
Timber and stone entries from June 3, 1878, to June 30, 1922, inclusive. Number 5,190	663,392 acres
Original stockraising homestead entries from time of passage of act to June 30, 1922, inclusive. Number 10,835.....	3,666,836 acres
Coal land entries from March 3, 1873, to June 30, 1922, inclusive. Number 505.....	64,718 acres
Applications filed under the mineral leasing act of February 25, 1920, from date of passage to June 30, 1922, inclusive.....	3,707 acres
Total segregations of Carey lands June 30, 1922. (For irrigation under state control)	99,322 acres
Carey lands patented from August 18, 1894, to June 30, 1922.....	66,266 acres
Grand total entered under the various land laws (does not include total of Carey lands segregated but only those patented, which issues only after reclamation)	78,411,646 acres
State lands sold 1909 to 1922, inclusive.....	1,102,412 acres
State lands remaining unsold	4,514,698 acres
State lands under lease for grazing or agricultural purposes.....	2,453,597 acres
State lands under lease for oil drilling.....	211,136 acres
Original Northern Pacific land grants	17,576,672 acres
Total acreage now owned by Northern Pacific.....	3,687,385 acres
Total acreage lands offered for sale by Northern Pacific, January, 1923.....	1,354,296 acres
Total acreage private lands assessed, 1922.....	51,990,875 acres
Total acreage under Federal control, January, 1922.....	38,679,096 acres

MONTANA LANDS UNDER FEDERAL CONTROL*

Public lands, June, 1922, unreserved and open to filing.....	5,659,879 acres
(U. S. General Land Office Report, June, 1922.)	
National forests, net area, June, 1922 (U. S. Forest Service).....	15,933,889 acres
Indian reservations, area under federal control, June, 1921.....	3,543,353 acres
(U. S. Statistical Abstract, 1921.)	
National Park and Monument reservations (National Park Service).....	1,108,640 acres
Military reservations, area under federal control, Nov., 1922.....	57,901 acres
(U. S. War Department.)	
Federal Bird reserves, Willow Creek, Pishkun, Nine-Pipe and Pablo.....	Area unknown
National Bison range (Congressional report).....	18,000 acres
Oil land withdrawals outstanding, June 30, 1922.....	1,345,151 acres
(cover both surface and mineral)	
Phosphate land withdrawals outstanding, June 30, 1922.....	287,833 acres
Power site reserves	145,785 acres
Public water reserves	7,278 acres
Reservoir site reserves	9,080 acres
Well drilling reservoir reserves.....	40 acres
(U. S. General Land Office Report, June, 1922.)	
Total area of lands in Montana over which federal control of surface and mineral rights is exclusively exercised.....	28,116,879 acres
Coal land withdrawals outstanding, June 30, 1922 (in most instances the mineral rights only are reserved).....	10,562,217 acres
(U. S. General Land Office Report, June, 1922.)	
Grand total of acreage in Montana under federal control.....	38,679,096 acres

ORIGINAL HOMESTEAD ENTRIES IN MONTANA

Year	No. of Original Homestead Entries	Acreege of Original Homestead Entries	Acreege Public Lands Disposed of or Patented	Public Domain Acreege
1869	48	7,624		86,887,316
1870	213	33,458		
1871	309	48,338		
1872	265	41,366	67,568	
1873	49	5,303	25,894	
1874	22	2,760	21,368	
1875	38	5,286	19,839	
1876	86	12,179	28,068	
1877	52	6,597	12,688	
1878	134	29,494	10,076	
1879	140	18,093		
1880 (1)	282	39,139	108,593	
1881	392	1638 entries 56,361	249,637 ac.	109,579
1882	445	64,682		186,463
1883 (2)	569	81,213		443,324
1884	548	81,821		625,292
1885	460	70,591		1,112,140
1886	455	68,633		911,574
1887 (3)	437	66,461		2,536,037
1888	509	77,697		282,597
1889	564	85,407		462,428
1890	559	85,246		481,816
1891	795	4938 entries 119,215	738,112 ac.	522,980
1892	1,663	248,279		587,262
1893	1,571	237,248		631,868
1894	1,155	167,358		326,114
1895	1,212	177,892		418,302
1896	1,399	211,473		683,617
1897	1,239	187,148		341,229
1898	1,502	225,541		699,318
1899	1,652	240,512		889,894
1900	2,230	328,437		1,158,294
1901	2,901	14,418 entries 413,373	2,141,103 ac.	67,963,057
1902	2,829	408,034		65,803,307
1903	2,691	388,554		61,439,514
1904	2,492	362,882		57,885,663
1905	2,386	341,931		56,455,435
1906	3,398	503,789		55,748,400
1907	3,347	489,985		51,398,631
1908	5,328	777,455		49,799,514
1909	7,484	1,159,486		46,532,440
1910	21,982	4,732,806		42,900,229
1911	15,399	54,838 ents. 4,257,302	9,578,295 ac.	36,015,943
1912	12,597	3,600,260		32,030,646
1913	17,844	3,996,358		29,053,995
1914	20,662	4,429,616		21,542,853
1915	16,146	3,500,268		22,237,660
1916	14,486	3,318,450		19,065,121
1917	15,197	3,471,286		16,649,725
1918	9,429	2,124,092		11,818,414
1919	5,462	1,314,235		8,201,019
1920	7,802	2,095,510		7,133,594
1921	5,433	1,573,149		5,973,741
1922	4,970	1,441,175		5,720,125
				5,659,879
	145,427		35,175,691	
Grand total	221,259 entries		47,882,838 acres	

- (1) The Utah Northern R. R. was built into Montana in this year.
- (2) The Northern Pacific R. R. was completed across the state in this year.
- (3) The Great Northern R. R. completed as far as Great Falls in this year.

*Lands embraced in U. S. Reclamation projects are not included.

Under regulations of the Federal Government, most of above lands are used for agricultural and commercial purposes, and for public enjoyment. The state also receives a share of the earnings from the National Forests, Public land filings, oil and mineral leases, etc.

FLOUR AND CEREAL MILLS

Milling is one of the most important state industries from the standpoint of agriculture. Montana mills have at their doors the finest milling wheat in the world, and they have expanded rapidly with the increased production of wheat during the past twelve years.

On January 1, 1923, there were 66 flour mills in operation in the state, having a total aggregate rated capacity of 11,778 barrels of flour per day. More than 16 per cent of the 1921 wheat crop of Montana, or about 5,584,000 bushels, was milled in these establishments, from which 1,263,096 barrels of flour were made. It is estimated that about 8 per cent of this amount of wheat was taken by the mills in exchange for flour.

During the year ending June 30, 1922, it required 4.43 bushels of wheat to produce a barrel of flour in the Montana mills; whereas the latest available data (1919) on flour extraction for the United States as a whole gives 4.62 bushels to produce a barrel of flour, which shows the distinct superiority of Montana wheats in flour extraction.

It has been estimated that about 75 per cent of the flour milled in the state is shipped to out-of-state markets, which includes Atlantic and Pacific coast and intermediate points, as well as foreign ports. The high quality of the Montana product is widely recognized.

Besides the flour mills, there are two large cereal mills in operation within the state, which manufacture rolled oats, wheat flakes, farina, pearl barley, and other cereal products. These mills afford a market for large quantities of oats grown in the state, as well as barley and wheat. The well-filled and heavy-weighting oats grown in the state are particularly adapted for the manufacture of rolled oats.

FLOUR MILL, CEREAL AND GRIST MILL PRODUCTS.

	1922 (1)	1919 (2)	1914 (2)	1909 (2)
Number of Mills.....	66 (3)	69	33	12
Wheat flour produced, bbls. (196#)	1,263,096	1,271,861	871,918	375,440
Rye flour—barrels	no data	138	799	856
Oat meal, Rolled Oats, and other Cereal foods, (pounds).....	2,957,196	8,862,946	940,648	.....
Feeds, including bran, middlings, etc. (tons)	47,015 (4)	53,629	43,314	14,036

(1) Data for 1922 furnished by the Montana Trade Commission, and for the flour mills covers operations for the year ending June 30, 1922.

(2) Data from U. S. Bureau of the Census.

(3) Number in operation on January 1, 1923.

(4) Does not include feeds produced by one large cereal mill.

FORESTS AND TIMBER IN MONTANA

*Montana's timber stand is estimated to aggregate 59,509 million feet, and the current annual growth for all species on the productive commercial timber land is roughly estimated at 790 million feet. The average annual lumber cut for the six year period of 1916-1921 inclusive was 329,682,000 feet. The total annual cut for the state, inclusive of lumber, round timbers for the mines, cordwood, hewn ties, posts, pilings, shingles and lath, averages 600,000,000 feet or 190,000,000 feet less than the current annual growth.

The lumber cut of Montana in 1921 was 47.7 per cent less than the 1920 cut and was the smallest in Montana since 1905. "Unsettled business conditions throughout the country, high freight rates and the cessation of demand temporarily checked the natural trend toward increased production in the state," reports the U. S. Forest Service.

Approximately two-thirds of the state's timber resources are under the jurisdiction of the federal government, while the state owns approximately four per cent, and private interests about twenty-nine per cent of the timber resources.

The estimated stand by ownership is as follows:

National Forests	35,250 million feet
National Parks	2,006 million feet
Public Domain	27 million feet
Indian Reservations	2,425 million feet
<hr/>	
Total Federal	39,708 million feet
State	2,300 million feet
Private	17,501 million feet
<hr/>	
Total	59,509 million feet

Timber acreages are incomplete. The net area of national forests in Montana, June 30, 1922 was 15,933,889 acres. The state owns 500,000 acres of timber land. Approximately 1,000,000 acres of timber land are listed by assessors.

The Forest Service estimates the stands of timber on the national forests by species as follows:

Species	Million feet
Lodgepole pine	14,599
Douglas fir	7,366
Western larch	4,364
Western Yellow pine	3,427
Engelmann spruce	2,749
Miscellaneous	1,188
Western white pine	630
White bark pine	416
Alpine and white fir	396
Cedar	115

Nine-tenths of the 1921 lumber cut was sawed from three species, western-pine, larch and Douglas fir. Nearly one-half of the cut was western pine, two-fifths of it was larch, and about one-fifth Douglas fir. Of the total cut of 213,857,000 feet, 77,065,000 feet were cut in Missoula county, 57,027,000 feet in Flathead, 45,406,000 in Lincoln, 16,459,000 feet in Ravalli, and 7,388,000 in Sanders. The only other counties in which the cut was more than a million feet that year were Mineral, Gallatin and Granite. Some lumber was cut in 1921 in 33 of the 54 counties of the state. That year 142 saw-mills were active and 89 were idle. The forest service estimates that 40,240,000 feet of the 1921 lumber cut was on national forests. The cut in 1921 on state lands is estimated at 28,000,000 feet. Deducting these from the total cut, shows that 145,617,000 feet of lumber was cut that year from privately owned lands.

NOTE: *Data furnished by the U. S. Forest Service.

The output of poles, piling, posts, hewn ties and round mining timbers was much below normal in 1921. Some companies specializing in that business did not operate at all.

A census made by the U. S. Forest Service shows there were 2,575 wage earners engaged in the production of lumber and timber products in 1921. Total expenditures that year for salaries and wages, contract work and materials were \$5,857,104. In the value of products of industries in Montana, lumber and timber ranked as the second largest industry, according to the 1919 census.

The Forest Service has not completed the compilation of data for the 1922 lumber cut in the state. The following data for 1922 is taken from a report of the Montana Lumber Manufacturer's Association:

Total lumber cut, 236,739,778 feet. Total shipments for the year were 9,667 cars, or 255,378,460 feet, which was 18,000,000 feet in excess of the year's production. In 1921 according to the figures of the association the cut exceeded shipments by 53,687,333 feet. Of the lumber shipped in 1922, Montana consumed 89,636,275 feet. Illinois was the second best market, taking 863 cars, Iowa 737 cars, Minnesota 718 cars, Wisconsin 414 cars, North Dakota 310 cars, Colorado 300 cars, Nebraska 374 cars, Michigan 296 cars and Missouri 252 cars. A total of 1,306 cars went to Atlantic coast states and 167 cars to other eastern states.

The lumber cut of Montana as far back as 1870 is given in Bulletin No. 1119, of the U. S. Department of Agriculture, as follows:

1870	12,571,000	1911	228,416,000
1880	21,420,000	1912	272,174,000
1890	89,511,000	1913	357,974,000
1899	255,685,000	1914	317,842,000
1904	236,430,000	1915	328,000,000
1905	189,291,000	1916	333,900,000
1906	328,727,000	1917	350,000,000
1907	343,814,000	1918	340,000,000
1908	311,533,000	1919	287,378,000
1909	308,582,000	1920	410,000,000
1910	319,089,000	*1921	213,857,000

*U. S. Forest Service.

IRRIGATION IN MONTANA

Irrigation antedates the discovery of gold in Montana. Father De Smet, in 1845, in the Bitter Root valley, was its first exponent, and a small irrigated settlement grew up around St. Mary's mission. The expansion of irrigation, between 1860 and 1870, was simultaneous with that of agriculture, some of the men disappointed in gold mining turning to farming in the rich grass-covered valleys.

At first only crude ditches carried part of the direct flow of a few of the mountain streams to the land. It was natural that in the following years the lands which could be most easily and cheaply watered were taken up and irrigated first, leaving for later years the development of projects which required more expensive ditch construction, diversion and storage dams, and pumping plants.

Now Montana has nearly 3,000,000 acres of irrigated land, and, according to the U. S. Census figures for 1920, its irrigation works served 10.5 per cent of all irrigated lands in the country. In irrigated lands Montana ranked fourth, being exceeded only by California, Colorado and Idaho. The same source of information shows that the estimated final cost per acre of all existing enterprises was \$16.19, which is a lower average with a single exception, than for any other western state. About 90 per cent of the lands irrigated in 1919 in the state were watered under gravity systems from streams.

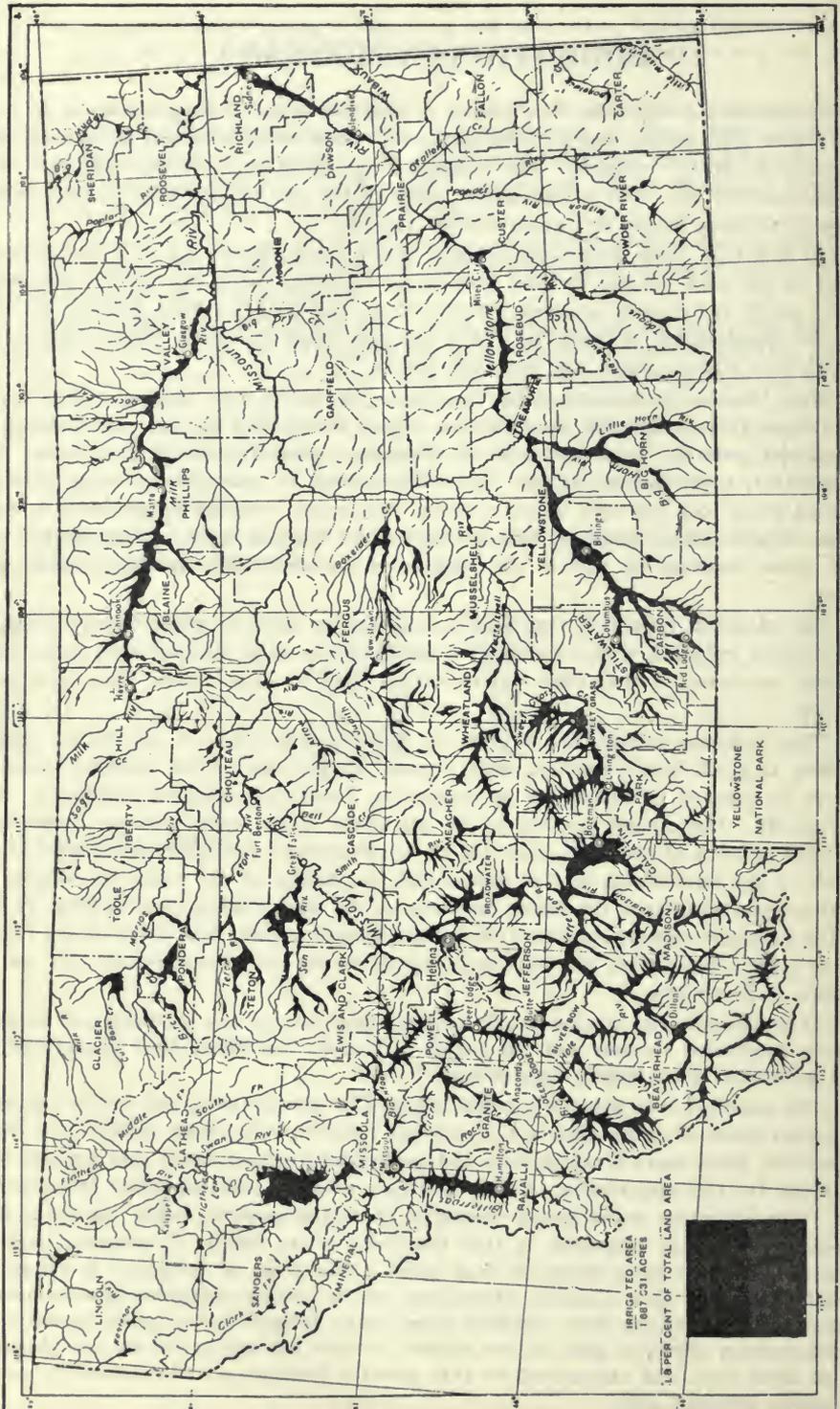
The Montana Irrigation Commission on a survey made in 1920, reported 2,136,974 acres actually irrigated, with an additional 885,543 acres to be watered soon under plans or works completed at that time. It estimated 2,266,000 acres more were feasible of irrigation.

The Montana Experiment Station in Bulletin 103, says of the water supply: "Montana is much better supplied with streams than many of the western states, as there is no part of it which can be classed as desert, all portions yielding at least some run-off. The greater portion of the discharge of the main streams comes from the higher portions of the state along the Rocky Mountains and their spur ranges. * * * Because of the narrowness of the valleys and the height of the bordering slopes, the diversions practical from the lower portions of the main streams are limited to less than the available supply, and the Yellowstone, Missouri, and Clark Fork of the Columbia will always carry from the state water which would be of great value if its use for irrigation were feasible.

"The amount will be continually reduced, however, by the extension of irrigated areas on headwater streams and tributaries. On these the direct flow during the low water period has been largely appropriated."

The irrigated area is being steadily enlarged by new projects, and by the extension and improvement of many older ones. Several comparatively small projects are under construction, many more contemplated, and preliminary arrangements and surveys have been made for the construction of several larger projects covering many thousands of acres. The enormous water power resources and developments within the state have a direct bearing upon irrigation, in that the cheap power admits of pumping water at moderate costs to irrigate relatively high lands. This form of irrigation is already in successful operation upon a number of projects and its further utilization is contemplated in various sections of the state. Besides these, many farmers in the non-irrigated areas are constructing earthen dams across coulees to hold the spring run-off for irrigating part of their land, and the growth of this practice promises to add materially to the part-season irrigated area.

IRRIGATED AREAS IN MONTANA



(From U. S. Bureau of the Census)

The growth, area, location, and relative producing capacity of Montana's irrigated lands are shown more in detail in the following tables and by the accompanying map.

Drainage

Practically all of Montana's lands, including the areas under irrigation, are provided with excellent natural drainage, and very little artificial drainage is or will be required. The Census report of 1920 shows that 164,439 acres of land in farms in Montana have or need drainage, which is less than one per cent of the total area in farms. Drainage east of the mountains is almost entirely needed to relieve water-logged or seeped land as a result of irrigation; while west of the Divide most drainage is required to relieve or to protect lands which are swampy or subject to overflow.

On January 1, 1920, the Census Bureau found there were 17 drainage enterprises in operation in Montana, which covered a gross area of 168,682 acres. Of this amount, 19,630 acres were reported as being swampy, subject to overflow, seeped, or alkali land. The estimated cost per acre to complete the drainage under these enterprises was \$5.02.

Yellowstone, Stillwater and Big Horn counties have the largest areas included within drainage enterprises east of the mountains, while Richland and Gallatin counties have smaller areas in this class. In the western part of the state, Flathead, Lincoln, Ravalli and Powell counties contain most of the areas within drainage enterprises. In several other counties throughout the state there are small tracts which are provided with artificial drainage, or where additional drainage is contemplated.

CAPITAL INVESTED, COST PER ACRE, AND COST OF MAINTENANCE OF IRRIGATION WORKS.

(U. S. Bureau of the Census—1920.)

	Montana		U. S.
	Total	Average Per Acre	Average Per Acre
Capital invested in irrigation works.....	\$ 52,143,363	\$ 18.94	\$ 26.81
Estimated final cost of existing irrigation works.....	70,079,028	16.19	22.84
Average cost per acre for operation and maintenance, 1919.....	-----	1.26	2.43

AREA AND PER CENT OF LAND IRRIGATED, AND CHARACTER OF IRRIGATION ENTERPRISES.

	1920 (1)	1919 (2)	1909 (2)
Total acreage actually irrigated (6).....	2,136,974	1,681,729	1,679,084
Character of Irrigation Enterprises:			
Individual and Partnership		976,645	
Cooperative		393,257	333,926
Carey Act	100,000	54,771	9,648
Irrigation District	51,698	35,153	412
Commercial		34,115	62,544
U. S. Reclamation Service.....	145,000 (3)	88,291	14,077
U. S. Indian Service.....		98,887	67,417
Other	1,839,576 (4)	640	----- (5)
Acreage enterprises were capable of irrigating.....	3,022,517	2,753,498	2,205,155
Acreage included in enterprises.....		4,329,148	3,515,602
Number of farms irrigated.....		10,807	8,970
Per cent of farms irrigated.....		18.7	34.2
Per cent of land in farms irrigated.....		4.8	12.4
Per cent of improved land in farms irrigated.....		15.3	46.1

(1): Figures for 1920 from report of Montana Irrigation Commission Surveys made in 1920.

(2): Data from U. S. Bureau of the Census. Much land covered by irrigation ditches, and ordinarily irrigated, was not irrigated in 1919, due to that year being the third successive year with sub-normal precipitation, which reduced the supply of water in streams, especially those not originating in mountain districts, hence rather low acreage shown for 1919.

(3): Includes both U. S. R. S. and Indian Service irrigation.

(4): The Commission did not segregate into same classes as the Census Bureau, hence this item composed chiefly of acreage under Individual Partnership and Cooperative.

(5): These classifications not made in 1910 Census.

(6): The U. S. Bureau of the Census shows that in Montana 951,154 acres were irrigated in 1900, and 350,582 acres were irrigated in 1890.

IRRIGATED ACREAGE BY COUNTIES—1922*

County	Approximate Acreage Irrigated—1922.	County	Approximate Acreage Irrigated—1922.
Flathead	16,000	Judith Basin	18,000
Lincoln	6,000	Lewis & Clark	46,000
Blaine	63,000	Meagher	31,000
Chouteau	7,500	Musselshell	3,300
Glacier	15,000	Wheatland	20,000
Hill	3,000	Dawson	2,200
Liberty	800	Garfield	400
Pondera	96,000	McCone	500
Teton	61,000	Prairie	500
Toole	900	Richland	25,000
Daniels	1,200	Wibaux	200
Phillips	32,000	Beaverhead	340,000
Roosevelt	1,600	Madison	117,000
Sheridan	2,000	Silver Bow	13,000
Valley	23,000	Carbon	114,000
Deer Lodge	32,000	Gallatin	135,000
Granite	36,000	Park	86,000
Mineral	1,000	Stillwater	39,000
Missoula	92,000	Sweet Grass	48,000
Powell	65,000	Yellowstone	119,000
Ravalli	111,000	Big Horn	51,000
Sanders	8,500	Carter	500
Broadwater	34,000	Custer	14,000
Cascade	32,000	Fallon	400
Fergus	31,000	Powder River	1,800
Golden Valley	3,500	Rosebud	32,500
Jefferson	27,000	Treasure	23,500

*These are estimates based upon data from the Census of 1919, assessors' returns, Montana Irrigation Commission, and from other sources, and should not be taken as absolutely accurate. They are presented here to show as nearly as possible the relative importance of irrigation in the different counties in 1922.

PER CENT OF CROPS GROWN IN MONTANA ON IRRIGATED LAND—1919.

(U. S. Bureau of the Census.)

Crop	Per cent of total acreage on irrigated land.	Crop	Per cent of total acreage on irrigated land.	Crop	Per cent of total acreage on irrigated land.
TOTAL, ALL CROPS	25.7	Timothy and clover.....	65.3	Potatoes	22.1
Corn	13.0	Clover	42.4	Apples	71.9
Oats	23.6	Alfalfa	58.9	Cherries	72.5
Winter wheat.....	7.3	Other tame grasses.....	52.0	Sugar beets for sugar....	89.4
Spring Wheat	10.5	Annual legumes for hay	12.1	Clover and Alfalfa seed	34.6
Barley	35.1	Small grains for hay....	5.4	Dry beans.....	44.5
Rye	1.8	Wild, salt, or prairie grasses	26.0	Dry peas	81.2
Timothy	44.3	Slilage crop	32.3	Flaxseed	2.9

NOTE: Above percentages were based upon the harvested acreages in 1919. Extreme drouth in that year caused much acreage on non-irrigated lands to be abandoned for harvest, hence the percentages shown as irrigated above are higher than usual for most crops, especially the cereals.

AVERAGE YIELDS PER ACRE OF PRINCIPAL CROPS ON IRRIGATED LAND—1922.

(With State and United States averages for comparison.)

CROPS	MONTANA		UNITED STATES
	Average yields on irrigated land*	Average yields for entire state	Average yields
Winter Wheat—bushels	27.0	16.5	13.9
Spring Wheat—bushels	26.0	14.7	14.1
Oats—bushels	48.0	32.0	29.9
Barley—bushels	37.0	25.0	25.2
Rye—bushels	20.0	14.5	15.4
Flax—bushels	11.0	7.0	9.4
Corn—bushels	33.0	25.0	28.2
Potatoes—bushels	179.0	126.0	104.2
All tame hay—tons.....	2.20	1.90	1.58
Wild hay—tons	1.27	.90	1.02
Alfalfa hay—tons.....	3.10	2.23	—
Seed peas—bushels	22.0	—	—
Sugar beets—tons	10.8	—	9.76

NOTE: *These averages were computed for the entire irrigated area of the state and should not be confused with maximum yields. In making comparisons with Montana's average yields per acre on irrigated land it should be borne in mind that much of the state's irrigated area is in the pioneer stage of development, and has not approached its potential production capacity. This is shown by the higher average yields obtained in the older and more intensively cultivated irrigated sections, where scientific application of water is combined with good farming methods.

The gross value per acre of all crops grown on irrigated land in Montana in 1919 was \$35.03, while for the entire state the average gross value per acre of all crops was \$18.30. U. S. Census 1920.)

GRAIN STORAGE

There are 659 grain elevators with a combined capacity of 20,242,000 bushels in Montana. Elevators are found in all but eight counties, and three of these raise considerable grain but are without rail transportation. The largest elevator capacity is in the central portion of the state.

These elevators are bonded by and under supervision of the Montana Department of Agriculture, which is vested with broad powers for the protection of owners of stored grain. The owner of the grain, and not the elevator, has the option of receiving his grain back at the point of first delivery or at a terminal selected by him. The storage of grain is a bailment and not a sale, and the sale of stored grain by an elevator and the use of the proceeds in the business is prohibited.

Since the last crop season, a farm warehouse storage law has been enacted, under which negotiable warehouse certificates will be issued upon the grain stored on the farm. One of the objects of the law is to give the owner of farm-stored grain a better opportunity to secure an advance on wheat he desires to hold.

GRAIN ELEVATORS.

January—1922.

District and County	Number	Capacity (Bushels)
Northwestern District		
Flathead	8	562,000
Lincoln .....	.....	.....
Northcentral District		
Blaine	14	338,000
Chouteau	43	1,009,000
Glacier	5	138,000
Hill	28	703,000
Liberty	12	302,000
Pondera	21	545,000
Teton	26	634,000
Toole	17	396,000
Northeastern District		
Daniels	14	374,000
Phillips	12	321,000
Roosevelt	26	720,000
Sheridan	34	924,000
Valley	18	462,000
Westcentral District		
Deer Lodge.....	.....	.....
Granite	3	75,000
Mineral .....	.....	.....
Missoula	16	635,000
Powell	2	38,000
Ravalli	6	150,000
Sanders	4	75,000
Central District		
Broadwater	4	220,000
Cascade	31	1,639,000
Fergus	55	1,479,000
Golden Valley	13	325,000
Jefferson	1	32,000
Judith Basin.....	31	833,000
Lewis & Clark.....	5	117,000
Meagher	3	45,000
Musselshell	11	248,000
Wheatland	11	570,000
Eastcentral District		
Dawson	11	465,000
Garfield .....	.....	.....
McCone .....	.....	.....
Prairie	6	155,000
Richland	17	542,000
Wibaux	9	297,000
Southeastern District		
Beaverhead	3	110,000
Madison	4	96,000
Silver Bow.....	.....	.....
Southcentral District		
Carbon	20	435,000
Gallatin	27	1,612,000
Park	11	389,000
Stillwater	18	553,000
Sweet Grass.....	3	130,000
Yellowstone	25	754,000
Southeastern District		
Big Horn	5	115,000
Carter	6	150,000
Custer	12	330,000
Fallon	12	330,000
Powder River.....	.....	.....
Rosebud	6	155,000
Treasure	2	45,000
Total Number Elevators in the State.....	659	
Total Combined Capacity—bushels.....		20,242,000

MONTANA LIVESTOCK

Cattle were introduced into Montana as early as 1832 by fur traders who wanted the luxuries of beef and butter at their posts, but John Grant is credited with establishing the first beef herd here in 1853. According to the first report of the territorial auditor there were 4,325 head of oxen and 1,896 cows and calves returned for assessment purposes in 1865. In 1868 the first market shipment was made by J. D. Hogan of Augusta of cattle owned by Patrick Largey of Butte. They went to Salt Lake City. The first Texas drive to Montana was made in 1869 and the last in the late eighties. The first shipment by rail was made in 1874 by Conrad Kohrs, who trailed the beef overland from Sun River to Ogden, whence they went by rail. After 1876 many shipments were trailed from Montana to Cheyenne and thence over the Union Pacific to Chicago. The completion of the Northern Pacific in 1883 markedly stimulated the industry. That year the Eastern Montana Stockgrowers' Association was organized at Miles City, which two years later was absorbed by the Montana Stockgrowers' Association that still enjoys a virile existence. In 1885, the first year for which figures are available, 79,089 head of cattle were shipped to market. In 1891 the number increased to 250,000 head, and shipments aggregated more than 200,000 head a year up to 1912, except in 1900 and 1901. Shipments declined in the next four years and then sharply increased to the peak of 1919 when 641,337 head were shipped out, followed by another downward swing.

The Changing Order

It was in the first decade of this century that encroachments of the homesteaders began to be felt by the stockmen. Prior to then the industry had been conducted on a range basis. As the steady influx of homesteaders continued, many old time outfits gave up the range.

Others, desiring to continue in the business and recognizing the changed order, acquired large land holdings for grazing and hay purposes. Still others moved from their original holdings to hay ranches adjacent to the National Forests. From 1910 to 1915 many stock outfits that only a few years before had purchased large tracts of lands, took advantage of the many times enhanced values the agricultural development had placed upon their holdings and sold them out in smaller tracts.

The drouth of 1919, with the ensuing hard winter, and the deflation of 1920, constituted a series of hard blows to Montana stockmen from which they have not yet recovered. Ranges in many parts of the state are understocked, at least compared with former years, but this understocking insures range recuperation. The next big development in the livestock industry of this state will be the gradual stocking of the smaller farms. When this is accomplished it is felt certain that Montana will annually market more cattle and of better quality than it did in the palmiest days of the range.

The Sheep Industry

While Thomas Harris is credited with bringing, in 1857, the first sheep to Montana, to the Bitter Root valley, a man named Dobbins is said to have introduced into the Deer Lodge valley the first flock of breeding sheep. In 1865 the territorial auditor listed 1,769 head of

sheep for assessment purposes, which had increased to 4,212 head by 1870 and to 249,978 head in 1880. Before the Northern Pacific reached Montana in 1883 large quantities of wool were shipped on flat-bottomed boats down the Missouri and Mississippi rivers to New Orleans and thence by steamboat to Boston. In 1890 there were 1,990,000 sheep reported in the state and in 1900 6,170,000 head. The wool clip that year of 26,020,120 pounds was the largest of any state. The peak in numbers was attained in 1901 when 6,417,000 head of sheep were listed and the high wool clip of 1904 when it amounted to 37,773,000 pounds. The same forces that operated against the range cattlemen affected the sheepmen. From 1901 to 1914 inclusive the Montana clip averaged in excess

of 30,000,000 pounds annually; in the next four years it dropped from 27,000,000 pounds to 18,685,000 pounds, in 1920 to 16,000,000 pounds and in 1922 it was 16,700,000 pounds, ranking fourth in the list of states.

It is claimed by some that range conditions in Montana are better adapted to the merino, or fine wool type, than are the cross breeds, and that under the same conditions a better quality of merino wool can be produced than of cross bred wool. Twenty per cent of Montana's clip is classified as fine wool and 80 per cent as medium. Over a period of 22 years the average weight of a Montana fleece varied from 6.75 pounds to 8.3 pounds. Over the same period the shrinkage of the scoured over the unscoured wool ranged from 61 to 66 per cent.

The sharp increase in wool and lamb prices in 1922 has stimulated interest in sheep raising. Many sheepmen are planning more extensive operations.

**Horses
and
Mules**

The range horse has played an important part in the live stock history of the state. The heavy demand for these horses during the Boer War marked the beginning of the greatest expansion in the production of them. Between the years of 1895 and 1918 the sales of range horses provided a large share of the state's income from live stock. Miles City became the central trading point for horses, and was one of the most important horse markets in the world, and buyers from all over the country came there, and drew heavily on Montana for its horses. This market enjoyed the most prominence between 1910 and 1915. Warring governments during the past 30 years have purchased many thousands of these horses. Most of these range horses carried more or less of Thoroughbred or Standardbred blood, and through their dams traced back to the descendants of the old Spanish horses of the Southwest. Such breeding, together with the conditions under which they were raised, produced animals of high spirit, great courage, vigor and stamina, for which characteristics they became noted. Most of these horses were raised upon the open range, and received little or no feed aside from the abundant and nutritious grasses of the range. During the ascendancy of this industry, the use of sires of the draft or "cold-blooded" type became more general, with the result that average size was increased somewhat.

With the exception of the passing demands of the Allied Powers during the recent war, the demand for this kind of horse has rapidly diminished since about 1914, due chiefly to increased production of horses over the country as a whole, and to the more general use of tractors, trucks, and autos. The interest in and production of range horses within the state has become less with the narrowing outlet, and the occupation of much of the former open range by settlers has reduced the possibilities for production along this line.

At present there is a surplus of horses in Montana, particularly of the range type, and there is not only little interest in raising them, but in many parts of the state they are recognized as a nuisance on the ranges. There is a growing interest in producing the farm chunk type of horse, and heavy drafters. In raising the former, the range can still be utilized to advantage, provided proper attention is given to the selection of breeding stock, and feed is supplied when needed.

Records of shipments have been compiled for only the past four years, and these show that approximately the following numbers of horses and mules were shipped out of the state during that period:

1922.....	9,200
1921.....	10,000
1920.....	29,000
1919.....	56,000

Comparatively few mules are raised or used in Montana, but they are slowly and steadily increasing in numbers within the state. The ease with which range horses have been produced seems largely to account for the small number of mules.

Swine Production Swine production is increasing in the state more rapidly than any other branch of the live stock industry at the present time. Fluctuations in volume are easily brought about by low or high prices, or other factors, although a general tendency to increase is expected to continue with the growth of population and of western industries. Production of swine grew quite in proportion to the state's population up to 1916, followed by a distinct reduction for about five years. Since 1921 greater production has been stimulated by diversification tendencies and corn-raising in greater volume. The making of excellent market hogs has been shown to be a profitable enterprise in Montana, using the extensive alfalfa and other legume pastures, and corn, barley, rye, skim milk, and other available feeds. At present the local and western markets absorb practically all the surplus hogs from the state, and this demand is expected to keep pace with a reasonable increasing supply.

Milk Cows and Dairying This branch of the state's live stock industry has enjoyed and still is making a steady growth, as a study of the sub-joined tables will show. This is due to other factors as well as to the increase in population. Climatic conditions are favorable for handling milk and its products the year round, and are conducive to healthfulness of stock as evidenced by the very low percentage of tubercular cattle in Montana, and by freedom from other diseases. The enormous production of alfalfa hay as well as other nutritious tame and wild hays, and of feed crops such as corn, barley, oats, rye, root crops, and sun-flowers, insure an abundance of the best of dairy feeds in most parts of the state. The conversion of these feeds into dairy products permits the shipment of them in concentrated form, which largely overcomes the disadvantage of being distant from heavy consuming centers. More recently the tendency toward safer farming through diversification, combined with the effect of steadier and comparatively higher prices received for dairy products, has stimulated this industry. The rapid extension of corn production in the state can be regarded as both a cause and result of increased use of dairy cows. The recent advance is marked more by the introduction of many bulls and cows of the dairy type, and by more general improvement in care and feeding of dairy cows, than by increased numbers. Indications point to a continuance of the growth of dairying in the state, in the number of dairy cows as well as in the improvement of average production and in quality of products.

The United States Bureau of the Census gives the following value for dairy products, produced in Montana in 1909 and 1919:

1909.....	\$2,093,594
1919.....	7,534,413

These amounts represent the total farm value of dairy products, excluding milk and cream consumed as such on farms where produced.

Poultry Poultry production in Montana ranks as one of the major farm enterprises. A comparison of the census data on poultry since 1880 reveals the fact that this industry has made a most remarkable growth. Improvement in the quality of the poultry, and in the methods of production has more than kept pace with the growth in the size of the industry, as is evidenced by the rapidly increasing number of flocks of standard-bred fowls, and by the more general employment of modern methods of housing, care and management.

Montana climatic conditions are extremely favorable to the raising of poultry. This has been thoroughly demonstrated by members of the State College and Extension Service staffs, and by farmers and poultry raisers over the state, as well as the fact that winter egg production is not difficult in any section of the state.

Large quantities of eggs and poultry are now imported into the state, which, with

the increasing industrial activities over Montana, indicate possibilities of good future local markets for poultry and eggs produced in the state.

Turkey raising is rapidly increasing in importance. Montana climatic conditions, the range conditions, natural range feeds, and the feeds raised locally, have proved to be especially favorable factors toward economical production of turkeys. Well matured birds can be produced in time for the Thanksgiving markets, and shipments of dressed turkeys to central markets are fast assuming large proportions.

Available statistics on poultry production in the state are confined chiefly to the data collected by the U. S. Census Bureau. The following tables indicate the extent and growth of the poultry industry in Montana.

Bees and Honey

While Montana farmers have displayed less interest in the honey industry than in other diversified lines, apiculture has made a steady growth. Statistics of the United States Bureau of the Census show that bees are kept on 1,918 farms in 35 counties. The first ten counties according to their rank in honey production in 1919 were: Yellowstone, Carbon, Ravalli, Big Horn, Sweet Grass, Cascade, Rosebud, Stillwater, Custer and Madison.

Montana ranks near the top in the production of surplus honey per hive. In 1920 Wyoming ranked first, while Montana and California were tied for second place. Montana ranked first for the four year period of 1916-1919 with an average surplus of 86 pounds per hive. Wyoming was second.

Apiculture is especially adapted to irrigated regions. Indirect benefits from bee-keeping are probably of greater value than the surplus honey produced. These indirect benefits are gained through the fertilization of plants by the pollen carried by the bees from flower to flower. This work of the bee is not only important to the production of fruits, but no less so to the attainment of full seed and fruit production in a number of forage and grain plants.

MONTANA WOOL PRODUCTION

(1880-1922.)

Year	Production (Pounds)	Year	Production (Pounds)
1880.....	1,000,000 c	1904.....	37,773,000 n
1886.....	5,031,000 *	1905.....	37,700,000 n
1887.....	5,283,000 *	1906.....	35,815,000 n
1888.....	unknown	1907.....	30,820,000 n
1889.....	9,740,000 *	1908.....	32,200,000 n
1890.....	13,929,000 *	1909.....	35,000,000 n
1891.....	14,471,000 *	1910.....	33,600,000 n
1892.....	15,670,000 *	1911.....	34,875,000 n
1893.....	17,697,000 *	1912.....	31,175,000 n
1894.....	17,642,000 *	1913.....	31,500,000 n
1895.....	19,032,000 n	1914.....	30,177,000 u
1896.....	21,530,000 n	1915.....	26,950,000 u
1897.....	20,110,000 n	1916.....	24,570,000 u
1898.....	20,935,000 n	1917.....	23,342,000 u
1899.....	30,438,000 *	1918.....	18,685,000 u
1900.....	26,020,000 *	1919.....	18,267,000 u
1901.....	30,554,000 *	1920.....	16,000,000 u
1902.....	35,567,000 n	1921.....	16,400,000 u
1903.....	30,600,000 n	1922.....	16,700,000 a-u

c—Based upon Census data.

*—Estimates of S. N. D. North, Bureau of Statistics, U. S. Treasury Department.

n—Estimates of National Association of Wool Manufacturers.

u—Estimates U. S. Department of Agriculture.

a—Tentative Revision.

MONTANA LIVESTOCK

NUMBERS OF LIVESTOCK.

(1870 to 1923.)

Year	Milk Cows	Other Cattle	All Cattle	Horses	Sheep	Swine	Mules
1870	12,400*	24,000*	36,400	5,300*	2,000*	2,600*	500*
1880	11,500*	162,000*	173,500	36,000*	185,000*	10,500*	900*
1883	14,000	590,000	604,000	39,900	405,000	17,000	900
1884	14,200	672,600	686,800	45,900	466,000	17,500	1,000
1885	23,000	615,000	638,000	105,000	625,000	19,000	2,800
1886	25,300	725,700	751,000	120,700	719,000	19,000	8,900
1887	29,000	934,500	841,800	129,000	755,000	20,000	9,200
1888	31,000	962,500	965,500	187,000	1,265,000	22,000	5,500
1889	31,400	981,800	993,900	200,000	1,391,000	23,000	5,300
1890	33,000	982,800	1,014,800	216,000	1,990,000	29,000	2,400
1891	34,000	982,700	966,700	152,000	2,089,000	35,000	1,800
1892	35,700	1,026,000	1,061,700	197,000	2,089,000	35,000	1,200
1893	36,400	1,036,000	1,072,400	207,000	2,528,000	39,000	1,200
1894	36,400	1,057,000	1,093,400	197,000	2,781,000	39,000	900
1895	39,000	1,078,000	1,117,000	198,000	2,809,000	46,000	900
1896	42,000	1,154,000	1,196,000	183,000	3,061,000	52,000	900
1897	43,000	1,177,000	1,220,000	175,000	3,123,000	51,000	900
1898	42,700	1,082,000	1,510,000	171,800	3,248,000	47,000	900
1899	44,000	953,000	997,000	165,000	3,378,000	42,300	1,000
1900	48,500*	926,500*	975,000	347,000*	3,170,000*	50,000*	2,800*
1901	49,400	960,200	1,009,600	302,000	6,417,000	47,000	3,400
1902	50,000	998,000	1,048,000	275,000	5,081,000	49,000	3,400
1903	52,400	1,048,600	1,101,000	246,600	5,120,000	51,700	3,400
1904	53,900	1,059,000	1,112,900	244,000	5,270,000	54,800	3,400
1905	55,000	1,048,000	1,103,000	236,800	5,639,000	57,600	3,400
1906	61,600	965,000	1,026,600	239,000	5,752,000	59,900	3,600
1907	66,000	916,300	982,300	292,000	5,637,000	62,900	4,000
1908	69,000	879,000	948,000	292,000	5,524,000	66,000	4,000
1909	75,000	905,000	980,000	304,000	5,634,000	68,000	5,000
1910	80,000	842,000	922,000	319,000	5,747,000	75,000	5,000
1911	80,000**	818,000**	898,000	344,000	5,230,000**	124,000	4,500**
1912	91,000	732,000	823,000	350,000**	4,926,000**	145,000**	5,000**
1913	95,000	750,000**	845,000	385,000**	4,675,000**	168,000**	5,500**
1914	104,000	826,000**	930,000	440,000**	3,850,000**	187,000**	6,000**
1915	114,000	836,000**	950,000	485,000**	3,340,000**	245,000**	6,500**
1916	125,000**	1,035,000**	1,170,000	520,000**	3,020,000**	270,000**	7,000**
1917	140,000**	1,114,000**	1,254,000	580,000**	2,670,000**	260,000**	7,500**
1918	150,000**	1,310,000**	1,460,000	640,000**	2,380,000**	202,000**	8,500**
1919	163,000**	1,447,000**	1,610,000	720,000**	2,530,000**	180,000**	9,000**
1920	153,000	1,116,000	1,269,000	669,000	2,083,000	167,000	9,000
1921	156,000	1,080,000	1,236,000	669,000	1,973,000	160,000	9,000
1922	160,000	1,260,000	1,420,000	670,000	2,270,000	180,000	9,500
1923	165,000	1,285,000	1,400,000	643,000	2,315,000	198,000	10,000

Note: Many earlier estimates were made to exact figures. These have been rounded to even thousands or hundreds in above table.

*Based upon Census Data.

**Tentative Revision. All others are United States Department of Agriculture Estimates.

CATTLE SHIPMENTS FROM MONTANA

(1885-1922.)

The Livestock Commission of Montana through its system of brand inspection secures an accurate check upon all cattle shipped out of the state. The following table, taken from the secretary's report for 1921, shows the total number of all cattle sent out each year since 1885:

Year	Output	Year	Output	Year	Output
1885	79,089	1897	252,162	1909	255,178
1886	119,620	1898	232,225	1910	243,662
1887	82,134	1899	203,499	1911	205,873
1888	167,602	1900	160,055	1912	188,675
1889	123,880	1901	151,986	1913	172,299
1890	174,035	1902	230,000	1914	158,623
1891	250,000	1903	210,573	1915	173,936
1892	203,000	1904	288,775	1916	227,828
1893	279,158	1905	267,966	1917	333,056
1894	302,655	1906	276,722	1918	406,415
1895	206,460	1907	214,642	1919	641,337
1896	254,864	1908	241,320	1920	211,242
				1921	147,413
				1922	246,378

TOTAL NUMBERS OF CATTLE, HORSES, SHEEP AND SWINE BY COUNTIES.
(As shown by Assessors—March, 1922.)

District and County.	All Cattle	Horses	Sheep	Swine*
Northwestern District				
Flathead	14,053	7,228	4,651	4,386
Lincoln	2,937	1,883	76	782
Northcentral District				
Blaine	36,549	17,832	105,642	1,677
Chouteau	25,890	17,693	39,856	3,246
Glacier	19,062	5,859	22,687	136
Hill	12,863	14,032	10,552	1,772
Liberty	4,814	4,194	6,387	399
Pondera	12,510	9,186	13,110	1,908
Teton	16,331	9,038	25,834	2,002
Toole	5,637	5,918	26,987	815
Northeastern District				
Daniels	10,293	10,582	3,862	1,300**
Phillips	24,626	20,065	58,901	1,735
Roosevelt	13,331	9,887	626	2,595
Sheridan	16,738	13,782	5,049	3,160**
Valley	24,680	25,921	59,983	2,680
Westcentral District				
Deer Lodge	3,877	1,415	6,206	1,410
Granite	11,679	3,496	10,754	878
Mineral	872	580	69	327
Missoula	11,671	5,452	3,532	5,535
Powell	15,366	4,479	94,217	1,951
Ravalli	20,044	5,896	22,817	10,386
Sanders	9,800	3,046	3,424	1,385
Central District				
Broadwater	13,753	4,661	28,324	2,853
Cascade	29,594	10,608	75,159	4,367**
Fergus	57,711	27,610	62,883	9,989**
Golden Valley	12,769	6,417	8,884	1,700**
Jefferson	13,883	3,975	3,285	2,215
Judith Basin	27,346	9,036	30,645	3,100**
Lewis & Clark	29,786	5,734	58,138	3,378
Meagher	21,654	5,028	123,652	1,575
Musselshell	14,509	7,372	9,853	2,809**
Wheatland	24,542	6,036	56,059	2,486
Eastcentral District				
Dawson	19,656	15,234	12,236	2,214
Garfield	22,145	15,413	68,569	1,460
McCone	16,475	17,297	27,132	1,676
Prairie	14,258	10,156	23,560	999
Richland	20,974	16,799	1,607	3,978
Wibaux	9,116	6,575	2,713	1,899
Southwestern District				
Beaverhead	65,219	12,208	158,724	2,558
Madison	36,992	9,392	127,717	7,111
Silver Bow	5,136	2,003	9,002	1,375
Southcentral District				
Carbon	18,672	8,961	27,709	8,707
Gallatin	22,636	11,194	18,028	11,504
Park	24,142	7,249	46,577	6,402
Stillwater	21,889	9,526	26,195	5,381
Sweetgrass	22,425	5,740	53,104	3,669**
Yellowstone	20,375	12,475	30,045	9,566
Southeastern District				
Big Horn	43,573	7,427	13,180	2,885
Carter	23,280	10,854	75,957	1,004
Custer	25,779	11,926	27,820	1,947
Fallon	13,703	8,974	7,362	1,363
Powder River	45,725	12,401	26,112	1,961
Rosebud	25,066	9,256	87,738	3,368
Treasure	7,815	2,800	13,843	1,196
State Total	1,084,220	507,783	1,867,094	167,060
Number as estimated by U. S. Dep't. of Agriculture, Jan. 1, 1922	1,420,000	670,000	2,270,000	180,000

*Assessments in 1922 were made on basis of weight. Figures for swine taken from Census data—1920.

**Estimates based on changes in counties since census was taken.

MONTANA LIVESTOCK

NUMBERS AND VALUES OF LIVE STOCK.
(1920-1923.)

Montana Live Stock on Farms and Ranges		Total Number	Average Value Per Head	Total Value
HORSES	Jan. 1, 1923	643,000	\$ 38.00	\$ 24,434,000
	Jan. 1, 1922	670,000	41.00	27,470,000
	Jan. 1, 1921	669,000	50.00	33,450,000
	Jan. 1, 1920	669,000	61.00	40,809,000
MULES	Jan. 1, 1923	10,000	60.00	600,000
	Jan. 1, 1922	9,500	69.00	656,000
	Jan. 1, 1921	9,000	87.00	783,000
	Jan. 1, 1920	9,000	92.00	828,000
MILK COWS	Jan. 1, 1923	165,000	55.00	9,075,000
	Jan. 1, 1922	160,000	58.00	9,280,000
	Jan. 1, 1921	156,000	75.00	11,700,000
	Jan. 1, 1920	153,000	83.00	12,799,000
OTHER CATTLE	Jan. 1, 1923	1,235,000	30.90	38,161,000
	Jan. 1, 1922	1,260,000	27.20	34,272,000
	Jan. 1, 1921	1,080,000	35.40	38,232,000
	Jan. 1, 1920	1,116,000	46.80	54,288,000
ALL CATTLE	Jan. 1, 1923	1,400,000	33.73	47,236,000
	Jan. 1, 1922	1,420,000	30.60	43,552,000
	Jan. 1, 1921	1,236,000	44.78	49,932,000
	Jan. 1, 1920	1,269,000	52.85	67,087,000
SHEEP	Jan. 1, 1923	2,315,000	8.70	20,140,000
	Jan. 1, 1922	2,270,000	4.70	10,669,000
	Jan. 1, 1921	1,973,000	5.80	11,443,000
	Jan. 1, 1920	2,080,000	10.40	21,663,000
SWINE	Jan. 1, 1923	198,000	13.20	2,614,000
	Jan. 1, 1922	180,000	13.10	2,358,000
	Jan. 1, 1921	160,000	16.50	2,640,000
	Jan. 1, 1920	167,000	20.00	3,340,000

TOTAL VALUE OF ALL LIVE STOCK IN MONTANA

Jan. 1, 1923.....	\$ 95,024,000
Jan. 1, 1922.....	84,705,000
Jan. 1, 1921.....	98,248,000
Jan. 1, 1920.....	133,727,000

GRAZING ON NATIONAL FORESTS IN MONTANA.

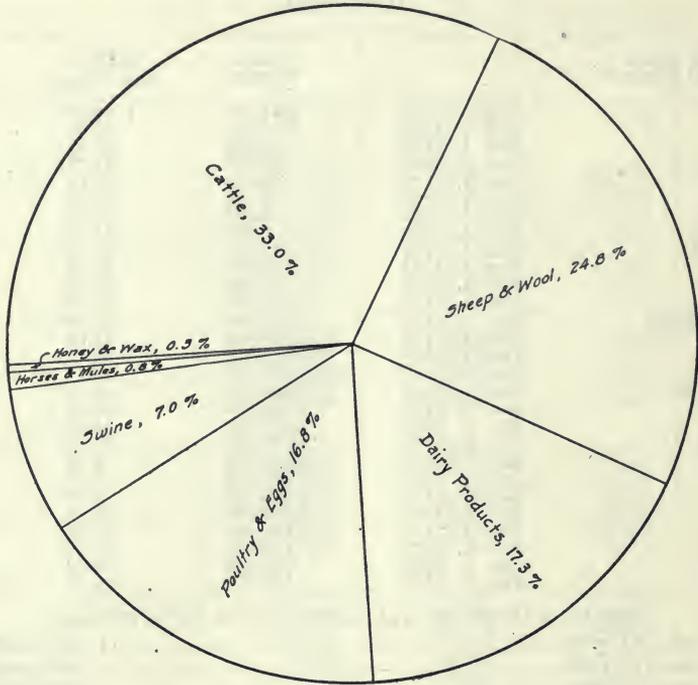
(Data from the U. S. Forest Service, for the year 1922.)

National Forest	Number of Permits Granted		Number Grazed		Length of Grazing Seasons (days)		Fees—Per Head Per Season		
	Cattle & Horses	Sheep	Cattle & Horses	Sheep	Cattle & Horses	Sheep	Cattle	Horses	Sheep
Missoula	113	5	7,250	5,425	184	122	\$.60	\$.75	\$.10
Absaroka	159	52	7,027	64,395	153	77	.50	.62	.07
Beartooth	92	38	5,020	36,974	153	92	.50	.62	.08½
Beaverhead*	221	46	26,410	84,340	153	92	.50	.62	.08½
Bitter Root	80	13	2,334	19,039	199	153	.65	.81	.12½
Blackfoot	6	1	178	325	168	92	.44	.55	.06¾
Cabinet	41	15	827	16,661	184	107	.48	.60	.07¾
Custer	332	6	24,627	4,137	229	184	.90	1.12	.18
					Entire				
Custer					Year		1.20	1.50	---
Deer Lodge	293	21	16,144	31,772	184	107	.60	.75	.09¾
Flathead	10	---	205	---	168	92	.44	.55	.06¾
Gallatin	168	30	6,099	41,845	184	92	.72	.90	.10
Helena	325	34	15,798	53,358	184	92	.60	.75	.08½
Jefferson	355	76	20,292	109,883	153	92	.50	.62	.08½
Kootenai	20	---	413	---	153	137	.40	.50	.09
Lewis & Clark	111	16	8,145	37,050	137	92	.45	.56	.08½
Lolo	15	10	249	21,900	214	137	.56	.70	.08
Madison	275	60	24,489	116,925	168	122	.66	.82	.12
TOTAL	2,616	423	165,147	644,029					

Note: Grazing seasons begin and end at various dates on the different National Forests. The grazing period for cattle and horses begins as early as April 16 on one Forest Range, and ends as late as November 30 on two others. The grazing period for sheep begins as early as May 1 on only one Forest Range, and extends to October 31 on two. Seasons vary also on the same Forests, as do the fees. The above figures represent the most common seasons and fees in force for 1922.

*Data for 1921 season.

RELATIVE VALUES OF MONTANA LIVESTOCK PRODUCTS FOR 1922



ESTIMATED AGGREGATE VALUES LIVESTOCK AND LIVESTOCK PRODUCTS.

	Montana	United States	Montana's Rank with Other States
Value of Live Stock, Jan. 1, 1923.....	\$95,024,000	\$5,111,000,000	19th
Value of all animal Products for 1922.....	61,300,000	5,349,200,000	24th

PERCENTAGES OF LIVESTOCK THAT ARE PURE-BRED

	Montana	U. S.
Horses	5%	0.6%
Beef Cattle.....	1.8%	3.0%
Dairy Cattle.....	1.6%	2.9%
All Cattle	1.8%	2.9%
Sheep	1.2%	1.3%
Swine	3.2%	3.5%

BEEES ON FARMS, HONEY AND WAX PRODUCED, WITH VALUES 1909 AND 1919.
(Data from U. S. Bureau of the Census).

Year	BEEES		HONEY		WAX	
	No. of Farms	No. of Hives	Lbs. Produced	Value	Lbs. Produced	Value
1909	795	6,313	163,510	\$ 21,802	394	\$ 133
1919	1,199	11,918	630,608	157,656	7,682	2,614

MONTANA FARM REVIEW

MANUFACTURED DAIRY PRODUCTS.

(Includes production of creameries and cheese factories only),

	Number of Creameries	Butter Made (Pounds)	Number of Cheese Factories	Cheese Made (Pounds)	Ice Cream (Gallons)
1918*	42	4,580,920	6	484,864	427,279
1919**	50	5,584,311	7	403,378	743,311
1920**	52	6,086,347	8	266,973	660,387
1921**	53	7,464,679	5	158,559	481,160
1922**	57	5,779,786‡	5	166,831	336,531‡

*Reported by Bureau of Markets, U. S. Department of Agriculture.

**Reported by State Dairy Commissioner's Office.

Reports for 1919 and 1920 cover period ending November 30th each year.

‡Reports not complete.

POULTRY ON FARMS AND EGGS PRODUCED.

(Data from U. S. Bureau of the Census).

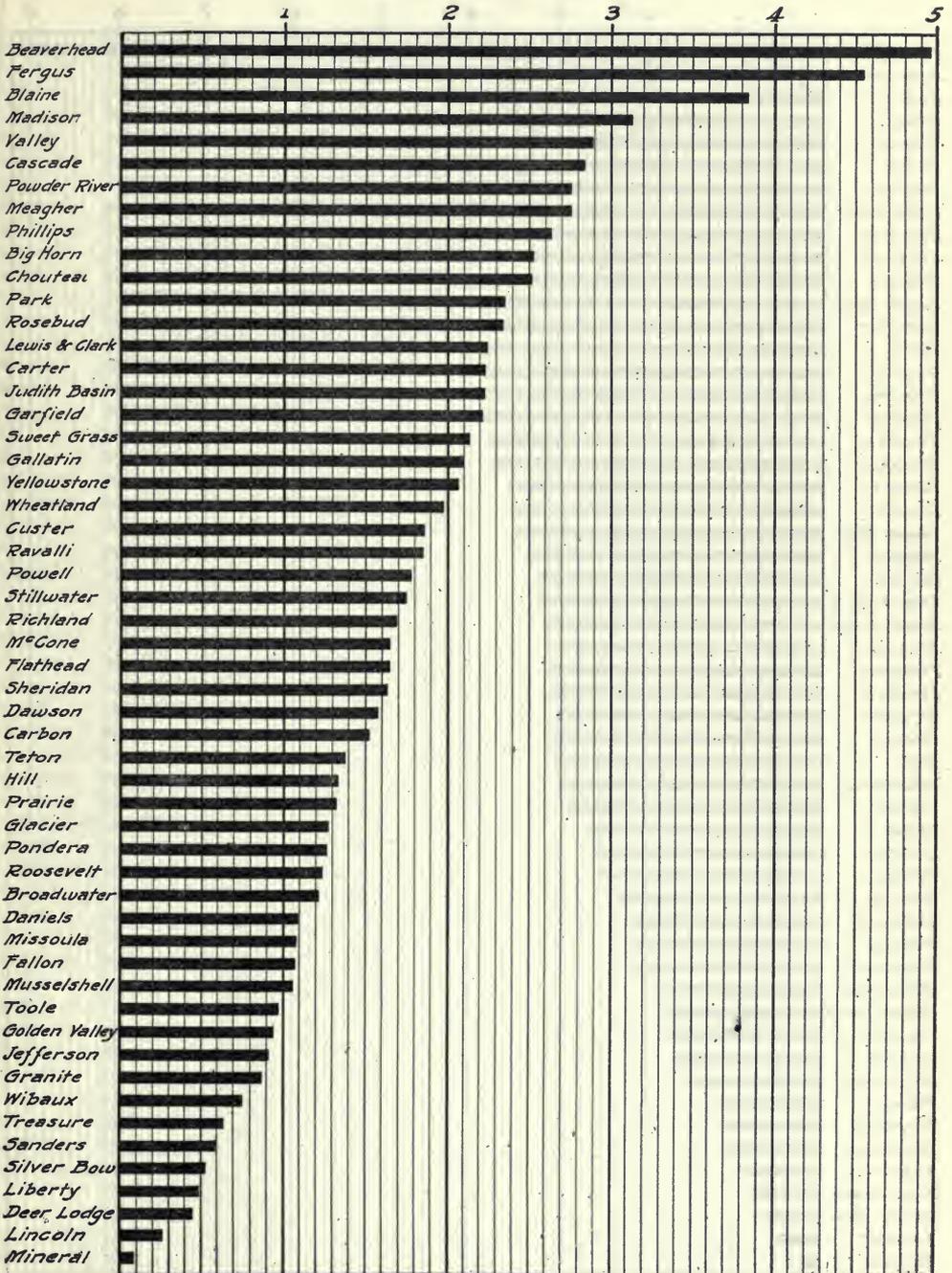
Year	Chickens on Farms	Other Fowls on Farms	Eggs Produced (dozens)
1880	58,244	2,160	208,794
1890	233,660	9,992	834,166
1900	531,774	24,900	3,002,890
1910	966,690	44,150	6,004,051
1920	2,055,120	72,734	11,858,042

CHICKENS RAISED, EGGS PRODUCED, WITH VALUES, 1909 AND 1919.

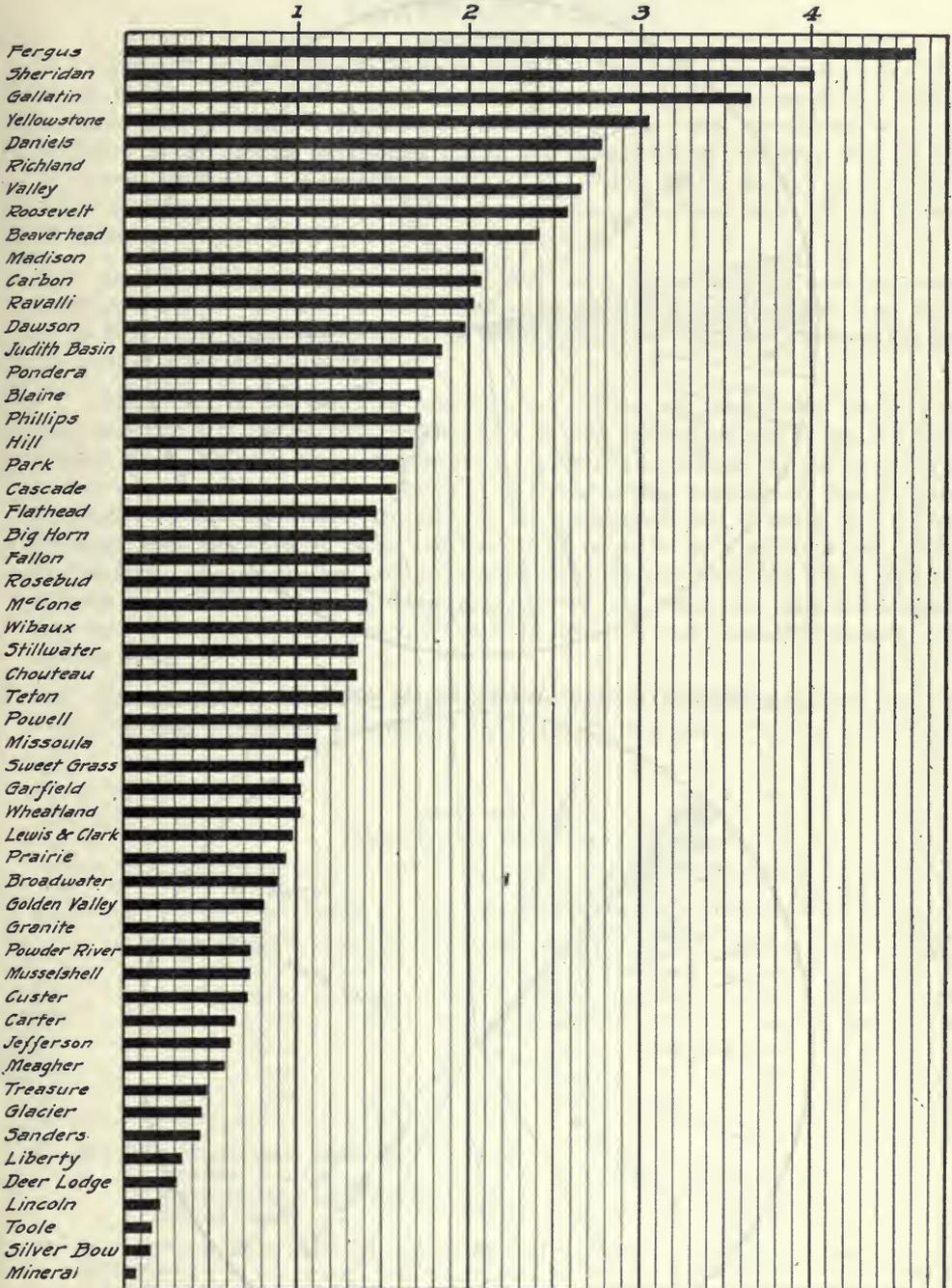
(Data from U. S. Bureau of the Census).

Year	CHICKENS		EGGS (Doz.)		Total Value
	No. Raised	Value	Produced	Value	
1909	1,432,741	\$ 797,450	6,004,051	\$1,610,766	\$2,408,216
1919	3,247,090	2,272,963	11,858,042	4,624,636	6,897,599

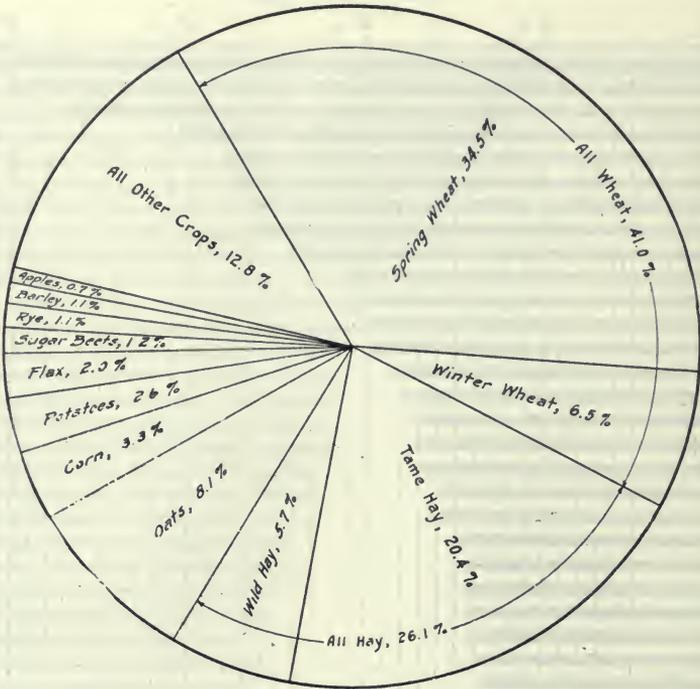
ESTIMATED FARM VALUE OF ALL LIVESTOCK, JAN. 1, 1923—BY COUNTIES
(In millions of dollars)



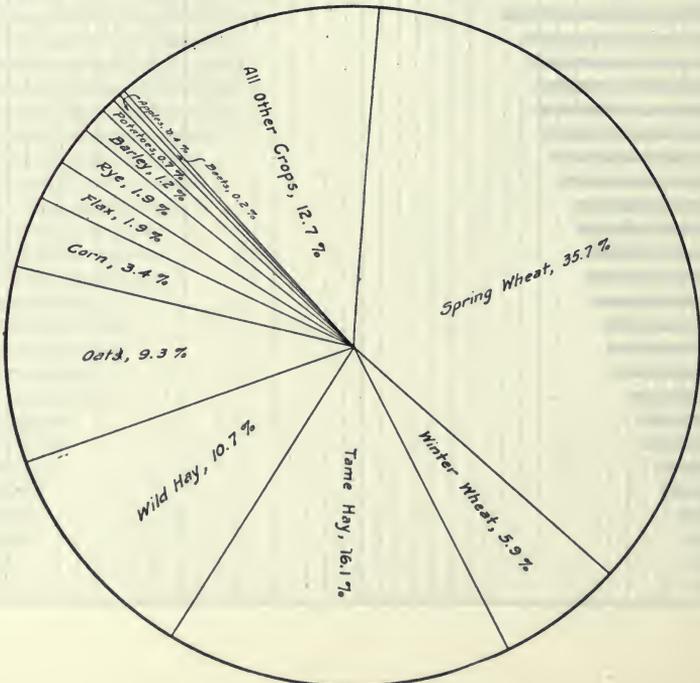
ESTIMATED TOTAL FARM VALUE OF ALL CROPS FOR 1922—BY COUNTIES
(In millions of dollars)



RELATIVE IMPORTANCE OF MONTANA CROPS IN 1922 ACCORDING TO GROSS FARM VALUES



RELATIVE CROP ACREAGES IN MONTANA, 1922



FARMS AND CROPS

Montana farmers, who in numbers constitute less than one per cent of the total in the United States, in 1922 on 1.75 per cent of the total crop acreage of the country, produced 1.03 per cent of the nation's total crop value. The percentages show the Montana farmer handles more acreage than the average for the country. The number of farmers in Montana is based on figures of the United States Bureau of the Census for 1919. There is little doubt but that there has been a marked decline in the number of farmers since the census listed 57,677 in this state.

In 1922 Montana farmers cropped 6,872,000 acres and produced a total crop value of \$92,932,090. In acreage, Montana ranked twenty-fourth, and in total crop value, thirty-first. The total crop value of the United States in 1922 was \$8,501,395,000 and the total crop acreage 370,472,000.

Significant of the changing conditions in Montana is the relative standing, in total crop value, of the ten counties that lead in crop production. Six of the ten lie in eastern Montana, and in three of these six non-irrigated farming is exclusively followed, and in the other three is at least equal to, if not of greater importance, than irrigated farming. No less significant, however, is the standing of the counties in the total estimated combined value of crops and live stock, as shown by a graph which appears in this book. Five of the ten leading counties lie in eastern Montana, but in only one of them is non-irrigated farming followed exclusively. In years past these non-irrigated regions were big livestock producers, and it is predicted that diversified farming will re-stock them.

The sub-joined tables and graphs tell the story of farm numbers, acreages and values; of crop production, distribution, and values in Montana.

LAND VALUES.

Value of Plow Lands Per Acre

Year	Average of Poor Plow Lands			Average of Good Plow Lands			Average of All Plow Lands		
	Montana	Iowa	United States	Montana	Iowa	United States	Montana	Iowa	United States
1923	\$14	\$115	\$45	\$31	\$181	\$85	\$22	\$153	\$67
1922	15	119	47	35	193	89	23	163	70
1921	19	145	57	41	238	106	30	200	84
1920	21	157	61	48	257	113	36	219	90
1919	21	129	51	45	196	92	34	169	74

Assessed Valuations—1922, Montana:

Irrigated lands.....	\$51.38 per acre.
Non-Irrigated agricultural lands.....	13.48 per acre.
Grazing lands.....	6.51 per acre.

Census of 1920—Average value per acre of all land in farms in Montana (without improvements)\$19.73

Average sale price of all state lands—1909-1922.....\$15.37

NUMBER OF FARMS, LAND IN FARMS, VALUE OF ALL FARM PROPERTY, AND
AVERAGE VALUE PER ACRE OF ALL LANDS IN FARMS—1920—BY COUNTIES.

(Data from the U. S. Census Bureau).

Counties and Districts	No. of Farms	Land in Farms Acres	Percent of Total Land Area in Farms	Value of all Farm Property	Average Value of Land Alone Per Acre*
NORTHWESTERN					
Flathead	1,923	470,283	12.0	\$21,733,687	\$32.44
Lincoln	341	65,050	2.8	2,457,141	24.20
NORTHCENTRAL					
Blaine	1,761	1,159,056	42.8	23,075,070	13.14
Chouteau	2,573	1,508,898	56.0	42,007,453	20.68
Glacier	372	545,256	28.6	8,241,389	9.20
Hill	2,257	1,107,399	59.8	27,095,425	17.71
Liberty	515	310,742	33.5	7,557,616	17.40
Pondera	1,060	629,995	59.4	20,538,958	25.27
Teton	1,135	613,506	46.9	20,255,634	24.54
Toole	933	570,163	45.5	13,170,890	16.52
NORTHEASTERN					
Daniels**					
Phillips	1,914	1,084,725	32.7	21,530,404	12.43
Roosevelt	1,215	673,936	44.8	17,371,181	17.69
Sheridan**	2,408	1,155,859	67.2	30,884,323	17.52
Valley**	2,169	1,126,872	32.3	22,527,381	12.79
WESTCENTRAL					
Deer Lodge	202	58,484	12.3	2,505,808	27.47
Granite	354	254,148	23.1	9,268,303	26.22
Mineral	95	20,209	2.6	7,18,129	22.14
Missoula	1,323	388,408	19.1	17,708,193	32.11
Powell	476	520,065	34.9	16,614,125	22.42
Ravalli	1,231	245,965	16.1	19,020,095	51.84
Sanders	667	175,088	9.6	6,669,487	27.74
CENTRAL					
Broadwater	466	304,483	39.4	11,088,070	25.42
Cascade**	1,703	1,252,282	57.4	49,913,704	30.84
Fergus**	4,226	2,573,981	56.3	93,916,182	28.27
Golden Valley**					
Jefferson	555	281,494	27.0	8,725,480	20.60
Judith Basin**					
Lewis & Clark	855	754,135	34.2	17,858,222	16.30
Meagher	447	801,801	52.9	15,115,201	12.68
Musselshell**	1,604	999,389	53.8	28,866,004	21.64
Wheatland	688	589,827	65.3	18,493,898	23.20
EASTCENTRAL					
Dawson	1,195	747,993	49.5	16,362,146	15.25
Garfield	1,530	874,129	28.2	13,694,567	8.99
McCone	1,284	668,686	39.5	11,739,330	10.94
Prairie	673	548,989	49.2	10,301,314	13.25
Richland	1,577	812,194	60.3	20,983,029	17.09
Wibaux	530	336,167	59.5	9,355,969	20.15
SOUTHWESTERN					
Beaverhead	642	637,009	17.6	26,426,581	24.15
Madison	901	564,516	24.4	22,176,226	25.59
Silver Bow	331	100,170	21.6	2,912,490	16.51
SOUTHCENTRAL					
Carbon	1,353	446,386	33.9	20,909,703	30.58
Gallatin	1,349	783,189	48.8	42,856,691	42.81
Park	756	613,597	36.0	21,592,108	24.86
Stillwater	1,370	660,996	58.1	22,526,639	24.53
Sweet Grass**	863	645,120	51.2	19,286,221	21.68
Yellowstone	2,211	1,067,425	63.9	36,422,986	24.60
SOUTHEASTERN					
Big Horn	791	748,749	23.6	18,152,414	15.21
Carter	855	557,495	25.8	9,220,487	10.10
Custer	941	997,169	41.6	15,190,663	10.02
Fallon	758	576,754	56.0	11,139,922	13.52
Powder River	833	597,056	28.0	11,467,810	10.22
Rosebud	1,136	1,608,235	50.3	23,646,233	9.85
Treasure	330	237,133	38.6	4,672,276	14.20
STATE TOTAL	57,677	35,070,656	37.5	\$985,961,308	\$19.73

*Average value of land alone, i. e., not including value of improvements or other property.

**Since the 1920 census was taken, Daniels county has been created out of Sheridan and Valley counties; Judith Basin county created from Fergus and Cascade counties; and Golden Valley from Musselshell and Sweet Grass counties.

GENERAL SUMMARY MONTANA CROPS
Acreage, Production and Farm Value, 1922, 1921, 1920 and 1919.

Crop	Year	Acres	Yield Per Acre	Production	Farm Value Dec. 1	
					Per Unit	Total
Winter Wheat	1922	386,000	16.5	6,369,000 Bus.	\$.89	\$ 5,668,000
	1921	425,000	14.0	5,950,000 "	.85	5,058,000
	1920	410,000	12.0	4,920,000 "	1.28	6,298,000
	1919	538,000	5.2	2,798,000 "	2.35	6,575,000
Spring Wheat	1922	2,713,000	14.7	39,881,000 "	.89	35,506,090
	1921	2,290,000	12.0	27,480,000 "	.85	23,358,000
	1920	2,377,000	10.0	23,770,000 "	1.28	30,426,000
	1919	3,083,000	2.3	7,091,000 "	2.35	16,664,000
Corn	1922	219,000	25.0	5,475,000 "	.53	2,902,000
	1921	190,000	20.0	3,800,000 "	.67	2,546,000
	1920	184,000	12.1	2,226,000 "	.80	1,789,000
	1919	133,000	4.0	532,000 "	1.65	879,000
Oats	1922	600,000	32.0	19,200,000 "	.37	7,104,000
	1921	618,000	24.0	14,832,000 "	.34	5,043,000
	1920	533,000	22.0	11,726,000 "	.51	5,980,000
	1919	579,000	6.0	3,474,000 "	.91	3,161,000
Barley	1922	77,000	25.0	1,925,000 "	.50	962,000
	1921	75,000	20.5	1,538,000 "	.60	923,000
	1920	64,000	18.0	1,152,000 "	.65	749,000
	1919	75,000	5.6	420,000 "	1.40	588,000
Flax	1922	127,000	7.0	889,000 "	1.97	1,751,000
	1921	110,000	5.0	550,000 "	1.40	770,000
	1920	407,000	2.6	1,058,000 "	1.75	1,851,000
	1919	370,000	1.3	481,000 "	4.40	2,116,000
Rye	1922	126,000	14.5	1,827,000 "	.54	987,000
	1921	116,000	11.2	1,299,000 "	.53	688,000
	1920	59,000	8.0	472,000 "	1.08	510,000
	1919	76,000	3.0	228,000 "	1.85	422,000
Tame Hay	1922	1,045,000	1.90	1,986,000 Tons	9.00	17,874,000
	1921	1,045,000	1.80	1,881,000 "	8.70	16,365,000
	1920	1,105,000	1.80	1,989,000 "	12.00	23,868,000
	1919	1,158,000	1.00	1,158,000 "	23.00	26,634,000
Wild Hay	1922	692,000	.90	623,000 "	8.00	4,984,000
	1921	657,000	.80	526,000 "	8.60	4,524,000
	1920	652,000	.95	619,000 "	9.00	5,571,000
	1919	451,000	.35	158,000 "	22.50	3,550,000
Potatoes	1922	46,000	126.0	5,796,000 Bus.	.40	2,318,000
	1921	41,000	115.0	4,715,000 "	.80	3,772,000
	1920	40,000	110.0	4,400,000 "	1.05	4,620,000
	1919	38,000	60.0	2,280,000 "	1.60	3,648,000
Apples	1922	-----	-----	610,000 "	1.00	610,000
	1921	-----	-----	975,000 "	1.50	1,465,000
	1920	-----	-----	825,000 "	1.80	1,485,000
	1919	-----	-----	850,000 "	1.75	1,488,000

FARM VALUES OF OTHER CROPS

1922	-----	\$12,278,000
1921	-----	10,498,000
1920	-----	13,527,000
1919	-----	9,917,000

TOTAL VALUE ALL CROPS

1922	-----	\$92,932,090
1921	-----	75,010,000
1920	-----	96,674,000
1919	-----	69,975,000

WHEAT

Wheat is the most important crop raised in Montana, both in point of acreage and total value, a position it has maintained since 1914, when it superseded hay. A general steady increase in the wheat acreage from year to year was noted until 1910, after which the acreage doubled in two years. The 1914 acreage of nearly 1,600,000 acres was more than doubled in the following four years. In 1919 there were 3,621,000 acres of wheat, the high point to date. The series of extremely dry years following 1917 caused the abandonment of considerable areas of marginal lands, and a consequent reduction of the wheat acreage. In 1922 there were 3,099,000 acres in wheat. In total production of spring wheat in 1922, Montana ranked second among all the states, and in total wheat (spring and winter) it ranked fifth.

The quality of the spring wheat grown in Montana is superior to that grown in any other state. The bulk of it is classed as Hard Red Spring, which is recognized as the strongest milling wheat known. As to grades, 84.0 per cent of the crop of 1922 was officially estimated to grade No. 1, compared to 52.1 per cent for the total spring wheat in the United States. Taking the three year period from 1920 to 1922 inclusive, 74.4 per cent of Montana's spring wheat fell into the No. 1 grade, compared to a corresponding figure of 59.4 for Wyoming, its nearest competitor in this respect, and to 33.4 per cent for the entire United States. Further than this, nearly all of the 1922 spring wheat crop of the state sold for a premium over the posted prices for No. 1 Dark Northern, the trade using an unofficial grade known as "fancy" to apply to this wheat. This premium ranged mostly between 6 and 20 cents per bushel, and was based upon the percentage and quality of the gluten contained in the wheat.

About 75 per cent of the spring wheat grown in the state in 1922 was of the Marquis variety, and 11.9 per cent of it were durum varieties. The acreage seeded to durum wheats has decreased for the two years just passed, due to comparatively lower prices caused mainly by curtailment in export demand.

Spring wheat is grown extensively in all sections of the state, but the extreme northeast counties are the heaviest producers, areas considered. The durum varieties are chiefly grown in the eastern counties, but their production extends to a small degree over all districts, particularly east of the mountains. Most of the spring wheat is grown on non-irrigated lands.

The peak of the winter wheat acreage in Montana was reached in 1918, when 682,000 acres were harvested, since which time it has registered a heavy decline. This has been partially due to heavy losses from winter-killing in some of the more northern counties, which has discouraged its general adoption in affected localities. It is mostly grown in the central, south central and northwestern sections of the state. The most important varieties grown are Turkey Red, Kharkov, Kanred, and Montana 36. The hard red winter wheat produced in the state is of excellent milling quality.

Little trouble is had in Montana from diseases affecting wheat, as the climatic conditions are very unfavorable for their spread. Some black rust has affected fields along the eastern border, but its damage to the entire crop has been very small. Smut is controlled by treating the seed, but cut worms, army worms, and grasshoppers have been at times serious damaging factors to wheat as well as to other crops.

Data showing the acreage, yield and production by counties are presented in the tables which follow.

ALL WHEAT BY COUNTIES—1922.

County	Total Acreage	Total Production (Bushels)
Northwest District		
Flathead	60,000	764,000
Lincoln	3,200	19,000
Northcentral District		
Blaine	72,800	884,000
Chouteau	130,000	1,044,000
Glacier	27,000	337,000
Hill	138,000	1,363,000
Liberty	31,000	273,000
Pondera	95,900	1,538,000
Teton	84,600	1,100,000
Toole	25,000	202,000
Northeastern District		
Daniels	114,400	2,406,000
Phillips	71,500	905,000
Roosevelt	111,200	2,002,000
Sheridan	199,200	3,353,000
Valley	128,800	1,957,000
Westcentral District		
Deer Lodge	3,200	85,000
Granite	8,600	196,000
Mineral	900	14,000
Missoula	36,000	385,000
Powell	13,000	251,000
Ravall	23,000	603,000
Sanders	12,000	174,000
Central District		
Broadwater	26,000	485,000
Cascade	58,000	997,000
Fergus	230,000	3,612,000
Golden Valley	64,000	608,000
Jefferson	12,000	234,000
Judith Basin	118,000	1,460,000
Lewis & Clark	22,000	375,000
Meagher	11,000	148,000
Musselshell	41,000	471,000
Wheatland	56,000	754,000
Eastcentral District		
Dawson	102,500	1,398,000
Garfield	36,800	528,000
McCone	65,500	1,042,000
Prairie	63,500	849,000
Richland	106,400	1,609,000
Wibaux	79,200	1,135,000
Southwestern District		
Beaverhead	12,400	230,000
Madison	28,600	688,000
Silver Bow	500	10,000
Southcentral District		
Carbon	47,000	996,000
Gallatin	84,000	1,778,000
Park	32,000	659,000
Stillwater	68,000	845,000
Sweet Grass	38,000	646,000
Yellowstone	80,000	1,238,000
Southeastern District		
Big Horn	47,000	774,000
Carter	22,700	334,000
Custer	26,200	403,000
Fallon	72,600	1,105,000
Powder River	9,800	140,000
Rosebud	38,000	613,000
Treasure	11,000	181,000
State Total	3,099,000	46,250,000

MONTANA FARM REVIEW

ALL WHEAT BY YEARS.
1882-1922.

Year	Total Acreage All Wheat	Average Yield Per Acre (Bushels)	Total Production (Bushels)	Farm Price Per Bushel Dec. 1	Farm Value Dec. 1
1882	42,812	16.0	685,000	\$1.45	\$ 993,250
1883	57,796	16.3	942,000	.92	866,640
1884	76,240	18.0	1,372,000	.70	960,400
1885	83,864	20.4	1,715,000	.77	1,320,550
1886	88,896	17.0	1,509,000	.75	1,131,750
1887	97,786	18.0	1,760,000	.76	1,337,600
1888	121,255	16.5	2,001,000	.85	1,700,850
1889	85,000	18.1	1,539,000	.75	1,153,875
1890	87,550	17.0	1,488,000	.80	1,190,680
1891	92,803	20.0	1,856,000	.84	1,559,090
1892	41,761	21.5	898,000	.69	619,525
1893	43,431	21.5	933,767	.60	560,260
1894	44,828	24.8	1,111,735	.54	600,337
1895	44,570	23.9	1,065,223	.73	777,613
1896	45,443	26.5	1,204,240	.66	794,798
1897	69,792	32.5	2,268,240	.68	1,542,403
1898	71,188	29.5	2,100,046	.58	1,218,027
1899	69,764	25.7	1,792,935	.61	1,093,690
1900	72,555	26.6	1,929,963	.61	1,177,277
1901	88,807	26.5	2,353,386	.67	1,576,769
1902	90,583	26.0	2,355,158	.62	1,460,198
1903	98,735	28.2	2,784,327	.66	1,837,656
1904	108,608	23.9	2,596,731	.89	2,311,091
1905	119,469	23.8	2,843,362	.71	2,018,787
1906	137,389	24.0	3,297,336	.64	2,110,295
1907	139,000	28.8	4,003,000	.81	3,243,000
1908	153,000	24.2	3,703,000	.86	3,185,000
1909	259,000	24.1	6,252,000	.87	5,639,000
1910	415,000*	21.4	8,885,000	.86	7,541,000
1911	609,000*	24.5	14,935,000	.77	11,500,000
1912	1,055,000*	20.3*	21,417,000	.64	13,707,000
1913	1,300,000*	20.1*	26,088,000	.66	17,218,000
1914	1,596,000*	16.8*	26,821,000	.91	24,407,000
1915	2,415,000*	18.4*	44,413,000	.78	34,642,000
1916	2,440,000*	15.4*	37,632,000	1.61	60,587,000
1917	2,884,000*	7.3*	20,934,000	1.92	40,193,000
1918	3,485,000*	9.5*	33,365,000	1.94	64,728,000
1919	3,621,000	2.7	9,889,000	2.35	23,239,000
1920	2,787,000	10.3	28,690,000	1.28	36,723,000
1921	2,715,000	12.3	33,430,000	.85	28,416,000
1922	3,099,000	15.6	46,250,000	.89	41,162,500

* Tentative Revisions.

SPRING WHEAT BY COUNTIES—1922.

County	Acreage	Average Yield (Bus.).	Production (Bushels)
Northwest District			
Flathead	44,000	10.8	474,000
Lincoln	3,000	5.7	17,000
Northcentral District			
Blaine	71,000	12.4	855,000
Chouteau	98,000	7.2	704,000
Glacier	27,000	14.3	387,000
Hill	136,000	9.9	1,340,000
Liberty	30,000	8.7	262,000
Pondera	95,000	16.0	1,520,000
Teton	84,000	13.0	1,092,000
Toole	25,000	8.0	202,000
Northeastern District			
Daniels	114,000	21.0	2,400,000
Phillips	70,000	12.6	883,000
Roosevelt	111,000	18.0	1,998,000
Sheridan	193,000	16.8	3,350,000
Valley	128,000	15.2	1,944,000
Westcentral District			
Deer Lodge	3,000	26.7	80,000
Granite	8,000	23.3	186,000
Mineral	600	15.0	9,000
Missoula	24,000	9.8	235,000
Powell	10,000	20.0	200,000
Ravalli	21,000	27.0	567,000
Sanders	8,000	13.7	110,000
Central District			
Broadwater	22,000	17.8	393,000
Cascade	43,000	16.5	712,000
Fergus	152,000	14.0	2,130,000
Golden Valley	44,000	8.9	393,000
Jefferson	10,000	19.4	194,000
Judith Basin	98,000	11.2	1,100,000
Lewis & Clark	20,000	17.0	340,000
Meagher	9,000	12.0	108,000
Musselshell	31,000	10.1	314,000
Wheatland	49,000	13.3	654,000
Eastcentral District			
Dawson	102,000	13.6	1,390,000
Garfield	36,000	14.3	516,000
McCone	65,000	15.9	1,033,000
Prairie	63,000	13.3	840,000
Richland	106,000	15.1	1,602,000
Wibaux	77,000	14.3	1,100,000
Southwestern District			
Beaverhead	11,000	18.6	205,000
Madison	24,000	24.5	588,000
Silver Bow	400	20.0	8,000
Southcentral District			
Carbon	36,000	23.2	836,000
Gallatin	58,000	20.8	1,208,000
Park	27,000	20.9	564,000
Stillwater	40,000	12.1	485,000
Sweet Grass	28,000	17.0	476,000
Yellowstone	55,000	15.3	838,000
Southeastern District			
Big Horn	33,000	16.5	544,000
Carter	22,000	14.7	323,000
Custer	25,000	15.3	383,000
Fallon	67,000	15.0	1,005,000
Powder River	9,000	13.8	124,000
Rosebud	32,000	16.0	513,000
Treasure	9,000	16.3	147,000
State Total.....	2,713,000	14.7	39,881,000

WINTER WHEAT BY COUNTIES—1922.

	Acreage	Average Per Acre (Bushels)	Production (Bushels)
Northwest District			
Flathead	16,000	18.1	290,000
Northcentral District			
Blaine	1,800	16.1	29,000
Chouteau	32,000	10.6	340,000
Hill	2,000	11.5	23,000
Liberty	1,000	11.0	11,000
Pondera	900	20.0	18,000
Teton	600	13.3	8,000
Northeastern District			
Daniels	400	15.0	6,000
Phillips	1,000	14.7	22,000
Valley	800	16.2	13,000
Westcentral District			
Granite	600	16.7	10,000
Mineral	300	16.7	5,000
Missoula	12,000	12.5	150,000
Powell	3,000	17.0	51,000
Ravall	2,000	18.0	36,000
Sanders	4,000	16.0	64,000
Central District			
Broadwater	4,000	23.0	92,000
Cascade	15,000	19.0	285,000
Fergus	78,000	19.0	1,482,000
Golden Valley	20,000	10.7	215,000
Jefferson	2,000	20.0	40,000
Judith Basin	20,000	18.0	360,000
Lewis & Clark	2,000	17.5	35,000
Meagher	2,000	20.0	40,000
Musselshell	10,000	15.7	157,000
Wheatland	7,000	14.3	100,000
Eastcentral District			
Dawson	500	16.0	8,000
Garfield	800	15.0	12,000
McCone	500	18.0	9,000
Prairie	500	18.0	9,000
Richland	400	17.5	7,000
Wibaux	2,200	15.9	35,000
Southwestern District			
Beaverhead	1,400	17.9	25,000
Madison	4,600	21.8	100,000
Southcentral District			
Carbon	11,000	14.5	160,000
Gallatin	26,000	21.9	570,000
Park	5,000	19.0	95,000
Stillwater	23,000	12.9	360,000
Sweet Grass	10,000	17.0	170,000
Yellowstone	25,000	16.0	400,000
Southeastern District			
Big Horn	14,000	16.4	230,000
Carter	700	15.7	11,000
Custer	1,200	16.7	20,000
Fallon	5,600	17.8	100,000
Powder River	800	20.0	16,000
Rosebud	6,000	16.7	100,000
Treasure	2,000	17.0	34,000
ALL OTHER COUNTIES TOTAL	900	17.8	16,000
STATE TOTAL	386,000	16.5	6,369,000

HAY

Until 1914, hay was Montana's most important crop, both in acreage and in total value. Wheat alone has superseded it. In 1922 the total area in tame and wild hay was 1,735,000 acres. The acreage of tame hay has increased along with the expansion of the irrigated land, but is also due in part to the development of the non-irrigated areas. Wild hay has remained quite constant in total acreage in recent years, fluctuations noted from year to year, being due mainly to the variations in rainfall. More is usually cut in seasons of good rainfall.

Hay is produced chiefly for feed within the state, and only a small portion is shipped out. Approximately half of the tame hay acreage is alfalfa, the remainder being in grain hays, clovers, timothy, millets, and a few others. The bulk of the acreage devoted to tame hays is found in the irrigated sections.

Wild hay grows in most sections of the state. In some places wild hay is the only crop of importance, where it is produced in connection with the livestock industry. Beaverhead county usually produces more than a fourth of all the wild hay raised in the state, and it is fed there to cattle, sheep and horses. The wild hay of Montana is largely native blue-joint, and is noted for its high nutritive value. Stock readily takes on fat when fed this wild hay alone, while it supplies the proper nutrients for growth of young animals.

TAME HAY BY YEARS
1882-1922

Year	Acreage	Yield Per Acre (Tons)	Production (Tons)	Farm Price Per Ton Dec. 1	Total Farm Value Dec. 1
1882	87,000	1.07	93,000	\$10.00	\$ 930,000
1883	92,220	1.20	110,664	10.50	1,161,972
1884	150,000	1.00	150,000	13.00	1,950,000
1885	142,500	1.10	156,750	10.37	1,625,498
1886	139,650	1.09	152,048	10.50	1,596,504
1887	181,545	1.30	238,009	13.50	3,186,122
1888	181,545	1.20	217,854	8.30	1,808,188
1889	300,033	.90	268,639	11.50	3,089,924
1890	299,802	1.20	359,762	10.50	3,777,501
1891	299,802	1.15	344,772	8.50	2,930,562
1892	320,788	1.10	352,867	8.95	3,158,160
1893	349,659	1.26	440,570	7.89	3,476,097
1894	370,039	1.20	444,707	7.17	3,188,979
1895	311,337	.94	292,657	11.40	3,336,290
1896	345,584	1.38	476,906	6.86	3,271,575
1897	328,305	1.50	492,458	7.75	3,816,550
1898	343,003	1.45	504,604	6.80	3,431,307
1899	361,923	1.42	513,931	7.70	3,957,269
1900	369,161	1.60	590,658	8.70	5,138,725
1901	285,096	1.79	510,322	8.18	4,174,434
1902	313,606	1.68	526,858	7.54	3,972,509
1903	335,558	2.08	697,961	8.81	6,149,036
1904	348,980	1.92	670,042	8.70	5,829,365
1905	362,939	1.60	580,702	7.70	4,471,405
1906	373,827	1.85	691,580	8.90	6,155,062
1907	500,000	1.70	850,000	9.50	8,075,000
1908	525,000	2.00	1,050,000	8.35	8,768,000
1909	549,000	2.00	1,100,000	10.00	11,000,000
1910	615,000*	1.40	861,000	12.50	10,762,000
1911	675,000*	2.00	1,350,000	10.00	13,500,000
1912	715,000*	1.90	1,358,000	8.30	11,171,000
1913	780,000*	1.80	1,384,000	9.60	13,286,000
1914	830,000*	2.50	2,075,000	8.70	18,053,000
1915	900,000*	2.00	1,800,000	7.50	13,500,000
1916	980,000*	1.70	1,666,000	11.00	18,326,000
1917	1,050,000*	1.40	1,470,000	18.60	27,342,000
1918	1,120,000*	1.60	1,792,000	19.60	35,123,000
1919	1,158,000	1.00	1,158,000	23.00	26,634,000
1920	1,105,000	1.80	1,989,000	12.00	23,868,000
1921	1,045,000	1.80	1,881,000	8.70	16,365,000
1922	1,045,000	1.90	1,986,000	9.00	17,874,000

*Tentative Revisions.



TAME HAY BY COUNTIES, 1922

	Acreage	Average Yield Per Acre (Tons)	Production (Tons)
NORTHWEST DISTRICT			
Flathead	24,000	1.36	32,600
Lincoln	6,000	1.50	9,000
NORTHCENTRAL DISTRICT			
Blaine	20,000	1.65	33,000
Chouteau	14,000	1.28	18,000
Glacier	700	1.29	900
Hill	9,000	1.39	12,500
Liberty	6,000	1.22	7,300
Pondera	14,000	1.87	26,200
Teton	7,000	1.57	11,000
Toole	1,800	1.00	1,800
NORTHEASTERN DISTRICT			
Daniels	7,800	1.60	12,500
Phillips	22,000	2.00	44,000
Roosevelt	9,500	1.47	14,000
Sheridan	8,800	1.52	13,400
Valley	16,000	1.71	27,600
WESTCENTRAL DISTRICT			
Deer Lodge	7,000	1.86	13,000
Granite	29,000	2.00	58,000
Mineral	2,400	1.75	4,200
Missoula	39,000	1.82	71,000
Powell	40,000	1.86	74,500
Ravalli	36,000	2.42	87,000
Sanders	14,000	1.70	23,700
CENTRAL DISTRICT			
Broadwater	18,000	2.11	38,000
Cascade	32,000	1.64	52,600
Fergus	52,000	1.44	75,000
Golden Valley	7,600	1.68	12,800
Jefferson	12,000	1.88	22,600
Judith Basin	25,000	1.60	40,000
Lewis & Clark	30,000	1.80	54,000
Meagher	16,000	1.69	27,000
Musselshell	7,000	1.43	10,000
Wheatland	16,000	1.60	25,600
EASTCENTRAL DISTRICT			
Dawson	8,000	1.60	12,800
Garfield	15,000	1.39	20,800
McCone	11,000	1.45	16,000
Prairie	3,500	1.51	5,300
Richland	23,000	1.84	42,400
Wibaux	7,000	1.53	10,700

TAME HAY BY COUNTIES, 1922—(Continued)

	Acreage	Average Yield Per Acre (Tons)	Production (Tons)
SOUTHWESTERN DISTRICT			
Beaverhead	46,000	1.93	89,000
Madison	54,000	2.15	116,000
Silver Bow	5,400	1.85	10,000
SOUTHCENTRAL DISTRICT			
Carbon	42,000	2.33	97,700
Gallatin	52,000	3.15	164,000
Park	38,000	2.13	81,000
Stillwater	24,000	1.93	46,500
Sweet Grass	20,000	1.95	39,000
Yellowstone	43,000	2.02	87,000
SOUTHEASTERN DISTRICT			
Big Horn	22,000	2.26	49,600
Carter	4,800	1.52	7,300
Custer	19,600	1.68	33,000
Fallon	3,400	1.88	6,400
Powder River	19,000	1.84	35,000
Rosebud	26,000	1.85	48,000
Treasure	8,700	1.80	15,700
STATE TOTAL	1,045,000	1.90	1,986,000

WILD HAY BY YEARS
1909-1922

Year	Acreage	Yield Per Acre (Tons)	Production (Tons)	Farm Price Per Ton Dec. 1	Total Farm Value Dec. 1
1909	585,000	1.01	590,000	*	
1910	585,000	.80	468,000	*	
1911	585,000	1.10	644,000	*	
1912	673,000	1.00	673,000	*	
1913	612,000	.95	581,000	*	
1914	630,000	.94	592,000	\$ 8.70	\$ 5,150,000
1915	640,000	1.10	704,000	8.20	5,773,000
1916	646,000	.90	581,000	11.80	6,856,000
1917	536,000	.75	402,000	17.50	7,035,000
1918	482,000	.75	362,000	16.50	5,973,000
1919	451,000	.35	158,000	22.50	3,550,000
1920	652,000	.95	619,000	9.00	5,571,000
1921	657,000	.80	526,000	8.60	4,524,000
1922	692,000	.90	623,000	8.00	4,984,000

WILD HAY BY COUNTIES—1922

	Acreage	Average Yield Per Acre (Tons)	Production (Tons)
NORTHWEST DISTRICT			
Flathead	15,600	.50	7,800
Lincoln	1,800	.55	1,000
NORTHCENTRAL DISTRICT			
Blaine	25,000	1.12	28,000
Chouteau	10,000	.60	6,000
Glacier	14,000	.63	8,800
Hill	5,000	.72	3,600
Liberty	4,000	.62	2,500
Pondera	5,000	.80	4,000
Teton	20,000	.75	15,000
Toole	500	.60	300

*No reliable data on wild hay values 1909-13 for this state.

WILD HAY BY COUNTIES—1922—(Continued)

	Acreage	Average Yield Per Acre (Tons)	Production (Tons)
NORTHEASTERN DISTRICT			
Daniels	6,000	1.00	6,000
Phillips	34,000	.73	25,000
Roosevelt	28,000	.85	24,000
Sheridan	12,000	.92	11,000
Valley	22,000	.95	21,000
WESTCENTRAL DISTRICT			
Deer Lodge	5,000	1.10	5,500
Granite	4,500	1.20	5,400
Mineral	300	1.00	300
Missoula	2,500	.88	2,200
Powell	28,000	.94	26,300
Ravalli	1,500	1.07	1,600
Sanders	3,400	.71	2,400
CENTRAL DISTRICT			
Broadwater	6,000	1.33	8,000
Cascade	5,600	1.00	5,600
Fergus	18,400	.83	15,400
Golden Valley	2,800	.86	2,400
Jefferson	8,000	1.00	8,000
Judith Basin	13,000	.85	11,000
Lewis & Clark	12,000	1.00	12,000
Meagher	17,000	1.18	20,000
Musselshell	4,000	.85	3,400
Wheatland	9,000	.90	8,000
EASTCENTRAL DISTRICT			
Dawson	6,500	.92	6,000
Garfield	4,000	.85	3,400
McCone	12,000	.92	11,000
Prairie	3,000	1.00	3,000
Richland	20,000	.85	17,000
Wibaux	4,000	1.15	4,600
SOUTHWESTERN DISTRICT			
Beaverhead	184,000	.86	158,000
Madison	22,000	1.06	23,300
Silver Bow	4,000	1.00	4,000
SOUTHCENTRAL DISTRICT			
Carbon	2,800	.93	2,600
Gallatin	16,000	1.12	18,000
Park	4,000	.98	3,900
Stillwater	4,100	.85	3,500
Sweet Grass	3,400	.97	3,300
Yellowstone	4,800	.90	4,500
SOUTHEASTERN DISTRICT			
Big Horn	10,000	1.34	13,400
Carter	11,000	.82	9,000
Custer	8,000	.85	6,800
Fallon	4,000	1.05	4,200
Powder River	13,000	1.08	14,000
Rosebud	6,000	1.07	6,400
Treasure	1,500	1.07	1,600
STATE TOTAL	692,000	0.90	623,000

OATS

Oats rank third in Montana with respect both to acreage and total value of the crop, being exceeded by wheat and hay. The crop is grown principally for feed within the state, but cereal mills and central markets normally take about one-fifth of the total production. The oat acreage has shown a fairly constant increase up to 1919, when a decrease took place for two successive years, followed again by an increase. In 1922, 600,000 acres were planted to oats in the state.

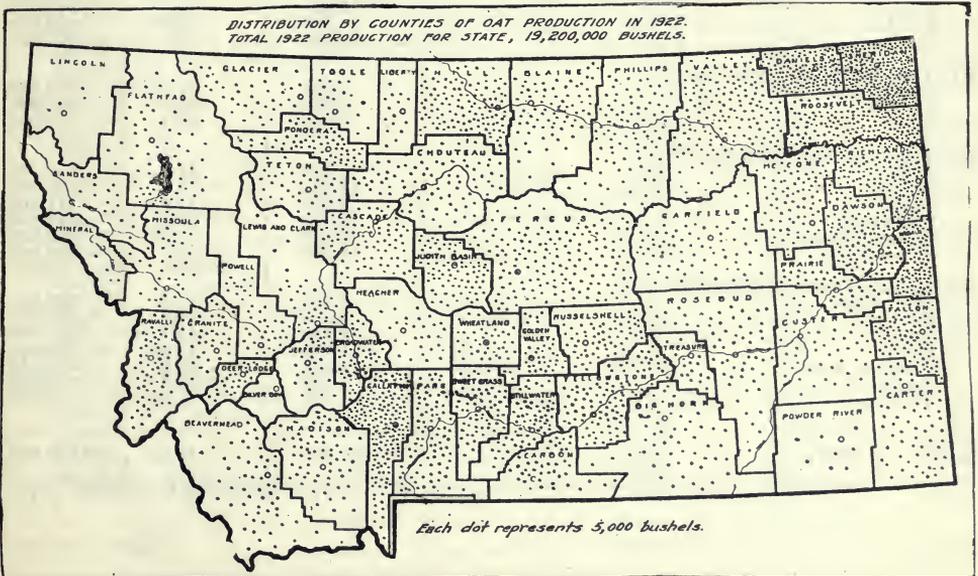
Oats are grown generally over the entire state with good returns, but it is in the irrigated districts and the northeast, east and central parts that the largest acreages devoted to this crop are found.

The average weight per measured bushel of oats grown in Montana for a ten-year period is 36.5 pounds, compared to 32.0 pounds, the average for the United States over the same time. No other state except Wyoming produces oats with such a high average weight. The principal varieties grown in the state are Swedish Select, Victory and Sixty Day.

OATS BY YEARS

1882-1922

Year	Acreage	Yield Per Acre (Bushels)	Production	Farm Price Per Ton Dec. 1	Total Farm Value Dec. 1
1882	28,000	39.3	1,100,000	\$.75	\$ 825,000
1883	32,200	37.6	1,210,000	.58	701,800
1884	52,000	33.5	1,740,000	.35	609,000
1885	53,560	33.1	1,775,000	.42	745,500
1886	56,774	35.0	1,987,000	.55	1,092,850
1887	60,180	31.0	1,866,000	.45	839,700
1888	61,384	29.0	1,780,000	.34	605,200
1889	85,938	30.0	2,578,000	.44	1,134,382
1890	90,235	31.0	2,797,000	.59	1,650,398
1891	94,747	32.0	3,648,000	.48	1,750,925
1892	66,323	28.8	1,910,000	.40	764,041
1893	66,986	34.0	2,277,524	.37	842,684
1894	66,986	40.1	2,686,139	.31	832,703
1895	68,326	35.8	2,446,071	.44	1,076,271
1896	64,910	40.7	3,050,770	.31	945,739
1897	61,664	42.0	2,589,888	.33	854,663
1898	61,047	40.6	2,478,508	.35	867,478
1899	60,986	38.0	2,317,468	.39	903,813
1900	65,865	39.0	2,568,735	.42	1,078,869
1901	147,365	42.0	6,189,330	.36	2,228,159
1902	159,154	41.9	6,668,553	.36	2,400,679
1903	162,337	46.4	7,532,437	.35	2,636,353
1904	167,207	37.7	6,303,704	.46	2,899,704
1905	178,911	41.3	7,389,024	.43	3,177,280
1906	196,802	43.2	8,501,846	.44	3,740,812
1907	240,000	49.0	11,760,000	.46	5,410,000
1908	254,000	41.6	10,566,000	.49	5,177,000
1909	333,000	41.4	13,806,000	.42	5,798,000
1910	390,000	38.0	14,820,000	.46	6,817,000
1911	425,000	49.8	21,165,000	.40	8,466,000
1912	476,000	48.0	22,848,000	.35	7,997,000
1913	500,000	43.5	21,750,000	.32	6,960,000
1914	530,000	35.0	18,550,000	.39	7,234,000
1915	600,000	52.0	31,200,000	.32	9,984,000
1916	660,000	38.0	25,080,000	.47	11,788,000
1917	680,000	20.0	13,600,000	.81	11,016,000
1918	680,000	30.0	20,400,000	.80	16,320,000
1919	579,000	6.0	3,474,000	.91	3,161,000
1920	533,000	22.0	11,726,000	.51	5,980,000
1921	618,000	24.0	14,832,000	.34	5,043,000
1922	600,000	32.0	19,200,000	.37	7,104,000



OATS BY COUNTIES—1922

	Acreage	Average Yield Per Acre (Bushels)	Production (Bushels)
NORTHWEST DISTRICT			
Flathead	13,800	22.0	304,000
Lincoln	1,400	11.4	16,000
NORTHCENTRAL DISTRICT			
Blaine	14,000	26.4	370,000
Chouteau	18,000	22.2	400,000
Glacier	5,300	33.4	177,000
Hill	26,000	22.5	584,000
Liberty	3,500	21.4	75,000
Pondera	8,700	35.4	308,000
Teton	8,000	24.0	192,000
Toole	4,400	21.6	95,000
NORTHEASTERN DISTRICT			
Daniels	26,000	30.1	782,000
Phillips	20,000	25.6	512,000
Roosevelt	23,000	36.1	830,000
Sheridan	40,000	36.0	1,440,000
Valley	30,000	28.3	850,000
WESTCENTRAL DISTRICT			
Deer Lodge	2,000	50.0	100,000
Granite	3,400	53.5	182,000
Mineral	400	40.0	16,000
Missoula	5,000	37.6	188,000
Powell	4,600	45.6	210,000
Ravalli	6,000	55.5	333,000
Sanders	2,400	32.1	77,000
CENTRAL DISTRICT			
Broadwater	8,000	35.0	280,000
Cascade	12,000	32.7	392,000
Fergus	34,000	25.2	858,000
Golden Valley	11,000	18.2	200,000
Jefferson	3,700	40.0	148,000
Judith Basin	13,000	28.0	364,000
Lewis & Clark	4,400	37.0	163,000
Meagher	4,200	33.3	140,000
Musselshell	12,000	26.0	312,000
Wheatland	6,600	31.1	205,000
EASTCENTRAL DISTRICT			
Dawson	20,000	31.8	637,000
Garfield	14,000	27.7	388,000
McCone	15,000	30.0	450,000
Prairie	7,600	31.6	240,000
Richland	22,000	38.6	850,000
Wibaux	15,000	32.9	493,000
SOUTHWESTERN DISTRICT			
Beaverhead	7,200	37.1	267,000
Madison	8,000	42.0	336,000
Silver Bow	800	28.8	23,000
SOUTHCENTRAL DISTRICT			
Carbon	7,500	26.7	200,000
Gallatin	17,000	51.5	875,000
Park	8,500	49.6	421,000
Stillwater	12,000	26.7	320,000
Sweet Grass	8,500	36.7	312,000
Yellowstone	15,000	35.5	532,000
SOUTHEASTERN DISTRICT			
Big Horn	7,300	35.6	260,000
Carter	7,800	41.0	320,000
Custer	8,000	33.4	267,000
Fallon	13,000	38.0	494,000
Powder River	1,000	36.0	36,000
Rosebud	8,000	37.5	300,000
Treasure	2,000	38.0	76,000
STATE TOTAL	600,000	32.0	19,200,000

BARLEY

Barley is now grown mainly for feed purposes. Increases in the acreage sown took place each year up to 1916, when there were 95,000 acres in this crop. Decreases were registered for each of the following four years, after which gains were made in 1921 and in 1922. The acreage devoted to barley is well distributed over the state, but the crop is more generally grown in the central and south-central districts. In weight per measured bushel Montana barley ranks high, the ten-year average being 48.6 pounds for the state, compared to 46.1 pounds for the entire United States.

BARLEY BY COUNTIES—1922.

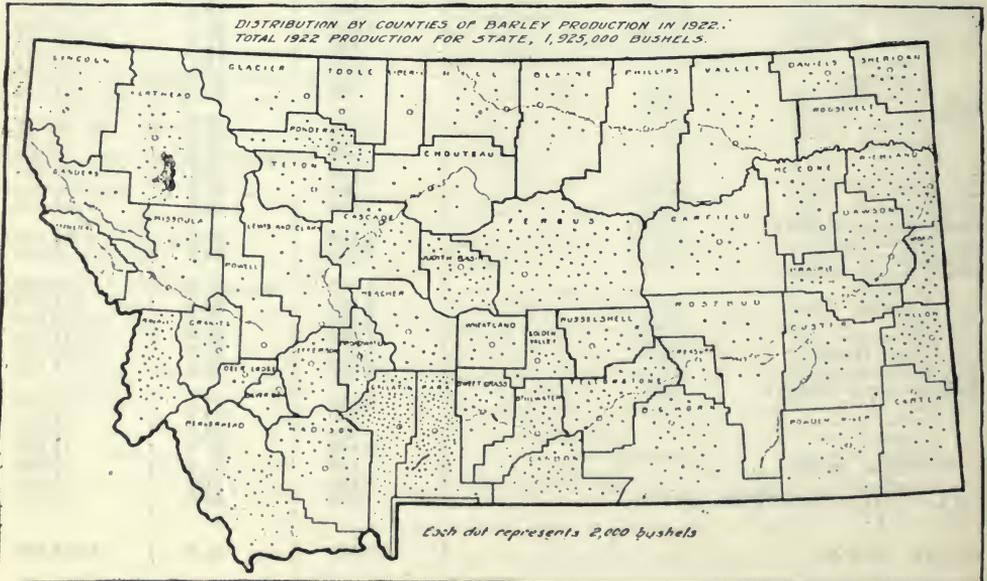
	Acreage	Average Yield Per Acre (Bushels)	Production (Bushels)
Northwest District			
Flathead	2,600	16.2	42,000
Lincoln	400	12.5	5,000
Northcentral District			
Blaine	1,200	18.3	22,000
Chouteau	1,000	15.0	15,000
Glacier	300	26.7	8,000
Hill	1,300	15.4	20,000
Pondera	2,800	19.3	54,000
Teton	1,200	16.7	20,000
Northeastern District			
Daniels	600	25.0	15,000
Phillips	800	22.5	18,000
Roosevelt	900	14.4	22,000
Sheridan	1,000	25.0	25,000
Valley	1,100	21.8	24,000
Westcentral District			
Granite	500	28.0	14,000
Missoula	800	18.7	15,000
Powell	400	20.0	8,000
Ravalli	2,000	35.5	71,000
Sanders	400	20.0	8,000
Central District			
Broadwater	1,000	28.0	28,000
Cascade	2,000	25.0	50,000
Fergus	6,000	22.0	132,000
Golden Valley	1,100	18.2	20,000
Jefferson	900	33.3	20,000
Judith Basin	2,500	23.2	58,000
Lewis & Clark	700	22.9	16,000
Meagher	900	26.7	24,000
Musselshell	1,000	23.0	23,000
Wheatland	700	24.3	17,000
Eastcentral District			
Dawson	1,200	23.3	28,000
Garfield	1,400	22.9	32,000
McCone	900	22.2	20,000
Prairie	1,300	23.1	30,000
Richland	2,500	25.6	64,000
Wibaux	900	26.7	24,000
Southwestern District			
Beaverhead	2,500	27.2	68,000
Madison	1,600	26.2	42,000
Southcentral District			
Carbon	1,800	33.3	60,000
Gallatin	6,000	34.2	205,000
Park	6,600	33.3	220,000
Stillwater	2,000	22.0	44,000
Sweet Grass	1,200	21.7	26,000
Yellowstone	2,400	25.8	55,000
Southeastern District			
Big Horn	2,200	24.5	54,000
Carter	700	27.1	19,000
Custer	800	23.7	19,000
Fallon	2,800	23.9	67,000
Powder River	800	21.3	17,000
Rosebud	700	21.4	15,000
ALL OTHER COUNTIES TOTAL	600	20.0	12,000
STATE TOTAL	77,000	25.0	1,925,000

MONTANA FARM REVIEW

BARLEY BY YEARS.

1882-1922.

Year	Acreage	Yield Per Acre (Bushels)	Production (Bushels)	Farm Price Per Bushel Dec. 1	Total Farm Value Dec. 1
1882	1,852	29.1	53,959	\$1.00	\$ 53,959
1883	1,945	25.8	50,182	.73	36,663
1884	2,139	34.6	74,000	.60	44,400
1885	2,353	30.2	71,000	.77	54,351
1886	3,144	22.9	72,000	.46	33,120
1887	3,458	22.6	78,000	.56	43,680
1888	3,804	28.7	109,000	.65	70,964
1889	4,652	34.6	160,902	.60	96,541
1890	4,792	24.0	115,008	.74	85,106
1891	4,792	30.0	143,760	.65	93,444
1892	5,032	32.5	163,540	.66	107,936
1893	5,183	30.1	156,008	.50	78,004
1894	5,183	22.5	116,618	.40	46,647
1895	5,701	25.0	142,525	.59	84,090
1896	5,701	25.0	142,525	.55	78,389
1897	5,188	38.0	197,144	.50	98,572
1898	5,240	36.0	188,640	.57	107,525
1899	6,183	35.0	216,405	.51	110,367
1900	5,194	38.8	201,527	.48	96,733
1901	16,398	39.0	639,522	.57	364,528
1902	17,874	37.0	661,338	.51	337,282
1903	18,231	40.2	732,886	.58	425,074
1904	17,502	29.9	523,310	.62	324,452
1905	15,227	33.0	502,491	.56	281,395
1906	14,313	33.0	472,329	.56	264,504
1907	17,000	38.0	646,000	.62	400,000
1908	25,000	35.0	875,000	.61	534,000
1909	27,000	27.7	753,000	.63	474,000
1910	30,000	28.0	840,000	.62	521,000
1911	31,000	34.5	1,070,000	.68	728,000
1912	39,000	36.5	1,424,000	.53	755,000
1913	60,000	31.0	1,860,000	.48	893,000
1914	70,000	30.5	2,135,000	.53	1,132,000
1915	80,000	34.0	2,720,000	.48	1,306,000
1916	95,000	28.0	2,660,000	.76	2,022,000
1917	90,000	15.0	1,350,000	1.03	1,390,000
1918	87,000	22.0	1,914,000	1.00	1,914,000
1919	75,000	5.6	420,000	1.40	588,000
1920	64,000	18.0	1,152,000	.65	749,000
1921	75,000	20.5	1,538,000	.60	923,000
1922	77,000	25.0	1,925,000	.50	962,000



RYE

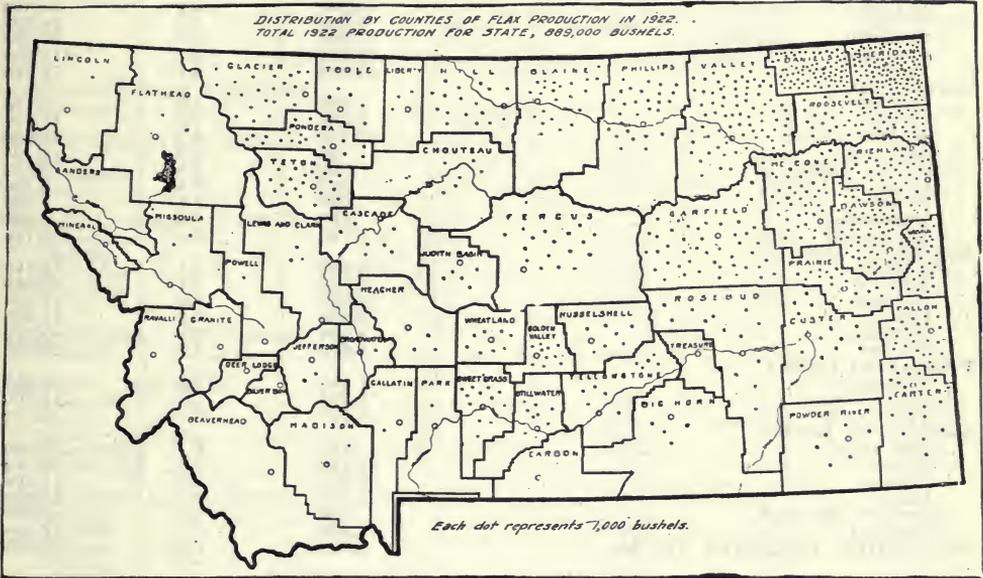
Rye has shown its heaviest increase in acreage in Montana within the two years just past. The recent increase is due largely to rye being more generally recognized as a good feed crop for stock, and to its hardiness and adaptability to non-irrigated sections. Much is raised for hay. In 1922 there were 126,000 acres of rye in the state, the most extensive acreage ever planted. The raising of this crop is fairly well distributed over the entire state, but the northern counties lead with Blaine county showing by far the largest acreage in 1922, followed by Fergus, Chouteau and Hill counties.

RYE BY COUNTIES—1922.

	Acreage	Yield per Acre (Bushels)	Production (Bushels)
Northwest District			
Flathead	1,800	16.7	30,000
Northcentral District			
Blaine	32,000	13.5	432,000
Chouteau	6,300	10.8	68,000
Glacier	1,200	18.3	22,000
Hill	6,600	11.1	73,000
Liberty	500	12.0	6,000
Pondera	400	22.5	9,000
Teton	500	18.0	9,000
Toole	600	10.0	6,000
Northeastern District			
Daniels	2,500	17.6	44,000
Phillips	5,200	12.7	66,000
Roosevelt	4,800	16.0	77,000
Sheridan	4,000	18.5	74,000
Valley	3,500	14.8	52,000
Westcentral District			
Granite	400	12.5	5,000
Missoula	1,000	13.0	13,000
Ravalli	500	12.0	6,000
Sanders	900	12.2	11,000
Central District			
Broadwater	600	15.0	9,000
Cascade	1,200	15.0	18,000
Fergus	11,000	15.1	166,000
Golden Valley	3,000	10.0	30,000
Jefferson	1,200	17.5	21,000
Judith Basin	1,500	16.7	25,000
Meagher	500	16.0	8,000
Musselshell	1,500	12.0	18,000
Wheatland	600	16.7	10,000
Eastcentral District			
Dawson	1,300	18.5	24,000
Garfield	4,300	15.3	66,000
McCone	1,500	15.3	23,000
Prairie	1,500	16.0	24,000
Richland	1,000	14.0	14,000
Wibaux	1,800	14.9	25,000
Southwestern District			
Beaverhead	500	18.0	9,000
Madison	600	18.3	11,000
Silver Bow	600	15.0	9,000
Southcentral District			
Carbon	1,100	11.8	13,000
Gallatin	1,400	19.3	27,000
Park	400	17.5	7,000
Stillwater	900	15.5	14,000
Sweet Grass	700	12.9	9,000
Yellowstone	1,800	17.2	31,000
Southeastern District			
Big Horn	800	18.7	15,000
Carter	2,000	16.5	33,000
Custer	1,500	16.0	24,000
Fallon	3,000	17.7	53,000
Powder River	1,100	19.1	21,000
Rosebud	3,000	15.0	45,000
Treasure	600	15.0	9,000
Treasure	800	16.2	13,000
ALL OTHER COUNTIES TOTAL			
STATE TOTAL	126,000	14.5	1,827,000

FLAX

Flax, considered primarily a sod crop, stepped into rank as one of the important crops of the state about 1910, expanding with the taking up of much new land by homesteaders. The largest area in flax was 583,000 acres in 1917. A general heavy decrease took place afterwards, until in 1922 there were only 127,000 acres. Most of the flax is raised in the eastern one-fourth of the state, but some is produced in all sections east of the main mountain ranges. Practically all of the crop is produced on non-irrigated lands. There is evidence indicating that more flax will be raised in the immediate future than has been for the past two years.



FLAX BY YEARS.
1902-1922.

Year	Acres	Yield Per Acre (Bushels)	Production (Bushels)	Farm Price Per Bushel Dec. 1.	Total Farm Value Dec. 1.
1902	12,500	9.0	112,500	\$.68	\$ 76,500
1903	12,625	14.0	176,750	.60	106,050
1904	9,334	8.0	74,672	.95	70,938
1905	16,570	10.0	165,700	.82	135,874
1906	24,855	12.0	298,260	1.00	298,260
1907	34,000	13.0	436,000	.81	353,000
1908	9,000	11.5	104,000	1.00	104,000
1909	38,000	11.9	447,000	1.60	715,000
1910	300,000	7.0	2,100,000	2.40	5,040,000
1911	425,000	7.7	3,272,000	1.80	5,890,000
1912	460,000	12.0	5,520,000	1.12	6,182,000
1913	400,000	9.0	3,600,000	1.15	4,140,000
1914	300,000	8.0	2,400,000	1.20	2,880,000
1915	250,000	10.5	2,625,000	1.70	4,462,000
1916	325,000	9.5	3,088,000	2.48	7,658,000
1917	583,000	3.0	1,749,000	2.95	5,160,000
1918	547,000	3.0	1,641,000	3.38	5,547,000
1919	370,000	1.3	481,000	4.40	2,116,000
1920	407,000	2.6	1,058,000	1.75	1,851,000
1921	110,000	5.0	550,000	1.40	770,000
1922	127,000	7.0	889,000	1.97	1,751,000

FLAX BY COUNTIES—1922.

	Acreage	Average Yield Per Acre (Bushels)	Production (Bushels)
Northcentral District			
Blaine	4,800	4.8	23,000
Chouteau	1,800	3.1	5,500
Glacier	3,000	6.9	20,600
Hill	3,500	4.9	17,000
Liberty	600	4.7	2,800
Pondera	2,400	7.5	18,000
Teton	3,000	6.7	20,000
Toole	1,000	4.7	4,700
Northeastern District			
Daniels	12,000	6.2	74,300
Phillips	5,000	5.3	26,500
Roosevelt	7,000	7.9	55,700
Sheridan	13,300	8.3	111,000
Valley	14,000	5.2	73,000
Central District			
Cascade	900	7.8	7,000
Fergus	2,100	7.3	15,400
Golden Valley	1,700	6.2	10,500
Jefferson	400	6.0	2,400
Judith Basin	700	6.9	4,800
Lewis & Clark	400	6.0	2,400
Meagher	400	6.7	2,700
Musselshell	800	8.6	6,900
Wheatland	1,100	7.0	7,700
Eastcentral District			
Dawson	8,200	8.4	69,000
Garfield	5,700	7.7	44,000
McCone	5,500	8.2	45,000
Prairie	2,600	7.3	19,000
Richland	6,000	7.5	45,000
Wibaux	3,600	7.5	27,000
Southcentral District			
Stillwater	1,200	7.0	8,400
Sweet Grass	1,600	7.5	12,000
Yellowstone	1,100	9.1	10,000
Southeastern District			
Big Horn	400	8.7	3,500
Carter	2,100	9.8	20,500
Custer	1,500	9.0	13,500
Fallon	2,700	9.4	25,300
Powder River	700	7.9	5,500
Rosebud	1,600	7.7	12,400
ALL OTHER COUNTIES TOTAL	2,600	6.5	17,000
STATE TOTAL	127,000	7.0	889,000

CORN

Corn has made the most rapid proportional increase of all the important crops. With 1,600 acres in 1900, the following 22 years brought an expansion of the state's corn acreage up to 219,000 acres in 1922, and this remarkable growth will continue for at least another year. The factors causing this expansion are many, and include among others: the increasing demand for homegrown livestock feed and recognition of the importance in rotation of inter-tilled crops—both requirements arising out of the trend toward diversification, and both met by corn; the demonstration by the Experiment Station that wheat on well-tilled corn ground yields practically as much as after summer fallow; the success with which certain varieties have been acclimated, so that they mature under Montana conditions; and the popularity of corn as a feed for all stock in many forms, as grain, silage, and roughage.

Most of the corn is raised in the eastern one-third of the state, but it is rapidly assuming an important position in nearly all sections east of the mountains. Very little is grown in districts with altitudes of more than 3,500 feet, although in the milder climate west of the Divide its success has been demonstrated, and its acreage is extending there.

The biggest share of the crop is cut for forage, and is fed as fodder and stover, while increasing amounts are being hogged off and put into silos each year.

Several varieties of dent, semi-dent, and flint types have been acclimated and proved to be excellent yielders of either forage or grain, or both. The average yields shown in the tables indicate how successful the crop has been, and show that it is not a "boom" crop, but that it merits the growth it is having.

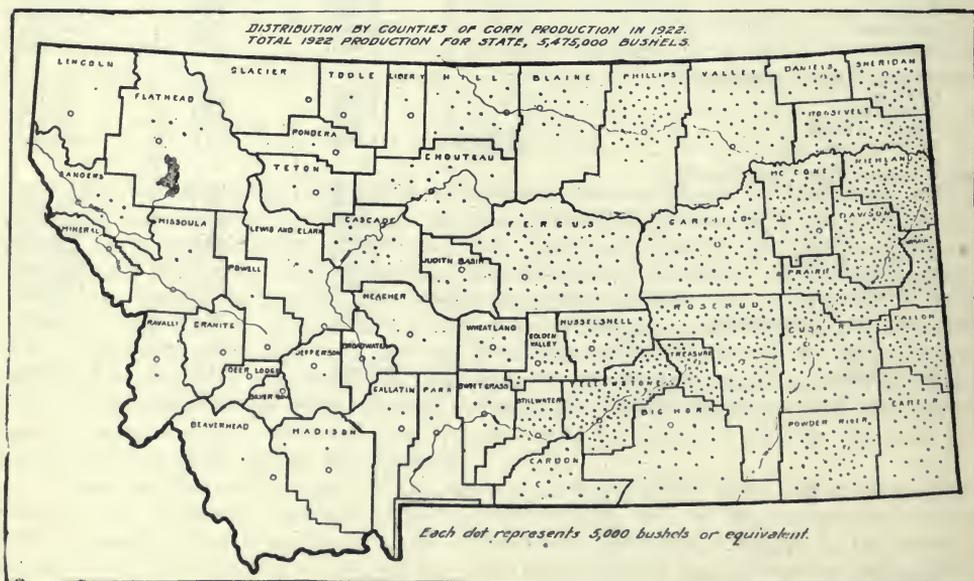
CORN BY COUNTIES—1922

	Acreage	Average Yield Per Acre (Bushels)	Production (Bushels)
NORTHWESTERN DISTRICT			
Flathead	800	25.0	20,000
NORTHCENTRAL DISTRICT			
Blaine	2,000	22.5	45,000
Chouteau	3,000	20.0	60,000
Hill	2,000	22.0	44,000
NORTHEASTERN DISTRICT			
Daniels	2,000	24.0	48,000
Phillips	8,000	23.4	187,000
Roosevelt	10,000	24.4	244,000
Sheridan	5,000	25.2	126,000
Valley	6,000	21.3	128,000
WESTCENTRAL DISTRICT			
Sanders	700	24.3	17,000
CENTRAL DISTRICT			
Cascade	1,700	27.6	47,000
Fergus	11,000	22.5	248,000
Golden Valley	4,000	18.2	73,000
Musselshell	7,000	21.6	151,000
Wheatland	1,400	20.0	28,000
EASTCENTRAL DISTRICT			
Dawson	12,000	31.6	380,000
Garfield	14,000	22.0	308,000
McCone	9,000	28.2	254,000
Prairie	7,000	27.6	193,000
Richland	16,000	27.2	435,000
Wibaux	5,500	27.0	148,000
SOUTHCENTRAL DISTRICT			
Carbon	3,000	23.3	70,000
Stillwater	3,000	22.6	68,000
Sweet Grass	900	22.2	20,000
Yellowstone	17,000	24.2	411,000
SOUTHEASTERN DISTRICT			
Big Horn	4,000	27.5	110,000
Carter	7,000	26.4	185,000
Custer	12,000	26.6	320,000
Fallon	8,000	28.0	224,000
Powder River	9,000	26.2	236,000
Rosebud	18,000	25.1	452,000
Treasure	5,000	24.6	123,000
Total All Other Counties.....	4,000	23.0	92,000
STATE TOTAL	219,000	25.0	5,475,000

Note: Estimates on corn are made upon the basis of all the crop being harvested for grain, and above figures should be considered accordingly.

CORN BY YEARS.
1882-1922.

Year	Acreage	Yield Per Acre (Bushels)	Production (Bushels)	Farm Price Per Bushel Dec. 1.	Total Farm Value Dec. 1.
1882	492	36.6	18,000	\$1.05	\$ 18,900
1883	502	20.0	10,040	.90	9,036
1884	830	24.9	20,700	.75	15,525
1885	880	25.0	22,000	.80	17,600
1886	890	24.7	22,000	.65	14,390
1887	908	27.5	25,000	.60	15,000
1888*	-----	-----	-----	-----	-----
1889*	-----	-----	-----	-----	-----
1890*	-----	-----	-----	-----	-----
1891*	-----	-----	-----	-----	-----
1892	1,080	19.4	21,000	.68	14,364
1893	1,102	27.5	30,305	.70	21,214
1894	1,157	32.7	37,834	.82	31,024
1895	1,331	25.0	33,275	.75	24,956
1896	1,331	26.0	34,606	.60	20,764
1897	1,065	18.0	19,170	.65	12,460
1898	1,598	28.0	44,744	.66	29,531
1899	1,582	23.0	36,386	.52	18,921
1900	1,598	15.0	23,970	.59	14,142
1901	3,095	25.0	77,375	.90	69,638
1902	3,714	22.0	81,708	.72	58,830
1903	3,788	24.1	91,291	.62	56,600
1904	3,902	22.2	86,624	.68	58,904
1905	3,941	19.4	76,455	.68	51,989
1906	3,980	23.4	93,132	.65	60,536
1907	4,000	22.5	90,000	.68	61,000
1908	4,000	23.4	94,000	.90	85,000
1909	10,000	28.8	274,000	.86	236,000
1910	16,000	23.0	368,000	.95	350,000
1911	20,000	26.5	530,000	.80	424,000
1912	24,000	25.5	612,000	.70	428,000
1913	28,000	31.5	882,000	.77	679,000
1914	50,000	28.0	1,400,000	.76	1,064,000
1915	70,000	28.0	1,960,000	.69	1,352,000
1916	74,000	25.0	1,850,000	.93	1,720,000
1917	81,000	12.5	1,012,000	1.75	1,771,000
1918	100,000	21.0	2,100,000	1.35	2,835,000
1919	133,000	4.0	532,000	1.65	879,000
1920	184,000	12.1	2,226,000	.80	1,789,000
1921	190,000	20.0	3,800,000	.67	2,546,000
1922	219,000	25.0	5,475,000	.53	2,902,000

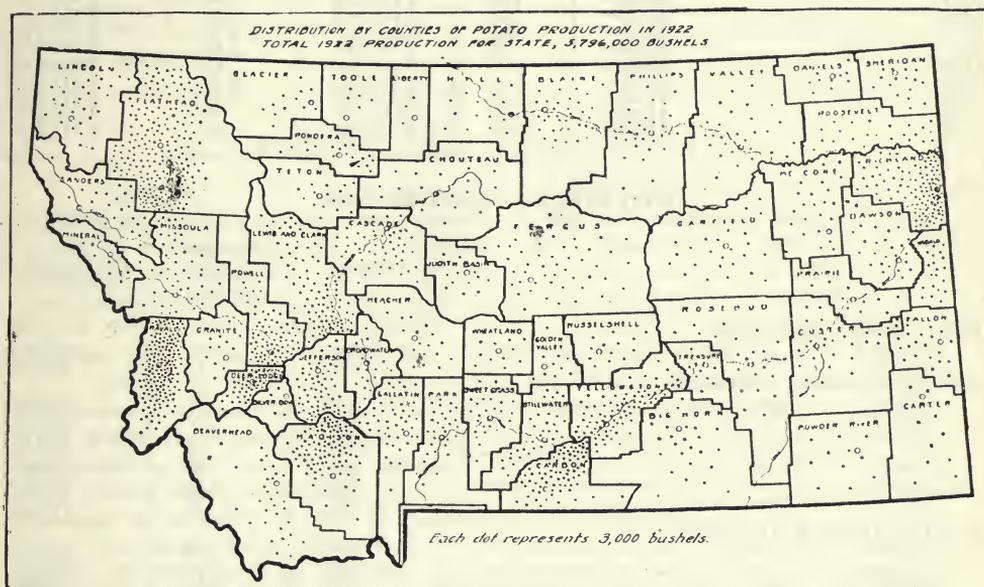


*No reliable data available for these years.

POTATOES

The climate and soils of Montana are extremely favorable to the production of large yields of potatoes of high quality, and the acreage has grown steadily until in 1922 there were 46,000 acres, the largest the state has had. Further increase is not expected in the immediate future, for the high cost of transporting such a bulky crop is a distinct limiting factor on net proceeds.

Potatoes are raised over all the state on both irrigated and non-irrigated lands, but the most of the commercial production is on irrigated land, with the notable exception of the region west of the Divide, and particularly Flathead county, where most of the potatoes are grown without irrigation. In the counties at the east end of the state potatoes are produced commercially without irrigation, as well as in scattered sections elsewhere. Flathead county leads in total acreage given to potatoes, with Ravalli and Richland the next two in this respect.



POTATOES BY YEARS 1882-1922

Year	Acreage	Yield Per Acre (Bushels)	Production (Bushels)	Farm Price Per Bus. Dec. 1	Total Farm Value Dec. 1
1882	2,500	120	300,000	\$1.00	\$ 300,000
1883	2,575	105	270,375	.70	189,263
1884	2,781	105	292,000	.56	163,520
1885	3,198	82	262,000	.50	131,118
1886	4,253	106	451,000	.90	405,900
1887	4,466	110	491,000	.64	314,240
1888	4,600	120	552,000	.50	276,000
1889	4,270	87	371,490	.65	241,468
1890	4,484	73	327,332	.80	261,866
1891	4,708	120	564,960	.41	231,634
1892	4,614	100	461,400	.60	276,840
1893	4,799	138	662,262	.69	456,961
1894	5,183	111	575,313	.48	276,150
1895	5,442	53	288,426	.48	138,444
1896	4,952	170	841,840	.32	269,389
1897	4,506	156	702,936	.40	281,174

MONTANA FARM REVIEW

POTATOES BY YEARS—(Continued)

Year	Acreeage	Yield Per Acre (Bushels)	Production (Bushels)	Farm Price Per Bus. Dec. 1	Total Farm Value Dec. 1
1898	4,551	104	473,304	.55	260,317
1899	4,597	141	648,177	.53	343,534
1900	4,781	134	640,654	.53	339,547
1901	9,932	157	1,559,324	.73	1,133,307
1902	11,521	153	1,762,713	.50	881,356
1903	12,904	176	2,271,104	.44	999,286
1904	13,162	143	1,882,166	.61	1,148,121
1905	13,688	120	1,642,560	.59	969,110
1906	14,099	152	2,143,048	.61	1,307,259
1907	18,000	150	2,700,000	.50	1,350,000
1908	20,000	138	2,760,000	.70	1,932,000
1909	21,000	156	3,276,000	.51	1,671,000
1910	22,000	120	2,640,000	.85	2,244,000
1911	25,000*	150	3,750,000	.74	2,775,000
1912	30,000*	165	4,950,000	.40	1,980,000
1913	33,000*	140	4,620,000	.67	3,095,000
1914	33,000*	140	4,620,000	.64	2,957,000
1915	36,000*	155	5,580,000	.50	2,790,000
1916	37,000*	125	4,625,000	1.20	5,550,000
1917	39,000*	95	3,705,000	1.02	3,779,000
1918	37,000*	135	4,995,000	.80	3,996,000
1919	38,000	60	2,280,000	1.60	3,648,000
1920	40,000	110	4,400,000	1.05	4,620,000
1921	41,000	115	4,715,000	.80	3,772,000
1922	46,000	126	5,796,000	.40	2,318,000

POTATOES BY COUNTIES—1922

	Acreeage	Average Yield Per Acre (Bushels)	Production (Bushels)
NORTHWEST DISTRICT			
Flathead	4,800	131	629,000
Lincoln	800	112	90,000
NORTHCENTRAL DISTRICT			
Blaine	680	97	66,000
Chouteau	560	99	55,000
Glacier	300	116	35,000
Hill	450	94	42,000
Liberty	100	90	9,000
Pondera	550	115	63,000
Teton	480	109	52,000
Toole	150	94	14,000
NORTHEASTERN DISTRICT			
Daniels	250	108	27,000
Phillips	700	114	80,000
Roosevelt	600	116	70,000
Sheridan	450	107	48,000
Valley	800	105	84,000
WESTCENTRAL DISTRICT			
Deer Lodge	950	148	140,000
Granite	250	132	33,000
Mineral	150	134	20,000
Missoula	1,600	103	165,000
Powell	1,700	144	244,000
Ravalli	3,500	150	525,000
Sanders	700	105	74,000
CENTRAL DISTRICT			
Broadwater	400	135	54,000
Cascade	1,300	120	156,000
Fergus	1,700	83	140,000
Golden Valley	350	86	30,000
Jefferson	1,300	151	196,000
Judith Basin	400	87	35,000
Lewis & Clark	1,900	153	290,000
Meagher	500	104	52,000
Musselshell	400	95	38,000
Wheatland	350	95	33,000
EASTCENTRAL DISTRICT			
Dawson	700	110	77,000
Garfield	750	96	72,000
McCone	600	103	62,000
Prairie	250	108	27,000
Richland	2,500	140	330,000
Wibaux	500	120	60,000

*Tentative Revisions.

POTATOES BY COUNTIES—1922—(Continued)

	Acreage	Average Yield Per Acre (Bushels)	Production (Bushels)
SOUTHWESTERN DISTRICT			
Beaverhead	650	142	92,000
Madison	1,700	178	302,000
Silver Bow	150	80	12,000
SOUTHCENTRAL DISTRICT			
Carbon	1,700	127	216,000
Gallatin	850	153	130,000
Park	600	150	90,000
Stillwater	450	147	66,000
Sweet Grass	500	140	70,000
Yellowstone	1,800	134	240,000
SOUTHEASTERN DISTRICT			
Big Horn	550	121	67,000
Carter	280	107	30,000
Custer	750	114	85,000
Fallon	500	116	58,000
Powder River	300	106	32,000
Rosebud	550	113	62,000
Treasure	250	108	27,000
STATE TOTAL	46,000	126	5,796,000

APPLES AND OTHER FRUITS

Apples form one of the major crops of the state, although production is mainly confined to only 18 counties. According to the 1920 Census figures, there are more than a million bearing apple trees in Montana. More than half of these are in Ravalli county, in the Bitter Root Valley. Flathead, Missoula, and Carbon counties also produce apples in commercial quantities, ranking in the order named. Shipments of apples are by far the heaviest from Ravalli county. Commercial apples are chiefly of the McIntosh Red variety, which develops to perfection under conditions here.

Among the other orchard fruits, cherries lead in quantity. Pears, plums and prunes are also grown on limited acreages, chiefly west of the Divide.

Small fruits are also successfully grown in various sections of the state, but commercial production is more general in the counties west of the Divide.

Production of small fruits and of orchard fruits other than apples on a commercial scale is limited at present to comparatively few localities.

The tables throw light upon the quantity of apples produced in Montana, the general distribution of the orchards by counties, and the size of the commercial crop.

NUMBER OF APPLE TREES OF BEARING AGE IN MONTANA BY COUNTIES

(As Reported by the U. S. Bureau of the Census for 1919)

County	No. Trees of Bearing Age	County	No. Trees of Bearing Age
Ravalli	725,720	Broadwater	7,841
Flathead	104,702	Park	5,790
Missoula	63,222	Gallatin	4,879
Carbon	58,364	Jefferson	3,655
Yellowstone	20,486	Mineral	2,632
Sanders	17,940	Sweet Grass	2,519
Madison	11,450	Powell	2,249
Stillwater	11,271	Granite	1,389
Lincoln	10,940	Fergus	1,305
All Other Counties.....	2,844		
Total for State.....	1,059,198		

ORCHARD FRUITS—TREES OF BEARING AGE—MONTANA (1920 Census)

Kind	No. of Trees
Apples	1,059,198
Pears	10,278
Plums and Prunes.....	24,501
Cherries	65,633

APPLES—MONTANA
1909-1922

Year	Total Production (Bushels)	Farm Value Dec. 1 Per Bushel	Total Farm Val. of Crop Dec. 1
1909	567,000	\$ *	*
1910	420,000	1.20	504,000
1911	900,000	1.15	1,035,000
1912	900,000	1.03	927,000
1913	840,000	1.42	1,192,000
1914	900,000	.76	684,000
1915	1,041,000	.93	968,000
1916	768,000	1.10	845,000
1917	1,044,000	1.00	1,044,000
1918	792,000	2.10	1,663,000
1919	850,000	1.75	1,488,000
1920	825,000	1.80	1,485,000
1921	975,000	1.50	1,465,000
1922	610,000	1.00	610,000

*No data available.

COMMERCIAL APPLE PRODUCTION—MONTANA

Year	Total Crop* (Bushels)	Commercial Crop (Boxes)*	Cars of Apples Shipped of This Crop	Equivalent in Boxes Shipped
1919	850,000	420,000	444	337,000
1920	825,000	384,000	443	335,000
1921	975,000	521,000	687	520,000
1922	610,000	300,000	340*	260,000

*Estimated.

SUGAR BEETS

Sugar beets rank as one of the important crops grown in Montana. In 1922, there were 14,441 acres of beets harvested within the state, producing more than 153,000 tons of beets. Up to May 1, 1923, the growers have received \$1,144,271 for the 1922 crop, and will probably receive considerably more, as they share in the profits realized from the sale of the sugar, according to terms of the contracts with the sugar companies.

The factory of the Great Western Sugar Company at Billings is now the only one in the state, and it handles most of the beets raised in Montana. Beets grown in Big Horn county are shipped to the factory of the Holly Sugar Corporation at Sheridan, Wyoming.

Beets for sugar are now grown principally in the following counties: Yellowstone, Carbon, Big Horn, Treasure, Rosebud, Custer, Stillwater, and Richland. Extension of acreage and construction of new factories are being contemplated.

SUGAR BEETS

Year	1922 ²	1919 ¹	1909 ¹
Sugar beets harvested, acres.....	14,441	8,600	8,710
Tons harvested	153,380	73,824	108,776
Average Yield Per Acre (tons).....	10.62	8.58	12.48
Average sugar content of beets (sliced) per cent....	16.75	15.92 ²	.....
Average Price per ton to grower.....	\$7.46 ³	\$11.00	\$5.00
Total farm value of crop.....	\$1,144,271 ³	\$812,064	\$543,478

¹Data for 1919 and 1909 from U. S. Census Bureau.

²Factory reports.

³Average rate and total amount paid up to May 1, 1923. Additional payments are contemplated.

SEED CROPS

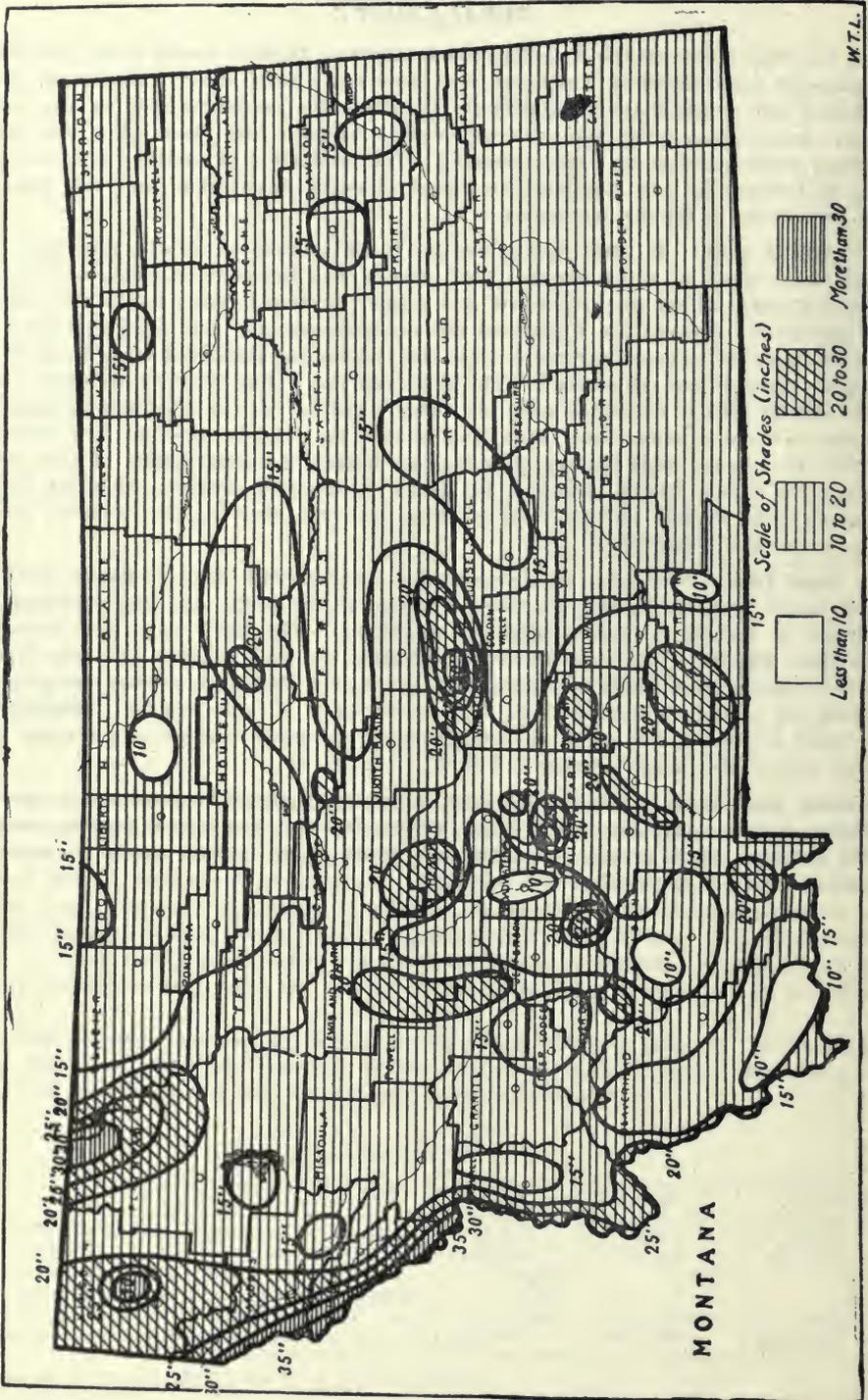
No little share of the cash income of Montana farmers comes from the sale of various seed crops, chief of which are seed peas and alfalfa seed. The climatic conditions and soil of the state are extremely favorable for producing seed of the highest quality, from which grow plants of exceptional strength and vigor. For this reason Montana-grown seeds enjoy a wide demand. The production of certified and registered seeds is fostered by the Montana Pure Seed Growers Association, and this phase of crop production is rapidly increasing.

Alfalfa Seed: In 1922 approximately 16,000 bushels of alfalfa seed were produced in the state, of which about 115,000 pounds was Registered Grimm, and the rest common alfalfa, Grimm not registered, and a small portion Cossack and other varieties. The out-of-state demand for Registered Grimm is strong, and this seed sells for about twice as much as common varieties, while the Grimm not registered finds a ready sale at higher figures than the common. The 1922 crop was valued at about \$170,000. Much of the alfalfa seed is harvested from old fields which have very poor stands, hence the average yields are much lower than they should be. During the ten year period of 1912-21, the average yield for the state was 3.6 bushels per acre. Most of this crop is produced in Valley, Blaine, Rosebud, Big Horn, Yellowstone, Carbon, Richland, Powder River, Cascade, Fergus, and Garfield counties, although several other counties produce it in commercial quantities.

Seed Peas: Seed peas are grown under contract with seed companies chiefly in the irrigated sections in the southwest quarter of the state, and the excellent seed produced is leading to more extended operations. The 1922 crop was valued at more than \$200,000. The counties which produce the bulk of this crop are Ravalli, Madison, Beaverhead, Gallatin, Lewis and Clark, and Missoula. Other counties will increase the acreage in seed peas in 1923, according to advance reports. Canning peas are raised in Ravalli and Gallatin counties where canneries operate, and acreage given to this crop is also being increased.

Other Seed Crops: Many other seed crops are produced in commercial amounts, including mainly sugar beet seed, beans, clover, timothy, vegetables, potatoes, and all of the principal small grains. Localities are found where farmers profitably specialize on one or more of these crops for seed.

AVERAGE ANNUAL PRECIPITATION



(From Records of U. S. Weather Bureau).

W.T.L.

NOTES ON THE CLIMATE OF MONTANA

William T. Lathrop,

Meteorologist, U. S. Weather Bureau.

Marked influences upon its climate are exerted by topographic features of Montana, especially the Rocky Mountains. The Continental Divide crosses the western part of the state and in the southwest determines a part of the Montana-Idaho boundary line. The south-central and western portions of the state are very largely mountainous, and the central part also has several important mountain ranges. Outlying ranges and groups of mountains and hills rise in other sections. The eastern portion of the state belongs to the Great Plains region, but the level expanses of the plains here are broken up by rolling hills and increasing roughness of surface as the Rocky Mountain country is approached.

Rivers and streams in great numbers have their sources of first supply in the winter accumulations of snow in the mountain regions. The flow from the melting of these snow deposits in the spring and summer months is augmented by water absorbed by the soil and by the rains of those seasons. The Missouri River is formed by the confluence of the Jefferson, Madison, and Gallatin rivers in a well watered section of the southwestern part of the state. It proceeds in a generally northerly and then easterly direction into North Dakota. Its great tributary, the Yellowstone, takes the drainage of all of southern Montana from Yellowstone Park eastward, except the extreme south-eastern corner, and much of eastern Montana. The Missouri and another tributary, the Musselshell, receive all the drainage of the central part of the state. The Milk, Marias, and Poplar rivers are the principal streams bringing into the Missouri the waters of the north. To the westward of the Continental Divide the bulk of the drainage is carried out of the state to the Columbia River by the Clark Fork, while the Kootenai River, also of the Columbia system, drains Lincoln County, in the extreme northwest. Because of the agricultural importance of its valley, the Bitter Root River, just east of the Bitter Root Mountains, which flows into the Clark Fork, should also receive mention. Into Flathead Lake, in the northwest, flows the drainage of a considerable area of the west slope of the Main Range of the Rockies.

The lowest parts of the state are in the northeast, where the Missouri and Yellowstone flow into North Dakota at an elevation of a little less than 2,000 feet. Numerous peaks in the mountains exceed 10,000 feet in altitude, the highest named being Granite Peak, in the Beartooth Mountains in the south, elevation 12,850 feet.

Long Growing Days Its northern geographical location lengthens the growing days, and the summer sun, not masked by too great cloudiness, encourages rapid growth of crops and native grasses. The winter days are correspondingly short. The range of temperature is rather wide, but the annual mean temperature in Montana as a whole is 42.2°. The warmest part of the state, considering the annual averages, is the southeastern, especially the Yellowstone Valley and the neighboring section of the Musselshell in Musselshell County. Billings and Huntley, Yellowstone County, have the highest average temperatures for the year through this section, the former being 46.2°, and the latter, 46.0°. Hamilton, in the Bitter Root Valley, however, equals Billings, and these two places have the highest mean annual temperatures in the state.

The northern tier of counties east of the Main Range, adjoining the international boundary line, taking in mountain slope sections in the west and exposed plains in the east, is the coldest large area, and has an average temperature slightly under 40°. The slope of the Main Range in Beaverhead and Madison counties, in the southwest, is

colder than this. Records of four stations available here, Bowen, Brenner, Dell, and Hebgen Dam, average 35.6°. Bowen, the coldest station in the Montana group of records, shows 32.3° as its annual mean. The elevation of this place is over 6,000 feet.

The general average of annual mean temperatures over the east slope region in the south, as well as in the north, is 41.6°. Roughly quartering the part of Montana east of the Main Range of the Rockies, the northeastern quarter has an average annual temperature of 41.1°, and the southeastern quarter, which has been mentioned as the warmest part of the state, 43.7°. That part of the Missouri Valley which extends from Three Forks northward into Chouteau County is one of the warmest sections of the state, and has temperature means approaching those of the Yellowstone Valley.

The Bitter Root and the Clark Fork valleys, and the Mission Valley, extending southward from Flathead Lake, have annual means similar to these and placing them in the warmer sections. The counties west of the Continental Divide, over which region as a whole the annual mean temperature is 42.9°, average warmer than other parts of the state excepting the southeastern, though the higher stations mostly have annual mean temperatures near 40°. In the matter of temperatures climatic conditions in these western counties differ from those east of the Main Range principally in their being subject to less extremes and less persistency of cold. The winters are milder, the summers are cooler, than in the eastern part of the state, and summer months are frequently a little cooler than in the central sections.

**False
Impressions
of Montana**

The customary prominence which extremes or unusual occurrences naturally receive in press and conversation through the country has served to create rather a widespread false impression in regard to the severity of winter weather in Montana. It is not the purpose here to make invidious comparisons, but it is not fair to Montana that she should suffer by them. It is of record that this state has shown some very low minimum temperatures, and furthermore, that the lowest temperature recorded in the United States has occurred here. A fact which has not been given equal prominence, however, is of somewhat greater importance: the mean or average winter temperatures do not place any section of Montana within the area of coldest winters in the United States. Because of its cool summers rather than the cold of its winters, the strip on the Montana slope of the Main Range of the Rockies, along the Idaho line in the southwest, the mean annual temperature of which has previously been cited, is the coldest considerable area in the United States on yearly averages as the basis of comparison, but not, be it remembered, on winter averages.

Over the eastern end of Montana the summers are hotter, generally speaking, than in other large sections, and the winters colder. Maximum temperatures of 100° or higher ordinarily are reached in June, July, August, and in about as many years as not in September. There is usually a large daily range of temperature, however, when such maxima are reached, and the early morning temperatures are often as much as or more than 30 degrees lower. The highest temperature ever recorded in Montana was 117° at Glendive on July 20, 1893. The low humidity greatly reduces the discomfort and danger from the high temperatures, and heat prostration is seldom or never heard of as occurring in the state.

The extreme minimum temperature record is -65°, reported from Ft. Keogh, near Miles City, in January, 1888. The average January temperature for northeastern Montana is 11.0°, and the winter daily range is not as great as in the summer. Minimum temperatures east of the Main Range fall to 40 degrees below zero in most winters, and sometimes go lower. But such conditions are not as extensive or as frequent as is often thought, nor does extreme cold weather in most cases last more than a few days at a time. Owing to low humidity, and the usually light winds or near calms when such cold prevails, the severity of the weather is less than is imagined by persons who have not experienced it, but the activities of life must, of course, be sensibly governed. Such

reference to cold waves in Montana should also include at least mention of the chinooks which so frequently terminate or mitigate them with various degrees of decisiveness and abruptness. As a result of certain air pressure distribution and air movement, rapid rises of 20 to 50 degrees in temperature often occur in one section or another, of greatly varying local extent. A troublesome weather item in the summer months is the hot wind which occasionally arises and rapidly takes up the moisture from crops and soil and grass, leaving them dry and more or less parched, sometimes greatly reducing the grain yield in areas exposed to it and not favored with rain quickly thereafter.

Precipitation by Regions The region of Montana's greatest total annual precipitation is that adjoining Idaho in the northwest, particularly western portions of Sanders and Mineral counties. A record nine years long for Saltese, which is near the Idaho line, in a valley between the Bitter Roots and the Coeur d'Alenes, shows an average annual total of 34.25 inches. Farther north, between the Coeur d'Alenes and the Cabinet Mountains, a ten year record for Heron, a few miles from the Idaho line, gives an average of 31.90 inches. There may be scattered localities in the mountain valleys and passes, both east and west of the Continental Divide, where these amounts are exceeded, but in places where this may be suspected the records are too brief to establish the fact definitely. There is much variation in the west, through the section marked off by the Continental Divide. Here the precipitation averages 20.37 inches a year. In Glacier Park and the Flathead Valley are totals above 20 and 25 inches. Belton has 26.46 inches. Amounts with few exceptions between 12 and 19 inches are irregularly distributed over the rest of this area, the least being 11.29 inches at Hamilton.

From the feet of the Main Range eastward in the counties along the Canadian line, and including also Pondera, part of Teton, western and most of northern Chouteau, and Roosevelt, the average precipitation during the year is a little over 13 inches, the least being 8.27 inches, which is shown by the average for Rudyard. As the Rudyard record began as late as 1916, and the average is of only five years of observations and runs into the most notable drought in the weather history of the state, this figure does not by any means indicate the normal precipitation, and the average will most probably be raised as the record lengthens. Through the entire eastern part of the state there are but limited areas where the annual precipitation averages as much as 15 inches. In central and southwestern counties the distribution is very irregular. It is scant in the high lands of Beaverhead county, and varies mostly between 9 and 14 inches through the upper end of the Missouri Valley where the trend is north-south; yet it averages 16.84 inches for the southwestern part of the state to eastward of the Continental Divide, while the section to northward, notwithstanding the light precipitation in the northernmost counties, averages 15.81 inches.

Thus the roughest sections of Montana show the greatest local differences in the amount of precipitation and have the highest general averages, and the expanses less varied in topography receive, in general, somewhat less, but more evenly distributed, precipitation. May and June have the greatest monthly amounts for almost the whole of the state, a circumstance highly favorable for agricultural interests. There are, of course, wide local variations in the monthly amounts, but they range from about two inches to four inches, with few exceptions, in each of these months. July averages a smaller amount than May or June, but still sufficient for the needs of the growing crops. There is a distinct falling off in the rainfall in August, and a clearly marked increase over the August average in September. Near the Idaho line, in Mineral, Sanders, and Lincoln counties, and on the west slope in Glacier Park, this monthly distribution does not hold; while there are as a rule sufficiently ample amounts in the early summer, the precipitation maximum occurs in the winter, the colder months having a decidedly greater amount of precipitation than the warmer months. The fact points to a heavy snowfall for these sections, and this is shown by the records. This north-

western corner of the state and somewhat smaller sections in the mountains of the central, south-central, and southwestern portions have the greatest annual totals of snowfall. The short record for Saltese averages 161.5 inches of snow for the year. Hebgen Dam averaged 150.3 inches in sixteen years. The Elliston average is 137.3 inches; Belton, 122.2 inches; Red Lodge, 106 inches; Pine Grove, in the Big Snowy Mountain district, 104.5 inches; Adel, at the northern end of the Big Belts, 98.3 inches. The lowest totals of snowfall, amounts between 20 and 30 inches, and at an occasional station less than 20 inches, are scattered through the east and north. Fallon, with 13.3 inches in a ten year record, represents the minimum.

Light Snowfall on Ranges The broader range sections, it will be noted, have comparatively light snowfall. The snow cover on the plains and the lower flats generally diminishes quickly, through melting, evaporation, and the action of the sweeping winds, which carry the bulk of it into the coulees and draws, leaving the grazing grounds still largely available for livestock much of the time.

Irrigation in many sections supplements the rainfall and carries into fields and pastures water to provide sufficiently for times when the natural supply is deficient.

At stations where this factor has up to this time been determined more or less satisfactorily, the average number of days in the course of a year when precipitation amounting to at least .01 inch occurs (either rain or snow), varies from 38 at Fallon to 136 at Haugan, Mineral county.

Summer produces a quota of atmospheric electrical disturbances which ordinarily is not large. The thunderstorms are occasionally heavy, and the accompanying winds may rise tempestuously for short times, with pouring rain. Sometimes destructive hail also is precipitated and crops are laid waste over considerable areas. Hail insurance is available to minimize the danger of financial loss from such a cause.

It will be seen that Montana is a region of pronounced meteorological contrasts. Extreme temperature records range from -65 degrees to 117 degrees, while annual means of temperature range from 32.3 degrees in the mountains to 46.2 degrees in river valleys. The yearly snowfall varies from a low mark of 13.3 inches on the plains to a high mark of 161.5 inches in the mountains, and annual total precipitation is from less than nine inches in the driest districts to more than thirty inches in the rough country where the yearly averages are greatest.

FROST DATA FOR MONTANA

Stations—Counties	Length of Record Years	Average Date last killing frost in spring	Average Date first killing frost in autumn
Adel, Cascade	23	June 12	Sept. 1
Agric. Col., Gallatin	28	May 22	Sept. 12
Anaconda, Deer Lodge	21	June 10	Sept. 11
Augusta, Lewis & Clark	22	June 4	Sept. 4
Biddle, Powder River	14	May 23	Sept. 18
Big Timber, Sweet Grass	15	May 23	Sept. 14
Billings, Yellowstone	26	May 16	Sept. 26
Bowen, Beaverhead	15	**	**
Brenner, Beaverhead	8	June 14	Sept. 12
Browning, Glacier	12	June 16	Sept. 2
Butte, Silver Bow	28	May 29	Sept. 18
Cascade, Cascade	17	May 19	Sept. 17
Chester, Liberty	17	May 25	Sept. 7
Chinook, Blaine	25	May 14	Sept. 18
Choteau, Teton	14	May 25	Sept. 14
Circle, (near McCone)	20	May 28	Sept. 16
Crow Agency, Big Horn	40	May 14	Sept. 26
Cut Bank, Glacier	13	May 21	Sept. 13
Deer Lodge, Powell	16	June 11	Sept. 6
Denton, Fergus	13	May 17	Sept. 23
Dillon, Beaverhead	23	June 1	Sept. 5
Ekalaka, Carter	20	May 25	Sept. 22
Findon, Meagher	9	May 28	Sept. 18
Fort Benton, Chouteau	28	May 11	Sept. 23
Fortine, Lincoln	15	June 13	Aug. 26
Fort Shaw, Cascade	21	May 19	Sept. 18
Glasgow, Valley	26	May 21	Sept. 17
Glendive, Dawson	32	May 14	Sept. 22
Goldbutte, Toole	14	May 29	Sept. 14
Great Falls, Cascade	29	May 8	Sept. 24
Hamilton, Ravalli	22	May 17	Sept. 23
Harlowton, Wheatland	17	June 7	Sept. 4
Haugan, Mineral	14	June 14	Aug. 28
Havre, Hill	40	May 16	Sept. 19
Hebgen Dam, Madison	18	July 3	Aug. 15
Helena, Lewis & Clark	42	May 9	Sept. 28
Heron, Sanders	10	May 29	Sept. 3
Holter, Lewis & Clark	19	May 19	Sept. 17
Jordan, Garfield	14	May 19	Sept. 19
Kalispell, Flathead	23	May 5	Oct. 2
Lewistown, Fergus	22	May 29	Sept. 7
Libby, Lincoln	27	June 6	Sept. 6
Livingston, Park	20	May 18	Sept. 19
Malta, Phillips	15	May 21	Sept. 25
Medicine Lake, Sheridan	11	May 23	Sept. 15
Miles City, Custer	29	May 5	Oct. 2
Missoula, Missoula	31	May 23	Sept. 18
Ovando, Powell	22	June 19	Aug. 16
Phillipsburg, Granite	17	June 14	Aug. 29
Plevna, Fallon	9	May 23	Sept. 26
Polson, Lake	15	May 13	Sept. 28
Poplar, Roosevelt	36	May 15	Sept. 16
Red Lodge, Carbon	22	June 8	Sept. 4
Renova, Jefferson	24	May 26	Sept. 9
Roundup, Musselshell	7	May 17	Sept. 30
Saint Ignatius, Missoula	17	May 22	Sept. 20
Shelby, Toole	10	May 27	Sept. 14
Sidney, Richland	16	May 20	Sept. 22
Snowbelt, (near) Garfield	7	May 16	Oct. 2
Stevensville, Ravalli	11	May 22	Sept. 21
Superior, Mineral	7	June 7	Sept. 7
Thompson Falls, Sanders	11	May 20	Sept. 22
Three Forks, Gallatin	19	June 1	Sept. 9
Upper Yaak River, Lincoln	8	June 13	Aug. 29
Utica, Judith Basin	28	May 26	Sept. 18
Valentine, Fergus	15	May 21	Sept. 16
Valier, Pondera	10	May 21	Sept. 28
Virginia City, Madison	18	June 2	Sept. 19
White Sulphur Springs, Meagher	14	June 2	Sept. 4
White Water, Phillips	7	May 30	Sept. 15

**Freezing temperature often occurs every month.

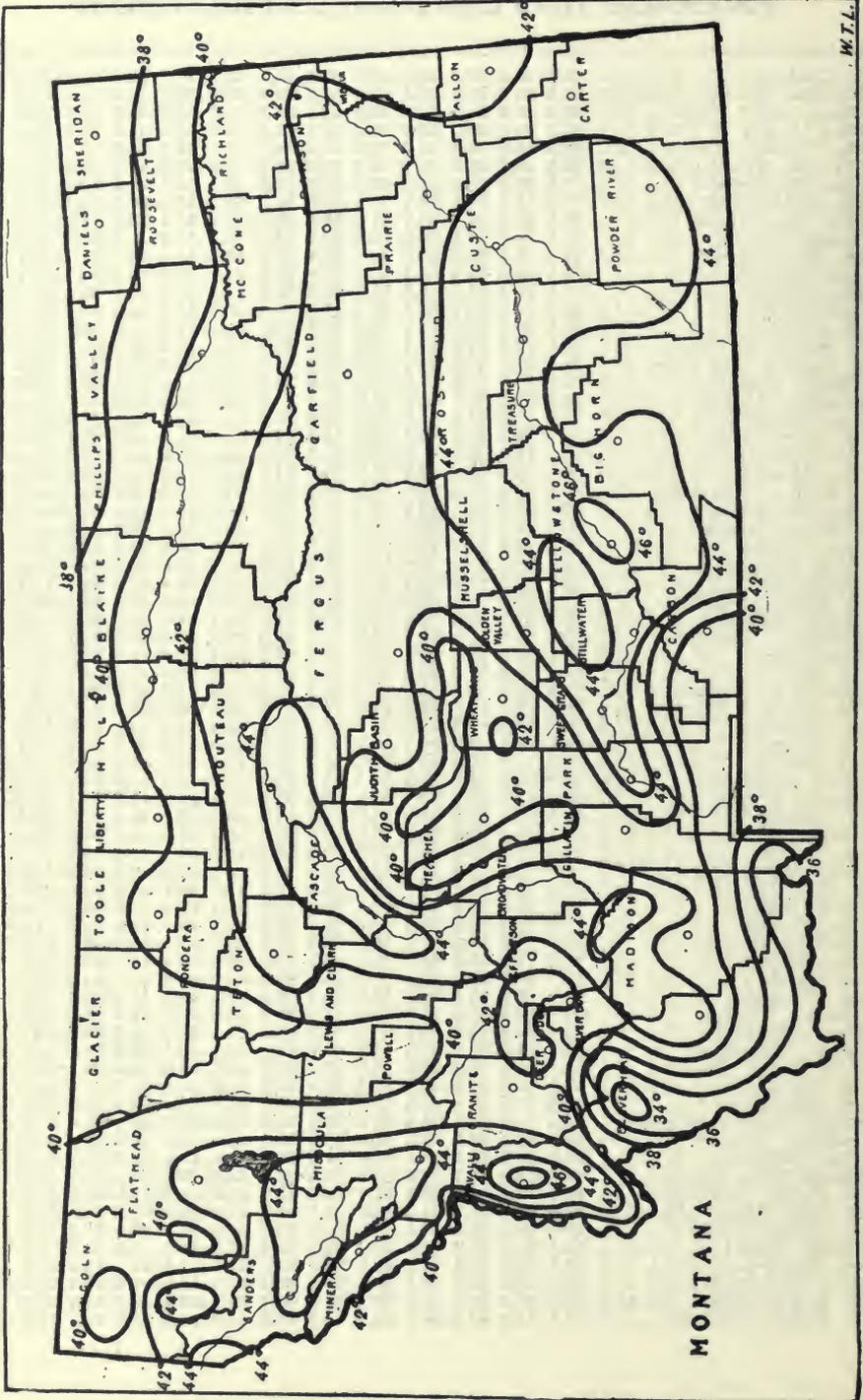
AVERAGE PRECIPITATION FOR MONTANA

Stations—County	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann'l
Adel, Cascade	1.32	1.31	1.55	1.98	3.52	3.76	1.95	1.58	2.23	1.92	0.95	1.33	23.40
Agricultural College, Gallatin	0.85	0.81	1.26	1.72	3.49	3.00	1.27	1.02	1.72	1.35	0.94	1.02	18.45
Anaconda, Deer Lodge	0.90	0.70	0.87	0.92	2.22	2.22	1.33	0.95	1.28	0.91	0.80	0.75	13.85
Augusta, Lewis & Clark	0.69	0.45	0.89	1.09	2.86	3.06	1.76	1.09	1.59	0.77	0.52	0.53	15.30
Biddle, Powder River	0.47	0.34	0.50	1.27	2.58	2.76	1.97	1.67	1.65	0.90	0.39	0.33	14.63
Big Timber, Sweet Grass	0.68	0.57	1.03	1.25	3.04	2.24	1.50	1.02	1.75	1.35	0.82	0.43	15.68
Billings, Yellowstone	0.68	0.40	0.80	1.16	2.79	2.37	1.20	0.98	1.13	1.21	0.80	0.44	13.96
Bowen, Beaverhead	0.90	0.77	0.78	0.73	1.41	1.93	1.04	0.78	1.11	0.86	0.88	0.95	12.14
Brenner Beaverhead	0.68	0.52	0.69	1.24	1.42	1.40	1.12	0.71	1.27	0.94	0.71	0.77	11.47
Browning, Glacier	0.75	0.60	0.61	0.85	1.69	2.11	1.11	1.13	1.90	0.52	0.47	0.45	12.19
Butte, Silver Bow	0.84	0.78	1.09	1.13	2.09	2.23	1.26	0.85	1.18	0.97	0.81	0.82	14.05
Cascade, Cascade	0.71	0.68	0.69	1.45	3.23	3.55	1.48	1.21	1.76	1.42	0.59	0.62	17.39
Chester, Liberty	0.60	0.26	0.34	0.47	1.60	2.77	1.02	1.18	1.30	0.30	0.32	0.34	10.50
Chinook, Blaine	0.63	0.37	0.43	0.76	2.09	2.56	1.41	1.16	1.36	0.70	0.51	0.46	12.44
Choteau, Teton	0.77	0.55	0.47	0.76	2.00	3.20	1.85	0.96	0.94	0.47	0.42	0.55	12.94
Circle (near) McCone	0.98	0.93	1.50	1.20	2.36	4.49	1.83	1.66	1.27	1.07	0.75	1.02	19.06
Crow Agency, Big Horn	0.78	0.62	0.92	1.33	2.50	2.65	1.26	0.89	1.03	1.23	0.79	0.70	14.70
Cut Bank, Glacier	0.50	0.53	0.69	0.71	2.29	2.56	1.71	1.16	1.54	0.73	0.75	0.45	13.62
Deer Lodge, Powell	0.70	0.48	0.92	0.82	1.65	2.22	0.90	0.81	1.26	0.74	0.67	0.62	11.79
Denton, Fergus	0.71	0.30	0.49	0.91	1.87	3.12	1.87	0.98	1.33	0.88	0.42	0.44	13.82
Dillon, Beaverhead	0.92	0.74	1.31	1.89	3.25	2.66	1.44	1.17	1.61	1.00	0.95	0.78	17.72
Ekalaka, Carter	0.39	0.35	0.66	0.91	2.26	2.48	1.70	1.58	1.36	0.73	0.28	0.30	13.00
Findon, Meagher	0.80	0.64	0.75	1.39	2.87	3.18	2.46	1.44	1.98	0.91	0.82	0.64	17.88
Fort Benton, Chouteau	0.74	0.45	0.57	1.15	2.67	2.44	1.59	1.00	1.10	0.64	0.54	0.55	13.44
Fortine, Lincoln	1.66	1.23	1.37	1.02	1.81	2.43	1.52	1.51	1.56	1.10	1.62	1.27	18.10
Fort Shaw, Cascade	0.52	0.44	0.41	0.65	1.92	2.24	1.31	0.95	0.97	0.67	0.35	0.47	10.90
Glasgow, Valley	0.61	0.48	0.98	0.96	2.29	2.57	1.40	1.11	1.05	0.67	0.50	0.55	13.17
Glendive, Dawson	0.64	0.52	0.98	1.12	2.30	3.18	1.78	1.41	1.33	0.88	0.51	0.60	15.25
Goldbutte, Toole	0.62	0.41	0.39	0.58	1.84	3.06	1.66	1.29	1.36	0.59	0.36	0.36	12.52
Great Falls, Cascade	0.68	0.56	0.83	1.21	2.48	3.29	1.69	1.07	1.40	0.89	0.74	0.62	15.46
Hamilton, Ravalli	0.87	0.67	0.72	0.97	1.68	1.66	0.68	0.64	1.11	0.93	0.87	0.49	11.29
Harlowton, Wheatland	0.73	0.68	0.80	0.95	2.22	2.31	1.51	0.71	1.28	0.77	0.81	0.61	13.43
Haugan, Mineral	4.26	2.44	3.01	1.58	1.78	1.68	0.76	0.87	1.80	2.26	3.47	3.96	27.87
Havre, Hill	0.78	0.51	0.53	0.90	1.90	2.74	1.81	1.20	1.27	0.69	0.63	0.58	13.54
Hebgen Dam, Madison	2.38	1.44	1.71	1.30	2.48	2.01	1.77	1.08	1.74	-1.58	1.14	1.56	20.19
Helena, Lewis & Clark	0.94	0.67	0.77	1.06	2.15	2.32	1.14	0.70	1.25	0.90	0.72	0.77	13.90
Heron, Sanders	3.72	2.93	3.50	2.30	2.10	2.02	1.50	1.22	2.14	2.30	3.95	4.22	31.39
Holter, Lewis & Clark	0.69	0.78	0.57	1.14	2.42	2.80	1.46	0.99	1.51	1.17	0.54	0.59	14.66
Jordan, Garfield	0.74	0.61	0.60	0.76	2.07	2.77	1.64	1.05	0.83	0.67	0.22	0.67	12.63
Kalispell, Flathead	1.34	1.05	1.06	0.82	1.71	1.98	1.15	1.01	1.47	0.94	1.54	1.14	15.21
Lewistown, Fergus	0.80	0.82	1.08	1.39	3.05	3.54	2.42	1.35	1.61	1.26	0.79	0.78	18.89
Libby, Lincoln	2.61	1.70	1.68	1.09	1.53	1.64	1.17	0.94	1.56	1.61	3.40	2.34	21.27
Livingston, Park	0.60	0.55	0.87	1.20	3.19	1.77	1.16	0.88	1.60	1.03	0.89	0.49	14.23
Malta, Phillips	0.58	0.43	0.43	0.69	2.22	3.57	1.85	1.23	1.24	0.55	0.40	0.39	13.58
Medicine Lake, Sheridan	0.47	0.44	0.49	1.16	1.72	2.92	2.11	1.53	1.54	0.88	0.29	0.30	13.85
Miles City, Custer	0.65	0.51	0.90	1.02	2.16	2.83	1.58	1.06	0.94	0.85	0.55	0.50	13.55
Missoula, Missoula	1.35	0.86	1.02	1.03	2.12	2.15	1.02	0.86	1.34	1.20	1.18	1.43	15.56
Ovando, Powell	1.82	1.56	1.23	1.08	2.28	2.44	1.18	1.08	1.37	1.26	1.70	1.89	18.89
Philipsburg, Granite	0.71	0.69	0.97	1.27	2.38	2.84	1.40	0.93	1.56	1.17	0.96	0.58	15.46
Plevna, Fallon	0.59	0.45	0.65	1.12	2.11	2.79	1.90	1.32	1.05	0.85	0.46	0.38	13.67
Polson, Lake	1.14	0.89	1.07	1.23	1.49	3.77	1.19	0.89	1.52	1.16	1.42	1.29	15.66
Poplar, Roosevelt	0.59	0.45	0.81	0.90	1.84	3.02	1.73	1.14	0.94	0.70	0.65	0.43	13.20
Red Lodge, Carbon	0.77	0.78	1.49	2.50	4.13	2.23	1.28	0.94	1.88	1.60	0.62	0.69	18.91
Renova, Jefferson	0.43	0.34	0.52	1.27	2.19	2.25	1.18	0.86	1.35	0.94	0.45	0.31	12.09
Roundup, Musselshell	0.94	0.44	0.69	0.95	2.36	3.62	1.82	0.88	1.17	0.96	0.68	0.89	15.40
St. Ignatius, Missoula	0.95	0.80	0.87	1.34	2.35	2.39	1.21	0.94	1.92	1.36	1.24	0.76	16.13
Shelby, Toole	0.38	0.36	0.30	0.71	1.76	2.07	1.28	1.43	1.57	0.79	0.21	0.37	11.23
Sidney, Richland	0.51	0.42	0.58	0.91	2.10	3.28	1.97	1.63	1.77	0.83	0.39	0.50	14.89
Snowbelt (near) Garfield	0.61	0.53	0.91	0.89	2.26	2.79	2.44	1.21	1.37	0.91	0.60	0.81	15.33
Stevensville, Ravalli	0.79	0.58	0.51	0.81	1.75	1.72	0.79	1.12	1.48	1.26	0.98	0.64	12.43
Superior, Mineral	1.33	1.15	1.87	1.16	2.34	1.62	1.03	0.90	1.60	0.92	1.32	2.21	17.50
Thompson Falls, Sanders	2.24	1.47	1.95	1.57	1.79	1.60	1.42	0.80	1.41	1.60	2.22	2.36	20.43
Three Forks, Gallatin	0.25	0.35	0.39	0.94	1.70	1.91	0.99	0.69	1.24	0.86	0.53	0.48	10.33
Upper Yaak River, Lincoln	2.06	1.57	1.86	1.75	1.53	1.63	0.94	1.19	1.98	1.52	2.02	2.33	20.38
Utica, Judith Basin	0.65	0.38	0.80	1.17	2.83	3.39	2.10	1.19	1.38	1.15	0.81	0.58	16.43
Valentine, Fergus	0.46	0.32	0.37	0.68	2.21	2.37	1.55	1.20	0.94	0.73	0.32	0.29	11.44
Valier, Pondera	0.35	0.22	0.25	0.67	1.61	2.18	1.65	1.43	1.63	0.78	0.21	0.38	11.36
Virginia City, Madison	0.62	0.54	1.03	1.21	2.70	2.16	1.25	1.09	1.39	0.89	0.89	0.77	14.54
White Sulphur Spgs., Meagher	0.34	0.32	0.38	0.82	1.43	1.99	1.59	0.81	1.30	0.70	0.39	0.46	10.53
White Water, Phillips	0.37	0.39	0.44	0.75	1.54	2.68	2.21	1.48	1.16	0.36	0.24	0.34	11.96

AVERAGE TEMPERATURE FOR MONTANA

Stations—County	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
Adel, Cascade	21.6	22.2	29.2	40.7	46.7	54.3	61.3	60.2	52.2	42.5	34.6	25.6	40.9
Agricultural College, Gallatin	21.2	22.4	30.2	40.4	48.8	57.0	63.6	62.5	52.6	43.4	31.4	23.3	41.4
Anaconda, Deer Lodge	23.5	25.5	31.9	40.8	47.8	55.5	63.2	61.9	52.8	44.7	33.7	25.3	42.2
Augusta, Lewis & Clark	21.2	22.5	29.1	42.0	49.0	56.2	62.3	60.7	52.0	44.3	31.9	25.5	41.4
Biddle, Powder River	18.5	22.3	31.2	41.1	52.9	63.4	70.0	67.3	58.5	45.9	32.7	23.0	43.9
Big Timber, Sweet Grass	25.6	27.7	33.8	45.0	53.4	62.7	68.6	67.4	57.2	41.1	29.5	28.8	45.1
Billings, Yellowstone	22.5	25.0	34.2	47.2	54.8	63.0	70.8	68.9	58.7	48.1	34.7	26.5	46.2
Bowen, Beaverhead	9.4	11.1	19.8	33.1	42.1	49.7	55.4	52.4	45.5	35.0	23.0	10.7	32.3
Brenner, Beaverhead	18.1	21.1	25.8	34.1	41.7	51.3	59.6	57.8	48.4	38.2	27.3	19.5	36.9
Browning, Glacier	16.3	18.7	27.6	39.7	46.9	56.2	61.7	60.0	51.4	41.5	29.7	20.9	39.2
Butte, Silver Bow	23.6	25.0	31.2	40.7	48.3	56.4	64.1	63.0	53.1	43.7	32.9	25.1	42.3
Cascade, Cascade	21.8	25.9	34.4	45.3	52.0	60.4	67.0	64.9	56.5	46.0	38.7	27.7	45.0
Chester, Liberty	9.7	12.8	25.9	41.8	51.9	59.3	66.5	64.0	53.4	44.9	30.4	18.3	39.9
Chinook, Blaine	14.1	15.9	26.0	44.1	54.4	63.5	70.0	67.1	56.0	45.3	30.1	20.2	42.2
Chouteau, Teton	23.1	22.8	34.0	41.1	48.9	57.8	64.9	62.1	54.3	44.5	33.4	28.4	42.9
Circle (near) McCone	14.1	15.3	27.7	43.7	52.8	62.9	68.6	67.4	57.6	45.6	31.9	19.3	42.2
Crow Agency, Big Horn	18.6	20.2	32.6	46.4	56.7	65.0	71.2	69.1	58.7	47.1	33.3	24.5	45.3
Cut Bank, Glacier	16.9	17.7	27.0	41.2	48.7	56.9	63.0	61.5	51.3	41.9	28.6	23.3	39.8
Deer Lodge, Powell	21.6	24.0	30.1	40.6	51.3	61.1	67.7	64.1	55.4	44.0	33.1	21.0	42.8
Denton, Fergus	18.6	22.1	31.2	43.8	51.1	60.3	67.3	65.7	56.1	44.9	34.7	24.9	43.4
Dillon, Beaverhead	24.2	27.6	33.5	42.3	50.6	58.3	63.7	61.8	53.1	46.1	35.1	26.3	43.6
Ekalaka, Carter	18.7	18.6	30.5	43.6	52.9	63.4	70.4	68.4	59.3	46.0	33.3	21.8	43.9
Findon, Meagher	22.0	23.0	28.6	37.8	45.1	54.4	61.1	60.7	50.8	41.3	32.8	23.7	40.1
Fort Benton, Chouteau	18.4	22.2	31.0	45.1	55.0	63.0	69.4	67.3	56.7	46.5	31.9	23.4	44.2
Fortine, Lincoln	17.8	23.3	33.3	42.4	49.4	57.5	62.7	60.4	51.7	42.2	31.4	22.5	41.2
Fort Shaw, Cascade	20.3	23.9	32.8	44.8	53.3	61.7	67.7	64.9	55.8	46.4	34.4	26.4	44.4
Glasgow, Valley	8.0	10.8	24.4	44.0	55.2	63.6	70.0	67.9	56.2	43.6	26.8	15.0	40.5
Glendive, Dawson	13.4	14.2	27.2	46.2	55.9	65.8	72.2	70.4	58.5	46.9	30.6	19.6	43.4
Goldbutte, Toole	12.8	16.6	27.3	40.9	49.2	59.0	64.6	62.7	53.4	41.5	30.6	19.1	39.8
Great Falls, Cascade	23.4	24.7	33.1	45.9	53.5	61.6	68.5	66.5	56.8	47.7	35.6	28.7	45.5
Hamilton, Ravalli	27.9	29.2	38.2	46.9	53.3	60.6	66.7	65.2	56.6	46.8	36.5	26.5	46.2
Harlowtown, Wheatland	19.4	21.9	29.9	40.8	49.0	57.9	62.8	61.3	50.8	44.9	30.8	23.6	41.1
Haugan, Mineral	21.1	26.5	34.0	43.1	49.7	57.4	62.7	60.8	53.0	43.8	32.9	23.5	42.4
Havre, Hill	12.5	13.8	27.0	43.7	53.1	61.5	68.0	66.0	55.8	44.2	30.2	21.0	41.4
Hebgen Dam, Madison	12.4	14.8	25.6	33.7	43.3	51.4	57.4	56.6	47.8	37.0	25.2	12.7	34.8
Helena, Lewis & Clark	20.3	23.0	32.2	43.8	51.4	59.6	67.0	66.1	55.7	45.4	32.7	26.0	43.6
Heron, Sanders	24.9	28.9	35.5	45.2	52.0	58.6	64.4	63.4	54.1	44.0	34.6	26.0	44.3
Holter, Lewis & Clark	24.5	26.7	34.0	44.7	51.3	60.5	66.9	65.9	56.7	47.8	37.3	28.4	45.4
Jordan, Garfield	12.7	16.2	29.8	42.9	51.8	62.8	71.4	70.4	57.1	46.3	30.5	18.3	42.5
Kalispell, Flathead	22.0	24.2	33.1	43.8	51.3	58.1	64.5	62.8	53.2	43.6	32.7	24.9	42.8
Lewistown, Fergus	20.7	22.8	30.0	42.2	50.1	58.2	64.3	62.8	53.3	44.6	32.2	25.5	42.2
Libby, Lincoln	23.4	27.9	35.9	46.0	53.1	59.3	64.9	63.4	55.0	45.4	33.9	25.8	44.5
Livingston, Park	25.1	27.3	33.8	43.1	51.2	60.2	68.0	66.6	57.2	48.1	36.2	29.3	45.5
Malta, Phillips	8.6	12.6	26.2	44.2	54.0	63.8	69.8	67.9	56.8	44.4	29.6	15.3	41.1
Medicine Lake, Sheridan	5.6	7.7	19.9	41.6	52.1	63.4	66.3	65.3	54.0	41.4	25.0	13.8	38.0
Miles City, Custer	15.3	16.9	31.1	46.6	56.7	66.4	73.6	71.7	60.1	47.4	32.9	21.6	45.0
Missoula, Missoula	22.2	26.0	35.2	44.9	52.3	59.4	66.8	65.2	55.4	44.6	33.3	24.9	44.2
Ovando, Powell	17.3	19.0	29.1	39.4	47.6	54.9	61.2	59.5	50.9	41.0	29.5	19.9	39.1
Phillipsburg, Granite	22.2	24.5	31.6	41.1	47.1	55.4	62.2	60.7	52.5	43.0	32.1	24.4	41.4
Plevna, Fallon	14.2	15.8	26.2	43.0	52.2	62.8	70.2	66.7	56.4	43.8	32.8	18.9	41.9
Polson, Lake	24.1	27.9	35.1	43.6	51.6	60.1	67.6	66.1	55.5	46.1	34.6	26.9	44.9
Poplar, Roosevelt	6.1	8.6	23.8	43.8	54.9	62.7	70.6	67.9	57.2	44.7	27.7	14.7	40.2
Red Lodge, Carbon	20.6	20.9	27.9	38.8	45.9	55.7	61.4	60.2	51.2	41.0	31.5	23.3	39.9
Renova, Jefferson	24.4	26.4	34.3	43.9	51.0	59.1	65.3	63.7	54.8	45.8	35.6	26.0	44.2
Roundup, Musselshell	24.5	24.0	31.8	44.3	51.6	64.1	72.1	66.9	59.7	46.4	35.1	19.3	45.0
Saint Ignatus, Missoula	24.1	27.1	35.9	45.8	52.0	59.4	65.7	64.5	54.8	45.0	34.4	26.2	44.6
Shelby, Toole	15.1	14.9	26.9	42.1	50.5	60.4	66.6	65.2	53.8	42.7	30.2	18.8	40.6
Sidney, Richland	10.2	12.8	25.4	43.8	55.0	63.2	68.7	67.0	55.9	44.5	28.8	17.6	41.1
Snowbelt, (near Garfield)	16.6	19.5	29.1	41.9	51.6	62.1	69.6	67.6	55.7	44.1	31.4	18.8	42.3
Stevensville, Ravalli	24.3	28.2	35.7	44.1	50.0	58.3	65.2	64.1	53.6	43.4	33.0	24.7	43.7
Superior, Mineral	24.3	28.2	36.4	41.8	49.8	57.8	66.0	65.0	55.0	43.3	32.0	24.7	43.7
Thompson Falls, Sanders	24.9	28.9	35.9	45.1	51.6	59.8	66.3	64.6	55.3	45.5	34.3	26.1	44.9
Three Forks, Gallatin	21.7	24.2	32.9	43.5	51.7	59.8	65.5	63.6	53.7	42.6	30.2	21.0	42.5
Upper Yaak River, Lincoln	19.2	25.1	32.0	41.5	48.7	56.5	61.1	61.1	50.8	41.7	29.9	18.8	40.6
Utica, Judith Basin	23.0	24.1	29.9	42.1	49.4	58.0	64.8	64.6	54.6	45.0	34.3	26.8	43.0
Valentine, Fergus	14.8	17.8	29.8	42.9	51.2	62.0	69.2	67.0	56.5	45.6	31.9	20.1	42.4
Valier, Pondera	17.5	20.4	28.1	42.5	49.8	58.7	64.8	63.9	53.6	43.1	33.1	21.9	41.4
Virginia City, Madison	20.7	23.5	29.4	39.5	47.4	56.5	65.1	63.7	53.1	42.8	30.5	22.8	41.2
White Sulphur Spgs., Meagher	21.2	22.6	27.9	40.2	47.8	56.8	62.5	61.2	50.4	41.2	31.6	21.7	40.4
White Water, Phillips	8.1	12.3	22.6	40.1	51.3	60.8	67.2	65.3	52.5	40.4	26.4	12.3	38.3

AVERAGE ANNUAL TEMPERATURE



W.T.L.

(From Records of U. S. Weather Bureau).

MISCELLANEOUS DATA

COOPERATIVE MARKETING AND PURCHASING THROUGH FARMERS' ORGANIZATIONS MONTANA AND UNITED STATES—1919

(U. S. Bureau of the Census)

Sales Through Farmers' Organizations

	Farms Reporting		Amount	
	Number	Per Cent of all Farms	Total	Average Per Farm
Montana	1,948	3.4	\$ 1,538,303	\$ 790
United States	511,383	7.9	721,983,639	1,412

Purchases Through Farmers' Organizations

	Farms Reporting		Amount	
	Number	Per Cent of all Farms	Total	Average Per Farm
Montana	2,926	5.1	\$ 871,192	\$ 298
United States	329,449	5.1	84,615,669	257

WAGES OF MALE FARM LABOR IN MONTANA

Year	Per Month		Per Day at Harvest		Per Day Other Than Harvest	
	With Board	Without Board	With Board	Without Board	With	Without
					Board	Board
1910	\$38.00	\$50.00	\$ 2.05	\$ 2.80	\$ 1.77	\$ 2.36
1917	46.00	70.00	3.00	3.79	2.44	3.30
1918	59.50	83.00	3.80	4.75	3.15	4.10
1919	62.50	89.00	4.00	4.95	3.25	4.35
1920	75.40	105.00	5.20	6.20	4.20	5.20
1921	42.10	63.00	2.92	3.65	2.21	2.98
1922	42.20	63.00	3.60	4.40	2.40	3.20

GAS AND ELECTRIC LIGHT, TELEPHONES, AUTOMOBILES, MOTOR TRUCKS, AND TRACTORS ON FARMS IN 1920

(U. S. Bureau of the Census)

	Gas or Electric Light	Tele- phones	Auto- mobiles	Motor Trucks	Tractors
MONTANA:					
No. of farms reporting use of.....	2,013	9,781	20,749	1,167	6,890
Per cent of all farms.....	3.5	17.0	36.0	2.0	12.0
UNITED STATES:					
No. of farms reporting use of.....	452,809	2,508,002	1,979,564	131,551	229,334
Per cent of all farms.....	7.0	38.9	30.7	2.0	3.6

POPULATION OF MONTANA—1920

(U. S. Bureau of Census)

	Total	Per Cent of Total
Total Population 1920	548,889	100
Cities of 2,500 and more.....	172,011	31.3
Incorporated cities and towns of less than 2,500.....	69,699	12.7
Rural territory (includes towns and villages not incorporated)	307,179	56.0

FEDERAL FARM LOAN ASSOCIATIONS.

COUNTY	ASSOCIATION	TOWN LOCATED	NUMBER MEMBERS	AMT. OF LOANS TO JAN. 31, 1923
Totals for State	146		6,178	\$16,732,340.00
Beaverhead	Beaverhead-Madison	Dillon	26	\$ 14,100.00
Big Horn	Foster	Foster	19	69,100.00
	Hardin	Hardin	12	30,900.00
	Little Horn	Wyola	9	32,400.00
Blaine	Blaine County	Chinook	197	664,150.00
	Harlem	Harlem	103	181,800.00
	Savoy	Savoy	34	56,500.00
	Stowman	Chinook	41	66,000.00
	Zurich	Zurich	53	88,800.00
Broadwater	Broadwater County	Townsend	102	496,150.00
Carbon	Carbon Central	Joliet	66	222,650.00
	Red Lodge Creek	Roberts	132	455,850.00
Carter	D. H. Russel	Ekalaka	71	124,300.00
	Wilson	Boyes	42	174,100.00
Cascade	Great Falls	Great Falls	11	44,500.00
	Fort Shaw	Fort Shaw	14	41,600.00
Chouteau	Lone Tree	Big Sandy	15	38,900.00
	Big Sandy	Big Sandy	28	54,700.00
	Carter	Carter	8	19,000.00
	Fort	Fort Benton	51	113,850.00
	Genou	Genou	19	40,300.00
	Highwood	Highwood	14	59,200.00
Custer	Miles City	Miles City	13	51,200.00
Daniels	Daniels County	Scobey	22	46,600.00
Dawson	Hay Creek	Axtel	41	76,000.00
	First Dawson	Glendive	47	100,150.00
	Retah	Retah	14	39,100.00
	Redwater	Richey	50	100,000.00
	Sullivan	Richey	17	33,500.00
	Clear Creek Valley	Union	41	75,200.00
Fallon	Fallon County	Baker	38	99,400.00
	Plevna	Plevna	64	146,600.00
	Westmore	Westmore	75	172,050.00
	Medicine Rocks	Willard	11	33,300.00
Fergus	Darrell	Darrell	33	82,200.00
	Danvers	Danvers	7	17,900.00
	First	Flatwillow	13	36,600.00
	Flatwillow	Flatwillow	24	38,900.00
	Three Butte	Grass Range	45	103,400.00
	Button Butte	Grass Range	21	44,450.00
	Judith	Lewistown	32	167,500.00
	Moore	Moore	23	141,800.00
	Novary	Novary	9	15,900.00
	Suffolk	Suffolk	13	20,400.00
	Weede	Weede	10	17,600.00
	Winifred	Winifred	16	31,600.00
	Winnett	Winnett	16	29,400.00
	Flathead	Kalispell	Kalispell	252	796,000.00
Poison		Poison	73	179,600.00
Gallatin	Southern Montana	Bozeman	108	663,600.00
	Wheatland	Three Forks	13	46,400.00
Garfield	Old Settlers	Cohagen	38	49,700.00
	Smoky Butte	Smoky Butte	35	38,400.00
	Snowbelt	Snowbelt	40	57,100.00
	Wason Flats	Wason Flats	14	21,150.00
Glacier	Cutbank	Cutbank	10	18,300.00
Golden Valley	Lavina	Lavina	23	71,500.00
	Rothiemay	Rothiemay	26	70,800.00
	Ryegate	Ryegate	30	99,600.00
Granite	New Chicago	Hall	26	14,140.00
Hill	Havre	Havre	33	91,300.00
	Cottonwood	Havre	177	342,000.00
	Hingham	Hingham	9	19,850.00
	Kremlin	Kremlin	26	53,800.00

FEDERAL FARM LOAN ASSOCIATIONS—(Continued)

COUNTY	ASSOCIATION	TOWN LOCATED	NUMBER MEMBERS	AMT. OF LOANS TO JAN. 31, 1923
Jefferson	Jefferson Valley	Whitehall	34	143,300.00
Judith Basin	Stanford	Stanford	18	41,700.00
Lewis & Clark	Augusta	Augusta	47	154,400.00
	Helena	Helena	37	111,950.00
Liberty	Joplin	Joplin	149	357,850.00
	Tiber	Lothair	53	139,550.00
Lincoln	Tobacco Valley	Eureka	41	98,850.00
	Kootenai Valley	Libby	33	44,600.00
	Troy	Troy	30	40,300.00
Madison	Twin Bridges	Twin Bridges	50	243,500.00
McCone	Horse Creek	Cabin Creek	10	20,600.00
	Circle	Circle	49	88,550.00
	Pleasant View	Nickwall	39	73,100.00
Meagher	Meagher	White Sulphur Springs	17	68,500.00
Mineral	Mineral County	Superior	28	61,300.00
Missoula	Missoula	Missoula	119	396,150.00
Musselshell	Dean Creek	Bundy	31	69,650.00
	Gage	Gage	18	33,550.00
	Hawk Creek	Musselshell	18	52,800.00
	Lake Mason	Roundup	46	134,900.00
	County Central	Roundup	17	73,900.00
	Goulding Creek	Roundup	14	46,700.00
Park	Meyersburg	Wilsall	20	89,100.00
	Wilsall	Wilsall	54	285,750.00
Phillips	Dodson	Dodson	47	75,800.00
	Freewater	Freewater	68	109,350.00
	North Star	Lovejoy	45	62,400.00
Pondera	Conrad	Conrad	84	281,500.00
	Williams-Manson	Williams	73	282,500.00
Powder River	South Custer	Coalwood	20	32,900.00
Powell	Deer Lodge	Deer Lodge	12	36,250.00
Prairie	Timber Creek	Crowley	14	25,100.00
	Cabin Creek	Melstone	27	59,350.00
	Enterprise	Terry	49	84,000.00
	South Side	Terry	15	23,500.00
Ravalli	Darby	Darby	19	54,850.00
	Hamilton	Hamilton	108	333,750.00
	Stevensville	Stevensville	25	103,200.00
Richland	Lambert	Lambert	27	54,900.00
	Brorson	Sidney	35	73,700.00
	Gossett	Sidney	47	123,200.00
	Sioux Pass	Sioux Pass	62	128,050.00
Roosevelt	Froid	Froid	25	50,200.00
	Wolf Point	Wolf Point—Recently chartered—no loans closed		
Rosebud	Bascom	Bascom	20	55,400.00
	Rosebud County	Forsyth	141	437,250.00
	Yellowstone	Rosebud	8	49,500.00
	Sumatra	Sumatra	40	79,950.00
Sanders	Dixon	Dixon	21	45,500.00
	Perma	Perma	43	71,950.00
	Plains	Plains	18	76,100.00
	Central Sanders	Thompson Falls	36	85,700.00
	White Pine	Whitepine	62	99,000.00
Sheridan	Antelope	Antelope	33	64,000.00
	Dagmar	Dagmar	68	130,300.00
	Liberty	Dooley	48	82,300.00
	Soo	Outlook	63	148,000.00
Stillwater	Whitebird	Absarokee	62	179,300.00
	Lake Basin	Lake Basin	13	56,300.00
	Sackett Butte	Park City	18	53,300.00
	Reedpoint	Reedpoint	21	55,900.00

MONTANA FARM REVIEW

FEDERAL FARM LOAN ASSOCIATIONS—(Continued)

COUNTY	ASSOCIATION	TOWN LOCATED	NUMBER MEMBERS	AMT. OF LOANS TO JAN. 31, 1923
Sweet Grass	Sweet Grass	Big Timber	46	195,500.00
Teton	Choteau	Choteau	53	163,100.00
	Collins	Collins	31	48,000.00
Toole	Fairview	Dunkirk	25	58,600.00
	Marias	Galata	18	45,500.00
	Kevin	Kevin	17	33,600.00
	Sunburst	Sunburst	17	37,550.00
	Teilstad	Teilstad	13	21,950.00
Treasure	Hysham	Hysham	43	110,950.00
Valley	Beaverton	Beaverton	23	50,250.00
	Glasgow	Glasgow	90	203,600.00
	Farmers	Hinsdale	124	227,250.00
Wheatland	Harlowton	Harlowton	86	239,800.00
Wibaux	Blue Mountain	Been	27	53,300.00
	Carlyle	Carlyle	37	73,700.00
	Beaver Valley	Wibaux	55	115,150.00
Yellowstone	Billings	Billings	210	766,800.00
	Pleasant Valley	Broadview	20	77,200.00
	Custer	Mizpah	39	103,300.00
	Newton Grove	Newton Grove	20	29,600.00
	Park City	Park City	Just organized	

INDEX

	Page
ACREAGE—See also crops	9
AGRICULTURE—Historical Sketch	5-7
ALFALFA—See crops	
ALTITUDE, of Montana	9
APPLES—See crops	
ASSESSED VALUATIONS	9, 35
AUTOMOBILES	73
BARLEY	51-52
BEEES AND HONEY	24, 28
CEREAL MILLS	12
CLIMATOLOGY	64-71
COOPERATIVE CROP REPORTING SERVICE.....	Foreword
COOPERATIVE ORGANIZATIONS	73
CORN	56-58
CROPS.	
Acreage, Montana's rank	35
Acreages, relative crop (graph)	34
Alfalfa hay	45
Alfalfa seed	63
Apple production	62
Apple trees	61
Areas, crop	9
Barley	51-52
Corn	56-58
Flax	55-56
General summary of 1919-1922	37
Hay	45-48
Oats	48-50
Orchard products	61-62
Potatoes	59-61
Relative importance of in 1922 (graph).....	34
Reporting districts, map of.....	inside front cover
Rye	53-54
Seed peas	63
Sugar beets	62
Seed crops	63
Total farm value of in 1922 by counties (graph).....	33
Value of Montana's rank	35
Wheat	38-44
DAIRYING	
Cows by counties	29
Manufactured products	30
DRAINAGE	
Enterprises	17
River systems	9, 65
DRY LANDS—See non-irrigated farming	
ELEVATION, of Montana	9

	Page
ENTRIES, land	10-11
FARMS	
Cooperative organizations	73
Lands	9-11
Lighting plants	73
Number, total and average values of, by counties.....	36
Telephones	73
FARM LOAN ASSOCIATIONS BY COUNTIES	74-76
FLAX	55-56
FLOUR AND CEREAL MILLS	12
FORESTS AND TIMBER	
Lumber cut	14
Ownership	13
Species	13
GRAIN ELEVATORS by counties	20
GRAIN STORAGE	19
GRAZING, on National Forests	27
GROWING SEASON—See Climatology	
HAY	45-48
HISTORICAL	5, 6, 7, 21
HOMESTEADS—See also agriculture	10-11
HONEY	24, 28
HORSES AND MULES	22
HORTICULTURE	61-62
IRRIGATION	
Acreage by counties	18
Assessed valuation	9
Capital invested, costs per acre	17
Character of enterprises	10, 17
Map of, areas	16
Per cent of crops grown under	18
Yields	19
LABOR, wages of, on farms.....	73
LANDS	
Assessed valuations	35
Classification by types and usage	9
Entries	11
Farms, value of	36
Plow lands, value of (table).....	35
Prices, average of state owned.....	35
Public	10
Soil surveys of	10
State	10
Total acreage assessed	10
Under Federal control	10
LIVESTOCK	
Bees and honey	24
Cattle shipments	25
Combined value of, with crops by counties (graph).....	32
Dairy cows	23

	Page
Farm values of all, by counties (graph).....	31
Grazing on National Forests	27
Historical	6, 21
Horses and mules	22
Numbers and values of.....	27
Numbers of, by counties	26
Numbers of, by years	25
Poultry	23
Poultry and eggs (tables).....	30
Purebreds in percentage	28
Purebreds, numbers of	29
Range industry	21
Relative value of products (graph)	28
Swine	23
Wool and production	24
LUMBER—See Forests and Timber	
MILK COWS—See dairying	
MONTANA	
Altitude of	9
Area, land and water surfaces	9
Rank of in acreage	35
Rank of in crop value	35
MOTOR TRUCKS	73
NATIONAL FORESTS—See grazing, forests and timber	
NON-IRRIGATED FARMING	7, 9, 35, 38
OATS	48-50
ORCHARDS	61-62
ORGANIZATIONS, Farm	73
PLOW LANDS	35
POPULATION	73
POTATOES	59-61
POULTRY	23, 30
PRECIPITATION	
By regions	67
By stations	70
Map	64
PRODUCTION—See livestock, crops, agriculture	
PUREBRED LIVESTOCK	28, 29
RYE	53, 54
SEED CROPS	63
SHEEP—See also agriculture	21, 22, 25, 26, 27
SOIL SURVEYS	10
SUGAR BEETS	62
SWINE	23, 25, 26, 27
TELEPHONE	73
TEMPERATURE—See climatology	
TIMBER—See forests	
TOPOGRAPHY, effect of on climate	65
TRACTORS	73
WAGES, on farms	73
WEATHER—See climatology	
WHEAT	38-44
WOOL	24

