Relation of farm tenancy to size of farm, farm practices and soil grades
by Homer E Brunk

A THESIS Submitted to the Graduate Committee in partial fulfillment of the requirements for the Degree of Master of Science in Agricultural Economics at Montana State College
Montana State University
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Abstract:
The growth of farm tenancy in the last half century has been one of the outstanding problems of agriculture. This growth has been the same in times of prosperity as well as during seasons of low prices. Various causes have been given for our tenancy situation such as over valuation of land, uneconomical farming units, farming of sulmarginal land, drouth, high taxes, high interest rates, poor management, and low prices for farm products.

Tenant farmers in many parts of Montana have a low standard of living. They do not have adequate farm machinery. Many of these tenant farmers have very few livestock. They plant a large percentage of their farms to soil depleting crops, which are conducive to soil erosion. In many parts of the state, the land is owned by absentee owners who have purchased the land for speculative purposes, and are not interested in the land except for its monetary returns.

In the area studied, consisting of Roosevelt, Gallatin, and Musselshell counties, farm tenancy was among the highest in the state, Gallatin Comty had almost two-thirds of the farmers as tenants and Roosevelt and Musselshell almost fifty per cent farm tenants. These tenants (except Roosevelt, 1936-57) farmed larger farms than did the owners. In Roosevelt County the tenants operated less of the second and third grade farming land but had more of the fourth grade farming land, and also more of all grades of grasping land except grade three which showed a larger percentage to the owner.

The tenants plant more soil depleting oropa and less soil conserv ing crops. The tenants also plant less feed crops such as com, oats, barley, and the sorghum crops which would indicate that they have less livestock on their farms than have the owners.

Farm tenancy is not undesirable in itself but can be made so by misuse. We need a certain percentage of tenancy because all farmers cannot own land. In recent years, the United States government has been helping many worthy tenants to become land owners. This has been done through loaning of money at a low rate of interest and a long period of time in which to pay.

The tenant farmers make up a large part of the farming population. Their situation is one that cannot be overlooked. It behooves society to recognise these problems end to offer aid in their solution.
RELATION OF FARM TENANCY TO SIZE OF FARM, FARM PRACTICES AND SOIL GRADES

by

Homer E. Brunk

A THESIS

Submitted to the Graduate Committee in partial fulfillment of the requirements for the degree of Master of Science in Agricultural Economics at Montana State College

Approved: ____________________________

In Charge of Major Work

Chairman Examining Committee

Chairman Graduate Committee

Bozeman, Montana
June, 1939
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ACKNOWLEDGMENTS

The author wishes to acknowledge the assistance of the Works Progress Administration, Work Project O.P. 665–91–3–43 (W.P. 257), for gathering the data used and for assisting in the compiling and tabulating of the field records and for preparing the charts and maps used in this thesis.

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RELATION OF FARM TENANCY TO SIZE OF FARM, FARM PRACTICES AND SOIL GRADES

ABSTRACT

The growth of farm tenancy in the last half century has been one of the outstanding problems of agriculture. This growth has been the same in times of prosperity as well as during seasons of low prices. Various causes have been given for our tenancy situation such as over valuation of land, uneconomical farming units, farming of submarginal land, drought, high taxes, high interest rates, poor management, and low prices for farm products.

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In the area studied, consisting of Roosevelt, Gallatin, and Musselshell counties, farm tenancy was among the highest in the state. Gallatin County had almost two-thirds of the farmers as tenants and Roosevelt and Musselshell almost fifty per cent farm tenants. These tenants (except Roosevelt, 1936-37) farmed larger farms than did the owners. In Roosevelt County the tenants operated less of the second and third grade farming land but had more of the fourth grade farming land, and also more of all grades of grazing land except grade three which showed a larger percentage to the owner.

The tenants plant more soil depleting crops and less soil conserving crops. The tenants also plant less feed crops such as corn, oats, barley, and the sorghum crops which would indicate that they have less livestock on their farms than have the owners.

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RELATION OF FARM TENANCY TO SIZE OF FARM,
FARM PRACTICES AND SOIL GRADES

PART I. INTRODUCTION

A Comparison of the Growth and Causes of Farm Tenancy
in Various Parts of the United States

Tenancy in the United States has increased from 25.6 per cent in 1880 to 41.2 per cent in 1935 (figure 1, also table I). This increase has been caused by:

1. Inheritance laws in the United States which give each heir a portion of the land. This necessitates selling the land or putting heavy mortgages on it to pay the heirs their equity.

2. Economic depressions which caused prices to drop while operating costs remained constant, or declined very little. The results were dwindling savings, declining equity in the farms, and finally foreclosure sales.

3. Speculation and high land values in all parts of the United States, but especially in the settling of the West, in relation to farm income. Land speculation has the effect of raising land prices to levels considerably above the prices justified by the productive capacity of the land. During the land settlement of the West, Congress tried in every way possible to eliminate speculation but was not very successful.

4. High taxes and interest rates.

5. High railroad rates (especially true in regions long distances from central markets).

6. Farm practices not adapted to the region.
Figure 1.--Rise in farm tenancy in the United States, 1880 to 1930 1/

1/ Farm Tenancy Report of the President's Committee, 1937, prepared under the auspices of the National Resources Committee, Washington.
TABLE I.—PER CENT OF FARMS OPERATED BY TENANTS, BY GEOGRAPHIC AREAS, 1880 TO 1935

<table>
<thead>
<tr>
<th>Areas</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
<th>1935</th>
</tr>
</thead>
<tbody>
<tr>
<td>The North</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England</td>
<td>19.2</td>
<td>22.1</td>
<td>26.2</td>
<td>26.5</td>
<td>28.2</td>
<td>30.0</td>
<td>31.8</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>19.2</td>
<td>22.1</td>
<td>25.3</td>
<td>22.3</td>
<td>20.7</td>
<td>14.7</td>
<td>16.2</td>
</tr>
<tr>
<td>East North Central</td>
<td>20.5</td>
<td>22.9</td>
<td>26.3</td>
<td>27.0</td>
<td>26.1</td>
<td>27.3</td>
<td>29.4</td>
</tr>
<tr>
<td>West North Central</td>
<td>20.5</td>
<td>24.0</td>
<td>29.6</td>
<td>30.9</td>
<td>34.2</td>
<td>29.9</td>
<td>42.6</td>
</tr>
<tr>
<td>The South</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Atlantic</td>
<td>36.1</td>
<td>38.5</td>
<td>47.0</td>
<td>49.6</td>
<td>49.6</td>
<td>55.5</td>
<td>53.5</td>
</tr>
<tr>
<td>East South Central</td>
<td>36.8</td>
<td>39.3</td>
<td>49.1</td>
<td>50.7</td>
<td>49.7</td>
<td>55.9</td>
<td>54.8</td>
</tr>
<tr>
<td>West South Central</td>
<td>35.2</td>
<td>38.6</td>
<td>49.1</td>
<td>52.6</td>
<td>52.9</td>
<td>62.3</td>
<td>59.5</td>
</tr>
<tr>
<td>The West</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain</td>
<td>14.0</td>
<td>12.1</td>
<td>16.6</td>
<td>14.0</td>
<td>17.7</td>
<td>20.3</td>
<td>23.8</td>
</tr>
<tr>
<td>Pacific</td>
<td>16.8</td>
<td>14.7</td>
<td>19.2</td>
<td>20.1</td>
<td>17.7</td>
<td>21.2</td>
<td></td>
</tr>
</tbody>
</table>

\(*/\) Taken from "Farm Tenancy Report of the President's Committee", February, 1937.
Advantages of Tenancy

The principal advantages of tenancy are:

1. Many farmers use the tenure system of farming as a stepping stone to the ownership of land at some future date. Many young farmers rent land and in this manner save money to buy a farm later in life. The census of 1930 shows almost two-thirds of all tenants under 45 years of age. Of all farmers under 25 years of age, seven-eighths were tenants and of those over 65 years of age, only about one-sixth were tenants. 1/

2. There are many families which prefer the security and profits of tenant farming, on good land, under a good landlord to venturing upon the precarious task of buying a farm on credit, with no assurance as to the future of prices for farm products in relation to the fixed indebtedness which would have to be incurred. 2/

3. Many young farmers do not have the managerial ability to own a farm. It would be much better for them to rent from a good landlord who in many cases gives their tenants information through years of experience of farming themselves.

Disadvantages of Tenancy

1. "From the standpoint of soil conservation, the development of farm tenancy and absentee ownership is of significance primarily through its effects upon land use practices. In the case of tenancy at least two parties are looking to the land as a source of income. If all parties

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1/ "Farm Tenancy Report of the President's Committee, 1937", prepared under the auspices of the National Resources Committee, Washington.
having to depend for their income on agriculture had the right attitude toward the land, that is, a long time interest in the maintenance of the producing powers of the land, tenancy would not be associated with eroding soil and neglected structures." As it is, however, tenancy causes the tenant to be interested only in the highest possible income from the land regardless of its future productivity. Many landlords are so situated financially that they insist their tenants plant cash crops, and select their tenants on the basis of the greatest possible crop in the year immediately contracted for (see table II).

2. Tenant farmers are less interested in community life than are owners. They take less interest in schools, churches, community centers, good roads, and the general well-being of the community because almost one-half of the tenants stay on the same farm one year or less.

3. Tenants are less interested in building up the soil or improving the land for fear they will have to move or the rent will be raised.

Conditions that will make Tenancy more Satisfactory

We must realize that tenancy is a part of our agricultural system as many farmers do not have the necessary capital to become land owners. Conditions that would make tenancy more satisfactory are:

1. Written leases signed by the owner and tenant.

2. An understanding on the part of the owner and tenant with regard to upkeep of improvements, payment for soil conserving practices performed


4/ Ibid.
TABLE II.—NUMBER AND PROPORTION OF TENANT FARMS IN THE IMPORTANT TYPE-OF-FARMING REGIONS IN THE UNITED STATES IN 1935 1

<table>
<thead>
<tr>
<th>Type-of-farming regions</th>
<th>Number of farms</th>
<th>Number of tenant farmers</th>
<th>Per cent of all tenant farmers</th>
<th>Per cent of all farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States total</td>
<td>6,812,350</td>
<td>2,865,115</td>
<td>100</td>
<td>42.1</td>
</tr>
<tr>
<td>Cotton</td>
<td>1,924,054</td>
<td>1,186,643</td>
<td>41.4</td>
<td>65.1</td>
</tr>
<tr>
<td>Corn</td>
<td>928,416</td>
<td>416,764</td>
<td>14.6</td>
<td>44.9</td>
</tr>
<tr>
<td>Tobacco</td>
<td>534,642</td>
<td>254,540</td>
<td>7.9</td>
<td>47.6</td>
</tr>
<tr>
<td>General farming</td>
<td>746,211</td>
<td>220,448</td>
<td>7.7</td>
<td>29.5</td>
</tr>
<tr>
<td>Dairy</td>
<td>799,221</td>
<td>149,467</td>
<td>5.2</td>
<td>18.7</td>
</tr>
<tr>
<td>Wheat</td>
<td>350,010</td>
<td>147,466</td>
<td>5.1</td>
<td>42.1</td>
</tr>
<tr>
<td>Rice</td>
<td>33,961</td>
<td>19,867</td>
<td>.7</td>
<td>59.7</td>
</tr>
<tr>
<td>Sugar cane</td>
<td>11,715</td>
<td>5,329</td>
<td>.2</td>
<td>45.5</td>
</tr>
<tr>
<td>Others</td>
<td>1,584,210</td>
<td>464,639</td>
<td>16.2</td>
<td>29.3</td>
</tr>
</tbody>
</table>

1/ Taken from "Farm Tenancy Report of the President's Committee," February, 1937.
such as application of commercial fertilizers and barnyard manure.

3. Long-time leases give more security to the tenant as he does not need to worry about a farm for the coming year.

4. A fair cash rental which will vary for different farms, and in cases of share tenancy a third or a fourth is customary in cash crop areas.

5. Compensation for buildings constructed on the land by the tenant.

PART II. A STUDY OF FARM TENANCY

In seeking a solution for any problem it is necessary to know some of the outstanding causes. There may be some factors in the Plains Region which are more conducive to tenancy that are only of minor importance in other parts of the country. Montana has some conditions that may be contributing factors to tenancy such as drouth seasons, insect pests, plant diseases, farms that are too small to support a family, farming of the poorer grades of land and a one crop system of farming. In this study some of these factors have been studied to see if they have any relationship to tenancy.

Objectives of the Study

In 1880 the percentage of tenancy in Montana was 5.3 and in 1935 it had increased to 27.7. This rapid rate of increase is not only true in Montana but is also true in other states. This increase has been greater in the cash crop areas, especially cotton, tobacco, and the small grain

regions (see table II). Some parts of Montana have a higher percentage of tenancy than others. In the eastern part of the state, or the spring wheat area, tenancy ranges from 20-24 per cent in Roosevelt, McCone, and Custer counties to over 35 per cent in Daniels, Wibaux, and Fallon counties. The grass land area west of the spring wheat area is the lowest in the state with less than 20 per cent. The counties in the middle of the state run from 20-30 per cent except Gallatin County which is over 35 per cent (figure 2). It is evident that there are characteristics in some parts of the state that are more conducive to tenancy than in others. The purpose and effect of this study are:

1. To determine the relationship between size of farm and farm tenancy.

2. To determine the relationship between farm practices, crops planted, and tenancy.

3. To determine the relationships between soil grades and farm tenancy.

The basic data were selected as a representative sample of the state.

The Sample

Due to the large number of farms in the state only a few farms could be studied. Counties as representative of the state included Roosevelt, Gallatin, and Musselshell. These counties are geographically well distributed in various parts of the state and different farming conditions prevail. Roosevelt County, which is located in the north-
Figure 2.—Percentage of farms operated by tenants in Montana Counties, 1935, 1/

1/ Compiled by R. R. Renne, "Adjusting Montana's Agriculture, IV. Land Ownership and Tenure", Montana Agricultural Experiment Station, Bulletin No. 310.
eastern part of the state, is in the spring wheat dry land area. Musselshell County, located near the center of the state, is dominated by livestock but has some general agriculture as well. Gallatin County, located in southwestern Montana, has a combination of dry land and irrigation farming. The years 1933-37, inclusive, were used as the basic period of the study for Roosevelt and Gallatin counties. The soil grade analysis of 1937 was available for Roosevelt County. The Musselshell County data were available for the years 1933-35, inclusive, for the size of farms and farm practices. The chief source of data was farm sign-ups on the Agricultural Adjustment Administration, 1933-35, and the Agricultural Conservation Program, 1936-37.

**Source of Data**

Size of farm, tenancy, name of owner and tenant, location of farm as to section, township, and range, acreage of types of crops grown and per cent of crop land devoted to soil conserving crops were secured from the Agricultural Adjustment Administration records. Data on soil grades were secured from soils maps available at the Montana Experiment Station. No primary data were used for the study. Some helpful information for purposes of interpretation was obtained from various field workers in the state. No direct contacts with the farmers in the region studied were possible.

The data were secured from the county offices by Works Progress Administration help and transferred to mimeographed cards. These cards were used in securing information for farms studied in various counties.
Limitations of the Data Used

The Agricultural Adjustment Administration records used were considered the best source of information available at the time the study was started. This program was an emergency program and was set up principally for wheat farmers. Many employees who had very little experience in this type of work compiled the records. Since the program was chiefly for wheat farmers, many of the other crops grown on the farm were not given. Information on some of the farms was so limited that the farm was not used. In some cases the total farm land did not check with the crops listed. Although the records were incomplete in many respects, they were the same for the owner as well as the tenant.

For using data from more than one source it is natural that the same type of information will not be given on both. This was true in the data used. For the 1933-35 information for Roosevelt and Musselshell counties it was necessary to take a group of part-owner farms or owners that leased a part of the land they operated. In the case of the 1933-37 information for Gallatin and Roosevelt counties for 1936-37, owners who leased part of their land were treated in a separate category.

The Agriculture Conservation Program records were used for Roosevelt and Gallatin counties. These data were more complete than the data for 1933-35. Information was not available for Musselshell County for the years 1936-37.

Many records used for 1933-37 listed only the crops planted and practices performed. There was a portion of land in each farm not listed such as roads, lanes, fence rows, permanent pasture and idle land. The
information used for these farms for the five years was a duplication as many of the farms were signed up in all five years.

The practices, as shown for the years studied, were not typical of farm practices over a long period of time. This is especially true of some soil conserving practices that were performed for benefit payments.

The years studied may not be typical of the region due to drouth conditions. Land in Roosevelt County in the Indian Reservation was left idle during the dry years to keep from paying rent. In some areas more feed crops were planted due to drouth and in others less feed crops due to the decreased number of livestock.

The year 1937 for Roosevelt County was the only county studied for soil grades. For the most part, land signed up in 1937 included the land signed up in the program in previous years. In 1937 the multiple farms were all grouped under one name and put in the same contract. Land classification in Gallatin and Musselshell counties was not studied due to inadequate maps of the soil classes.

**Method of Analysis**

As the original data were analyzed it became apparent that there were differences in the farms as listed. For the purposes of this study the farms were divided into (1) owner operated farms, and (2) tenant operated farms. In Roosevelt and Musselshell counties for 1933-35 it was necessary to make a third class of owner-tenant operated.

The counties were analyzed separately for the entire period as well as by individual years. For the purpose of this study, comparisons
of the owners and tenants have been made within the counties rather than to compare the counties. It would be rather difficult to compare different years as the data were not set up for this purpose.

The arithmetic mean and the modal group were used as a means of comparison and contrast. Frequency distribution and ranges were used to show the characteristics of each group.

Farms were divided by size into 80 acre groups to show the outstanding size groups of farms for the different counties.

The arithmetic mean was used to show the average size of farms in the counties. This average was somewhat biased due to a number of large farms in each county.

Soil grade comparisons were included for Roosevelt County for 1937. Soils maps, prepared by L. F. Ceiseker, Associate Agronomist, Montana State College, Cooperating with the Bureau of Soils, United States Department of Agriculture, were used for the study. These maps divided land according to grades of farming and grazing land. The acreage of each grade of land and the percentage of each grade as a part of the total land for the owner and tenant were computed. Graphs were prepared to show the percentage of each grade of land operated by owners and tenants.

PART III. FARM TENANCY IN MONTANA

All areas have characteristics that are significant for that area and which must be studied with this fact in mind. The area under study is only a small part of the state and it is very reasonable to suspect that some conditions would be found that are not typical of the state as
Acreage in Farms

Much has been published concerning the uneconomical units in the Great Plains area. Successive crop failures have contributed to this one cause. This is one of the reasons the Homestead Law was changed in 1909 giving the homesteader 320 acres instead of 160 acres. This influence is very noticeable in Roosevelt County as one-fifth of the farms are in the 320 acre size group. The allotment of 320 acres of grazing land to each Indian was also another factor influencing the large number of 320 acre farms (see table IV).

The average size of farms in Roosevelt County for the years 1933-37 was 454 acres (see table I). This acreage is weighted by a few large farms that had as many as 8,000 acres per farm. 

The tenants in Roosevelt County farmed larger farms than did the owners in 1933-35 (see appendix table I). In 1936 and 1937 under the Agricultural Conservation Program the owners were reported as operating larger farms than the tenants. This change is the result of combining the multiple farms under one contract in the owner's name.

The average size farm in Gallatin County in 1933-37 was 403 acres.

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This acreage is very inadequate because the data used were so inconsistent. In the Agricultural Adjustment Administration records, 1933-35, the farms were listed under owners, operators, and owners who leased some land that they farmed. In 1936 and 1937 separate contracts were made for an owner if he rented land. In 1937 in Roosevelt County, all multiple farms were confined under the name of the owner and all other contract numbers were cancelled. This made fewer signers in 1937 than in 1936. However, there was more acreage shown in 1937 than in 1936. The modal group is more nearly the true average as found in Roosevelt County or the 320 acre group.
Figure 3.—Distribution of farms according to the number of farms in various size groups on basis of acreage per farm in Roosevelt and Gallatin counties, 1933-37, Musselshell County, 1933-35.

1/ Numerical data, appendix table IV.
TABLE III.—A COMPARISON OF LAND DEVOTED TO VARIOUS PRACTICES IN PER CENT OF TOTAL LAND IN THE THREE COUNTIES BY COUNTY AND OWNERSHIP STATUS 1/

<table>
<thead>
<tr>
<th>County and ownership status</th>
<th>Total land</th>
<th>Wheat</th>
<th>Fallow</th>
<th>Feed crops</th>
<th>Pasture</th>
<th>Legumes</th>
<th>Green manure</th>
<th>Other crops</th>
<th>Total crops</th>
<th>Land not listed 2/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pot.</td>
<td>pot.</td>
<td>pot.</td>
<td>pot.</td>
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<td>pot.</td>
<td>pot.</td>
<td>pot.</td>
<td>pot.</td>
<td>pot.</td>
</tr>
<tr>
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<td>.5</td>
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<td>14.6</td>
<td>4.0</td>
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<td>78.2</td>
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<td>72.2</td>
<td>27.8</td>
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<td></td>
</tr>
</tbody>
</table>

1/ Taken from Agricultural Adjustment Administration Records, 1933-1935, and Agricultural Conservation Program records, 1930-1937. Numerical information. (see tables VIII, IX, and X)

2/ This percentage is high because of many of the farms only the wheat acreage was given.
<table>
<thead>
<tr>
<th>County</th>
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<th>40-100</th>
<th>101-200</th>
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<th>401-500</th>
<th>501-600</th>
<th>601-700</th>
<th>701-800</th>
<th>801-900</th>
<th>901-1000</th>
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<th>1400+</th>
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</thead>
<tbody>
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<td>260</td>
<td>1329</td>
<td>660</td>
<td>2757</td>
<td>422</td>
<td>771</td>
<td>269</td>
<td>679</td>
<td>200</td>
<td>289</td>
<td>90</td>
<td>84</td>
<td>109</td>
<td>69</td>
<td>157</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>6957</td>
<td>455</td>
<td>1336</td>
<td>420</td>
<td>2170</td>
<td>260</td>
<td>618</td>
<td>195</td>
<td>601</td>
<td>129</td>
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<td>73</td>
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<td>501</td>
<td>249</td>
<td>496</td>
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<td>190</td>
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<td>6</td>
<td>43</td>
<td>9</td>
<td>9</td>
<td>27</td>
</tr>
</tbody>
</table>

\[\text{For additional data for years and ownership status see appendix table IV.}\]
(see appendix table II). This acreage was weighted by farms of a much larger acreage, and as this county is characterized by a large group of quarter-section and half-section farms, the latter groups are more typical than the arithmetic mean.

Musselshell County, which is largely a grazing area, has only a few localities where farming is practiced. It has larger farms than either Roosevelt or Gallatin counties. Much of the land listed is grazing land but is included as part of the farm. The average size farm for 1933-35 was 855 acres (see appendix table III). This acreage is weighted by large farms of from 6,000 to 8,000 acres each. Out of the 537 farms studied, 83 were over 1,400 acres in size (see table IV). Many of the large farms were part-owner farms. This group operated the largest farms with the tenants having the next largest.

The range of size of farms in this study was from 40 acres to 8,000 acres. A large percentage of the 40 acre farms were operated by owners rather than by tenants as is true in many sections of the United States. The large farms were often partnership farms and a large percentage of the land was used for grazing.

As shown in appendix tables I, II, and III, the tenants with a few exceptions operate larger farms than do the owners.

**Percentage of Owners and Tenants**

Grain crop farming in all parts of the United States shows a high percentage of tenancy (table II). This is also true of the sample studied.  

Figure 4.—Comparison of ownership status in Gallatin and Roosevelt counties, 1933-37, and Musselshell County, 1935-35 1/

1/ For numerical data see appendix tables I, II, and III.
for Montana. The counties studied have a higher average of tenancy than does the state as a whole.

Data from the study for Roosevelt County, 1933 to 1937, show that 55 per cent of the farms were farmed by owners (appendix table V) compared to 75 to 80 per cent for Roosevelt County as a whole (see figure 2).

Grain farming seems to be more conducive to tenancy than some of the other types of farming found in the state.

Cash crops such as small grains, cotton, tobacco, are more conducive to wind erosion than are dairy farming, hay or the legume crops. Tenants grow cash crops because there is less cash invested and a quicker return can be obtained than in most of the other farming types. In many parts of the United States the landlord requires his tenants to plant cash crops.

The percentage of tenancy in Gallatin County was very high (see figure 4). The section of the county studied is the highest in the county (see appendix table VI).

Musselshell County had very little grain farming. Only 537 farms were studied for the three years 1933-35 (see appendix table III). These farms are larger than the average size farms found in either Roosevelt or Gallatin counties.

These large farms were due to approximately 50 per cent of the total land was shown in permanent pasture (see appendix table VII). In Musselshell County 25.1 per cent of the farms were operated by farmers who were part-owners.

In 1935, 18 per cent of all owners leased some additional land as
TABLE V.—TOTAL LAND IN FARMS, NUMBER OF FARMS AND AVERAGE ACREAGE PER FARM, BY COUNTIES

<table>
<thead>
<tr>
<th>County</th>
<th>Total land in farms</th>
<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4,477,687</td>
<td>9,978</td>
<td>453</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>3,049,914</td>
<td>6,937</td>
<td>454</td>
</tr>
<tr>
<td>Gallatin</td>
<td>969,439</td>
<td>2,404</td>
<td>403</td>
</tr>
<tr>
<td>Musselshell</td>
<td>459,234</td>
<td>537</td>
<td>853</td>
</tr>
</tbody>
</table>

\[1\] For numerical data see tables I, II, and III.
compared to 12 per cent in 1900. In 1935 these owners rented 26.5 per cent of the total land under lease. Conditions seem to show that these part-owner farmers are likely more injurious to the land than are the tenants who rent all the land they farm. The latter do not have the same incentive to farm part of the land at the expense of the rest of it.

Part-owner operators find it advantageous to rent land near their farms, and in recent years with the use of the tractor, can go several miles and put in a wheat crop with very little added expense. Wheat is a crop that requires very little work except during certain seasons of the year.

**Types of Leases**

Data were not available for all years as to types of leases of Roosevelt and Musselshell but a general perusal indicated that the outstanding lease agreement was on a share rent basis divided as follows: two thirds to the tenant and one-third to the owner or three-fourths to the tenant and one-fourth to the owner. In Gallatin County, however, cash rent was quite a common practice.

In the United States in 1930, 62 per cent of the tenant farmers rented land on a crop share basis. This practice many times encouraged the production of cash crops and discouraged the production of crops that can be marketed through livestock. 3/

Short time leases seem to be predominant in this state. This type of lease gives less security to the tenant. It takes some time for the

tenant to become adjusted in the community and at least one year is necessary for the tenant to become acquainted with the farm he is operating. Short time leases discourage soil conserving practices, use of fertilizers, and improvements on the land.

Farm Practices

Farm practices as found in this study may not be typical of the practices performed over a long period of time (see appendix tables VIII, IX, and X). In many cases practices were carried out because payments made under the Agricultural Conservation Program required adherence to certain practices. 9/

The years studied were usually dry and prices for grain were low. In these counties many farms were left idle because of drought conditions.

Roosevelt is principally a wheat producing county. Wheat was the outstanding crop in 1933 as well as for the other years, although there was a decrease every year when compared with the previous year except in the case of 1935 (see appendix table VIII). The percentage of wheat planted in Roosevelt County during the years 1936 and 1937 shows very little difference for owners and tenants (see appendix table VIII). This table also shows that the owners plant more soil conserving crops and more feed crops than do the tenants (table III). The owners seeded more grass for pasture which would indicate that the owners are doing more to

9/ In 1936 in Roosevelt County, wheat especially was plowed under as a green manure crop as the operator was paid so much an acre for this practice. Other practices as seeding grasses, clover, and alfalfa were also performed for payment.
prevent soil erosion than are the tenants. The fact that the owners plant more feed crops such as corn, sorghum, and oats would indicate that they have more livestock on the farm than have the tenants.

The land in fallow in Roosevelt County in 1934 and 1935 consisted of about one-fourth total land in the average size farm (see appendix table VIII). This acreage decreased in 1936 and 1937. The large acreage in fallow in 1934 and 1935 was likely due to severe drought conditions during these years. Summer fallow is used to good advantage on dry land farms for the conservation of moisture and control of weeds.

The rod weeder, duck-foot cultivator, and rotary hoe have been used to good advantage in preparation of summer fallow land as they are very effective in killing weeds, and producing a desirable clod mulch. Increase in yield due to summer fallow will depend upon the moisture held in the soil and the methods of cultivation.

Wheat is the largest cash crop in Gallatin as well as Roosevelt County, however, a larger percentage of the total acreage is devoted to wheat in Roosevelt County (see table III). Tenants show a higher percentage of wheat in all five years than do the owners. Cereal crops, legumes, and other crops grown for feed show a higher percentage to the owner in Gallatin County than the other counties studied (see table III). There is a greater difference in crops planted by the owner and tenant in Gallatin County than in Roosevelt (see figure 3). These figures show that the owners are performing more soil conserving practices and very likely have more livestock on their farms than do the tenants. A wider variety

of crops is grown in Gallatin County than in either Roosevelt or Musselshell counties (see table III).

Musselshell County, which is largely a livestock county, shows a larger percentage of permanent pasture than either Gallatin or Roosevelt counties. Musselshell County also shows a larger percentage of wheat sowed by the tenants.

Livestock in Musselshell County is one of the chief sources of income. Due to the drought in Musselshell County in the last few years, livestock raising has been difficult. In this county, due to the short grazing period and the necessity of supplementary feed, the raising of livestock has not been so profitable. Grain sorghums and corn are being grown as a supplementary crop but have met with only limited success, as it takes too much dry feed to winter cattle where grazing is limited.

In 1925 in the United States only 38.6 per cent of the farmers were tenants, yet on the farms they operated there was harvested over two-thirds (67.6 per cent) of the cotton acreage, 49.9 per cent of the tobacco acreage, 47.3 per cent of the corn acreage for grain, 41.6 per cent of the oats for grain, 38.1 per cent of the wheat, 35.5 per cent of the flaxseed and 45.3 per cent of the sugar beets. These figures for 1935 show that the tenants produced a large percentage of the cash crops in the United States for that year.

Grades of Farming and Grazing Land

Montana farms have been classified into various grade based upon

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Farm land is divided into grades on the basis of the yield of wheat per acre on summer fallow land. The four grades are as follows:

- **First grade**: land yielding 22 or more bushels per acre;
- **Second grade**: 16-21 bushels;
- **Third grade**: 12-15 bushels;
- **Fourth grade**: 8-11 bushels.

Grazing land has been classified on the basis of the number of acres required to carry a 1000 pound steer for a ten month period:

- **First grade**: 18 acres or less;
- **Second grade**: 19-27 acres;
- **Third grade**: 28-37 acres;
- **Fourth grade**: 38-54 acres;
- **Fifth grade**: 55 acres or more.

Roosevelt County was used for this study.

Upon analysis of the grades of land operated by owners and tenants, it was found that a larger percentage of each farm operated by the owner was second and third grade farm land while the tenants farmed a larger percentage of the fourth grade land. Two-thirds of the total farm land in the county was classified as second and third grade land (see figure 5).

Roosevelt County shows no first grade farm land.

Most of the land of the plains area would be very productive if

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12/ This classification has been developed by the Department of Agronomy and the Department of Agricultural Economics, Montana State College, on the basis of a soils reconnaissance conducted by L. F. Gieseke, Associate Agronomist, Montana State College, Bozeman, Montana.

13/ Due to lack of time and inadequate maps of Musselshell and Gallatin counties, only Roosevelt County was used. As most of the farms in Roosevelt County for 1933-37 were a duplication of the farms in 1937, only 1937 was used. The discrepancy in the acreage used in this study and the acreage shown in appendix table VIII for Roosevelt County for 1937 is because a few of the farms listed had some land in Sheridan County or North Dakota and maps were not available for these farms. These farms were put in Roosevelt County because the improvements were in Roosevelt County. This is a ruling of the Agricultural Conservation Program.
Figure 5.--A comparison of the total number of acres of each grade of land operated by tenants and owners in Roosevelt County in 1937 expressed by percentage of total land.

1/ Numerical data, appendix table XI.
sufficient amounts of moisture could be obtained. Fertility is not the limiting factor in crop production. Studies made in the Plains Area show that there is no estimate of the duration of the productivity of the land. 14/

The tenants in Roosevelt County in 1937 had a larger percentage of all grades of grazing land except the third grade which was higher for the owners. 15/ This was especially true of land classified as swamp bottom land (see figure 5). No first grade grazing land was shown for Roosevelt County.

**SUMMARY AND CONCLUSIONS**

This is a study of the relationship of farm tenancy to size of farm, farm practices, and soil grades. The study included 9,878 farms with a total of 4,477,587 acres. The counties included were Roosevelt and Gallatin for the years 1933-37 and Musselshell County for 1933-35. This sample is only a small part of the state of Montana.

1. Taking the tenants as a group the data show them to be practically equal or in many cases better situated than are the owners. They have larger farms, except in Roosevelt County, 1936-37. There is comparatively little difference in the farm practices of the owners and tenants although the tenants do plant more soil depleting crops and less soil conserving crops. The tenants, however, do not have as much over-

14/ “Improvements and Methods of Tillage to Control Soil Blowing on the Northern Great Plains”, Farmers Bulletin No. 1797, U.S.D.A.

15/ Comparison of the total land in pasture as given in appendix table VIII would be inadequate as very few of these farms show permanent pasture.
head expenses such as interest, taxes, and up-keep of the land as do the owners.

2. The farm tenancy in the area studied is among the highest in the state. This is due to cash crop farming in this area. The principal crop on the most of the farms was wheat.

3. The various government programs from 1933-37 increased the soil conserving crops and decreased the soil depleting crops. Soil conserving practices such as sowing crested wheat grass, alfalfa, clover, and plowing under green manure crops were performed for payment.

4. Owners planted less wheat and more feed crops than did the tenants. This would indicate that the owners have more livestock on the farm. The owners also planted a larger variety of crops.

5. The owners planted more soil conserving crops such as crested wheat grass, alfalfa, and clover than did the tenants.

6. The size of farms for the counties studied ranged from 40 acres to 8,000 acres. There were three outstanding sizes of farms consisting of 160-320 and 640 acres each. Although the average size of farm for the three counties was 453 acres, the modal group consisting of about one-fifth of the farms in the area was the 320 acre group. Many large farms especially in Musselshell County, caused the average for the group as a whole to be much higher.

7. Drought conditions probably affected the acreage of crops grown in the counties studied. Feed crops were planted for supplementary feed for livestock. Much land was left idle due to drought.

8. Spring wheat was the outstanding soil depleting crop in the
three counties. Corn and sorghum crops were also grown to some extent over most of the area.

9. Soil conserving crops consisted of alfalfa, clover, and crested wheat grass. The acreage of crested wheat grass sown has increased in the last few years due to government payment for this practice.

10. The owners operate better land according to the data studied than did the tenants. In 1937 in Roosevelt County the owners farmed about 22.0 per cent of the total second grade land operated by the owners as compared to 16.4 per cent for the tenants. The owners also operated slightly more of the third grade land than did the tenants while for the fourth grade farm land the tenants farmed the larger percentage.

The tenants operated more of all grades of pasture land except third grade. This especially is true of the poorer grade of pasture land listed as swamp bottom land.

No land was reported as first grade farm or grazing land in Roosevelt County in 1937. This is likely due to insufficient rainfall as the various grades of land were determined on a production basis.
APPENDIX TABLE I.—TOTAL LAND IN FARMS, NUMBER OF FARMS AND AVERAGE ACREAGE PER FARM IN ROOSEVELT COUNTY BY OWNERSHIP STATUS, 1935-37

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land in farms (acres)</th>
<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
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<td>6,937</td>
<td>454</td>
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1933

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<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
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<td>Owner</td>
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<td>417</td>
</tr>
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<td>Tenants</td>
<td>125,496</td>
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<td>440</td>
</tr>
<tr>
<td>Part owner</td>
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1934

<table>
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<th>Total land in farms (acres)</th>
<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
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<td>Total</td>
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</tr>
<tr>
<td>Tenants</td>
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<td>293</td>
<td>445</td>
</tr>
<tr>
<td>Part owner</td>
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<td>891</td>
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1935

<table>
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<tr>
<th>Year and ownership status</th>
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<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
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<td>507</td>
</tr>
<tr>
<td>Owner</td>
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<tr>
<td>Tenants</td>
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</tr>
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<td>Part owner</td>
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1936

<table>
<thead>
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<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
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<td>355</td>
</tr>
<tr>
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<td>Tenants</td>
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<td>311</td>
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1937

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land in farms (acres)</th>
<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>709,490</td>
<td>1,793</td>
<td>394</td>
</tr>
<tr>
<td>Owner</td>
<td>443,920</td>
<td>229</td>
<td>477</td>
</tr>
<tr>
<td>Tenants</td>
<td>265,570</td>
<td>664</td>
<td>307</td>
</tr>
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</table>

1/ Data were taken from County A.A.A. records and County A.C.P. records for 1933-37.

2/ Many of these farms are duplications as some farms were signed up in all five years, 1933-37.

3/ This average is weighted by a number of farms with as high as 8,000 acres each.
APPENDIX TABLE II.—TOTAL LAND IN FARMS, NUMBER OF FARMS AND AVERAGE ACREAGE PER FARM IN GALLATIN COUNTY BY OWNERSHIP STATUS, 1933-37 1/

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land in farms</th>
<th>Total number of farms 2/</th>
<th>Average acres per farm 3/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(acres)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>969,439</td>
<td>2,404</td>
<td>403</td>
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<tr>
<td>1933</td>
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<td>Total</td>
<td>152,806</td>
<td>358</td>
<td>424</td>
</tr>
<tr>
<td>Owner</td>
<td>51,093</td>
<td>129</td>
<td>396</td>
</tr>
<tr>
<td>Tenants</td>
<td>101,712</td>
<td>229</td>
<td>444</td>
</tr>
<tr>
<td>1934</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>146,175</td>
<td>358</td>
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<td>430</td>
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<tr>
<td>1935</td>
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<tr>
<td>Total</td>
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<td>49,843</td>
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<td>383</td>
</tr>
<tr>
<td>Tenants</td>
<td>101,714</td>
<td>228</td>
<td>446</td>
</tr>
<tr>
<td>1936</td>
<td></td>
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<td>416</td>
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<tr>
<td>1937</td>
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<td>Total</td>
<td>352,971</td>
<td>953</td>
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<tr>
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<td>356</td>
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<tr>
<td>Tenants</td>
<td>187,638</td>
<td>492</td>
<td>386</td>
</tr>
</tbody>
</table>

1/ Data were obtained from County A.A.A. records for 1933-35 and A.C.P. records for 1936-37.
2/ Many of these farms were duplications as they were signed up in all five years, 1933-37.
3/ This average is weighted by a number of large farms with as many as 6,000 acres.
### APPENDIX TABLE III

**TOTAL LAND IN FARMS, NUMBER OF FARMS AND AVERAGE ACREAGE PER FARM IN MUSSELSHELL COUNTY BY OWNERSHIP STATUS, 1933-35**

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land in farms (acres)</th>
<th>Total number of farms</th>
<th>Average acres per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>458,243</td>
<td>837</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>151,963</td>
<td>179</td>
<td>848</td>
</tr>
<tr>
<td>Owner</td>
<td>56,233</td>
<td>77</td>
<td>730</td>
</tr>
<tr>
<td>Tenants</td>
<td>42,399</td>
<td>56</td>
<td>758</td>
</tr>
<tr>
<td>Part owner</td>
<td>53,331</td>
<td>46</td>
<td>1,157</td>
</tr>
<tr>
<td><strong>1934</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>154,216</td>
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<td>861</td>
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<td>Owner</td>
<td>59,566</td>
<td>77</td>
<td>773</td>
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<td>57</td>
<td>749</td>
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<td>1,144</td>
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<td><strong>1935</strong></td>
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<td>45</td>
<td>1,179</td>
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1/ Data were taken from the County A.A.A. records for 1933-35.

2/ Many of these farms are duplications as they were signed up in all three years, 1933-35.

3/ This acreage is weighted by a number of farms with an average of 600 to 8,000 acres each.
### APPENDIX TABLE IV: DISTRIBUTION OF ACREAGE IN FARMS

IN ROOSEVELT AND GALLATIN COUNTIES, 1933-57, AND
MUSSELSHELL COUNTY, 1933-56 BY OWNERSHIP STATUS

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<th>Counties by years and ownership status</th>
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<th>200</th>
<th>280</th>
<th>360</th>
<th>440</th>
<th>520</th>
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<th>680</th>
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<td>1929</td>
<td>660</td>
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<td>422</td>
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<td></td>
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</tr>
<tr>
<td>1933 Total</td>
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<td>463</td>
<td>176</td>
<td>909</td>
<td>128</td>
<td>306</td>
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<td>119</td>
<td>561</td>
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<td>28</td>
<td>77</td>
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<td>28</td>
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<td>334</td>
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<td>91</td>
<td>155</td>
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<td>650</td>
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<td>18</td>
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<td>1933-35 Total</td>
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<td>218</td>
<td>96</td>
<td>241</td>
<td>74</td>
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<td>19</td>
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<td>27</td>
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<td>187</td>
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<td>94</td>
<td>13</td>
<td>63</td>
<td>9</td>
<td>82</td>
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<td>20</td>
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<td>9</td>
<td>18</td>
<td>8</td>
<td>36</td>
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<td>1</td>
<td>15</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1/ The 60-acre groups were taken to show the 160-320 and 640 size farms.
2/ In 1937 in Roosevelt County all multiple farms were put under one name and all the other contract numbers cancelled. This caused more large farms and fewer small ones in 1937.
## APPENDIX TABLE V.--PERCENTAGE OF TOTAL LAND DEVOTED TO VARIOUS PRACTICES IN ROOSEVELT COUNTY, 1933-37

<table>
<thead>
<tr>
<th>Year and Ownership Status</th>
<th>Uses of Land in Percents</th>
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</thead>
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<tr>
<td></td>
<td>Total Land</td>
</tr>
<tr>
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<tr>
<td>Roosevelt, 1933</td>
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</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Owner</td>
<td>65.4</td>
</tr>
<tr>
<td>Tenant</td>
<td>26.0</td>
</tr>
<tr>
<td>Part owner</td>
<td>18.6</td>
</tr>
<tr>
<td>Roosevelt, 1934</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Owner</td>
<td>64.4</td>
</tr>
<tr>
<td>Tenant</td>
<td>26.6</td>
</tr>
<tr>
<td>Part owner</td>
<td>19.0</td>
</tr>
<tr>
<td>Roosevelt, 1935</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Owner</td>
<td>65.8</td>
</tr>
<tr>
<td>Tenant</td>
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</tr>
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<td>Part owner</td>
<td>17.6</td>
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<td>Roosevelt, 1936</td>
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1/ Source: [Additional source information].
### APPENDIX TABLE V, sheet 2

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<th>Year and ownership status</th>
<th>Uses of land in per cent</th>
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</tbody>
</table>

1/ Data taken from County Agricultural Adjustment Administration records, 1933-35, and Agricultural Conservation Program records, 1936-37.
2/ Feed crops includes crops as oats, rye, barley, corn, hay, speltz, millet, and corn.
3/ Pasture listed is partly permanent pasture and partly grass that was planted in the given year. The records were not consistent, some farms permanent pasture was given.
4/ Other crops include crops as flax, potatoes, garden, and peas.
5/ Land not listed includes idle land, fence rows, wood lots, lanes, farmsteads, and permanent pastures not listed.
APPENDIX TABLE VI.—PERCENTAGE OF TOTAL LAND DEVOTED TO VARIOUS PRACTICES IN GALLATIN COUNTY, 1933-37 1/

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land</th>
<th>Wheat</th>
<th>Fallow</th>
<th>Feed crops</th>
<th>Pasture Legumes</th>
<th>Green manure</th>
<th>Other crops</th>
<th>Total crops</th>
<th>Land not listed</th>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>100.0</td>
<td>16.0</td>
<td>11.4</td>
<td>2.3</td>
<td>5.4</td>
<td>10.3</td>
<td>0.9</td>
<td>48.8</td>
<td>53.2</td>
</tr>
<tr>
<td>Owner</td>
<td>48.3</td>
<td>13.5</td>
<td>8.6</td>
<td>2.0</td>
<td>6.4</td>
<td>11.3</td>
<td>2.8</td>
<td>44.8</td>
<td>55.2</td>
</tr>
<tr>
<td>Tenant</td>
<td>51.7</td>
<td>18.2</td>
<td>13.8</td>
<td>1.5</td>
<td>4.4</td>
<td>9.3</td>
<td>1.1</td>
<td>47.2</td>
<td>52.2</td>
</tr>
</tbody>
</table>

1/ Data taken from County A.A.A. records, 1933-35, and A.C.F. records for 1933-37.
2/ Only limited information was shown on A.A.A. records in 1934. On many of the farms only the wheat acreage was given.
## APPENDIX TABLE VII.--PERCENTAGE OF TOTAL LAND DEVOTED TO VARIOUS PRACTICES IN MUSSELSHELL COUNTY, 1933-35 1/

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Uses of land in per cent</th>
<th>Land not listed ( 2/ )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total land</td>
<td>Wheat</td>
</tr>
<tr>
<td></td>
<td>pet.</td>
<td>pet.</td>
</tr>
<tr>
<td>Musselshell, 1933</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>17.5</td>
</tr>
<tr>
<td>Owner</td>
<td>43.1</td>
<td>14.7</td>
</tr>
<tr>
<td>Tenant</td>
<td>31.2</td>
<td>22.7</td>
</tr>
<tr>
<td>Part owner</td>
<td>25.7</td>
<td>16.4</td>
</tr>
<tr>
<td>Musselshell, 1934</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>11.6</td>
</tr>
<tr>
<td>Owner</td>
<td>43.1</td>
<td>9.4</td>
</tr>
<tr>
<td>Tenant</td>
<td>31.2</td>
<td>14.3</td>
</tr>
<tr>
<td>Part owner</td>
<td>25.7</td>
<td>12.0</td>
</tr>
<tr>
<td>Musselshell, 1935</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>13.7</td>
</tr>
<tr>
<td>Owner</td>
<td>43.1</td>
<td>12.5</td>
</tr>
<tr>
<td>Tenant</td>
<td>31.3</td>
<td>16.4</td>
</tr>
<tr>
<td>Part owner</td>
<td>25.1</td>
<td>13.6</td>
</tr>
</tbody>
</table>

1/ Data taken from County Agricultural Adjustment Administration records, 1933-35.

2/ Feed crops include crops as oats, rye, barley, corn, hay, speltz, millet, and corn.

3/ Pasture listed is partly permanent pasture and partly grass planted in the given year. The records were not consistent, some contracts permanent pasture was not given.

4/ Land not listed includes idle land, fence rows, wood lots, lanes, farmsteads and permanent pastures not listed.
### Table VIII: Acreage of Various Farm Practices in Roosevelt County, 1933-37

<table>
<thead>
<tr>
<th>Year and Ownership Status</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>acres</td>
<td>acres</td>
<td>acres</td>
<td>acres</td>
<td>acres</td>
</tr>
<tr>
<td>Wheat</td>
<td>246,220</td>
<td>161,849</td>
<td>191,250</td>
<td>190,381</td>
<td>164,631</td>
</tr>
<tr>
<td>Fallow</td>
<td>57,754</td>
<td>139,170</td>
<td>133,395</td>
<td>36,551</td>
<td>36,551</td>
</tr>
<tr>
<td>Feed crops</td>
<td>40,070</td>
<td>40,963</td>
<td>49,186</td>
<td>35,574</td>
<td>50,039</td>
</tr>
<tr>
<td>Pasture</td>
<td>47,919</td>
<td>56,729</td>
<td>56,825</td>
<td>23,401</td>
<td>24,022</td>
</tr>
<tr>
<td>Legumes</td>
<td>20</td>
<td>551</td>
<td>468</td>
<td>10,517</td>
<td>24,022</td>
</tr>
<tr>
<td>Green manure crops</td>
<td>1,661</td>
<td>1,616</td>
<td>4,447</td>
<td>991</td>
<td>103</td>
</tr>
<tr>
<td>Other crops listed</td>
<td>163,667</td>
<td>143,553</td>
<td>129,625</td>
<td>310,169</td>
<td>458,003</td>
</tr>
<tr>
<td>Land not listed</td>
<td>56,860</td>
<td>36,685</td>
<td>10,950</td>
<td>45,582</td>
<td>103,003</td>
</tr>
</tbody>
</table>

1/ Data were obtained from the county A.A.A. records, 1933-35, and A.C.F. records, 1936-37.
| Year and Ownership status | Total Use of land in acres | | | | | | | | | |
| | Total | land | Wheat | Fallow | Feed | Pasture | Legumes | Green | Other | Land not listed |
| | acres | acres | acres | acres | acres | acres | acres | acres | acres | acres |
| Total | 969,439 | 200,863 | 149,366 | 43,685 | 88,686 | 54,580 | 1,698 | 7,739 | 422,439 | 1/ |
| 1933 | 152,806 | 40,547 | 36,123 | 16,137 | 42,088 | 165 | 1,579 | 16,166 | | |
| Owner | 51,093 | 12,883 | 11,070 | 7,625 | 12,823 | 103 | 936 | 5,548 | | |
| Tenant | 101,712 | 27,664 | 25,053 | 8,512 | 29,260 | 62 | 743 | 10,618 | | |
| 1934 | 146,176 | 31,105 | 3,774 | 1,034 | 10,625 | 41 | 66 | 99,530 | | |
| Owner | 48,108 | 9,931 | 1,060 | 619 | 1,843 | 34 | 44 | 34,470 | | |
| Tenant | 98,067 | 21,174 | 2,714 | 415 | 8,677 | 7 | 20 | 63,060 | | |
| 1935 | 151,557 | 45,624 | 36,904 | 10,693 | 10,501 | 1,033 | 46,602 | | | |
| Owner | 49,843 | 11,396 | 11,008 | 5,125 | 1,882 | 510 | 19,922 | | | |
| Tenant | 101,714 | 34,228 | 25,896 | 5,768 | 8,619 | 523 | 26,680 | | | |
| 1936 | 165,935 | 27,026 | 32,152 | 5,659 | 6,700 | 16,161 | 1,698 | 1,857 | 72,695 | | |
| Owner | 79,022 | 10,666 | 15,610 | 3,228 | 3,555 | 9,200 | 534 | 1,043 | 36,466 | | |
| Tenant | 86,913 | 16,360 | 16,542 | 1,731 | 3,145 | 8,951 | 1,164 | 814 | 36,209 | | |
| 1937 | 352,971 | 56,551 | 40,413 | 10,160 | 18,974 | 56,223 | 3,204 | 187,446 | | |
| Owner | 163,333 | 22,028 | 15,080 | 7,004 | 15,620 | 18,553 | 2,847 | 67,096 | | |
| Tenant | 189,638 | 34,528 | 25,327 | 3,156 | 8,154 | 17,670 | 967 | 99,348 | | |

---

1/ Data were obtained from the County A.A.A. records, 1933-35, and the A.C.P. records, 1936-37.
# APPENDIX TABLE X—ACREAGE OF VARIOUS FARM PRACTICES IN MUSSELSHELL COUNTY, 1933-35

<table>
<thead>
<tr>
<th>Year and ownership status</th>
<th>Total land acres</th>
<th>Wheat acres</th>
<th>Fallow acres</th>
<th>Pasture 2/ acres</th>
<th>Feed crops acres</th>
<th>Land not listed acres</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>458,234</td>
<td>65,540</td>
<td>66,145</td>
<td>212,672</td>
<td>23,940</td>
<td>99,935</td>
</tr>
<tr>
<td>1933</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>161,983</td>
<td>26,712</td>
<td>9,513</td>
<td>70,737</td>
<td>9,676</td>
<td>35,345</td>
</tr>
<tr>
<td>Owner</td>
<td>56,233</td>
<td>9,226</td>
<td>2,584</td>
<td>32,002</td>
<td>4,268</td>
<td>10,601</td>
</tr>
<tr>
<td>Tenant</td>
<td>42,399</td>
<td>9,641</td>
<td>3,245</td>
<td>19,096</td>
<td>2,152</td>
<td>8,266</td>
</tr>
<tr>
<td>Part owner</td>
<td>63,351</td>
<td>6,783</td>
<td>3,414</td>
<td>21,640</td>
<td>3,236</td>
<td>16,276</td>
</tr>
<tr>
<td>1934</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>164,216</td>
<td>17,924</td>
<td>23,640</td>
<td>70,679</td>
<td>5,654</td>
<td>36,319</td>
</tr>
<tr>
<td>Owner</td>
<td>69,666</td>
<td>6,616</td>
<td>9,311</td>
<td>31,013</td>
<td>2,357</td>
<td>11,268</td>
</tr>
<tr>
<td>Tenant</td>
<td>41,991</td>
<td>6,009</td>
<td>7,316</td>
<td>17,389</td>
<td>1,074</td>
<td>10,203</td>
</tr>
<tr>
<td>Part owner</td>
<td>53,660</td>
<td>6,299</td>
<td>7,013</td>
<td>22,277</td>
<td>2,223</td>
<td>14,846</td>
</tr>
<tr>
<td>1935</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>152,036</td>
<td>20,904</td>
<td>22,992</td>
<td>71,256</td>
<td>8,610</td>
<td>28,273</td>
</tr>
<tr>
<td>Owner</td>
<td>65,745</td>
<td>6,998</td>
<td>7,665</td>
<td>32,724</td>
<td>2,739</td>
<td>5,919</td>
</tr>
<tr>
<td>Tenant</td>
<td>45,219</td>
<td>6,671</td>
<td>5,013</td>
<td>17,299</td>
<td>1,947</td>
<td>9,289</td>
</tr>
<tr>
<td>Part owner</td>
<td>53,071</td>
<td>7,235</td>
<td>7,314</td>
<td>21,233</td>
<td>3,924</td>
<td>13,265</td>
</tr>
</tbody>
</table>

1/ Data were taken from the County A.A.A. records for 1933-35.
2/ Musselshell County has very little farming. On the farms used in this study much of the land is in pasture.
APPENDIX TABLE XI.—ACREAGE OF VARIOUS GRADES OF FARMING AND GRAZING LAND AND NUMBER OF FARMS IN ROOSEVELT COUNTY BY OWNERSHIP STATUS, 1937 1/

<table>
<thead>
<tr>
<th>County and ownership status</th>
<th>No. of farms</th>
<th>Grades of Farm Land</th>
<th>Grades of Grazing Land</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F-2</td>
<td>F-3</td>
</tr>
<tr>
<td>Roosevelt</td>
<td></td>
<td>Total</td>
<td>acreage</td>
</tr>
<tr>
<td>Total</td>
<td>1,791</td>
<td>704,567</td>
<td>140,960</td>
</tr>
<tr>
<td>Owner</td>
<td>929</td>
<td>442,427</td>
<td>98,103</td>
</tr>
<tr>
<td>Tenants</td>
<td>862</td>
<td>262,140</td>
<td>42,867</td>
</tr>
</tbody>
</table>

1/ Grades of Farm and grazing land were obtained from soil reconnaissance conducted by L. F. Geiseker, Assistant Agronomist, Montana State College, Bozeman, Montana.

2/ SB on the soils map was referred to as river bottom or swamp bottom land.
## Appendix Table XII: Comparison of Land Devoted to Various Practices in Three Counties by Counties and Ownership Status

<table>
<thead>
<tr>
<th>County and Ownership Status</th>
<th>Use of Land in Acres</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total acres</td>
<td>Wheat acres</td>
<td>Fallow acres</td>
<td>Feed acres</td>
<td>Legumes acres</td>
<td>Green manure acres</td>
<td>Other crops acres</td>
<td>Land not listed acres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roosevelt</td>
<td>4,477,687</td>
<td>1,240,724</td>
<td>621,900</td>
<td>267,637</td>
<td>489,657</td>
<td>76,615</td>
<td>48,103</td>
<td>16,667</td>
<td>1,727,396</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,049,914</td>
<td>974,331</td>
<td>416,409</td>
<td>168,014</td>
<td>183,077</td>
<td>21,033</td>
<td>46,405</td>
<td>8,018</td>
<td>1,205,037</td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>1,606,967</td>
<td>607,070</td>
<td>201,409</td>
<td>114,051</td>
<td>95,422</td>
<td>16,074</td>
<td>36,424</td>
<td>3,618</td>
<td>652,698</td>
<td></td>
</tr>
<tr>
<td>Tenant</td>
<td>910,890</td>
<td>270,194</td>
<td>111,790</td>
<td>37,972</td>
<td>45,236</td>
<td>4,705</td>
<td>9,991</td>
<td>2,083</td>
<td>420,917</td>
<td></td>
</tr>
<tr>
<td>Part owner</td>
<td>532,057</td>
<td>189,067</td>
<td>103,211</td>
<td>37,791</td>
<td>47,417</td>
<td>254</td>
<td>2,917</td>
<td>161,412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gallatin</td>
<td>969,439</td>
<td>200,883</td>
<td>149,366</td>
<td>43,883</td>
<td>56,828</td>
<td>54,590</td>
<td>7,739</td>
<td>422,424</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>592,399</td>
<td>66,901</td>
<td>51,828</td>
<td>24,501</td>
<td>31,033</td>
<td>27,890</td>
<td>534</td>
<td>186,024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>587,040</td>
<td>133,952</td>
<td>97,538</td>
<td>19,382</td>
<td>57,855</td>
<td>26,560</td>
<td>1,164</td>
<td>236,400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenant</td>
<td>171,643</td>
<td>20,903</td>
<td>103,220</td>
<td>9,384</td>
<td>93,739</td>
<td>27,988</td>
<td>99,933</td>
<td>27,988</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musselshell</td>
<td>458,234</td>
<td>65,540</td>
<td>56,145</td>
<td>23,940</td>
<td>212,672</td>
<td>95,150</td>
<td>44,291</td>
<td>27,566</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>127,609</td>
<td>22,321</td>
<td>15,741</td>
<td>5,173</td>
<td>53,793</td>
<td>27,566</td>
<td>44,291</td>
<td>15,057</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>159,062</td>
<td>22,317</td>
<td>17,741</td>
<td>9,363</td>
<td>65,150</td>
<td>44,291</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1/ Data were taken from the County A.A.A. records, 1933-35, and the A.C.P. records for 1936-37.

2/ No legumes, green manure, or crops listed under other crops were grown in Musselshell County.
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5. Geiseker, L. F., Soils of Roosevelt County, Montana Experiment Station Bulletin No. 179, August, 1925, 42 pp. illus.


12. Renne, R. R., Montana Farm Bankruptcies, A Study of the Number, Characteristics, and Causes of Farm Bankruptcies over a Forty-Year Period with some suggestions for Preventing them in the Future, Montana Agricultural Experiment Station Bulletin No. 359, June, 1938, 53 pp. illus.


