A Program for Crook County Agriculture

Report of the County Economic Conference
Prineville, February 28 and 29, 1924.
FOREWORD

This bulletin is published by reason of the following resolution adopted by the general assembly of the Crook County Agricultural Economic conference on the last day of its sessions at Prineville, February 28 and 29:

"WHEREAS, This the first Crook County Agricultural Economic conference has adopted a program based upon a comprehensive study of production and marketing possibilities which gives us the best guide for the further development of agriculture in Crook county, and

"WHEREAS, The ultimate value of the program will depend upon the extent to which it is understood and followed; therefore be it

"RESOLVED, That the general conference chairman, W. O. Hall, and the chairmen of the respective groups as follows:

C. B. GAYLORD, Dairy MRS. G. C. TRUESDALE, Poultry
E. T. SLAYTON, Livestock T. I. PHELPS, Soils
C. L. WORRELL, Farm Crops G. W. BURNET, Bees

constitute a standing committee to cooperate with the county agricultural agent in arranging for the publication of the information and recommendations brought out by the conference and the further purpose of devising ways and means of carrying these recommendations into effect."

Attended by more than 100 farmers and business men, the conference was organized along commodity lines, including the following groups: farm crops, dairying, bees, poultry, livestock, and boys' and girls' club work.

Each of these groups considered all available data including that gathered from local sources and that furnished by the Oregon Agricultural College through specialists of the college Extension Service. The groups also had before them the recommendations of the State Economic conference held at Corvallis January 23 to 25. With this information at hand each group prepared a statement and a set of recommendations that was considered and adopted by the general assembly on the last day of the conference.

Taken together, these reports constitute a program for Crook county agriculture. Singly, they represent the most approved practices in the production and marketing of the county's most important agricultural commodities.

The conference was a beginning. Its ultimate value will depend upon the extent to which its recommendations become known and are practiced in the various communities of the county. Consideration of the reports is commended to every person and group interested in the welfare of Crook county. It is hoped that farmers especially, individually and through their organizations, will use these reports as a general guide in developing the agriculture of this county. It is not assumed that the program is complete or infallible. It is a start in the right direction, however, and it is assumed that corrections and amendments should be made as conditions change and new facts develop.

In addition to the reports themselves this bulletin contains a few summaries of general interest relating to the development of agriculture in the county.

Publication of this bulletin has been made possible through the cooperation of the Central Oregonian, which contributed the cost of setting the type.
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<td>21-24</td>
</tr>
</tbody>
</table>
Climatic Conditions.

U. S. Weather Bureau records are available for Prineville over a considerable period of years. Records for 21 years show that the average yearly temperature at that point is 48 degrees, the highest on record is 106 degrees and the lowest 32 degrees below zero.

Nineteen year records indicate an average of 9.08 inches of snow.

Table No. 1 gives a summary of temperature and precipitation records.

<table>
<thead>
<tr>
<th>Period</th>
<th>Temperature</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Degrees</td>
<td>Highest Degrees</td>
</tr>
<tr>
<td>January</td>
<td>32.7</td>
<td>76</td>
</tr>
<tr>
<td>February</td>
<td>36.0</td>
<td>73</td>
</tr>
<tr>
<td>March</td>
<td>40.0</td>
<td>83</td>
</tr>
<tr>
<td>April</td>
<td>46.8</td>
<td>92</td>
</tr>
<tr>
<td>May</td>
<td>52.0</td>
<td>96</td>
</tr>
<tr>
<td>June</td>
<td>58.4</td>
<td>100</td>
</tr>
<tr>
<td>July</td>
<td>65.0</td>
<td>105</td>
</tr>
<tr>
<td>August</td>
<td>63.9</td>
<td>106</td>
</tr>
<tr>
<td>September</td>
<td>57.0</td>
<td>94</td>
</tr>
<tr>
<td>October</td>
<td>49.0</td>
<td>91</td>
</tr>
<tr>
<td>November</td>
<td>40.8</td>
<td>82</td>
</tr>
<tr>
<td>December</td>
<td>33.8</td>
<td>76</td>
</tr>
<tr>
<td>Annual</td>
<td>48.0</td>
<td>106</td>
</tr>
</tbody>
</table>

Frost Records.

Twenty years records show that at Prineville the average length of the growing season is 111 days. Pertinent facts in this connection are summarized below:

<table>
<thead>
<tr>
<th></th>
<th>Average</th>
<th>Latest</th>
<th>Earliest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last killing frost in the spring</td>
<td>May 31</td>
<td>July 7, 1917</td>
<td>April 25, 1900</td>
</tr>
<tr>
<td>First killing frost in the fall</td>
<td>Sept. 19</td>
<td>Oct. 17, 1901</td>
<td>August 18, 1918</td>
</tr>
</tbody>
</table>

The longest growing season on record was 152 days, in 1900; the shortest was 59 days, in 1917.
Development of Crook County Agriculture.

Crook county was originally a part of what was known as the Ochoco country. It became a part of Wasco county January 11, 1854. That county then included all the country in Oregon east of the Cascade mountains.

This territory was first developed as a cattle country. There was extensive range and an abundance of grass. Little attention was given to winter feeding. Each summer cattle were driven out to The Dalles, Oregon City, Salem and Albany and a year's supplies hauled back by wagon or pack train.

Larger herds reduced the grass and made winter feeding necessary. This led to the earliest irrigation enterprises. Meadows of native grasses were first watered.

Development is Traced

Crook county was organized October 24, 1882. Since that time areas of this county have been taken to form Wheeler county (Feb. 17, 1899); Jefferson (Dec. 12, 1914); and Deschutes (Dec. 13, 1916). That should be borne in mind in studying table No. 2, which traces the development of population and farm acreage in this county.

Table No. 2, Population and Farm Acreage, Crook County (U.S. Census).

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Population</th>
<th>Number of Farms</th>
<th>Acres in farms</th>
<th>Improved Total</th>
<th>Unimproved Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890</td>
<td>3244</td>
<td>622</td>
<td></td>
<td>59,737</td>
<td>116,302</td>
</tr>
<tr>
<td>1900</td>
<td>3964</td>
<td>576</td>
<td></td>
<td>55,734</td>
<td>727,731</td>
</tr>
<tr>
<td>1910</td>
<td>3515</td>
<td>1355</td>
<td></td>
<td>138,354</td>
<td>433,246</td>
</tr>
<tr>
<td>1920</td>
<td>3424</td>
<td>561</td>
<td></td>
<td>93,957</td>
<td>461,003</td>
</tr>
</tbody>
</table>

Note—The total acres in farms in 1900 included 484,039 acres of the Warm Springs Indian reservation.

The increase in the total valuation of farm property (land, buildings, implements and livestock) is as follows (U.S. census):

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Total Value of farm property</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890</td>
<td>$1,574,960</td>
</tr>
<tr>
<td>1900</td>
<td>5,000,111</td>
</tr>
<tr>
<td>1910</td>
<td>14,134,843</td>
</tr>
<tr>
<td>1920</td>
<td>12,418,148</td>
</tr>
</tbody>
</table>

In 1920 the average value per farm was $22,013.
DEVELOPMENT OF CROOK COUNTY AGRICULTURE

Classification of Lands.

The area of the county is 1,877,760 acres, according to the 1920 U. S. census. The 1923 report of the assessor showed that there were 85,222 acres of tillable lands in the county, 659,849 acres of untillable lands and 130,793 acres of timber lands.

According to the 1920 U. S. census 29.6 per cent. of the county's area is in farm land.

Irrigation Development.

It is estimated that the acreage now under irrigation is from 47,000 to 50,000 acres. The Ochoco district contains 22,000 acres, the Powell Butte project about 13,000, and it is estimated that there are 10,000 or 15,000 acres under private or company owned ditches.

The Ochoco project is still in process of development. While 17,000 acres were watered during the summer of 1923 and not over 2,000 acres are still uncleared, there are not over 100 farm families settled on the project. The soil is deep and the land level and unbroken by swamp or rock outcroppings.

The Powell Butte territory, with only 13,000 acres, is densely populated, having 175 families and a well developed community life. The land while broken with frequent outcroppings of rock, and having a much shallower soil, is somewhat richer in native soil fertility than the Ochoco district, according to a survey made by the O. A. C. Experiment Station.

The other individual and small company projects include many valleys of rich fertility.
Sources of Farm Income.

The sources from which Crook county derives its agricultural income are shown in table No. 3. Duplications have been eliminated in compiling this table.

TABLE NO. 3 SALES OF FARM PRODUCTS, CROOK COUNTY, YEAR 1919 (U. S. CENSUS).

<table>
<thead>
<tr>
<th>Product</th>
<th>Income</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock and meats</td>
<td>$1,065,000</td>
<td>64.6%</td>
</tr>
<tr>
<td>Hay and forage</td>
<td>265,000</td>
<td>16.1%</td>
</tr>
<tr>
<td>Wool</td>
<td>151,000</td>
<td>9.2%</td>
</tr>
<tr>
<td>Cereals</td>
<td>99,000</td>
<td>6.0%</td>
</tr>
<tr>
<td>Dairy Products</td>
<td>37,384</td>
<td>2.3%</td>
</tr>
<tr>
<td>Poultry Products</td>
<td>14,743</td>
<td>0.9%</td>
</tr>
<tr>
<td>Vegetables and Potatoes</td>
<td>15,000</td>
<td>0.9%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>$1,647,127</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Changes in unit prices and general agricultural conditions would alter the figures in the above table if it were compiled as of the year 1923. However, as it stands an idea of the main sources of income can be had.

Income from sales alone does not fully represent the extent of agricultural production. The total values of crops and livestock as given in the 1920 U. S. census are summarized in table No. 4.


<table>
<thead>
<tr>
<th>CROPS PRODUCED</th>
<th>VALUE (Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hay and Forage</td>
<td>$1,142,422</td>
</tr>
<tr>
<td>Cereals</td>
<td>131,661</td>
</tr>
<tr>
<td>Vegetables and Potatoes</td>
<td>58,552</td>
</tr>
<tr>
<td>Fruits</td>
<td>718</td>
</tr>
<tr>
<td>Total value of crops</td>
<td>$1,333,353</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIVESTOCK, POULTRY AND BEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef cattle</td>
</tr>
<tr>
<td>Sheep</td>
</tr>
<tr>
<td>Horses</td>
</tr>
<tr>
<td>Dairy cattle</td>
</tr>
<tr>
<td>Swine</td>
</tr>
<tr>
<td>Poultry</td>
</tr>
<tr>
<td>Mules</td>
</tr>
<tr>
<td>Bees</td>
</tr>
<tr>
<td>Goats</td>
</tr>
<tr>
<td>Total value of livestock</td>
</tr>
</tbody>
</table>
Conference Group Reports

On succeeding pages will be found the reports of the various groups as adopted by the general assembly of the conference.

Beekeeping Group Report

RECOMMENDATIONS

We, your committee on bee culture wish to make the following report:

1. That all parties beginning the bee business start with standard equipment and 10-frame hives and that others transfer to the 10-frame hives as soon as possible.

2. That summer management as recommended by the county bee association be followed by all engaged in the work.

3. That close grading of all honey according to the state and national honey grade be followed.

4. That cooperative marketing of all honey be encouraged.

5. That County Agent W. B. Tucker arrange for Professor Scullen of the O. A. C. Extension Service to devote considerable time to the bee project in Crook county this summer.

6. Realizing that club work with the boys and girls is an important factor in developing the character and training of these young people, and since bee clubs have met with a decided success in other counties, we recommend that a bee club be organized with the boys and girls, and be under the direction of the county bee association, in cooperation with the regular club work.

7. That the bee association select the local leader of this bee club.

8. That all bee club members make an exhibit of their honey at the county fair, and also that the demonstration team of the bee club give a demonstration in the handling of bees at some given date.
Boys' and Girls' Club Group Report.

(A) PRESENT STATUS

"This work has become permanent with the boys and girls of the state with the result that in the year 1923, there were 5,777 club members enrolled in the different projects throughout the state. Of this number, 3,971 filed their final reports in the office of the State Club Leader and made exhibits at one or more local County or State fairs. These members reported a valuation of their work amounting to $120,940.23, costing $75,775.41; thus giving a profit of $45,166.82.

There were 742 Standard clubs in the state, which means that there were 742 men or women willing to act as local leaders of these various clubs, working with these boys and girls and assisting them in their work, with the result that over 300 of these clubs finished their work 100 per cent. strong. The average per cent. of completion of the United States of all members in club work was 58 per cent, while the per cent. of completion in Oregon was 68 per cent.

Club Work in Crook County.

Crook county had 93 club members enrolled, 45 of whom filed final reports in the following projects: Potato club, 4; Garden club, 1; Calf club, 6; Canning club, 1; Sewing clubs, 33; They gave a valuation of their work of $1,416.03; costing them $649.96, thus giving a profit of $766.07. There were three 100 per cent. clubs in the county; two sewing clubs in Prineville under the leadership of Mrs. Bessie McFarland and Miss Florence Hutchison; and a Potato club at Powell Butte, with Mr. S. D. Mustard, as leader.

In addition to these, the Bachelor's Sewing club had 35 members who sent in final reports. This club was handled only in this county, with the teachers as club leaders.

(B) RECOMMENDATIONS

We therefore recommend that club work be further encouraged in Crook county and that it be correlated with the program adopted by this conference so far as possible;

That clubs be organized in the following projects: Gardening, poultry, pig, calf, sheep, bees, sewing and cooking;

That each community help secure local leaders for whatever clubs may be organized in their respective communities, and that the local leader selected be given the support of the community;

That the people of each community see that the exhibits of the club members in their community be sent to the county fair.

We commend the county court of Crook county for their cooperation in past years in appropriating money for prizes in the school division of the county fair.

9
Dairy Group Report.

The dairy section of the Crook County Economic conference recognizes the probable increase of the dairy industry in this section and believes that when there is any surplus alfalfa hay that dairying can be profitable expanded. It is desired, however, to call attention to certain production statistics and also marketing conditions on which our recommendations are based.

(A) STATISTICAL INFORMATION

1. Production Statistics.

According to the best information available there are in Crook county 1800 cows 2 years of age or older which have produced approximately 275,000 pounds of butter fat or an average production of 150 pounds of butterfat per cow. There are 40 bulls one year old in the county. In production of roughage alfalfa amounts to 50,000 tons and succulent feeds to 1000 tons.


There are two cream stations in the county and cream is also sent to Redmond. The average Portland price of butterfat in 1923 was 46.6 cents per pound. The average prices received locally have compared favorably with the Portland price when transportation costs are considered.

(B) ANALYSIS OF STATISTICS

1. Herds Too Small.

The 1800 dairy cows of Crook county are on approximately 250 farms, making about seven cows per farm. The cost of production studies in other sections indicate this to be too small a unit for economical production and on this account the minimum herd should consist of at least ten cows.

2. Average Production Low.

The production of 150 pounds of butterfat per cow annually in Crook county is 18 pounds less than the state average, and is 90 pounds less than the average for Tillamook county. Cost studies show that a production of 240 pounds of fat per year on the average is required to make profits above production costs.

3. Production Exceeds Consumption.

The production of 275,000 pounds of butterfat in the county is 100 per cent. more than that consumed if the per capita consumption conforms with that of the United States as a whole.

4. Shortage of Succulent Feeds.

The surplus of legume hay is not large. The production of 1000 tons of succulent feed is 5000 tons short of the dairy cows' requirements.

5. Many Scrub Bulls.

The 40 bulls in the county are probably no better bred than the average for the state, which would indicate that 20 of them are grades or scrubs.

6 Continue T. B. Testing.

Tuberculosis testing has covered the county but should be continued to make the county a free area.


The amount of production in the county is probably inadequate for a creamery to operate successfully but may be possible if dairying continues to increase.
DAIRY GROUP REPORT

(C) RECOMMENDATIONS

Increase Average Production.

1. That efforts be made to increase the average production of the individual cows in Crook county through the keeping of records and the organization of a testing association, and further that a committee of three be appointed to assist the county agent in forming an organization.

Use Pure-Bred Sires

2. That every legitimate effort be made to eliminate the scrub and grade bulls in the county and that only registered dairy sires be used in dairy herds.

Eliminate Tuberculosis.

3. That every advantage be taken of government and state aid in tuberculosis testing and that as soon as possible, sentiment be created for the compulsory method of tuberculosis eradication in order that the county may become a free area.

Succulent Feed Needed.

4. That every dairyman strive to provide at least twenty-five pounds of succulent feed daily for each dairy cow when not on pasture and that the growing of permanent pastures be encouraged.

Ten Cows Should Be Minimum Herd.

5. That since production costs are higher on the very small herds and since those herds are frequently the source of products of poorer quality, 10 cows be recognized as a minimum herd for economical production and further that all dairymen strive to produce products of the highest quality.

Local Mixed Feed.

6. That the local miller be supported in the manufacture of a mixed dairy feed suited to local conditions and which has the approval of the county agricultural agent.

Cost Records on At Least Ten Herds.

7. That cost of production records be obtained on at least ten herds in the county during the year, and that assistance be given the agricultural agent in locating these herds.

Sell Cream on Grade.

8. That since quality of product is essential to successful marketing and since quality of manufactured products is dependent upon quality of cream, better care in handling of both milk and cream is urged. And further that every means of publicity be used in disseminating information as to best methods of taking care of milk products on the farm. It is also recommended that cream grading and payment upon grades be demanded of the cream buyers in the county and that only those buyers complying with this request be supported.

Support Dairy Council.

9. That we support the Oregon Dairy Council in its advertising and educational work relative to dairy products and request that its activities be extended to all parts of the state.

Defeat Oleo Referendum.

10. That the state dairy association receive our moral and financial support in its efforts to defeat the referendum on the filled milk and oleo law.

Encourage Club Work.

11. That we encourage boys' and girls' calf and dairy record clubs and that we give club work in general our fullest support.
Farm Crops Group Report.

I. SEED CROPS

1. Establish White Clover Seed Industry.

The seed conference recommends that an attempt be made in Crook county to establish a white clover seed industry. The facts upon which this conclusion was based are partly as follows:

a. There is not enough white clover seed grown in the United States to supply the demand.

b. There has always been a well established market for it at prices ranging from 30 to 50 cents a pound.

c. It is a crop which naturally does well here.

d. Seed crops average in Idaho about 360 pounds per acre.

e. The freight rate took a very low percentage of the total value of the crop.

f. A cash crop is badly needed in this county.

2. Production Practices.

Production practices recommended include:

a. Each man should go into the crop on a small scale at first, not over 5 acres in most cases. As he learns the business he can expand his acreage if he desires.

b. These small plantings should total at least 200 acres in the two counties, Crook and Deschutes, in order to allow car shipments.

c. No sulphur should be used until experiments are made to see if it helps or hinders seed setting.

d. Seed and ground should be inoculated before seeding.

e. Only the best seed should be used. All seed used should be tested for purity in order to avoid weeds which would ruin the value of the seed.

f. More experimental plantings of Ladino clover should be made.

g. To further the acreage of small plantings, we ask the state leader of Boys’ and Girls’ clubs to agree to include in his club work a clover seed project on limited acreages for boys and girls.

II. CEREALS

(A) PRESENT SITUATION

The principal grain crops of the county with acreages are as follows:

<table>
<thead>
<tr>
<th>CROP</th>
<th>Acres per acre</th>
<th>per bu.</th>
<th>lbs.</th>
<th>acre per acre</th>
<th>per $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spr. wheat</td>
<td>9000</td>
<td>20</td>
<td>1200</td>
<td>$17.00</td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td>1200</td>
<td>20</td>
<td>1480</td>
<td>19.24</td>
<td></td>
</tr>
<tr>
<td>Win. wheat</td>
<td>800</td>
<td>14</td>
<td>900</td>
<td>7.65</td>
<td></td>
</tr>
<tr>
<td>Oats</td>
<td>1300</td>
<td>28</td>
<td>832</td>
<td>12.48</td>
<td></td>
</tr>
<tr>
<td>Rye</td>
<td>7000</td>
<td>10</td>
<td>560</td>
<td>10.00</td>
<td></td>
</tr>
</tbody>
</table>

It must be remembered that these figures are average figures and do not apply to any individual farm. The dry land is averaged in with the irrigated land. A comparatively small amount of any of these crops is shipped out of the county, so the grain is mostly used for home feeding. The local mill buys about 20,000 bushels of wheat and perhaps 15,000 bushels is shipped out. Some oats and barley go to outside markets, but about the same amounts are shipped in again as feed. Most of the rye and some of the wheat is cut for hay.
Unless artificially stimulated by some such means as the McNary-Haugen bill, wheat can not be expected to bring much more than the average price for the past three years, which was about 85 cents locally. Other counties with cheaper land or cheaper labor or both are increasing their wheat acreage rapidly. For use for home feed, wheat will always be used for poultry, but for livestock barley is a better feed and will yield more pounds per acre.

(1.) Winter wheat is not a safe crop in occasional years because of late spring frosts.

(2.) For spring planting, Federation on the irrigated lands and Hard Federation on the dry lands are the best varieties. On irrigated lands, Dicklow may be expected to yield about as much as Federation and for growers wanting straw for their stock, it may be better as the straw yield is a great deal more than Federation.

(3.) Copper carbonate is the best treatment. Some kind of a treating machine either home made or bought should be used and care is necessary to keep from breathing the dust.

(4.) We ask the Moro Experimental station to establish a wheat nursery here similar to those in Umatilla and Morrow counties.

(5.) Yields of at least 16 bushels per acre are necessary to pay the cash costs of growing, and yields of 32 bushels per acre are necessary to pay ordinary day wages in taking care of the crop. Very little profit can be expected unless yields of better than 30 bushels are secured.

(6.) We endorse the McNary-Haugen bill now before Congress and authorize our chairman to so notify our Congressional representatives.

We urge the growing of barley for home feed for livestock. If the crop is to be sold, there is a question whether it is a better paying crop than wheat or not. If barley sells for $27 a ton, it usually gives higher returns per acre than oats at $35 or wheat at 90 cents a bushel, due to the yield of more pounds per acre. Barley will return more pounds per acre as a rule than either wheat or oats.

We recommend Hannchen for dry land and for all irrigated land, except on very rich land where grain is apt to lodge. Under these conditions, Trebi is better.

Oats can be expected to yield less pounds per acre than either wheat or barley. Therefore, it is not a profitable crop unless a special market exists, such as the Bend lumber companies. Idamine and Swedish Select are the recommended varieties.
FARM CROPS GROUP REPORT

III. POTATOES

(A) GENERAL SITUATION

The potato acreage in Oregon is not increasing while it is in neighboring states. The average yield in Oregon is about 100 bushels per acre while it runs from 140 to 180 bushels in the states around us. Our only outside market is California and the southwestern states.

There is a possibility of developing a market by water with the Gulf Coast States, but it will depend upon steamship service better than in former years.

The average yield in Crook county is about the same as the state average. This low yield is due to two things: planting on sagebrush or stubble land and occasional years of frost.

Freight rates from Prineville are 24 cents to Portland and 53½ cents a hundred to San Francisco. The rate from Portland to San Francisco is 35½ cents and from upper Willamette Valley points, it is 48 cents. The Crook county grower is thus at a handicap of from 18 to 5½ cents a hundred as compared with Western Oregon growers. The Western Oregon growers average about 100 bushels per acre. Their freight differential therefore is worth from $5.50 to $18.00 an acre to the average grower. This handicap on our part has been overcome by better grading and a better product here, but with better grading in Western Oregon, this condition can not be expected to continue.

(B) LOCAL SITUATION

The cash cost of growing an acre of potatoes here is probably about $35 an acre on the average. If a man should hire the work done, it is the consensus of the opinion of the farm group that the cost would be at least $75 per acre. In other words, crops of less than 75 sacks per acre can not be expected to pay ordinary hired help wages and pay for the actual cash cost of growing.

The operation of the old Deschutes County Potato Growers Association helped to advertise and build up a market for Central Oregon’s surplus crop. Part of this business, notably the seed business with Yakima, has since been lost since there was no organized effort to maintain it.

(C) RECOMMENDATIONS

Moderate Increase In Acreage.

(1.) That there be a moderate increase of potato acreage and that potatoes may on the average be recognized as the best cash crop so far developed for Crook county.

Stay With The Business.

(2.) Every man growing potatoes should plant about the same acreage every year and not skip in and out of the business, attempting to hit high markets.
Potatoes Should Follow A Legume

(3.) Potatoes should be grown only on clover or alfalfa land. When new land is broken up, it may be put into potatoes in order to prepare it better for alfalfa, but in such cases, it must be recognized that the first yield will be low.

Yield Should Be at Least 150 Bushels.

(4.) Yields of less than 150 bushels per acre can not be expected to be very profitable.

Good Seed Pays.

(5.) Good seed is the cheapest seed, no matter what the cost.

Compulsory Grading.

(6.) We endorse the compulsory grading law.

Organize Local Association.

(7.) We favor the formation of a potato growers association, such association not to engage in marketing to any extent at first. The principal business of this association would be to adopt a brand, sell potatoes on the outside markets only under the brand and attempt to build up the present reputation of potatoes here by putting out an absolutely guaranteed product. The members could sell through the present channels, but all members would be bound to obey such grading rules as the association should adopt. Furthermore, it would be the business of the association to build up the seed by hill selection in order to make yields here more profitable and in order to attempt to recapture part of the Yakima seed trade. We do not believe that the potato surplus is large enough here to justify a marketing association but we do believe that an association like the above would help to put Central Oregon potatoes on the map and would result in more profitable crops.

Good Storage Necessary.

(8.) We urge all growers not now equipped with proper storage space to construct storage cellars. Improper storage is the cause of great losses of table stock and injures seed so that poor crops sometimes result.

Grow Netted Gems.

(9.) Netted Gems should be grown rather than experimenting with other varieties to the detriment of our market.

Potatoes Fit In.

(10.) That potatoes be grown only on farms where they can fit into a balanced farm program, realizing that part of the value of potatoes lies in clearing the land of weeds, increasing the yields of following crops, and enabling seeding without plowing.

IV. HAY

(A) PRESENT SITUATION

Crook county sent out as baled hay about 1500 tons last year. There are about 75,000 tons of hay produced. This small tonnage of exported hay partly sets the prices for all hay. Most of the hay sent out goes to the coast and Willamette Valley counties. These districts are beginning to raise more legume hay and may be expected to need less and less
imported hay, thereby reducing the market for alfalfa hay. We believe that no district can afford to build its future on a basis of hay for export. Individual farms with a special market as lumber camps, etc., can do this with satisfaction, but an entire district cannot.

1. Feed Hay Locally.

We strongly recommend that the present dependence upon outside markets for local hay be discontinued by feeding the hay locally. The exports are not large enough to warrant any reduction of alfalfa acreage.

2. Use Grimm Seed.

We recommend the use of Grimm alfalfa on all farms as it will keep out grasses better, maintain its life better, and yield larger crops of more leafy hay. We urge the care in selecting seed in order to keep away from dodder and other weeds.

3. Apply Sulphur.

Alfalfa should be sulphured to get the best results in most of the county. The crude ground sulphur gives as good return as fine when it is not ground too coarsely. It is not available as quickly as the finely ground, so should be applied earlier in the winter.

V. PASTURES AND SILAGE CROPS

(A) RECOMMENDATIONS

1. Silos for Dairymen.

In order to get the best results from dairy cows, it is necessary to have succulent feeds the year around. This can most economically be done by silage for winter and grass pasture for summer feed. The county is short 5,000 tons of succulent feed. We therefore recommend to every dairymen that he have a silo in view as a goal to work toward. In many cases it is more economical to grow vetch and wheat, or peas and barley for ensilage than it is to grow sunflowers or corn. These crops also help to build the soil.

2. Permanent Grass

Pastures Urged.

Grass pasture will furnish a large amount of feed at a low cost. We urge all owners of dairy cattle and farm flocks of sheep to put a part of their acreage into permanent grass pastures and to have their pastures divided into two or more parts so that rotation grazing can be practiced.

VI. GENERAL RECOMMENDATIONS

A. We urge the general plan of growing their own feed for all owners of livestock.

B. We ask the community clubs on the two projects to appoint a joint committee of two from each project to attempt to secure the aid of the Chambers of Commerce and the farmers' organizations of the two counties in attempting to secure the reduction of freight rates as proposed by the public service commission.

C. We commend the stand of the Redmond Chamber of Commerce in working for a railroad extension south from Bend and pledge our support.
Irrigation practices were discussed by the crops group and the following recommendations were prepared:

1. **Cereals.**

In the irrigation of cereals, it is recommended that two irrigations be applied. The first irrigation should be applied about the time the crop is jointing and the second irrigation should be applied when the crop is coming out of the boot or shortly after.

2. **Potatoes.**

Potatoes should be irrigated by the row method and not by flooding. Care should be taken not to make too long rows with the water so as to over irrigate the upper end in order to reach the lower end. It is suggested that a quarter be irrigated from three cross head ditches although the slope of the land must be taken into consideration. Light frequent irrigations are absolutely necessary after irrigation is once started. The first irrigation should be delayed as long as possible. When the tops show slight wilting during the day, it is proof that water must be applied. The following irrigations should be applied at intervals of one to two weeks. The yield will vary directly with the frequency of the irrigations if they are light applications of three or four inches. Allowing the plants to become dry, and then irrigating during the growth of the tubers, will cause second growth. Heavy irrigations will cause watery, soggy potatoes. The rows should be well hilled up during irrigation. Cultivation after irrigation is recommended. It is also recommended that every row be irrigated and that the practice of irrigating every other row be considered inadvisable.

3. **Irrigation Methods.**

The wild flooding method of irrigation is not recommended, and should be discouraged. The corrugation method is recommended on the rolling lands and on the shallow soils but there is a need for the further use of the strip border method of irrigation of alfalfa, clover and pasture.

4. **Organic Matter.**

The outstanding need of the soil of the irrigated lands and especially the newly irrigated lands is the addition of organic matter for the building up of the humus content of the soil. Additional humus will increase the water holding capacity of the soil, make the soil easier to irrigate, and increase the crop yields, especially potatoes, cereals, and other cultivated crops. This can be accomplished (1) by the plowing under of alfalfa, clover, and pasture sod through crop rotation. (2) The spreading of all straw upon the soil that is not used for feed or for stock bedding and spread with manure. (3) By the use of barnyard manure. The value of such a soil building program cannot be over emphasized.
Livestock Group Report.

(A) PRESENT SITUATION

Livestock production in Crook county is a major industry showing a return from this source of 65 per cent. of the total income, besides about 9 per cent., coming from wool sales. The greater part of this comes from the range area. The last census shows that Crook county carries about 33,500 beef cattle and 51,000 sheep. The farms carry about 1600 hogs which is a little less than enough for local consumption.

The range area is vested largely in privately owned grazing lands and National forests.

Markets used by Crook county stockmen are largely the Coast markets.

Oregon produces 166 per cent. of her total beef requirements. Oregon, California and Washington produce together about 87 per cent. of their total beef requirements. Thirty-two per cent. of the total beef production of the United States comes from the eleven Western states. Of the total beef production in the United States in 1922, it is significant to note that 23 per cent. was contributed from the dairy industry and was of low quality. The United States produces but 50 per cent. of her wool consumption.

The limiting factors in livestock production recognized are in part as follows:

1. The carrying capacity of the ranges.
2. The availability and cost of winter feed including the length of the feeding season.
3. The cost of transportation.
4. Prices received at the market.
5. Cost and availability of hired labor.
6. Percentage of lamb and calf crop.
7. The grade of cattle and sheep as determined by the character of sires used.
8. Losses.

(B) RECOMMENDATIONS

1. Maintain Present Number of Cattle and Sheep.

As the range lands of the county are completely stocked at this time with cattle or sheep and the grass is being completely utilized by such livestock, it is recommended that the number of sheep and cattle be maintained in its present status. It is further recognized that the economical production of cattle or sheep in the county is based on range grasses and that an increase in numbers beyond this point is not justified. Great care needs to be exercised in not over-stocking the carrying capacity of the ranges but rather keeping the amount of stock that will allow for an ample supply of grass.

2. Regulate Grazing on Uncontrolled Public Lands.

Rapid depreciation through unregulated grazing use of the 13,000-000 acres of open uncontrolled public lands in southeastern Oregon has resulted in enormous depreciation in grazing capacity and a consequent heavy decline in the value of these lands which is likewise affecting the
values of owned lands as well as the livestock industry in this section of the state. It is therefore the sense of this meeting that some form of grazing regulations of these lands is desirable, and which would provide a greater return to the state if placed under some form of lease in sufficient area to support a family in connection with sufficient irrigated land to supply hay for winter feed.

3. Feed Cattle and Lambs in Hay District.

It is recommended that cattle and lambs be fed in the county in the hay districts. Past experience of present feeders has demonstrated that the hay available as well as the climatic conditions are very desirable in this connection. It is further urged that where lambs are fed, they should receive grain with the hay as this is the only way by which they can get the desired finish. It is fully realized by the livestock meeting that the feeding of lambs or beef is a highly specialized undertaking and when carried on should be carefully considered and the hazards fully realized when it is attempted. Good stock, good feed, and careful attention to management are necessary to succeed. The practice of the inexperienced feeder of attempting to feed large numbers of cattle or sheep is not good business. However, it is suggested that such undertaking be started with one carload, increasing the operations as one learns from his experience.

4. Cheap Range In East Part of County.

The eastern part of the county affords cheaper production of cattle because of the available range with which the cattlemen in the western part of the county cannot compete. This fact is recognized as one of great economic importance to stockmen of the county. The western part of the county on the other hand is the best adapted to feeding for market because of hay supply.

5. Market Steers As Two Year Olds.

Experience has shown that under normal conditions, the marketing of two year old steers is the most economical.

6. A Few Sheep On Irrigated Farms.

It is recommended that a few sheep be kept on irrigated farms in such numbers as will clean up suitable waste feeds. A few sheep on the farm are a source of profit where not overdone. Overstocking in this connection should be carefully guarded against. Ten to fifty sheep, depending on the food supply, is usually sufficient in this connection.

We further recommend that those inexperienced in handling sheep, in this connection, confine their operations to young ewes. Old ewes are all right for the man who knows the business, but for the new man are not advisable.

We encourage careful attention to fleece weights in connection with sheep.

7. Get rid of Poisonous Plants.

We recommend that stockmen exercise care in connection with poisonous plants. Losses occur from this source constantly. It is urged that
these plants be cut or dug out entirely at intervals to control or eliminate their growth.

8. Stability Is Urged.

Changing from cattle to sheep or vice versa is not justified in connection with permanency in the livestock business.


We indorse Boys' and Girls' Livestock club work in the county.
Poultry Group Report.

(A) PRESENT SITUATION

The poultry industry of Crook county is an interesting agricultural asset. According to the census report, the value in 1919 was $46,079.00. In value of chickens and eggs produced, this county ranks 33rd in the State of Oregon. The poultry interests of the county must now consider the cooperative marketing of surplus products and any expansion of the industry should be along the lines of producing a product of exportable quality.

The poultry industry has suffered less perhaps in agricultural deflation than other lines. Its expansion should be encouraged in the county because conditions warrant it and a larger volume can be more economically marketed if done cooperatively.

(B) RECOMMENDATIONS

Either 400 Hens or Just a Few.

1. The poultry business is a technical one, and requires much regular detailed work and careful supervision. It is not presumable that every farmer or farm is adapted to successful poultry keeping. Small flocks, too small to be considered an important unit of farm work, usually suffer from poor management and neglect.

Crook county already produces more eggs than it consumes, therefore care must be taken to produce eggs only of a high grade exportable quality. Eggs of this necessary quality will never be produced by the haphazardly managed, nondescript and ill-kept flocks. A drawback to industry in this country is the fact that in the aggregate, the greater volume is produced by the general farm flocks, rather than by the well managed economical units. The poultrymen assembled at this conference, therefore, specially recommend to the general farmer, where adequate housing and management can be given, a side line unit flock of not less than 400 laying hens and pullets. A flock of this size commands respect, regular attention, and returns a more profitable return per hour of labor. A flock of this size further contributes to the ultimate solution of the marketing problem.

It is not expected that this size flock can be attained the first year, but, for example, if 500 chicks were brooded each year, 200 good, vigorous pullets can be raised, so that by the second season, a unit flock of near 400 could be secured. For the
farmers who are not interested to this extent and for those who cannot prorate the necessary time daily, it is recommended that only a sufficient number of hens be kept to supply the home table, or none at all.

Not Less Than 10 Tillable Acres Per 1000 Hens.

2. The great undermining factor of permanent poultry farming in Crook county is the general lack of understanding upon the part of everyone relative to the amount of land necessary to commercial poultry keeping. Many established farms throughout the state and county, successful for a few years, have been compelled to close their doors and go out of business as a result of soil contamination. It is therefore strongly recommended by the poultrymen assembled that no one be influenced or even encouraged to engage in commercial poultry keeping on less than 10 acres of systematically yarded, tillable soil for each 1000 hens. Commercial poultry keeping on one, two or three acre tracts, where the young stock is to be reared each year, must be considered only a temporary and dangerous undertaking. Real estate dealers should be discouraged from exploiting small acreage tracts as desirable units for permanent and successful intensified poultry farming.

Non-irrigated land is not recommended for poultry farming unless sufficient irrigated land is farmed in connection with it to supply an abundance of green feed.

Disease Free Soil Is Necessary.

3. The success of poultry keeping in Crook county depends upon the ability of the producers to raise to maturity pullets that are healthy, vigorous and free from intestinal parasites and inflammation. This can only be done through careful efforts to produce chicks on disease-free soil and providing free range conditions for growing them to maturity. It is recommended that new poultrymen follow the colony brooder plan as recommended by the poultry department of O. A. C.

However, where permanent brooder houses are now built it is recommended where possible the land around it should be divided into four yards and crop rotated, one to be used each year, and then only until such time as they may be moved out on free range, as explained in Station Circular No. 54 of Oregon Agricultural College.

Supplement Alfalfa With Root Crop.

4. Green succulent feed is one of the four major classes of poultry feeds. Green alfalfa is the outstanding recommendation for supplying this class of feed but to provide for green feed during the winter when green alfalfa is not available the poultrymen of Crook county should protect the health, growth, and production of its flocks by storing the third cutting of alfalfa to be used as a substitute for green feed and also some root crop should be grown to be used as a supplement for green alfalfa.

Diseases Should Be Investigated

5. One of the limiting factors of Crook county poultry production is the increase of poultry diseases. It is recommended that the conference of Crook county endorse the action
of the poultrymen assembled at the State Economic Conference at Corvallis, January 23-25, 1924. In asking the state to employ one veterinarian to devote full time to the investigation and study of poultry diseases and their prevention, it is pointed out that the poultry industry of Oregon is a ten million dollar industry annually and its magnitude and permanent security warrant at least a one-man study of its problems along this line.

Hatch Chickens in March and April.

6. It is recommended that chicks be hatched early so that they may be old enough to lay eggs during the fall and winter when eggs are high in price. For this county, it is recommended that heavy breeds be hatched in March and Leghorns in April. Poultry producers must have the benefit of the high price months in order to get more months of laying from the pullet before molting time as well as to secure the best average price per dozen for the year.

Chicks of Same Age Simplify Management Problems.

7. It is recommended that the poultry producers make the effort to secure all chicks for brooding purposes at one time because of the dangers underlying the attempt to brood together chicks of several different ages. In terms of results, financial, labor, and permanency it is cheaper for the average producer to purchase, for example, 500 day old chicks to secure 200 vigorous laying pullets than to attempt to hatch this number from two or three hatchings, from insufficient incubator capacity. A uniform lot simplifies the brooding, feeding, growing, housing, and production problems and contributes largely towards a successful undertaking.

Follow O. A. C. Plans in Building Houses.

8. Proper poultry houses are essential to successful poultry keeping. There is too great a tendency to construct poultry houses along lines of individual hobbies rather than to construct poultry houses that through experimentation have proven successful in Crook county. It is recommended, therefore, that producers desiring to construct new laying houses be guided by the plans recommended by the Oregon Agricultural College as fully explained in Station Circular No. 51.

Grow and Mix Feeds Locally.

9. Some study should be given in how to get cheaper feeds. With the present practice of relying on poultry feeds to be shipped in, poultrymen are paying freight both ways for part of their feed which is shipped out and then returned in mixed feeds. Wheat, oats, and barley are grown in Crook county and some feasible plan should be made whereby these grains could be ground locally and used as a basis for mixed feed, with the addition of ground corn, which is the only grain needed to be shipped in. Milk could be used to supply the animal protein necessary and this is produced locally. This plan would be feasible where cows and poultry are kept on the farm or the milk could be purchased. Some plan along this line would mean a saving of $15 to $20 per ton
over buying mixed feed shipped in. It would also be one of the ways that the grains grown in Crook county could be consumed locally.

Local Marketing Association Needed.

10. Poultrymen here assembled agreed that some action should now be started towards organizing a local association to market properly any increase production that will naturally come this fall. However, poultrymen must remember that if an association is formed, some form of contract must be made that would bind its members to market only through the association. The best method of marketing the eggs should be agreed upon and left to the board of directors, to make the necessary arrangements for marketing, through a local agency that might be decided upon by the association.

Turkey Production Is Profitable.

11. Crook county could profitably increase its turkey production, as climatic conditions in this county are more ideal for this purpose than sections near the coast. By ranging them in the alfalfa pastures turkeys can be raised very profitably, as already has been demonstrated by some farmers. However, farmers in this county should profit by the experience of other counties where it has been found it is not advisable to range turkeys and other poultry together, because of the disease problem.

Support State Association.

12. The poultrymen of Oregon in January organized an association to encourage attention along poultry lines; to secure the passage and enforcement of legislation, which will protect and develop the poultry interests of the state and to perform such other functions as will promote the welfare of the industry. The name of this organization is “Oregon Poultrymen’s Association.” It is therefore recommended that the Crook county poultrymen and others interested, support the organization.