Economic Agricultural Conferences
Alamosa
Monte Vista
Rocky Ford
Steamboat Springs
Grand Junction
1928
Agricultural Conference
Rocky Ford Colo
Feb 17-18-1928
PROGRAM

ARKANSAS VALLEY AGRICULTURAL CONFERENCE

Rocky Ford, Colorado.

February 17, and 18, 1928

FRIDAY, FEBRUARY 17

7:30 p.m.

General Meeting

County Agent's office

SATURDAY, FEBRUARY 18—ROCKY FORD HIGH SCHOOL

9:30 a.m.

Committee Meetings—Rocky Ford High School

12:00

Dinner—Rocky Ford High School Cafeteria

1:30

Special Music—Rocky Ford High School Band

1:45

Address—J. B. Ryan, Rocky Ford

2:00

Reports of the Committees

Arrangements have been made with the High School Cafeteria to provide for 100 plates at 50¢ per plate. Tickets will be on sale Sat. morning in H. S. corridor.
Freewill

Irrigation

Proper notation is being stressed throughout several notations demonstrating to stress, among other things, the necessity in the duty of water.
Whereas the present water supply of the Arkansas River falls short of the demand under average conditions, the following be given earnest consideration and we therefore recommend that the following be given earnest consideration:

-1- Conservation of Water

- a - The better administration of the river supply through improvements in the present method of measuring diversions.

- b - The better distribution of the water from the canal to users by measurement instead of estimation as now praciced.

- c - More attention in the past of the farm in maintaining his laterals and farm structures in good working order.
- d - That all canals and ditches taking water from the river be maintained in the best possible condition to permit of taking full advantage of any available supply.

- 2 - To supplement the present water supply by the building of storage reservoirs.

- 3 - Because of silt conditions in the river off-channel reservoirs are more practical.

- 4 - That a careful study be made as to the possibility of diverting waters from the Colorado River drainage across to the Arkansas River drainage.

- 5 - To improve the management and distribution of water it is recommended that there be held annually at some convenient place in the valley a school for superintendents and ditch riders.
PROGRAM
ARKANSAS VALLEY AGRICULTURAL CONFERENCE
Rocky Ford, Colorado
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H. S. corridor.
Additions to 1937 Projects
Otero County
Major projects—1928

1. Crop Rotation

Object—Demonstrate that definite crop rotation systems are necessary for profitable farming.

Procedure—Select ten farms to demonstrate crop rotations. Systems recommended:

5 year rotation—
alfalfa 3 years
cultivated crop 1 year
Grain 1 year and back to alfalfa

8 year rotation—
alfalfa 3 years
vines or grain 1 year
beets, 1 year
misc. cult. crop 1 year
beets, 1 year
grain and back to alfalfa
(Red clover may be substituted for alfalfa.)

or—

alfalfa 4 years
followed by corn
#  " vines
#  " beets
#  " grain
#  " beets or vines
#  " grain and seeded to red clover

or alfalfa.
AN AGRICULTURAL PROGRAM
FOR THE ARKNSAS VALLEY
OF COLORADO

By THOS. H. SUMMERS, Farm Management Demonstrator
and
E. D. SMITH, District Extension Agent

A report dealing with some of the problems
having to do with adapting production to
market requirements.

COLORADO AGRICULTURAL COLLEGE
EXTENSION SERVICE
Fort Collins, Colorado
ACKNOWLEDGMENTS

Acknowledgment is here given the Office of Co-operative Extension Work of the United States Department of Agriculture which, through Eugene Merritt, gave valuable assistance in organization of facts; to railroads, sugar companies, dairy products manufacturing plants, canning factories and other local agencies who contributed reliable information; to farmers and others who gave of their time, efforts and experiences; to extension workers for their valuable assistance and to those who contributed to the comfort and convenience of the committees during the conference.
INTRODUCTION

The purpose of this publication is to picture the agriculture of the Arkansas Valley and to set forth a number of recommendations worked out by various committees chosen to consider the agriculture of this portion of the state.

In 1924 "Colorado's Agriculture" was published. This deals with the agricultural problems of the state and contains a number of suggestions for the readjustment of production to meet market requirements.

The state was divided into nine agricultural regions according to the general types of farming carried. The Arkansas Valley is one of these agricultural regions and comprises Pueblo, Otero, Crowley, Bent and Prowers counties.

A preliminary conference was called in December, 1924, at Rocky Ford for the purpose of reviewing agricultural conditions in the Valley and considering ways and means for solving some of the problems facing the farmer. As a result of the study of available data, committees on crops, livestock and general problems made a number of recommendations.

While most of the problems were emphasized at that time, it was felt that more information was necessary and that a larger representation from each of the five counties was desirable.

Following a closer study of valley conditions, assistance was solicited from all industries relating to agriculture, prominent growers, extension workers and the experiment station staff, and a conference was called at Rocky Ford on October 24, 1925.

All available information was submitted to eleven committees who considered the following subjects: Beef cattle, sheep, dairying, swine, poultry, grain crops, sugar beets, forage crops, vine crops, truck crops and irrigation. Subsequently this information was pooled with the experiences of the local farmers and the following recommendations were made:
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<tr>
<td>Swine</td>
<td>6</td>
</tr>
<tr>
<td>Poultry</td>
<td>7</td>
</tr>
<tr>
<td>Sugar Beets</td>
<td>7</td>
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<td>40</td>
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AN AGRICULTURAL PROGRAM FOR THE ARKANSAS VALLEY OF COLORADO

By THOS. H. SUMMERS, Farm Management Demonstrator
and
E. D. SMITH, District Extension Leader.

AGRICULTURAL RECOMMENDATIONS

BEEF CATTLE

Whereas the range in this region is depleted and the grasses should therefore be permitted to recuperate; and since cattle are not finished on the range; and since cattle feeding tends to increase soil fertility as well as provide winter employment, we recommend:

1. That the range cattle industry be not expanded;
2. That more cattle be fed on the irrigated farms of the region.

J. G. Washburn, Chairman, La Junta
G. W. Williams, La Junta
B. F. Stauffer, Rocky Ford
W. S. Marriott, Pueblo
W. D. Marriott, Omaha, Nebr.
L. A. Moorhouse, Secretary, Fort Collins

DAIRYING

Inasmuch as the local conditions are especially favorable as to climate, high yields of corn and alfalfa and market outlets for dairy products; and since dairying does not lend itself to make-shift farming; and since under present conditions the dairymen cannot utilize the wet beet pulp to advantage, we recommend:

1. That a gradual increase be made in the dairy industry;
2. That dairying be made a permanent enterprise on the farm;
3. That the advantage of dried beet pulp to the farmers who are beet growers be made evident to the sugar companies, so that enough dried pulp can be supplied to supplement dairy feeds on these farms.

J. H. Leonard, Chairman, Holly
J. H. Holm, Rocky Ford
E. F. Himes, Pueblo
K. J. Sinding, Rocky Ford
R. M. Reed, Lamar
Geo. E. Morton, Secretary, Fort Collins
SHEEP

On account of range pasture limitations and the close proximity of the range country; and since there is a small acreage of irrigated pasture together with inadequate facilities for handling farm flocks; and since livestock feeding is a means of increasing soil fertility, we recommend:
1. That range sheep production be not increased in the Arkansas Valley;
2. That the farm flock business continue largely on the basis of old ewes;
3. That any increase in farm flocks be started in a small way accompanied by adequate pastures or aftermath, suitable fencing and equipment for lambing;
4. That increase in farm flocks be stimulated and their value be demonstrated by the establishment of Boys' and Girls' Sheep Clubs;
5. That the number of small sheep feeders be increased without increasing the total number of sheep fed.

J. L. Anderson, Chairman, Las Animas
W. S. Davis, Pueblo
J. W. Kyffin, Pueblo
O. L. Robinson, Las Animas
C. A. Pedersen, Lamar
W. H. Olin, Denver
B. W. Fairbanks, Secretary, Fort Collins

SWINE

Inasmuch as there is a deficiency in pork production in the Arkansas Valley, Colorado, and the eleven western states; and since corn and alfalfa can be produced as cheaply in this region as in any other part of the United States; and since the market demands a hog weighing 180 to 225 pounds, we recommend:
1. That hog production be increased in the Valley;
2. That enough hogs be kept on every farm to consume available by-products or roughage from the farm dairy, feedlot and farm crops;
3. That hogs be marketed at 180 to 225 pounds in weight.

R. C. Kibbey, Chairman, Swink
G. L. Penley, Lamar
Fred Davidson, Las Animas
Dixon Birkett, Pueblo
Raymond H. Cook, Olney Springs
A. O. White, Pueblo
T. F. Simpson, Manzanola
P. L. Smithers, Secretary, Canon City.
POULTRY

Whereas, there is a seasonal shortage of eggs in the valley and a deficiency of poultry products in Colorado and the eleven western states, we recommend:

1. An increase in the production of baby chicks to supply the state demand now being met by other states;
2. An increase in winter egg production;
3. That not less than 100 laying hens be kept in the farm flock and 1500 laying hens in the commercial flock;
4. A production of not less than 8 dozen eggs per hen in the farm flock and not less than 12 to 14 dozen eggs per hen in the commercial flock;
5. A gradual increase in poultry production to meet the increasing demand in Colorado and outside markets;
6. An increase in the production of turkeys, where abundant range is available, to meet the increasing demand from outside markets.

Geo. W. Bishop, Chairman, Pueblo, Route 1.
J. E. Rose, Lamar
Oscar Huston, La Junta
H. A. Knapp, Rocky Ford
P. C. Jamieson, Secretary, Littleton

SUGAR BEETS

Inasmuch as the United States produces only 23 percent of the sugar consumed; and since 20 percent of the total irrigated area of the valley is profitable beet-producing land; and since one ton of beet tops in the field is equal to 100 pounds of alfalfa in feed value; and since accurate records show that beet yields are two and one-half tons per acre greater on farms where livestock feeding is done over yields on farms following crop enterprises exclusively; and since crop rotations serve to control disease and contribute to increased yields, we recommend:

1. That 20 percent of the acreage known to be good beet land be planted annually to sugar beets;
2. That crop rotations be established on every farm.

A. W. Skuderna, Chairman, Rocky Ford
E. H. Gerecke, Lamar
J. N. Bundick, Rocky Ford
Roy Hartman, Pueblo, R. 1, Box 196
W. F. Droge, Secretary, Rocky Ford
GRAIN CROPS

Whereas an average of 1000 cars of corn are shipped into the valley annually; and since barley provides a desirable feed during the months preceding the maturity of the new corn crop and is a desirable nurse crop to plant with the new alfalfa seeding; and since oats are desirable as feed for growing livestock and work stock; and since wheat is frequently grown at a loss, we recommend:

1. A slight increase in the production of corn to more nearly meet consumptive demands, especially where the alfalfa acreage exceeds 35 percent of the irrigated area;
2. An increase in the acreage of barley to supplement corn and provide a nurse crop for new alfalfa seeding;
3. A production of oats sufficient to meet the needs of growing livestock and work stock;
4. A decrease in the acreage of wheat, unless 35 bushels or more per acre can be secured.

J. G. Erion, Chairman, Pueblo
Frank H. Royal, Manzanola
B. A. Shelton, La Junta
A. Cleave, Rocky Ford
H. C. Sherman, Rocky Ford
C. J. Cover, Rocky Ford
E. F. Sult, Rocky Ford
Waldo Kidder, Secretary, Fort Collins

FORAGE CROPS

Alfalfa.—Since the alfalfa acreage in the valley is out of balance in comparison with other crops; and since the yield of alfalfa is not as high as it should be, we recommend:

1. That 35 percent of the irrigated acreage be maintained in alfalfa;
2. That land be not used for alfalfa production unless it produces three tons or better per acre;
3. That more of the alfalfa produced be fed upon the valley farms.

Pastures (Irrigated).—Since there is a scarcity of irrigated pasture and considerable waste land on many farms, we recommend:

1. That wherever possible waste land be put into pasture;
2. That one acre of irrigated pasture be maintained for every three animal units on the farm.
Pastures (Dryland).—Since there is a scarcity of pasture on dryland farms, we recommend:

1. That emphasis be given to pastures in the dryland farming areas of the valley.

Fred Haver, Chairman, Boone
J. H. Mayhew, La Junta
James Purvis, Las Animas
W. L. Sickenberger, Manzanola
E. D. Smith, Secretary, Fort Collins

VINE CROPS

Cantaloupes (Seed).—Inasmuch as the acreage of commercial cantaloupes in the western states and United States is gradually expanding; and since 95 percent of the seed used is produced in the valley, we recommend:

1. A gradual increase in cantaloupe seed acreage, only when demand justifies, to keep pace with the expansion of the commercial acreage elsewhere;
2. That the production of high quality seed be given more attention.

Cantaloupes (Commercial).—Whereas the expansion of commercial cantaloupe production in other districts competes on the markets with Colorado shipments, we recommend:

1. A reduction of the commercial cantaloupe acreage in the valley;
2. An improvement in the quality.

Cucumbers (seed).—Inasmuch as the demand for cucumber seed is increasing; and since 90 percent of the production of the United States is in the Arkansas Valley; and since quality has maintained the market for cucumber seed, we recommend:

1. That the acreage of cucumber seed be gradually expanded to keep pace with the increase in the acreage of pickles;
2. That more attention be given to quality production.

Cucumbers (pickles).—Whereas the outlook for the pickle industry is promising and the labor problem is a governing factor, we recommend:

1. That an increase be made in the pickle acreage;
2. That the expansion be not made at the sacrifice of handling the crop properly.
TRUCK CROPS

Celery.—On account of the high quality of Pascal celery in the valley, the market outlook and the high fertility requirement, we recommend:

1. An increase in the acreage of celery;
2. That the increase in acreage be confined to winter varieties;
3. That the increase be made only on suitable soil with abundant water supply and where animal manures are available;
4. The standardization of the celery package and a uniform shipping label.

Cauliflower.—Inasmuch as the demand for fresh cauliflower is increasing and the production for canning is in competition with Holland growers; and since the crop demands peculiar climatic and soil conditions, we recommend:

1. An increase in the acreage of market cauliflower;
2. That the increase in acreage be confined to the upper part of the Arkansas Valley;
3. That an increase in the acreage of cauliflower for canning be made as the competition with Holland can be met;
4. That a high standard of quality be maintained in the commercial pack.

Other truck crops.—For the proper control of truck-crop diseases and the maintenance of adequate fertility thru crop rotation; and to meet a gradual expansion of the demand for canning crops in the valley, we recommend:

1. That the truck crop acreage be expanded to meet local demands;
2. That individual truck farms be increased in size to allow a better cropping system.
AN AGRICULTURAL PROGRAM

R. W. Hepler, Chairman, Manzanola
C. H. Barnhart, Pueblo
Kasper Monahan, Pueblo
Tony DeCarlos, Pueblo
R. L. Ellis, Pueblo
Glenn F. Wallace, St. Louis, Mo.
Noice D. Bristol, Rocky Ford
E. P. Sandsten, Fort Collins
W. H. Sawhill, Secretary, Pueblo.

IRRIGATION

Whereas from two to three feet of water is required to produce the crops in the valley; and since there is sufficient underflow to provide water for supplementary pumping systems; and since the duty of water can be increased by the introduction of row crops in the farming system; and since there is a demand for more irrigation water, we recommend:

1. Some row crops on every farm;
2. That pumping plants be used only where low cost of operation and high price crops obtain;
3. That wherever possible increased storage capacity be provided.

P. K. Blinn, Chairman, Rocky Ford
Roy E. Miller, Rocky Ford
S. W. Cressy, Rocky Ford
Chas. E. White, Penrose
Justus C. Ward, Secretary, Rocky Ford

EARLY HISTORY

The early history of the valley dates back to 1806 when Captain Zebulon Pike followed the Arkansas River to the Rocky Mountains and discovered Pikes Peak. Altho the country was not settled until the early 60's this region was on the old hunters' and trappers' trail between the Missouri River and Santa Fe. Fort Bent was built by William Bent near Las Animas in 1832. As early as 1842 a camping place for trappers was established at the present site of La Junta.

In 1822 Jacob Fowler and party built a log house near the present site of Pueblo. In 1859 a settlement called Fountain City sprang up on the east side of Fountain Creek. Two years later Pueblo was started.

Bent County was organized in 1874, Crowley in 1911, Otero in 1889 and Prowers in 1889. Pueblo County was one of the original 17 counties created in Colorado Territory in 1861.
DESCRIPTION

The Arkansas Valley, which includes Pueblo, Otero, Crowley, Bent and Prowers counties, comprises close to 5,000,000 acres of which 74.8 percent is classified as agricultural land. Of the 3,664,123 acres in agricultural land, 8.6 percent is irrigated and 71.7 percent is grazing land. The balance is dry-farming land, with about 4,000 acres of natural hay land in Prowers County. Map I, below.

<table>
<thead>
<tr>
<th>TABLE I—LAND CLASSIFICATION, 1924</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (acres)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Bent</td>
</tr>
<tr>
<td>Crowley</td>
</tr>
<tr>
<td>Otero</td>
</tr>
<tr>
<td>Prowers</td>
</tr>
<tr>
<td>Pueblo</td>
</tr>
<tr>
<td>Arkansas valley</td>
</tr>
</tbody>
</table>

In 1924 the acres devoted to the main crops in the region were as follows:

- Corn: 129,096 acres
- Alfalfa: 126,979 acres
- Grain sorghum: 76,642 acres
- Wheat: 58,055 acres
- Sugar beets: 40,200 acres
- Beans: 18,841 acres
- Barley: 13,718 acres
- Oats: 12,601 acres
- Cantaloupes: 8,678 acres
- Cucumbers: 4,821 acres
During the same year there were reported the following numbers of livestock:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses and mules</td>
<td>36,286</td>
</tr>
<tr>
<td>Beef cattle</td>
<td>75,728</td>
</tr>
<tr>
<td>Dairy cows</td>
<td>11,843</td>
</tr>
<tr>
<td>Sheep</td>
<td>47,971</td>
</tr>
<tr>
<td>Swine</td>
<td>25,396</td>
</tr>
<tr>
<td>Poultry</td>
<td>320,088</td>
</tr>
</tbody>
</table>

1 These numbers do not include animals on feed in transit. See sections on beef cattle and sheep.

**RAINFALL**

The average annual rainfall in the valley varies from 11.95 inches at Pueblo to 15.56 inches at Lamar. At Holly the average annual precipitation is 14.67 inches; at Las Animas, 12.29 inches; and at Rocky Ford, 12.40 inches.

The distribution of the precipitation throughout the year is shown in table II.

**TABLE II—RAINFALL**

<table>
<thead>
<tr>
<th>Month</th>
<th>Holly</th>
<th>Lamar</th>
<th>Las Animas</th>
<th>Pueblo</th>
<th>Rocky Ford</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0.26</td>
<td>0.30</td>
<td>0.19</td>
<td>0.35</td>
<td>0.25</td>
</tr>
<tr>
<td>February</td>
<td>0.62</td>
<td>0.61</td>
<td>0.45</td>
<td>0.47</td>
<td>0.33</td>
</tr>
<tr>
<td>March</td>
<td>0.46</td>
<td>0.81</td>
<td>0.53</td>
<td>0.86</td>
<td>0.56</td>
</tr>
<tr>
<td>April</td>
<td>1.80</td>
<td>1.87</td>
<td>1.54</td>
<td>1.43</td>
<td>1.66</td>
</tr>
<tr>
<td>May</td>
<td>1.91</td>
<td>2.05</td>
<td>1.92</td>
<td>1.68</td>
<td>1.77</td>
</tr>
<tr>
<td>June</td>
<td>2.06</td>
<td>2.19</td>
<td>1.42</td>
<td>1.47</td>
<td>1.40</td>
</tr>
<tr>
<td>July</td>
<td>2.54</td>
<td>2.66</td>
<td>2.17</td>
<td>1.97</td>
<td>2.55</td>
</tr>
<tr>
<td>August</td>
<td>2.24</td>
<td>2.00</td>
<td>1.62</td>
<td>1.57</td>
<td>1.36</td>
</tr>
<tr>
<td>September</td>
<td>1.21</td>
<td>1.19</td>
<td>1.00</td>
<td>0.62</td>
<td>0.80</td>
</tr>
<tr>
<td>October</td>
<td>0.61</td>
<td>0.86</td>
<td>0.69</td>
<td>0.70</td>
<td>0.85</td>
</tr>
<tr>
<td>November</td>
<td>0.50</td>
<td>0.41</td>
<td>0.32</td>
<td>0.37</td>
<td>0.41</td>
</tr>
<tr>
<td>December</td>
<td>0.46</td>
<td>0.70</td>
<td>0.44</td>
<td>0.46</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>14.67</td>
<td>15.56</td>
<td>12.29</td>
<td>11.95</td>
<td>12.40</td>
</tr>
</tbody>
</table>

With this limited rainfall, irrigation is practiced to a considerable extent.

**SOILS**

The soil of the valley for the most part is underlaid with Benton and Dakota sediments, the high land being classified as sandy loam and the lower as alluvial loam. In a few sections adobe and shale are found to some extent. The land as a rule is fairly easy to work, retains moisture for a considerable time and is well suited to agricultural production.

**BEEF CATTLE**

The number of beef cattle in the Arkansas Valley has been gradually decreasing since 1919. At that time the peak of production (from 1917 to 1924) was reached with about 103,000 head in the valley. Prowers County led with 32,000 head; Pueblo second, with 26,000; Bent third, with 19,000; Otero fourth, with 18,000; and Crowley last, with about 9,000 head.
By 1924 a decrease had occurred in all counties except Crowley where an increase of about 50 percent had taken place. The total for the valley in that year was reported as 75,728 head, a decrease of 26 percent in five years. Chart I.

It is interesting to note that in 1900 there were over 180,000 head of cattle in the valley. At that time there were in Otero County alone about as many cattle as the entire valley contained in 1924.

A review of the situation in the valley by a committee of beef-cattle producers brought out several problems. In the first place the carrying capacity of the range has been gradually reduced to a point that an increase in the number of cattle on the range would be unwise. These pastures should be allowed to recuperate and their present carrying capacity to increase.

![Chart I.—Changes in numbers of beef cattle and sheep, Arkansas Valley.](image)

On the other hand, cattle fattening presents a different picture. With suitable feeds in the irrigated section, with the need for increasing soil fertility and with the opportunity of providing winter employment on the farm, there appears to be some chance to increase the feeding of cattle on the irrigated farms in the valley.
In four counties, Bent Crowley, Otero and Prowers, state figures show the following:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cattle on feed in transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>13,888</td>
</tr>
<tr>
<td>1920</td>
<td>15,245</td>
</tr>
<tr>
<td>1921</td>
<td>15,609</td>
</tr>
<tr>
<td>1922</td>
<td>6,703</td>
</tr>
<tr>
<td>1923</td>
<td>13,709</td>
</tr>
<tr>
<td>1924</td>
<td>9,314</td>
</tr>
</tbody>
</table>

A comparison of the United States beef cattle trend and population shows a gradual increase in population and a downward trend in cattle since 1900. Chart II.

**DAIRYING**

There are few districts better adapted to the production of dairy products than is the Arkansas Valley of Colorado. It not only has an ideal climate suitable to the production of dairy feeds, but is located in a favorable position in relation to home markets and outside markets, east, south and west.

In spite of this situation, reports show that there were not as many dairy cows in the valley in 1924 as there were in 1917. In the former year there were reported 13,364 head, while in the latter, 11,843. Chart III, Page 16.

Between 1900 and 1920 there was an increase of only 7 percent in dairy production in the United States. However, during this same period great strides were made in Colorado and in the 11 western states.* Chart IV, Page 16.

Chart III.—Changes in numbers of dairy cows and swine, Arkansas Valley.

Colorado and the 11 western states more than doubled their production of dairy products in 20 years.

Chart IV.—Dairy production trends, United States, Western States, Colorado.
With the gradual movement westward of the dairy production center, Colorado and the 11 western states are destined to greater expansion in the dairy industry.

The United States statistics show for 1924 the following per capita consumption of dairy products:

<table>
<thead>
<tr>
<th>Product</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole milk</td>
<td>54.75 gallons</td>
</tr>
<tr>
<td>Butter</td>
<td>17.25 pounds</td>
</tr>
<tr>
<td>Cheese</td>
<td>4.2 pounds</td>
</tr>
<tr>
<td>Ice cream</td>
<td>2.5 gallons</td>
</tr>
<tr>
<td>Condensed and Evaporated Milk</td>
<td>14.05 pounds</td>
</tr>
</tbody>
</table>

When reduced to 3.5 milk the total consumption was about 110 gallons. There has been a gradual increase in the per capita consumption of dairy products. In 1914 the per capita consumption of whole milk alone was 42 gallons; in 1921, 49 gallons; and in 1924, 54.75 gallons, an increase of more than 10 percent in three years. Consumption of butter increased during the same period from 16.1 pounds per capita to 17.25 pounds, and cheese from 3.8 pounds to 4.2 pounds per capita. This increase in the per capita consumption must be considered in addition to the normal population increase in planning any expansion of the dairy industry.

There are between 20 and 30 dairy manufacture plants in the valley making butter, ice cream, cheese and evaporated or condensed milk. Some plants make only one product while others manufacture several. A recent survey showed that 20 plants in 1924 made about 1½ million pounds of butter, one-fourth million gallons of ice cream and 14 million pounds of condensed milk.

About 98 percent of the butterfat and milk used in the manufacture of these products was produced in the state. Only 6 percent of the butter, and 7 percent of the ice cream was sent out of the state, while 43 percent of the condensed milk was marketed outside of Colorado.

While dairying fits in with the production of alfalfa, corn, sugar beets and grain, many farmers look upon the industry as a last resort following a financial depression. As a matter of fact dairying does not lend itself to make-shift farming. Moreover, to succeed in the dairy business, one must have a love for this kind of work. It takes time and money to build up even a small profitable herd. It is a business that can be and should be made a permanent part of a scheme of general farming. It is a means of marketing feed crops, utilizing waste roughage and aftermath, of maintaining soil fertility and providing winter employment on the farm.
SHEEP

Sheep, like beef cattle, reached the peak of production in 1900 when the census reports 260,000 head in the valley. Since that time a gradual reduction has taken place, reaching the low point of 32,000 on farms in 1922 and increasing to 48,000 head in 1924, according to the Colorado yearbook. These figures do not include sheep fed in transit. In Bent, Otero, and Prowers counties, the following feeding in transit report has been issued:

<table>
<thead>
<tr>
<th>Year</th>
<th>Sheep in Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>70,749</td>
</tr>
<tr>
<td>1920</td>
<td>84,704</td>
</tr>
<tr>
<td>1921</td>
<td>120,351</td>
</tr>
<tr>
<td>1922</td>
<td>173,822</td>
</tr>
<tr>
<td>1923</td>
<td>207,310</td>
</tr>
<tr>
<td>1924</td>
<td>149,925</td>
</tr>
</tbody>
</table>

Between 10 and 15 percent of the sheep fed in transit in the state have been fattened in these three counties over this six-year period.

A comparison of the trends in numbers of sheep and cattle can be made from Chart I, Page 14. From 1922 cattle have gradually decreased, while sheep have shown a gradual increase.

Chart V.—Pounds of wool consumed and number of sheep per capita in the United States.
In the United States the number of sheep per capita has been gradually decreasing. In 1880 about one head per capita was kept, in 1924 about three-tenths of a head per capita. Chart V. Page 18.

Wool consumption has varied greatly, a low point of 5.2 pounds per capita being reached in 1910, the peak of about 7½ pounds per capita in 1918, and in 1924 a consumption of 5.6 pounds of wool per capita.

In spite of the decrease in the number of sheep, the total wool production has varied little during the last 23 years, indicating a considerable increase in the production of wool per fleece. Since only about one-half of the wool consumed in the United States is produced here, the expansion of the industry is only limited by foreign competition on a cost of production basis. This situation clearly shows that with greater production must come an increase in the pounds of wool produced per fleece.

Farm flocks are comparatively new in this part of the state. There is a well established sheep industry in the lower part of the valley where broken-mouthed ewes are brought from the range, bred to bucks on the farm, and fattened out together with the lamb crop produced. In a few cases, some of the lambs have been retained on the farm to form the nucleus of a small farm flock.

Many farms in the valley could introduce a small flock of sheep as a permanent enterprise. In order to establish this practice, however, it seems advisable to stimulate this by means of boys' and girls' clubs.

The pasture problem for range sheep is a limiting factor which under present conditions does not justify any increase in the number of range sheep in the valley. The proximity of the range in addition to the feed in transit privileges, makes it practical to ship in lambs from Colorado, New Mexico, Utah and Wyoming, and fatten them for the Denver and Kansas City markets.

Much of the feeding at the present time is carried by large feeders. In order to improve the fertility of the soil on more farms and provide greater diversity, it seems advisable to have more sheep feeding on small farms in the valley.

SWINE

The production of swine in the Arkansas Valley during the period from 1917 to 1924 was at its lowest in 1920 when 16,825 head were reported on farms. In 1923 there were about 33,000,
and 25,000 in 1924. Last year experienced a still further reduction. Chart III, Page 16.

In balancing up the production and consumption of pork and pork products, a shortage in production has existed for some time in Colorado and the 11 western states. This shortage, caused by a smaller number of hogs kept on the farm, has been further augmented by the rapid growth of the Pacific Coast cities creating an increased demand for Colorado pork and pork products.

Due to this competition, the Denver market, which several years ago quoted hog prices enough lower than Omaha to allow freight charges, has become a leading western hog market with prices at times going above the Chicago market quotations.

Altho the packers‘ choice on weight is 180 to 225 pounds from August to January and above that during the balance of the year, California buyers, who ordinarily prefer a light hog, are buying any weights and classes on the market.

Colorado’s growth in hog production from 1900 to 1920 in comparison with the growth in the United States and in the 11 western states is shown on Chart VI.
Hog production usually increases with corn production, and goes well in combination with the dairy industry, especially where skimmilk is available. Hogs can also be combined with cattle in the feedlot.

On account of the rapidity with which the business can be expanded caution should be exercised to guard against a production beyond meeting the present deficit.

There is an opportunity to keep a few sows on every irrigated farm in the valley, when included as a definite part of the farm business.

There is more or less a direct relationship between the price of hogs and butter. Taking the 1910 to 1914 price as 100 the fluctuations in prices of both commodities are shown in Chart VII.

POULTRY

Poultry has been increasing in the valley since 1917 with the exception of 1921 and 1923 when a slight decrease below the preceding years was apparent. Chart VIII, Page 22.

The increase in egg production in the United States from 1900 to 1920 compared with the increase in the 11 western states
and in Colorado is shown on Chart IX, Page 23. While a small increase is apparent in the United States the 11 western states and Colorado have increased production 160 and 150 percent respectively.

A study of the situation in the valley shows a surplus beyond consumptive demands in the spring and summer months. However, a seasonal shortage occurs in the winter months and eggs are shipped in from outside sources.

The Arkansas Valley is particularly adapted to the poultry industry not only on a farm flock basis but also commercially. A number of large commercial plants are located in the valley.

Producers of poultry and poultry products have concluded that at least 1500 laying hens are necessary for profitable commercial production and at least 100 hens for farm flock production. A minimum profitable production per hen has been set at eight dozen for the farm flock and twelve dozen for the commercial flock.

Each year baby chicks are being shipped into the state from bordering states. This practice frequently brings in chicks having white diarrhea. This business could be met by an increase in the baby chick industry especially in the Arkansas Valley. More attention to keeping the breeding flocks free from white diarrhea will mean a great reduction in the death loss of chicks.

The increasing consumption of poultry and poultry products will justify some expansion beyond the growth to keep pace with
the increase in population. Expansion based on the outlook in eastern markets must take into consideration the national viewpoint. Many states, especially in the middle west and far west

Chart X.—The relative price of eggs.
are planning to increase production to supply these markets. Since a pullet is produced to the laying age in six to eight months, expansion can be accomplished very rapidly. It is therefore desirable to keep posted on the expansion made in other production areas.

Taking the price of 1910 to 1914 as 100, the relative price of eggs is shown on Chart X, Page 23.

The turkey industry in the valley has been increasing rapidly. In 1924, 20 cars of turkeys were shipped out. These went to New York and other eastern markets.

Where abundant range is available, the turkey industry can be slightly increased in the valley.

FORAGE CROPS

Alfalfa is the principal forage crop grown in the valley. From the standpoint of acreage alfalfa ranks first in the list of farm crops.

The following figures show the percentage of irrigated land in cultivation devoted to alfalfa.

<table>
<thead>
<tr>
<th>County</th>
<th>1923</th>
<th>1924</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bent</td>
<td>33</td>
<td>49</td>
</tr>
<tr>
<td>Crowley</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>Otero</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Prowers</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>Pueblo</td>
<td>47</td>
<td>60</td>
</tr>
<tr>
<td>Arkansas Valley</td>
<td>32</td>
<td>42</td>
</tr>
</tbody>
</table>

The trend of alfalfa acreage in the valley for eight years is shown on Chart XI, Page 26.

From a peak of 132,000 acres in 1917 a decrease occurred to 98,000 in 1921, an increase the following year to 105,000 followed by a decrease to 99,000 in 1923, and an increase to 127,000 in 1924.

The trend in alfalfa acreage for the state is slightly different, showing a decrease every other year since 1919. On the other hand, for the United States a gradual increase is apparent since 1919. Table No. III.

### TABLE III—ALFALFA ACREAGE TREND

<table>
<thead>
<tr>
<th>Year</th>
<th>Colorado</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>620</td>
<td>8,629</td>
</tr>
<tr>
<td>1920</td>
<td>647</td>
<td>9,131</td>
</tr>
<tr>
<td>1921</td>
<td>638</td>
<td>9,228</td>
</tr>
<tr>
<td>1922</td>
<td>669</td>
<td>9,369</td>
</tr>
<tr>
<td>1923</td>
<td>650</td>
<td>9,816</td>
</tr>
<tr>
<td>1924</td>
<td>893</td>
<td>10,453</td>
</tr>
</tbody>
</table>
A comparison of the trend in acreage of alfalfa, grain sorghum and corn can be made by referring to Chart XI, Page 26. Since 1921 the general trend of all three crops has been upward.

On the other hand, yields generally have been decreasing. This naturally suggests a decrease in soil fertility. It has been estimated that the value of the fertility removed from the soil in a three-ton yield of alfalfa is approximately $35.00. When the practice is followed of selling this crop off the farm without any return of fertility to the soil, it is apparent that yields must decrease.

In 1924, 27 percent of the alfalfa produced in the valley was shipped out. By counties the figures are as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Percent of alfalfa produced shipped out in 1924</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bent</td>
<td>42</td>
</tr>
<tr>
<td>Crowley</td>
<td>61</td>
</tr>
<tr>
<td>Otero</td>
<td>10</td>
</tr>
<tr>
<td>Prowers</td>
<td>26</td>
</tr>
<tr>
<td>Pueblo</td>
<td>44</td>
</tr>
<tr>
<td>Arkansas Valley</td>
<td>27</td>
</tr>
</tbody>
</table>

The 1920 census reported 61 percent of the alfalfa produced in the valley as sold. No doubt some of this moved from farm to farm in the same locality. It is safe to say, however, that most of it was shipped out of the state. Prowers County alone is reported to have sold 76 percent of the alfalfa crop that year.

In order to fit into a rotation adapted to valley conditions which will not only balance the crop enterprises on the farm, but will tend to better maintain soil fertility, 35 percent of the irrigated land should be in alfalfa.

Furthermore, in order to increase yields materially, more livestock feeding is essential in the valley, not only for the valley as a whole but also on many individual farms selling most of the alfalfa produced. Land that will not produce three tons of alfalfa per acre should be handled so that the fertility can be increased.

Irrigated pastures have proven profitable in the valley, especially where dairying is an important enterprise on the farm. The State Agricultural Experiment Station has found that one acre of Morton’s pasture will carry 2.7 head.

Morton’s pasture mixture sufficient to plant one acre of irrigated pasture contains the following:
Chart XI.—Alfalfa, grain sorghum and corn acreage trends, Arkansas Valley.

Chart XII.—Corn, wheat, oats, and barley acreage trends, Arkansas Valley.
Orchard grass ........................................ 15 lbs.
Awnless Brome ....................................... 15 lbs.
Meadow Fescue ....................................... 10 lbs.
Timothy ................................................ 6 lbs.
Yellow Sweet Clover .................................. 4 lbs.

Total .................................................. 50 lbs.

At the present time comparatively few irrigated pastures have been established. There ought to be at least one acre of irrigated pasture for every three animal units in the valley.

On the dryland more attention should be paid to summer pastures as a means of providing suitable feed and cutting the costs of production.

**GRAIN CROPS**

In 1924, 20 percent of the irrigated land in the valley was devoted to the production of corn, 6 percent to wheat, 3 percent to oats and 3 percent to barley.

Corn has been increasing rapidly since 1917, showing a decided increase each year except in 1923 when the corn acreage fell from 112,000 acres to 102,000 acres. In 1924 the acreage had reached 129,000 acres. Chart XII, Page 26.

From 1900 to 1920 the corn production in the United States increased 53 percent. During the same period, however, the 11 western states increased corn production 350 percent and Colorado 330 percent. Chart XIII, Page 28.

In spite of this increase in corn acreage, approximately 1,000 cars of corn are shipped into the valley each year. It is apparent, therefore, that an increase in the production of corn at least to the extent of supplying this amount, would be advisable.

The wheat acreage in the valley reached its peak in 1922, when 115,000 acres were grown. Since that year a marked reduction has taken place, reaching 58,000 acres in 1924. Chart XII, Page 26.

Generally, wheat yields have not been satisfactory in the valley. During the six years from 1919 to 1924, the average yields have been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Average wheat yield per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>21.0</td>
</tr>
<tr>
<td>1920</td>
<td>22.8</td>
</tr>
<tr>
<td>1921</td>
<td>19.7</td>
</tr>
<tr>
<td>1922</td>
<td>15.9</td>
</tr>
<tr>
<td>1923</td>
<td>15.2</td>
</tr>
<tr>
<td>1924</td>
<td>17.0</td>
</tr>
</tbody>
</table>
The average yield for irrigated wheat in 1924 was about 32 bushels per acre. Many tracts, however, yield less than this figure and are operated at a loss to the farmer.

It is estimated that irrigated wheat should yield 35 bushels per acre in order to make this crop pay. On irrigated land that produces less per acre wheat should not be grown until the fertility can be materially increased.

Wheat tends to become a speculative crop. The world supply governs what the farmer in the United States receives per bushel. A slight increase or decrease will not help the situation. As long as the control is out of the hands of the grower in the United States, it is necessary to reduce costs to a minimum or to increase yields per acre. Wheat production in Colorado and in the United States together with the percent exported over a period of years is shown in Table IV, Page 29.
TABLE IV. WHEAT PRODUCTION AND EXPORTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Production (1,000 bushels)</th>
<th>Exports (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Colorado</td>
<td>United States</td>
</tr>
<tr>
<td>1910</td>
<td>635,000</td>
<td>10.9</td>
</tr>
<tr>
<td>1911</td>
<td>621,000</td>
<td>12.8</td>
</tr>
<tr>
<td>1912</td>
<td>730,000</td>
<td>19.6</td>
</tr>
<tr>
<td>1913</td>
<td>763,000</td>
<td>19.1</td>
</tr>
<tr>
<td>1914</td>
<td>891,000</td>
<td>37.3</td>
</tr>
<tr>
<td>1915</td>
<td>1,026,000</td>
<td>22.7</td>
</tr>
<tr>
<td>1916</td>
<td>636,000</td>
<td>32.0</td>
</tr>
<tr>
<td>1917</td>
<td>13,536</td>
<td>637,000</td>
</tr>
<tr>
<td>1918</td>
<td>15,400</td>
<td>921,000</td>
</tr>
<tr>
<td>1919</td>
<td>16,615</td>
<td>970,000</td>
</tr>
<tr>
<td>1920</td>
<td>22,821</td>
<td>833,000</td>
</tr>
<tr>
<td>1921</td>
<td>23,239</td>
<td>814,000</td>
</tr>
<tr>
<td>1922</td>
<td>21,776</td>
<td>867,000</td>
</tr>
<tr>
<td>1923</td>
<td>18,272</td>
<td>786,000</td>
</tr>
<tr>
<td>1924</td>
<td>21,030</td>
<td>873,000</td>
</tr>
</tbody>
</table>

The fluctuation in the barley and oats acreage in the valley has been slight. Chart XII, Page 26.

In 1924 there were 12,601 acres of oats and 13,718 acres of barley. In 1923 almost the reverse was true, in 1922 the barley acreage exceeded the oat acreage and in 1921 the oat acreage exceeded the barley acreage. The total acreage of both crops was only 6 percent of the irrigated area in 1924.

From 1910 to 1920 the United States barley acreage decreased 13 percent and gained 5 percent of this amount by 1925. In Colorado, however, during the same period barley increased 115 percent in 10 years, and 380 percent from 1920 to 1925. Chart XIV, Page 30.

A 14 percent increase in oat acreage was apparent from 1910 to 1920, and a further increase of 6 percent by 1925. Colorado, however, decreased her oat acreage 37 percent during this ten-year period and continued to make a further decrease of 25 percent by 1925. Chart XV, Page 30.

Since barley fills in a feeding period between old corn and new corn, the acreage should be increased to take care of this need.

Sufficient oats should be grown to provide proper feed for growing livestock and for horse feed.

The following rotation has been recommended with the grain crops: Corn, wheat, oats and barley.

Alfalfa, 4 years
Corn, 1 year
Beets, 1 year
Small grain, 1 year
Vines or beets, 1 year
Small grain seeded to alfalfa.
Chart XIV.—Acreage trend of barley.

Chart XV.—Acreage trend of oats.
SUGAR BEETS

During the last eight years (1917 to 1924) a low point in the acreage of sugar beets was reached in 1922 when about 25,000 acres were grown. The year 1923 saw an increase to 27,500 acres and in 1924 to over 40,000 acres. Chart XVI, Page 32.

In 1924 the acreage was divided among the counties as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Acres Contracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bent</td>
<td>3,539</td>
</tr>
<tr>
<td>Crowley</td>
<td>7,600</td>
</tr>
<tr>
<td>Otero</td>
<td>15,516</td>
</tr>
<tr>
<td>Prowers</td>
<td>8,993</td>
</tr>
<tr>
<td>Pueblo</td>
<td>4,675</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40,323</strong></td>
</tr>
</tbody>
</table>

The sugar beet acreage in Colorado reached a low point in 1922 when about 150,000 acres of beets were grown. In 1923 this was increased to 162,000 acres and in 1924 to about 240,000 acres. Chart XVII, Page 32.

The United States produces only about 23 percent of the sugar which she consumes, 50 percent of the sugar coming from Cuba, about 12 percent from Hawaii and 8 percent from Porto Rico. Under present conditions there seems to be little chance for over-production.

At the present time about 12 percent of the irrigated acreage in the valley is suitable beet land. However, with proper crop rotation and the addition of more livestock on the farm, 20 percent of the irrigated area could be brought into condition for sugar beet production. According to the 1925 Colorado yearbook, the percent of irrigated land devoted to sugar beets in 1924 was as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Percent of irrigated area to beets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bent</td>
<td>8.9</td>
</tr>
<tr>
<td>Crowley</td>
<td>17.7</td>
</tr>
<tr>
<td>Otero</td>
<td>20.3</td>
</tr>
<tr>
<td>Prowers</td>
<td>8.7</td>
</tr>
<tr>
<td>Pueblo</td>
<td>10.4</td>
</tr>
</tbody>
</table>

Arkansas Valley .......... 13.2

The influence of livestock on sugar beet yields is shown by a comparison of yields on farms having livestock and those following crop farming exclusively. On the former farms an increase of about two and one-half tons per acre has been received.
The following crop rotations are recommended:

5-year rotation
Alfalfa, 3 years
Beets, 1 year
Grain, 1 year seeded to alfalfa

8-year rotation
Alfalfa, 3 years
Vines or grain, 1 year
Beets, 1 year
Miscellaneous, 1 year
Beets, 1 year
Grain, 1 year seed to alfalfa

Intermittent
Red Clover
Beets
Lima beans
Beets

Chart XVI.—Trend of sugar beet acreage, Arkansas Valley.

Chart XVII.—Colorado sugar beet acreage trend.
VINE CROPS

Cantaloupes and cucumbers are the main vine crops grown in the valley. These are produced both as a commercial crop and as a seed crop.

The acreage trends of these crops are seen on Chart XVIII, below. Cantaloupes show a decided decrease since 1922 and cucumbers a decrease from 1921 to 1923 and a peak of almost 5,000 acres in 1924.

The trends in the acreage of cucumbers for pickles in Colorado and in the United States and in the acreage for table use in the United States are shown in Table V. A decided increase is shown from 1923 to 1924.

Chart XVIII.—Cantaloupe and cucumber acreage trend, Arkansas Valley.

<table>
<thead>
<tr>
<th>TABLE V—CUCUMBER ACREAGE</th>
<th>PICKLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Colorado</td>
</tr>
<tr>
<td>Year</td>
<td></td>
</tr>
<tr>
<td>1918</td>
<td>2,140</td>
</tr>
<tr>
<td>1919</td>
<td>2,140</td>
</tr>
<tr>
<td>1920</td>
<td>1,880</td>
</tr>
<tr>
<td>1921</td>
<td>3,850</td>
</tr>
<tr>
<td>1922</td>
<td>3,080</td>
</tr>
<tr>
<td>1923</td>
<td>3,250</td>
</tr>
<tr>
<td>1924</td>
<td>4,260</td>
</tr>
</tbody>
</table>

Late cantaloupe acreages for Colorado, New Mexico, Washington, Michigan and New Jersey are shown in Table VI, Page 34. Colorado reached the peak in 1923; New Mexico, in 1920; Washington, in 1922; Michigan, in 1924; and New Jersey, in 1921. Colorado, however, is the only state in the group showing a decrease in acreage from 1923 to 1924.

Cantaloupe markets are indicated by the number of unloads by cities in 1923 and 1924. New York led with 568 cars in 1923,
Chicago came second with 256 cars. In 1924 Chicago led with 468 cars and New York came second with 302 cars. Table VII.

<table>
<thead>
<tr>
<th>Year</th>
<th>Colorado</th>
<th>New Mexico</th>
<th>Washington</th>
<th>Michigan</th>
<th>New Jersey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1918</td>
<td>4,600</td>
<td>630</td>
<td>300</td>
<td>1,000</td>
<td>4,029</td>
</tr>
<tr>
<td>1919</td>
<td>6,690</td>
<td>1,300</td>
<td>550</td>
<td>990</td>
<td>4,270</td>
</tr>
<tr>
<td>1920</td>
<td>8,280</td>
<td>2,520</td>
<td>710</td>
<td>980</td>
<td>4,380</td>
</tr>
<tr>
<td>1921</td>
<td>8,200</td>
<td>1,000</td>
<td>420</td>
<td>930</td>
<td>4,520</td>
</tr>
<tr>
<td>1922</td>
<td>14,000</td>
<td>1,100</td>
<td>1,120</td>
<td>1,500</td>
<td>3,360</td>
</tr>
<tr>
<td>1923</td>
<td>8,620</td>
<td>1,400</td>
<td>770</td>
<td>1,600</td>
<td>3,860</td>
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<tr>
<td>1924</td>
<td>7,170</td>
<td>2,100</td>
<td>850</td>
<td>1,700</td>
<td>4,360</td>
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<table>
<thead>
<tr>
<th>City</th>
<th>1923</th>
<th>1924</th>
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<tbody>
<tr>
<td>Chicago</td>
<td>256</td>
<td>468</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>80</td>
<td>159</td>
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<td>Cleveland</td>
<td>49</td>
<td>129</td>
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<td>Kansas City</td>
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<td>64</td>
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<td>New York</td>
<td>568</td>
<td>302</td>
</tr>
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<td>Philadelphia</td>
<td>186</td>
<td>189</td>
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<tr>
<td>Pittsburg</td>
<td>202</td>
<td>200</td>
</tr>
<tr>
<td>St. Louis</td>
<td>98</td>
<td>146</td>
</tr>
</tbody>
</table>

While some Colorado cantaloupes are shipped in August the peak month is September. California, on the other hand, ships most of her crop in June and July. On some occasions a late California crop and an early Colorado crop such as occurred in 1925, works a hardship on both sections as a result of competition on the markets. The clean-up shipments of any production area are always of poor quality, causing a lowering of the market price even on good quality melons from other sections. Arizona makes her largest shipment in July; Arkansas in July; Maryland in August; New Mexico, Indiana and Washington in August. Shipments for August and September from the principal production centers are shown in Table VIII.

<table>
<thead>
<tr>
<th>State</th>
<th>1920</th>
<th>1921</th>
<th>1922</th>
<th>1923</th>
</tr>
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<tbody>
<tr>
<td>August</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>264</td>
<td>1,259</td>
<td>1,276</td>
<td>278</td>
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<tr>
<td>California</td>
<td>3,136</td>
<td>1,298</td>
<td>1,139</td>
<td>1,600</td>
</tr>
<tr>
<td>Delaware</td>
<td>501</td>
<td>923</td>
<td>744</td>
<td>789</td>
</tr>
<tr>
<td>Indiana</td>
<td>592</td>
<td>127</td>
<td>169</td>
<td>428</td>
</tr>
<tr>
<td>Maryland</td>
<td>751</td>
<td>1,095</td>
<td>766</td>
<td>986</td>
</tr>
<tr>
<td>New Mexico</td>
<td>863</td>
<td>414</td>
<td>254</td>
<td>278</td>
</tr>
<tr>
<td>New Jersey</td>
<td>84</td>
<td>233</td>
<td>42</td>
<td>82</td>
</tr>
<tr>
<td>Washington</td>
<td>134</td>
<td>146</td>
<td>242</td>
<td>67</td>
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</table>

<table>
<thead>
<tr>
<th>September</th>
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<tbody>
<tr>
<td>Colorado</td>
</tr>
<tr>
<td>California</td>
</tr>
<tr>
<td>Nevada</td>
</tr>
<tr>
<td>Washington</td>
</tr>
<tr>
<td>Michigan</td>
</tr>
</tbody>
</table>
While these figures show carlot shipments they do not include cantaloupes grown by truck growers adjacent to cities and trucked to market. This industry is growing rapidly and will ultimately affect the large producing areas in the country.

It is estimated that 90 percent of the cucumber seed and 95 percent of the cantaloupe seed in the United States is produced in the Arkansas Valley. Cucumber seed production has increased tremendously during the last few years. As long as the demand for pickles continues, a good price can be secured for a good quality of seed. There is a tendency, however, to overdo seed production which will lower the contract price offered by the seed buyer. This ought to be watched very closely in the expansion of the industry.

The present production of cantaloupe seed is sufficient to meet the present demand. With an increase in the production of commercial cantaloupes by the truck growers near centers of population the production of seed can be increased. However, in order to maintain the industry on a profitable basis more attention must be paid to quality.

The following rotation is recommended with vine crops:
- Alfalfa, 4 years
- Corn or small grain, 1 year
- Cantaloupes or cucumbers, 2 years
- Beets, 1 year
- Grain seed to alfalfa
- When beans follow vines, clover, pickles and grain seeded to alfalfa are recommended as an alternate.

**TRUCK CROPS**

The truck crops in the valley receiving special consideration are tomatoes, snap beans, celery and cauliflower.

A considerable quantity of these crops is produced beyond the consumptive requirements of the valley. Some of the surplus is utilized by local canning factories, the balance being shipped to other parts of Colorado and to eastern and southern markets.

The trend in the tomato acreage for Colorado, California and Utah is seen in Table IX. Considerable variation occurs in the acreage from year to year in these three states. In the seven-year period Colorado’s high point was in 1923 with 2,860 acres. In 1921, however, 730 acres were reported. From 1923 to 1924 a reduction of about 1,000 acres occurred. Similar fluc-
tutions are noticed in other states with the exception of Utah in 1924 for canning tomatoes. California had only a slight decrease in 1924 below the 1923 acreage.

### TABLE IX—TOMATO ACREAGE

<table>
<thead>
<tr>
<th>Year</th>
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<th>Canning</th>
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<tr>
<td></td>
<td></td>
<td>Calif.</td>
<td>Utah</td>
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<tr>
<td>1918</td>
<td>2,440</td>
<td>44,540</td>
<td>5,680</td>
</tr>
<tr>
<td>1919</td>
<td>2,600</td>
<td>44,910</td>
<td>4,850</td>
</tr>
<tr>
<td>1920</td>
<td>2,530</td>
<td>28,340</td>
<td>4,220</td>
</tr>
<tr>
<td>1921</td>
<td>730</td>
<td>6,860</td>
<td>1,250</td>
</tr>
<tr>
<td>1922</td>
<td>2,200</td>
<td>24,140</td>
<td>3,820</td>
</tr>
<tr>
<td>1923</td>
<td>2,860</td>
<td>30,760</td>
<td>4,890</td>
</tr>
<tr>
<td>1924</td>
<td>1,880</td>
<td>26,760</td>
<td>5,480</td>
</tr>
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</table>

The acreage in snap beans shows a considerable increase since 1918 for Colorado, California, Oregon, Washington and the United States. Utah shows little gain in this period. Table X, below. Some fluctuations are apparent during the seven years. However, with the exception of Washington, the 1924 acreage was the highest during the period.

### TABLE X—SNAP BEAN CANNING ACREAGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Colorado</th>
<th>Calif.</th>
<th>Utah</th>
<th>Oregon</th>
<th>Washington</th>
<th>United States</th>
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</thead>
<tbody>
<tr>
<td>1918</td>
<td>840</td>
<td>620</td>
<td>340</td>
<td>270</td>
<td>200</td>
<td>12,650</td>
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<tr>
<td>1919</td>
<td>1,040</td>
<td>740</td>
<td>220</td>
<td>440</td>
<td>240</td>
<td>15,590</td>
</tr>
<tr>
<td>1920</td>
<td>980</td>
<td>420</td>
<td>110</td>
<td>200</td>
<td>100</td>
<td>11,680</td>
</tr>
<tr>
<td>1921</td>
<td>700</td>
<td>370</td>
<td>100</td>
<td>160</td>
<td>100</td>
<td>8,550</td>
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<tr>
<td>1922</td>
<td>610</td>
<td>890</td>
<td>210</td>
<td>320</td>
<td>430</td>
<td>12,460</td>
</tr>
<tr>
<td>1923</td>
<td>750</td>
<td>1,060</td>
<td>290</td>
<td>750</td>
<td>280</td>
<td>16,410</td>
</tr>
<tr>
<td>1924</td>
<td>1,200</td>
<td>1,220</td>
<td>360</td>
<td>1,040</td>
<td>380</td>
<td>20,040</td>
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</table>

The late celery acreage presents a different picture. From 200 acres in 1918 the celery acreage has expanded in the state to 800 acres in 1924. Oregon has shown an increase. Michigan reached a peak of 4,120 acres in 1923 and decreased to 3,940 in 1924. New York, on the other hand, reached her peak in 1924 with 4,720 acres, an increase of 50 percent since 1918. Table XI, Page 37.

Cauliflower is a relatively new crop in Colorado. For the year 1922-23 only 200 acres were reported. For 1923-24 this acreage has been almost doubled.

California had an acreage of over 7,000 acres in 1922-23 which decreased to 6,550 acres in 1924.

New York showed a marked increase each year from 1860 acres in 1918 to 4,350 acres in 1924. Table XII, Page 38.
AN AGRICULTURAL PROGRAM

Chart XIX.—Celery acreage trend.

<table>
<thead>
<tr>
<th>Year</th>
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<th>Oregon</th>
<th>Michigan</th>
<th>New York</th>
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</thead>
<tbody>
<tr>
<td>1918</td>
<td>200</td>
<td>...</td>
<td>2,940</td>
<td>3,200</td>
</tr>
<tr>
<td>1919</td>
<td>350</td>
<td>...</td>
<td>2,560</td>
<td>2,860</td>
</tr>
<tr>
<td>1920</td>
<td>410</td>
<td>...</td>
<td>3,060</td>
<td>3,020</td>
</tr>
<tr>
<td>1921</td>
<td>400</td>
<td>110</td>
<td>2,330</td>
<td>2,940</td>
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<tr>
<td>1922</td>
<td>600</td>
<td>90</td>
<td>4,090</td>
<td>3,520</td>
</tr>
<tr>
<td>1923</td>
<td>670</td>
<td>150</td>
<td>4,120</td>
<td>4,000</td>
</tr>
<tr>
<td>1924</td>
<td>800</td>
<td>160</td>
<td>3,940</td>
<td>4,720</td>
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</table>

Chart XX.—Canning tomato acreage trend.
TABLE XII—CAULIFLOWER ACREAGE

<table>
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<tr>
<th>Year</th>
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<th>California</th>
<th>Oregon</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920-21</td>
<td></td>
<td>6,190</td>
<td>460</td>
<td>1,860</td>
</tr>
<tr>
<td>1921-22</td>
<td></td>
<td>6,700</td>
<td>310</td>
<td>2,240</td>
</tr>
<tr>
<td>1922-23</td>
<td>260</td>
<td>7,260</td>
<td>510</td>
<td>3,500</td>
</tr>
<tr>
<td>1923-24</td>
<td>400</td>
<td>6,550</td>
<td>1,820</td>
<td>4,350</td>
</tr>
</tbody>
</table>

Some conception of the situation in the acreage of celery, canning tomatoes and canning beans can be secured from Charts XIX, XX and XXI, Pages 37 and 38.

A comparison is made of the acreage trend in the United States and the 11 western states.

As market demands from the East and South for late vegetables increase, the acreage of these crops can be gradually increased. The canning factories are steadily increasing their output in the valley and some expansion is possible before their capacities are reached. According to those who are closely in touch with the industry, the outlook is favorable.

Carlot shipments from the valley are increasing, indicating some chance for expansion of vegetables for outside demand.

More attention, however, must be given to soil fertility by the addition of animal manures. Furthermore, the production of truck crops is confined largely to the western end of the valley.

Quality of product must be maintained and more consideration given to standardization.
IRRIGATION

The Arkansas Valley receives its irrigation water from the Arkansas River and some 16 tributaries. The contribution of the tributaries is quite a factor during the irrigation season.

For the three years 1922 to 1924 the amount of water available for crops, less waste, averaged about 2.68 ft. per acre of irrigated crops. The actual consumption of water, found by deducting amount turned back into the river, was about 2 acrefeet.

In 1924 there were something over 300,000 acres irrigated in the valley. The water used was close to 650,000 acrefeet during that year.

With the present storage facilities there is little chance of expanding the irrigated area. There are, however, some opportunities of increasing the storage and utilizing more of the flood waters of the Arkansas River and its tributaries.

Grain and alfalfa require irrigation when row crops do not need the water. In order, however, to make a better distribution of the available water and therefore conserve the water supply, many farmers are practicing winter irrigation of alfalfa and grain.

In many parts of the valley the water table is shallow and some pumping plants have been installed. It has been found, however, that this does not pay except where the lift is small, the power comparatively cheap and the crop watered making a large return per acre to the operator. Such truck crops as tomatoes, cucumbers and seed crops in general are suggested. Under very favorable pumping conditions, the staple crops might be profitably irrigated.
# DIRECTORY OF THE CONFERENCE

<table>
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<th>Committee.</th>
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<td>Williams, G. W., La Junta</td>
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</table>
A list of the men who were invited but could not attend the conference.

<table>
<thead>
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<tr>
<td>Abel, Fred, Ordway</td>
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<td>Ascherman, Henry, Rocky Ford</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Bauer, Carl, Fowler</td>
<td>Sheep</td>
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<tr>
<td>Bauman, J. B., Lamar</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Beach, C. W., Pueblo</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Blotz, A., Rocky Ford</td>
<td>Grain crops</td>
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<tr>
<td>Caspar, Frank, Swink</td>
<td>Sugar beets</td>
</tr>
<tr>
<td>Center, G. H., Lamar</td>
<td>Poultry</td>
</tr>
<tr>
<td>Clevenger, J. E., Rocky Ford</td>
<td>Poultry</td>
</tr>
<tr>
<td>Close, Jas., Ordway</td>
<td>Sugar beets</td>
</tr>
<tr>
<td>Cooper, Roy, Lamar</td>
<td>Forage crops</td>
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<tr>
<td>Cowdon, John, Olney Springs</td>
<td>Vine crops</td>
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<tr>
<td>Crow, Frank, Rocky Ford</td>
<td>Grain crops</td>
</tr>
<tr>
<td>Crow, Otis, Rocky Ford</td>
<td>Hogs</td>
</tr>
<tr>
<td>Darrow, Earl, Pueblo</td>
<td>Dairying</td>
</tr>
<tr>
<td>Davidson, John C., Las Animas</td>
<td>Beef cattle</td>
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<tr>
<td>Decker, H. F., Bristol</td>
<td>Hogs</td>
</tr>
<tr>
<td>Fasnacht, F. C., Wiley</td>
<td>Grain</td>
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<td>Ford, L. E., Denver, Burlington Ry.</td>
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<td>French, H. E., Pueblo</td>
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<td>Gray, P. A., Pueblo</td>
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<tr>
<td>Heath, T. H., Lamar</td>
<td>Sheep</td>
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<tr>
<td>House, E. B., Fort Collins</td>
<td>Irrigation</td>
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<tr>
<td>Hunter, Louis, Rocky Ford</td>
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<td>Ingrum, Bart, Manzanola</td>
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<td>Malone, Tom, Boone</td>
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<td>Marshall, Claude, La Junta</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Mayhew, J. B., Lamar</td>
<td>Irrigation</td>
</tr>
<tr>
<td>McClusky, H. B., La Junta</td>
<td>Dairying</td>
</tr>
<tr>
<td>McGrath, Neil, Lamar</td>
<td>Grain crops</td>
</tr>
<tr>
<td>McGrath, Ray, Lamar</td>
<td>Sheep</td>
</tr>
<tr>
<td>McMillan, Donald, Lamar</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Melton, John L., Las Animas</td>
<td>Sugar beets</td>
</tr>
<tr>
<td>Name and Address</td>
<td>Committee</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Nevius, Harry, Lamar</td>
<td>Forage crops</td>
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<td>Nowels, A. R., Lamar</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Nuckolls, Harvey, Pueblo</td>
<td>Hogs</td>
</tr>
<tr>
<td>Parshall, R. L., Fort Collins</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Partridge, W. S., Holly</td>
<td>Forage crops</td>
</tr>
<tr>
<td>Pitman, J. B., Las Animas</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Powell, Ben F., Las Animas</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Putnam, W. W., Denver</td>
<td>Grain crops</td>
</tr>
<tr>
<td>Ratzlaff, H. B., Las Animas</td>
<td>Hogs</td>
</tr>
<tr>
<td>Ryan, J. B., Rocky Ford</td>
<td>Vine crops</td>
</tr>
<tr>
<td>Ryus, W. F., Trinidad</td>
<td>Sheep</td>
</tr>
<tr>
<td>Scott, P. G., Las Animas</td>
<td>Sheep</td>
</tr>
<tr>
<td>Sollee, Wesley, Pueblo</td>
<td>Poultry</td>
</tr>
<tr>
<td>Thomas, D. W., Denver</td>
<td>Dairying</td>
</tr>
<tr>
<td>Tolton, Arthur, Las Animas</td>
<td>Sheep</td>
</tr>
<tr>
<td>Wagner, E. J., Lamar</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Ware, Jack, Boone</td>
<td>Beef cattle</td>
</tr>
<tr>
<td>Weihing, Henry, Rocky Ford</td>
<td>Dairying</td>
</tr>
<tr>
<td>Williams, R. R., Pueblo</td>
<td>Truck crops</td>
</tr>
</tbody>
</table>
CO-OPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS, COLORADO AGRICULTURAL COLLEGE
AND U. S. DEPARTMENT OF AGRICULTURE CO-OPERATING
DISTRIBUTED IN FURTHERANCE OF ACTS OF CONGRESS
OF MAY 8 AND JUNE 30, 1914
EXTENSION PROJECT FOR 1928

5. Farm Management

Object--1. To determine what farming systems are economically sound.

2. To find the cost of production of the various major crops grown in the county.

Procedure--1. Continue with the cooperators in Farm Record Survey:
   (a) Supply them with record books.
   (b) Assist them in use of these record books.
   (c) Get their figures each year from these books and analyze the farm business.
   (d) Send summary of analysis to each cooperator.

2. Secure cooperators to keep cost of production records on the following crops:
   Red Clover
   onions
   celery
   garden beets
   tomatoes
   beans

   Secure 5 farmers for each crop.
Cooperative Extension Work in Agriculture and Home Economics
Colorado Agricultural College and U. S. Department of Agriculture Cooperating

San Luis Valley Agricultural Recommendations
1928

Assembled by
Thos. H. Summers
Farm Management Demonstrator

A report of the agricultural recommendations for the San Luis Valley made and adopted by the commodity committees at the second San Luis Valley Agricultural Conference, Monte Vista, Colorado, Feb. 10 and 11, 1928.
Introduction

An agricultural economic conference was held in February, 1927, at Alamosa, Colorado, for the purpose of discussing the economic problems of the farmers of the San Luis Valley. In addition to the discussion by the various commodity committees, a number of agricultural suggestions or recommendations were made, looking toward the solution of these problems. These suggestions were published in a bulletin entitled, "An Agricultural Program for the San Luis Valley of Colorado."

The recommendations were formulated with the idea of a long-time program for agriculture that would give a basis for work that could be built upon from time to time as the needs indicated. In fact, agriculture is continually changing and with these changes new problems appear and the old problems take on new aspects.

Accordingly, it was decided to hold a similar conference each year in the valley to review the recommendations, to check up on the progress of the work and to make adjustments that seemed advisable. The first follow-up conference was held at Monte Vista, February 10 and 11, 1928, at which these various phases were taken up. In addition the national agricultural outlook for 1928 was discussed in terms of how it affects the agriculture of the San Luis Valley.

This report takes up what was done at this follow-up conference and gives the recommendations made at that time.
Changes in crop acres and numbers of livestock in the
San Luis Valley from 1926 to 1927

<table>
<thead>
<tr>
<th>Numbers of livestock on farms</th>
<th>1926</th>
<th>1927</th>
<th>Increase or decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses and mules</td>
<td>12,800</td>
<td>12,300</td>
<td>decrease</td>
</tr>
<tr>
<td>Beef cattle</td>
<td>59,000</td>
<td>52,800</td>
<td>&quot;</td>
</tr>
<tr>
<td>Dairy cows</td>
<td>4,700</td>
<td>6,100</td>
<td>increase</td>
</tr>
<tr>
<td>Sheep</td>
<td>204,100</td>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>Swine</td>
<td>7,700</td>
<td>8,700</td>
<td>increase</td>
</tr>
<tr>
<td>Poultry</td>
<td>47,700</td>
<td>(1)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acres in crops</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild hay</td>
<td>106,400</td>
<td>119,300</td>
<td>increase</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>70,500</td>
<td>60,500</td>
<td>decrease</td>
</tr>
<tr>
<td>Oats</td>
<td>23,300</td>
<td>22,700</td>
<td>&quot;</td>
</tr>
<tr>
<td>Barley</td>
<td>17,500</td>
<td>21,100</td>
<td>increase</td>
</tr>
<tr>
<td>Peas (field)</td>
<td>67,100</td>
<td>66,800</td>
<td>decrease</td>
</tr>
<tr>
<td>Clover</td>
<td>9,000</td>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>20,200</td>
<td>22,400</td>
<td>increase</td>
</tr>
<tr>
<td>Lettuce</td>
<td>4,300</td>
<td>6,400 (est)</td>
<td>&quot;</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>470</td>
<td>284</td>
<td>decrease</td>
</tr>
<tr>
<td>Garden peas</td>
<td>640</td>
<td>2,000 (est)</td>
<td>increase</td>
</tr>
<tr>
<td>Potatoes</td>
<td>31,000</td>
<td>37,600</td>
<td>increase</td>
</tr>
</tbody>
</table>

(1) Figures not available at time this report was written.
Beef cattle continue to decrease in numbers while dairy cows and swine show an increase. Figures on sheep would likely show an increase over 1926.

The rise in cattle prices has been too recent to have had much effect on the number of beef cattle on farms January first. In a few cases, however, liquidation has continued for fear that the price recovery might be only temporary.

The relatively favorable prices for lambs, wool and dairy products have caused some expansion in sheep and dairy cows. Favorable hog prices during 1926, caused largely by the expanding markets on the Pacific coast, have brought about some increase in the number of hogs on farms Jan. 1, 1927.

Noticeable changes in crop acres have occurred in wild hay, (increase); alfalfa, (decrease); barley, (increase); wheat, (increase); cauliflower, (decrease). Lettuce, garden peas and potatoes show an increase. This increase in potatoes which is in line with the increase in the total United States acreage has contributed to potato prices this year of about 50 percent of the average price received for the 1926 crop.

It is safe to say that the acreage of clover in the valley is on the increase, taking a prominent place in the cropping systems of the San Luis Valley.
The committee on beef cattle endorses the recommendations made last year with some modifications and additions, as noted.

1. That the beef cattle industry continue to hold an important place in the development of agriculture in the San Luis Valley.

2. That there be no increase in the total number of beef cattle in the San Luis Valley, but that more pounds of beef be produced. This was modified to read "but slight increase."

3. That more purebred herds be established in the valley to furnish foundation stock for our beef industry.

4. That these breeders strive to produce a desirable type of bull that will improve the quality of our beef cattle. Purebred herds are not recommended to men who are not qualified livestock breeders.

5. That the feeding of beef cattle be developed to some extent in the valley.

6. This recommendation was modified to read: That baby beef clubs be continued and enlarged. The following suggestions are given for these clubs:

(a) That producers be urged to furnish suitable calves for baby beef clubs.

(b) That an effort be made to secure calves of high quality and uniform type.

(c) That boys and girls be discouraged from starting in baby beef clubs with inferior calves.

(d) That only the best finished and high quality steers be shown at the National Western Stock Show.

(e) That an effort be made to establish the following classification at the National Western Stock Show:

<table>
<thead>
<tr>
<th>Category</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior calf</td>
<td></td>
</tr>
<tr>
<td>Senior calf</td>
<td>for all breeds</td>
</tr>
<tr>
<td>Junior yearling</td>
<td></td>
</tr>
</tbody>
</table>

(f) That a club steer auction be established at the National Western Stock Show and that club auction days be established on the Denver market.

7. Whereas during the spring months there is a period of from four to six weeks between the time that cattle take readily to dry feed and the date that they should go onto the higher ranges at which time there is often a loss in weight, the committee recommends that more feed be provided during this period; that where feasible seeded pastures be used.
8. That the farm herd be limited to the number of livestock that the farm will care for during the entire year.

9. That the farm herd be kept on the farm thruout the year and that sufficient summer pasture be supplied at home.

10. That public grazing lands be regulated thru states or federal authorities together with local aid.

11. As a result of this recommendation made last year, committees were appointed and meetings held where plans were worked out and a feeder auction sale was held at Alamosa in November, 1927.

    Chas. Kaeck, Chr.    Del Norte
    Leslie Getz          Monte Vista
    J. J. Schecter       Alamosa
    Ross Johnson         La Jara
    D. D. Green          Denver
    Max Grandy           Alamosa
    Bruce Schecter
        " (Beef Club
        member)
    Earl Linger          Hooper
    Chas. E. Gibson
    A. C. Lawton         Center
    A. L. Carruthers     Del Norte
    L. H. Rochford, Secy., Fort Collins

SHEEP

This committee endorses the recommendations made in 1927 with the following modifications and additions:

1. That there be no increase in the total number of range sheep in the San Luis Valley.

2. That an operator have 1800 to 2200 head before engaging in the range sheep business.

3. We recommend the following husbandry practices which will increase production without increasing overhead expense and thereby increase net returns, all of which will be adhering to the economic principle of mass production:

    (a) We wish to emphasize as follows: Whereas many farm flock masters are raising bucks from grade ewes by crossing with pure-bred rams, we wish to discourage the tendency to raise rams from such breeding as a detriment to the sheep industry as a whole and we further recommend that any one wishing to engage in the raising of rams start with only purebred ewes and registered rams and only where the conditions and inclination exists, establishing such as a permanent business.

    (b) That this recommendation be emphasized during 1928, believing that at least three sheepmen in each county of the San Luis Valley, for his own and general information, should weigh each fleece at shearing time and mark all light shearing ewes so that they can be disposed of if found unprofitable. A report should be made of this wor-
(c) We wish to amend as follows: That breeding be done in smaller bunches and that greater discrimination be used in selecting rams both for farm and range flocks, and that no rams be used except purebred or registered.

(d) That we endorse the forest policy of bedding out and open herding systems as a means of range conservation and increased production.

Additional Recommendation

(e) That better business practices be followed in preparation of wool for market; that all fleeces be tied with paper twine, tags and "blacks" sacked separate and all wool kept clean and clear from corral sweepings. We suggest that the practice of allowing the ewes to run to hay stacks be discouraged.

4. That flockmasters realize that diseases cause about four percent loss and that this could be reduced fifty percent by the practicing of inexpensive preventive measures.

5. We believe should be amended as follows: "That we endorse any legislation that will assist in the control of predatory animals and rodents and suggest that all flock masters both on farm and range give active support to the industry by becoming members of local associations in the county in which they are located."

6. That we request the county commissioners to cooperate financially to the fullest extent possible in control of predatory animals and rodents.

7. That the size of the farm flock be limited to the feed resources of the individual ranch.

8. That these flocks be handled so as to be independent of public ranges at all times.

9. That suitable equipment such as coyote-proof fences, etc., be provided.

10. That the business be conducted largely on an old-ewe basis with an annual turnover of both ewes and lambs.

11. That any excess of feed and forage crops be marketed in the valley by:

(a) Fattening lambs and cattle
(b) Farm flocks
(c) Swine production

New Recommendation

12. That boys and girls lamb feeding clubs be encouraged, ten lambs to be the proper size unit to be fed.

R. E. Sellers, Chrm.
E. R. King
C. L. Perdue
C. A. White
L. C. Anderson

Alamosa
Alamosa
Monte Vista
Monte Vista
Monte Vista
DAIRYING

Most of the recommendations made last year were approved, while others were modified and some additional recommendations made. Those remaining the same are:

1. A 50 percent increase in the total production of dairy products in the valley; 10 percent of this from an increase in the total number of dairy cows; 10 percent thru the improvement of feeding, pasture and housing conditions; and 30 percent thru the use of purebred sires and higher producing cows.

2. On every farm where dairy cattle are kept at least one-half acre of permanent irrigated pasture be maintained per dairy cow, and sunflower silage on each farm where eight or more cows are kept. In the case of small farm herds that most of the feed for dairy cattle be produced on the farm.

3. This recommendation was modified to read: Where milk is a minor source of income, at least five cows be kept for economical production. Where milk is the main source of income, from 10 to 20 cows constitute a herd, and where milking machines are used there be more than 15 cows. That one cow be kept on every farm in the valley and two cows where there are children in order to supply the family with milk and dairy products.

4. That no cow producing less than 200 pounds of butterfat per year be kept in a small farm herd and none producing less than 250 pounds per year be retained in any commercial herd.

5. That young dairy animals be vaccinated for blackleg in areas having shown previous blackleg infection. That tuberculin tests be required of producers for city milk supplies. That accredited herds be encouraged and all milk used by the farm family be from TE-tested cows.

6. That open sheds, tree and lumber windbreaks be provided, and the construction of adequate barns for housing stock on extremely cold nights and during storms, where the finances for this construction are available.

7. That no change be made in the dairy manufacturing and shipping facilities but that a considerable increase be made in dairy products storage facilities.

8. That as many dairy cows as possible be bred to freshen during the months of October, November and December.

9. The use of sires from high-producing purebred registered herds of the same breed as the cows on which they are used.

10. That no dairy cattle of any age be put on open national forest-reserve ranges.
11. That bull calves from grade dairy cows be vealed at ages under six months.

12. That producers of dairy products market these products thru their home manufacturing plants.

13. On farms where the increase or introduction of dairying is contemplated,
   (a) That the farmer be dairy minded.
   (b) That sufficient feed be produced to supply the contemplated production as follows: one acre of barley, one-half acre of oats, three acres of alfalfa, one-half acre of permanent irrigated pasture and one-fifth acre of tame sunflowers for silage for each dairy cow.
   (c) That adequate sheds, windbreaks, shelters and equipment be provided.

The following additional recommendations are made:

14. That dairy calf club work in the San Luis Valley be encouraged and increased.

15. That a San Luis Valley Cow Testing Association be encouraged and an effort be made by the Extension Service and the State Dairy Commission to establish same thruout the valley.

16. That individual bull pens be constructed for all herd sires. That proven sires be exchanged between owners rather than slaughtered. That herd sires be given proper care.

17. That manufacturers of dairy products cooperate with the farmer in an effort to raise the quality of dairy products in the valley by advising him as to the quality of product delivered. And that the dairy association fieldman spend some time in an effort to raise the quality of San Luis Valley dairy products.

18. That an annual dairy day be held in the San Luis Valley each summer, the time and place to be set by a committee composed of the Valley extension agents, the dairy association fieldman and the state dairy commission fieldman.

L. A. Maupin, Chrs., Mosca
Jas. Mortensen Manassa
Vernell Gilleland Romeo
Carl J. Seavy Del Norte
Fred Sierie South Fork
Luther E. Bean Blanca
C. T. Myers Alamosa
C. W. Brandborg Monte Vista
C. Caldwell Monte Vista
T. B. Myers Monte Vista
C. A. Smith Fort Collins
Max Granby, Secy., Alamosa

SWINE

The committee on swine endorses the recommendations made last year with changes and additions as noted.

1. With surplus feeds and with increased yields of peas on the present acreage, the valley could produce more hogs, even in the face of a lower market.
It should at least produce its own stock hogs of which ordinarily about one-fourth to one-third of the present supply is shipped in.

2. That cost of production be lowered by saving more pigs per litter, by feeding local grain and mill products to hogs and by fattening shotes upon pasture; also thru the introduction of more new blood and provision for shelter with individual farrowing houses.

3. On account of large farm units and the adaptability of the pear crop to the valley with its suitability for hogging off, making valley conditions favorable for hog raising, that hog raising be a staple practice on most farms.

4. Altho the valley is in a favorable position for marketing due to its location relative to California markets, there is need for a more direct outlet to the thru lines. (To this recommendation has been added) "Therefore, those interested in raising and marketing hogs should unite their efforts with other stockmen and organizations towards securing this result."

The following recommendations have been added to those of last year.

5. That the Agricultural College put on a hog feeding demonstration in the valley for the purpose of ascertaining the best methods of feeding.

6. That all pigs be vaccinated within two weeks of weaning time as a method of reducing disease among swine to a minimum.

A report of losses in swine herds shows that early vaccination reduces the death loss from disease. Of twelve herds early vaccination was practiced in five with a loss ranging from 4 to 25 percent. In the seven late vaccinated herds the loss was 60 to 85 percent.

7. That boys and girls pig clubs be encouraged as an incentive to the breeding and producing of better hogs.

8. That the county extension agents, stockmen and farm bureaus of the valley be encouraged to organize a valley-wide livestock shipping association under the state cooperative marketing laws, with the view of reducing to a minimum the spread between the producer and consumer.

Frank L. Fair, Chr. Romeo
P. E. Harney, Secy. Monte Vista
J. E. Diel " "
Bert Mathias " "
W. M. Decker " "
Jesse Stephenson " "
Harry Asay Alamosa
Art Robinson Monte Vista

POULTRY

The committee on poultry approves the recommendations of the conference held in Alamosa last year which are:

1. That there be a slow but gradual increase in numbers of birds raised but that any material increase in numbers of eggs produced should be brought
about thru improvement in quality of stock raised and improved methods of management rather than thru an increase in the numbers of birds raised.

2. That more attention be given to the securing of higher quality stock for the valley.

3. That the establishment of baby-chick hatcheries be encouraged to take care of the valley's needs.

4. That the average farmer purchase baby chicks to maintain his flock under present conditions rather than to attempt to do his own hatching.

5. That the production of early chicks be encouraged.

6. That poultry-breeding farms be encouraged.

7. That a desirable farm flock unit be 100 to 150 hens, and 500 or more hens for commercial production.

8. That a production of not less than 100 eggs per hen be secured in farm flocks and 150 eggs in commercial flocks.

9. That there is sufficient feed produced and available for the needs of poultry in the valley.

10. That milk be fed to supply animal protein for egg production when it is available.

11. That more attention be given to sanitation.

12. That turkey raising be encouraged.

13. That a cash market be developed in the valley for poultry and eggs.

14. That the shed type of poultry house be adopted for the valley and that adobe be used wherever possible.

15. Due to the high quality of grains produced in the valley, that the poultry raisers mix and feed a standard ration of home-grown feeds.

The committee further recommends that the poultry producers of the San Luis Valley cooperate with the county agents and the poultry specialist of the Colorado Agricultural College in carrying out the following:

(a) Testing out artificial incubation with an idea of establishing a hatchery in the valley.

(b) Requesting the Colorado Agricultural College to furnish a list of reliable sources of baby chicks within the state.

(c) Demonstrating the use of valley feeds for raising chickens and for egg production.

(d) Demonstrating the proper type of poultry houses for valley conditions and securing the cooperation of the Smith-Hughes teachers, pupils and lumber dealers.
(e) Demonstrating the culling of chickens, and spreading this practice.

(f) Stimulating the formation of a turkey marketing pool.

(g) Securing instruction from the Colorado Agricultural College in the preparation of turkeys for market.

(h) Studying the present methods of marketing poultry and eggs with the idea of developing a cash market.

(i) Organizing the poultrymen of the valley into local poultry associations looking towards the federation of these locals.

Mrs. O. F. Diller, Chr., Center
Mrs. Harry Asay, Alamosa
Ralph Caldwell, Monte Vista
Amelio Gonzales, Monte Vista
Dr. A. G. Wadleigh, Monte Vista
Eugene Merritt, Secy., Washington, D. C.

The committee on horses and mules did not meet this year. The recommendations adopted last year were:

1. That more colts be raised in order to maintain farm work stock.

2. That the alfalfa farms are most favorably situated for raising colts.

J. E. Roberts, Chr., Hooper, Colo.
Eugene Merritt, Secy., Washington, D. C.

BEES AND HONEY

The committee on bees and honey endorses the recommendations made last year which are:

1. The cooperation of the county commissioners in checking the spread of bee diseases from Rio Grande and Saguache counties.

2. The appointment of a competent county apiary inspector for the five counties, the expense of such inspector to be borne by the counties in proportion to the number of colonies in each county.

3. Winter protection as a better method of wintering bees.

4. An inquiry into the possible reduction of freight rates on honey from the San Luis Valley.

Winter protection has increased throughout the valley during the year.

Satisfactory progress has been made toward the appointment of a valley agriculturist in accordance with recommendation No. 2. Plans are almost complete to make such an appointment.

The committee wishes to make the following additional recommendations:
5. (a) That a race or strain of bees be chosen, thru selection and breeding, whose queens cease egg laying early in the autumn and commence brood rearing later the following spring, but which comes thru the winter with a good supply of bees and honey, due to inactivity during the unproductive season.

(b) That the Colorado State Experiment Station or State Entomologist be requested to conduct an experiment during the winter of 1928-29 on winter protection of bees in the San Luis Valley, provided funds are available for packing cases and packing material, the bees and other equipment to be furnished by the beekeepers of the valley. To assist in an advisory capacity and to make reports and information available to all interested, that the following beekeepers be appointed:

Frank Belt, La Jara
Edward Haefeli, Monte Vista
Arthur McClintock, Mosca

F. G. Rauchfuss, La Jara
Fred Christenson, Manassa

6. That all beekeepers or persons having bees place bran, chop, sweepings or flour in apiaries or near the hives to prevent the bees from frequenting the stock feeding troughs in spring months.

7. The completion of action toward the appointment of a valley apiculturist instead of county apiculturists.

8. That beekeepers investigate cooperative sales agencies now operating with a view to better marketing of their product.

9. That the people of the valley oppose, thru their United States senators and representatives, the passage of the Corn Sugar bill, Senate Bill 2806 and H. R. 10022, since it defeats the purpose of the present pure food law, regulating the labeling of food products.

10. That an economic conference be held annually in the valley.

F. G. Rauchfuss, Chr., La Jara
C. E. Wolfe Monte Vista
A. A. Rolling Alamosa
F. C. Bilt La Jara
Chester McClintock Mosca
Arthur McClintock "
Edward Haefeli Monte Vista
Cecil Bledsoe "
R. G. Richmond, Secy. Fort Collins

POTATOES

The potato committee endorses the following recommendations made last year with modifications and additions as noted:

1. A rotation as follows:
   1st year - potatoes
   2nd " - small grain
   3rd " - peas and sweet clover seeded, together,
   4th " - sweet clover for pasture, hay, seed or soilinc crop.
The following was added to No. 1

Where alfalfa is used in the farm rotation, the following plan is recommended:

Alfalfa - 5 to 6 years
Potatoes - 2 years
Grain - 1 year
Peas - seeded in stubble, 1 year
Peas - land plowed before seeding, 1 year
Potatoes - 1 year
Alfalfa - reseeded to remain 5 to 6 years

2. Along with the first rotation, we recommend a liberal use of barnyard manure, where convenient, for the rotation, together with a more liberal amount of water.

3. That all potato producers practice seed treatment and field roguing of diseased hills.

4. That all potato producers be interested in maintaining a seed plot.

5. That a few qualified potato growers in each locality be encouraged to make a business of certified seed production.

6. That there be an increase in the potato acreage in the San Luis Valley only in proportion to the increase of the population in its trade territory.

This recommendation was modified and restated as follows:

(a) We recommend that in determining the acreage to be planted in 1928, growers take into consideration the fact that government outlook reports indicate a large national increase in potato acreage this year, and consequently another year of low potato prices.

(b) In a probable low price year like 1928, we recommend that growers give special attention to planting none but the best seed and that they endeavor to produce an especially high grade product which can be merchandized at premium prices.

7. That complete standardization of potatoes and marking of containers as to grades be given attention.

H. C. Honry, Chr., Monte Vista
L. A. Moorhouse, Socy., Fort Collins

J. W. Prentice, Monto Vista
Harvey Mathias " "
J. G. Robertson " "
John Drake " "
L. P. Goff " "
Chris. Salters " "
Jas. R. Sheely " "
O. A. Cunningham " "
Floyd Kirk " "

A. O. Miner, Monte Vista
Roy McConnell " "
Victor Olsen " "
Oscar Lindstrum Center
Clarence Mathias, Del Norte
Robin Hood Memphis, Tenn.
Jess Davis Monte Vista
ALFALFA AND OTHER HAY

1. Anticipating the addition of new crop areas from reclamation and irrigation projects, the committee suggests that the seeding of alfalfa be confined to the needs of those new farms and that sweet clover be used for soil building purposes on the remaining part of such areas brought under cultivation.

2. Since there has been a decrease of 10,000 acres in alfalfa in the valley during the year we recommend that sufficient alfalfa acreage be maintained to meet the livestock requirements.

3. That the additional fertility requirements be met by the use of sweet clover.

4. That the additional feed requirements resulting from the increased development of the livestock industry be supplied thru increased yields upon the present acreage by means of better cultural methods.

5. That the pasturing and fattening of livestock in localities where alfalfa production is the major enterprise be encouraged as a solution of the surplus feed problem.

6. That demonstrations in alfalfa improvement be established in each community.

7. That alfalfa variety tests be established in each county to determine the best strains adapted to this region.

L. B. Foley, Chrs. Mosca
E. D. Smith, Secy. Fort Collins
Chas. Mahl Monte Vista
C. E. Gibson Hooper
A. C. Lawton "
Clem Smith Alamosa

SUGAR BEETS

The sugar beet committee endorses the recommendations made at the Alamosa meeting last year without change. They are as follows:

1. That the beet acreage be increased as fast as the farmers realize the need of this crop in their crop rotations, and the benefits of its by-products in the feeding of livestock.

2. That the acreage be increased as more land is leveled and put in condition to grow sugar beets successfully.

3. That demonstrations be conducted in the feeding of sugar beet by-products to livestock in order to show the value of the sugar beet as a means of promoting the fattening of livestock in the valley.

4. That the yield of sugar beets be increased thru the better use of water; better use of cultural practices such as proper method of spacing and cultivating, and better crop rotation.
5. Let sugar beets be planted after potatoes when potatoes are put on sweet clover or alfalfa ground.

The committee submits the following for the consideration of the farmers of the San Luis Valley:

A. Since the beet sugar industry has been the foundation upon which the most highly developed agricultural district of the Rocky Mountain states has been built, both industrially and agriculturally, the sugar beets as a crop is recommended to the farmers of the San Luis Valley.

B. The beet industry has so many angles that some of the important ones are often overlooked.

C. The San Luis Valley, because of its proximity to ideal ranges and with its climatic conditions, could and should be made the greatest livestock finishing district in the state. To do this it needs only a few things to balance up the feeds that are so abundantly produced.

D. It has been stated repeatedly by good authorities that beet growing districts of eastern Colorado are making beef and mutton as much as two cents per pound cheaper than is now being done in the San Luis Valley.

E. The feeding of livestock and the production of beet sugar are so closely related that to attempt to separate them is impossible. There are, however, sufficient reasons for seriously considering this crop without mentioning the livestock industries. This statement seems to be particularly true in a community where there is only one extensively cultivated crop.

F. A crop requiring deep tillage and clean cultivation will be of very material benefit to the agriculture of the valley in that it would be a means of holding up to a high standard of production all of the grain or now cultivated crops and free them from many of the weed troubles now so prevalent.

G. To produce beets at a profit on a large scale in the Valley it is necessary to continue as rapidly as possible the leveling of land and the building up of the fertility of the soil thru the use of more sweet clover, alfalfa and manure.

W. D. Gorst, Chr., Monte Vista
A. J. Stoeber
J. J. Schecter, Alamosa
A. J. Hamman, Secy.

SEED CROPS

That the recommendations of last year be approved with exceptions and additions as noted below.

Those recommendations remaining the same are:

Sweet Clover (seed)
3. That the production of seed from other varieties and strains be given attention.

Potatoes (seed)

2. That the production of high quality seed of adapted varieties and high-yielding strains be given more attention.

3. That every commercial potato grower be interested in seed plot development.

Small Grains (Wheat, barley, oats for seed)

2. That the production and marketing of seed of high quality and high-yielding varieties and strains be given more attention.

Field Peas (Seed)

1. That the production of seed from high-yielding varieties and strains be given more attention by the Agricultural Experiment Station.

Garden Peas (Seed)

1. That the acreage of garden peas for seed be increased to supply local demand.

Miscellaneous seeds

That the possibilities of growing the following seed be investigated by the Agricultural Experiment Station: Red Clover, alsike clover, orchard grass, brome grass and timothy.

The recommendations of last year that were modified are:

Sweet Clover (seed)

1. That the present acreage of sweet clover be maintained but used more for green manure and pasture instead of so much for seed.

Potatoes (seed)

1. That an increase be made in Bliss Triumph and Irish Cobbler acreage for certified seed to supply the local demand and the demand from the South.

Small Grains (seed)

1. That the acreage of small grains for seed be increased.

Garden Peas (seed)

2. That the acreage of garden peas for seed remain the same.

The committee adds the following recommendations:

1. That grain seed grading plants be installed in various communities:
2. That a valley marketing utility man be employed.

3. That the Seed Growers organization be urged to get more members.

4. That all agricultural organizations and commercial organizations in the valley cooperate with the Seed Growers organization to produce better seed.

R. H. Chisholm, Chairman,            Del Norte
Arthur Speiser, Secr.                 Hooper
O. F. Diller                           Center
A. I. Maloney                         Monte Vista
A. G. Monroe                           Alamosa
Chas. Speiser                         Hooper

TRUCK CROPS

We, the truck crop committee of 1928, are in accord with the recommendations of the 1927 committee and believe the program should be followed. These are:

1. No increase in the lettuce acreage at the present time.

2. That the Agricultural Experiment Station give aid by furnishing more definite information on cultural methods, irrigation, seed supply and tipburn.

3. Experience has shown that the best lettuce land is located on the river bottoms and in the higher valleys. That the open valleys of a sandy nature are, as a rule, not adapted to the production of head lettuce.

4. That there be no decrease in the acreage of cauliflower.

5. That there be no increase in the pod-pea acreage.

6. No material increase in the truck crop acreage at the present time, but more devoted to quality production and efficient marketing.

7. That the truck growers adopt a definite system of crop rotation in order to maintain soil fertility, and that they diversify their crops so as to guard against crop losses.

8. That truck growers take immediate steps to form a valley wide organization with a local organization in each district.

The following modifications and additions to the 1927 recommendations are emphasized.

(a) That the Agricultural College carry on in the valley special investigations on tipburn and cutworm control.

(b) We recommend a truck crop rotation as follows: Peas; lettuce; small grain (with sweet clover 2 years or alfalfa 5 years); potatoes; peas; lettuce.

(c) We report progress in organization of a valley wide truck marketing association in a successful year's operation of the Del Norte Vegetable Grower's Association and plans for similar marketing associations in other sections of the valley.
(d) We especially recommend and urge that the County Farm Bureau, Commercial Clubs, County Extension Agents, Smith-Hughes teachers and marketing associations in the valley get behind the recommendation; that the Agricultural College put a man in the valley this season to carry on experiments for the benefit of the truck farmer relative to control of disease and insects and best cultural methods to be used in fostering this new industry.

H. R. Crow, Chrm., Romeo
H. B. Carr Del Norte
M. L. Chenoweth " "
J. T. Eskridge La Jara
D. Salazar San Luis
D. A. Feitz Antonito
N. D. Sanborn Secy., Denver

SMALL GRAINS

The committee on small grains approve the recommendations made last year with such additions as are noted below.

The last year's recommendations are:

Wheat

1. That no increase be made in the wheat acreage.

2. That Marquis wheat be the standard variety grown.

3. That tests be made in the growing of Early Bart wheat.

4. That the following rotation for wheat or small grain be considered:

   Alfalfa, 5 years
   Potatoes, 1 year
   Wheat or small grain, 1 year, seeded with sweet clover
   Sweet clover - pasture, and fall plowed, 1 year
   Peas, 1 year
   Potatoes, 1 year
   Small grain seeded to alfalfa or sweet clover.

Oats

1. An increase of 20 percent in the production of oats, thru increased yields per acre, this increase to be brought about by the use of the best varieties having local sources of registered seed, by the general use of good seed, by proper seed treatment, by planting oats on good soil, and by the use of a good crop rotation.

Barley

1. An increase of 25 percent in the production of barley from the same present acreage, by the use of good seed, by planting on better land and thru a good crop rotation.
2. That the following crop rotation, including barley where alfalfa is not grown, be given some consideration:

Barley seeded to sweet clover, 1 year
Sweet clover pastured and fall plowed, 1 year
Peas, 1 year
Potatoes, 1 year

The following recommendation is added for barley:

3. That Trebi barley be the standard variety grown.

It is further recommended:

1. That more farmers grow registered and approved seed to supply seed for local demand.

2. That farmers take advantage of the offer to have their seed grain cleaned at no charge by the mills.

Chas. Pusch, Chr., Mosca
R. E. Kioly, Secy., Romeo
H. E. Lague, Monte Vista.

IRRIGATED PASTURE CROPS

Permanent Irrigated Pastures

1. That each farm plant a sufficient acreage of permanent pasture grass to meet the demands of the dairy stock and sheep kept thereon.

2. That pasture demonstrations be established in each community.

3. That pasture variety tests be established in each county.

Sweet Clover

1. That sweet clover be included in the crop rotation until at least twenty percent of the cultivated land is thus occupied, permanent pasture and alfalfa land being excluded from the rotation.

2. That this crop be used as pasture, green manure, hay or seed as the needs of the individual farmer may require.

Field Peas

1. That unless the number of hogs and sheep to be carried on field peas increased, the acreage of field peas be decreased.

2. That any larger amounts of peas needed for seed be secured from increased yields per acre obtained thru better seed and better cultural practices.

3. That variety tests be established in each county.

4. That demonstrations be established in each community.
IRRIGATION AND DRAINAGE

1. Under present normal conditions of the available water supply with the present duty of two acre-feet of water per acre, no increase in the irrigated area of the San Luis Valley is warranted.

2. The consolidation in units of the various irrigation systems in the several areas of the valley; these organizations to create sufficient storage facilities to provide an ample supply of both early and late water. (The following modification): In view of the present urgent outlook to immediate action in connection with creating additional storage it is strongly recommended that all phases of this important problem be investigated.

3. In the consolidation of ditch systems delivering water to all lands served by the same watershed, we strongly recommend, where possible, the consolidation of irrigation and drainage interests serving the same area.

4. (Modified to read): Because of the immediate need of definite information on the use of water in the valley, it is recommended that a careful investigation be made in each representative soil and crop section of the valley as to the most practical quantity of water necessary to produce the best crop, and that thereafter, other conditions being equal, no more water be used than the practical optimum so determined.

5. That excessive amounts of water applied from flood flows in order to secure ground storage be eliminated through additional reservoir storage.

6. That the present water supply be increased, wherever possible, thru the use of water developed by means of drainage.

7. A more efficient use of water thru:

(a) Leveling of land.

(b) The installation of proper headgates for diversion and of proper measuring devices.

(c) The reduction of waste in application and prevention of avoidable leakage and loss from carrying channels.

6. That the practice of sub-irrigation be generally discouraged and that the more general practice of flooding and row method of irrigation be encouraged.

9. That pumping for supplemental irrigation be used only for specialized crops in favorable localities.

10. That crops demanding early and late water be encouraged in areas where storage water is available and discouraged where early and late water is not available.
11. The study of artesian wells with a view of throttling or closing down wells during the time when they are serving no useful purpose.

12. The organization of new drainage districts where economic conditions very strongly warrant this new development.


14. To improve the management and distribution of water, it is recommended that there be held annually at some convenient place in the valley a school for superintendents and ditch riders.

15. We earnestly submit: That the time is at hand for immediate action for the creation of supplementary water supply by means of storage reservoirs and that the people of the San Luis Valley exhaust every available resource in soliciting the aggressive cooperation of every possible agency in assuring immediate development.

John Fultz, Chr., Hooper
R. L. Parshall, Secy., Fort Collins
N. E. Morgan, Center
J. D. Brazie, Antonito
W. N. Evans, Del Norte

RODENTS AND PREDATORY ANIMALS

No separate meeting of the committee on rodents and predatory animals was held. Representatives met with other committees. The following report, however, on the work last year is submitted by D. D. Green of the U. S. Biological Survey, Denver, Colorado.

Summary of Expense - 1927 Prairie Dog Campaign
San Luis Valley, Colorado

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<th>Labor &amp; Trucking</th>
<th>Poison</th>
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Summary of Area Treated - 1927 Prairie Dog Campaign
San Luis Valley, Colorado.

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<th>Mineral</th>
<th>Saguache</th>
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Total acres 38,355 37,095 52,090 25,945 153,485
Public, total 20,580 32,555 46,740 21,335 121,210
Private, " 17,775 4,540 5,350 4,610 32,275
Lamar, Colorado  
October 16, 1925

Professor Parshall  
Colorado Agricultural College  
Fort, Collins, Colorado

Dear Sir:

I am enclosing a set of the questions which will be considered at the Rocky Ford Conference on October 24th. These questions have been raised by the County Extension Agents in the Valley and by members of the various committees.

Will you review these questions and be prepared in so far as you are able to bring material that will assist in answering them, especially those that relate to the particular committee to which you have been assigned?

The interest being shown in the Valley indicates that there will be a large representative group of the leading farmers at this meeting.

We would like to have a preliminary meeting on the afternoon of the 23rd, for the purpose of going over final arrangements for the Saturday meeting. Will you be there if it is possible to do so?

Thanking you for your cooperation, I am,

Yours very truly,

Thos. H. Summers,  
Farm Management Specialist.
IRRIGATION

I. What is the total acre feet of irrigation water available to the Arkansas Valley irrigation systems?

II. What are the requirements of the present crop acreage? Approx. 2 1/2 A.F.

III. How much water is wasted? 15 to 25 percent

IV. Is there opportunity for additional irrigation projects in the Arkansas Valley? Doubtful

V. What acreage of row crops can be grown with the available water and with the present acreage of other crops? 1/3 to 1/2

VI. Under what conditions should pumping be employed to supplement ditch water? Following factors to be considered:

- Value or dependability of ditch right.
- Is ground water available.
- Practical limit of pumping in Ark. Valley may not exceed 30 feet for general crops.
- Does water bearing strata have sufficient capacity.
- Does crop to be grown have sufficient value to warrant expense of pumping plant as supplemental to direct supply.
ALFALFA

I. What has been the production trend of alfalfa in the Arkansas Valley? In Colorado? In the Western States? Stationary about same acreage or the average each year.

II. Has the yield of alfalfa per acre been increasing, or decreasing? Possibly not changing.

III. How is the alfalfa hay being used in the Valley? Feeding

IV. What is the alfalfa meal production in the Valley? Where is the meal shipped? East & south

V. What crops supplement alfalfa to get the best feed value? Corn

VI. What is a good crop rotation with alfalfa? Alfalfa
    Wheat
    Beets
    Oats
    Alfalfa

VII. Under what conditions should alfalfa be sold? Sold to be fed on farm

VIII. Is livestock necessary to increase alfalfa yields? Yes

IX. Under what conditions can water be sacrificed on alfalfa to produce other crops? Irrigate once in heavy soil

X. Under what conditions should alfalfa acreage be decreased or increased and to what extent? Follow rotation
CORN (Irrigated)

I. What has been the trend in corn production in the Arkansas Valley? In Colorado? In the Western States? In the Corn Belt? *Corn in this Valley has been increasing due to introduction of favorable varieties.*

II. How much corn is shipped in and out of the Valley?

III. What value has corn and corn silage as feed compared with other feeds? *Good.*

IV. What is a good crop rotation with corn?

V. Should corn acreage displace any alfalfa acreage? *Yes.*

VI. Under what conditions should corn acreage be increased or decreased and to what extent? *Rotation*
PASTURE (Irrigated)

I. What waste land under irrigation can be used for pasture? Usually steep land for this purpose.

II. How many head of stock will an acre of irrigated pasture carry? Four if proper stand is maintained.

III. How much summer feed of different kinds will this displace?

IV. What increase in acreage should be made to provide irrigated pasture for horses, cattle and sheep?
SUGAR BEETS

I. What changes have taken place in the acreage of sugar beets in the Arkansas Valley? In Colorado? In the United States? Restricted to desirable or productive lands

II. What value have beet by-products as a supplement feed? Good

III. How do local yields of sugar beets on farms where livestock is an important enterprise compare with yields on farms having very little livestock? Should show increase

IV. What is a good crop rotation with sugar beets? Grain with vines and alfalfa

V. What influence have diseases on the production of sugar beets? Favorable years diseases are destructive

VI. Under what conditions should the sugar beet acreage be increased or decreased and to what extent? Several factors involved
I. What has been the trend in oat production in the Arkansas Valley? In Colorado? In the United States?

II. What feed value has oats compared with other feeds?

III. What is a good crop rotation with oats?

IV. Should oat acreage displace other feed crop acreage?

V. Under what conditions should the oat acreage be increased or decreased and to what extent?
WHEAT (Dry land)

I. What is the trend in production of wheat in the Arkansas Valley? In Colorado? In the United States? In the world?

II. How much wheat is shipped out of the Valley? What is the exportable surplus in the United States?

III. What yield per acre is necessary to make wheat pay?

IV. What is a good crop rotation with wheat?

V. Under what conditions should the wheat acreage be increased or decreased and to what extent?
BARLEY

I. What has been the trend in barley production in the Arkansas Valley? In Colorado? In the United States?

II. What feed value has barley compared with other feeds?

III. What is a good crop rotation with barley?

IV. Should barley acreage displace other feed crop acreage?

V. Under what conditions should the barley acreage be increased or decreased and to what extent?
RANGE SHEEP

I. What have been the changes in numbers of range sheep in the Arkansas Valley? In Colorado? In the Western States?

II. What has been the relationship between sheep and cattle prices?

III. How much and what kinds of winter feed are necessary per head?

IV. What is the present lamb crop(%)? What is the minimum lamb crop necessary for economical production?

V. What is an economical size of flock?

VI. To what extent and under what conditions can Valley range provide feeders for local irrigated farms?

VII. Under what conditions should range sheep production be increased or decreased in the Arkansas Valley and to what extent?
RANGE CATTLE

I. What changes have taken place in the numbers of range cattle in the Arkansas Valley? In Colorado? In the Western States?

II. What has been the relationship between beef and sheep prices?

III. How much and what kinds of winter feed are necessary per head?

IV. What is the average calf crop in the Valley (%)?
   What is the minimum calf crop for economical production?

V. What is the economical size of range herd?

VI. To what extent and under what conditions can the Arkansas Valley range cattle man provide feeders for the Valley irrigated farms?

VII. Under what conditions should the range man turn off his cattle as yearlings? As twos? As threes?

VIII. Under what conditions is it possible to grade cattle for market?

IX. Should range cattle be increased or decreased in the Valley and under what conditions? To what extent?
DAIRYING

I. Is there a surplus or deficit of dairy products? In the Valley?
   1. Extent.
   2. Kind of products.

II. What is the probable growth of population in the Valley?

III. How have prices of dairy products compared with other agricultural products?

IV. To what extent has the consumption of dairy products been increased in U. S.?

V. What is the dairy situation in the Western States?

VI. Where do the shipments of dairy products go out of the Valley?

VII. What quality of products are found on these markets with which the Arkansas Valley products must compete?

VIII. What advantages have the Arkansas Valley for economical dairy production?

IX. What size of dairy herd is desirable for economical production?

X. What yields per cow are necessary for economical production?

XI. Under what conditions is it profitable to sell alfalfa rather than to produce butterfat?

XII. Should dairying be increased in the Valley?
   A. Cows necessary to provide dairy products for increase in the local population?
   B. For production to meet outside demand for dairy products?
   C. Where in the Valley?
HOGS

I. Is there a surplus or deficit of hogs in the Arkansas Valley? In Colorado? In the Western States? In the U. S.?

II. What changes in numbers have there been in the Valley?

III. What are the requirements of the local packers? Denver market? Los Angeles market? (Numbers and weights)

IV. When do Arkansas Valley hogs go on the market?

V. What is the seasonal price variation for different weights?

VI. What advantage has the Arkansas Valley on the Los Angeles hog market?

VII. How many hogs should be kept per cow where skim milk is available?

VIII. How many hogs are necessary on dry land farms to clean up waste feeds?

IX. How many hogs should be kept per beef animal in feed lot?

X. What pasture is necessary to provide for sow and young pigs?

XI. What disease prevention measures are necessary? Sanitation. Vaccination.

XII. Should hog production be increased or decreased? How much? Under what conditions?
TURKEYS

I. How many turkeys are shipped out of the Arkansas Valley?

II. Where are those turkeys shipped?

III. What important other turkey producing sections supply these markets?

IV. What turkey diseases curtail production?

V. What are the marketing problems?
   Organization?
   Grading and fitting?

VI. Should turkeys be increased or decreased in the Arkansas Valley? Under what conditions and to what extent?
BEEF FATTENING

I. What changes have taken place in the number of beef cattle fattened in the Arkansas Valley? In Colorado? In Western States?

II. What changes have taken place in the type of finished animal demanded by the market?

III. What changes have taken place in the price of fat cattle and sheep over a period of years?

IV. What spread or margin in price is necessary for economical feeding?

V. What is the relative feed value of corn, alfalfa, silage, barley, by-products, and their combinations?

VI. What does it cost to fatten cattle?

VII. What is the value of manure in building up soil fertility?

VIII. Under what conditions should alfalfa be sold rather than fed?

IX. Should beef fattening be increased in the Arkansas Valley?
   Where?
   Under what conditions?
   With alfalfa at what price?
   At what price relationship of beef and lamb?
   With what feed combinations?
FARM SHEEP FLOCKS

I. What changes have taken place in the number of sheep on farms in the Valley?

II. Under what conditions should farm flocks be established?

III. What has been the price relationship between sheep, wool, and other competing farm products?

IV. What size of flock is economical? How many pounds of wool per head is necessary?


VI. What is the extent of various handicaps to farm flocks? Dogs? Diseases? Pests? Fences? Shelter?

VII. What is the possibility of uniting farm flocks to utilize summer range pasture?

VIII. Under what conditions should farm flocks be increased or decreased and to what extent?
FATTENING LAMBS AND SHEEP

I. What changes have taken place in the number of sheep and lambs fattened in the Arkansas Valley? In Colorado? In the Western States?

II. What changes have taken place in the price of sheep and beef over a long period?

III. What is the relative feed value of corn, alfalfa, barley and beet by-products and their feed combinations?

IV. What does it cost to feed sheep in the Arkansas Valley?

V. How important is the death loss problem in the Valley?

VI. What is the value of manure in building up the soil fertility?

VII. Under what conditions should alfalfa be sold rather than fed?

POULTRY

I. Is there a surplus or deficit of poultry products in the Arkansas Valley? In Colorado? In the Western States?

II. What changes have taken place in the number of poultry in the Arkansas Valley? In Colorado? In the Western States?

III. What changes have taken in the price of poultry products over a period of years?

IV. To what extent has the consumption of poultry products changed?

V. What has been the population growth in the Arkansas Valley? Probable future growth?

VI. What is the extent of shipments of poultry products out of and into the Valley?

VII. What is the economical size of farm flock?

Of commercial flock?

VIII. What egg production per hen is desirable in farm flocks?

In commercial flocks?

IX. Can winter egg production be increased and at a profit?

X. To what extent should sanitation be considered in establishing poultry flocks?

XI. What are the marketing problems? (Type of organization? Seasonal production? Quality?)

XII. What is the extent of Colorado market for baby chicks?

XIII. Should the baby chick production be increased in the Valley and to what extent?

XIV. Should poultry be increased or decreased in the Valley? Under what conditions? How much?
CELEY

I. What has been the trend of celery acreage in the Arkansas Valley? In Colorado? In the Western States?

II. How much celery is shipped in and out of the Valley?

III. What are the outside markets for Arkansas Valley celery?

IV. When does the Arkansas Valley celery and celery from other producing sections in the West come on the large markets?

V. What influence have diseases and pests on the present production of celery in the Valley?

VI. How can the fertility problem be met?

VII. What are good combinations of crops to grow with celery?

VIII. Under what conditions should the celery acreage be increased or decreased in the Valley and to what extent?
SNAP BEANS

I. What has been the acreage trend of snap beans in the Arkansas Valley? In Colorado? In the Western States?

II. What are the sources of the supply on the local markets?

III. What is the seasonal competition on markets taking Colorado snap beans?

IV. What diseases and pests menace the crop?

V. How can the problem of fertility be met?

VI. What other crops fit into a rotation with snap beans?

VII. Can the vegetable canning industry be expanded in the Valley? Where?

VIII. Should the acreage of snap beans be increased in the Valley? Under what conditions?

IX. How can the problem of assembling for carlot shipments be met?
CAULIFLOWER

I. What has been the trend of cauliflower production in the Arkansas Valley? In Colorado? In the Western States?

II. How much cauliflower is shipped out of the Valley?

III. What is the destination of Arkansas Valley cauliflower?

IX. When does the Valley cauliflower and that from other producing areas in the West come on the large markets?

V. What diseases and pests hinder the production of cauliflower?

VI. How can the fertility problem be met?

VII. What is a good combination of crops to grow with cauliflower?

VIII. Can the canning industry be expanded in the Valley? Under what conditions?

IX. Under what conditions should the acreage of cauliflower be increased or decreased and to what extent?
TOMATOES

I. What has been the trend in tomato acreage in the Valley? In Colorado? In the Western States?

II. When do tomatoes from the Arkansas Valley and from other producing areas in the West come on the large markets?

III. What are the sources of the supply of tomatoes on the local Valley markets?

IV. What diseases and pests hinder tomato production in the Valley?

V. How can the fertility problem be met?

VI. What crops combine with tomatoes in the cropping system?

VII. Can the vegetable canning industry be expanded in the Valley?

VIII. Should the tomato acreage be increased or decreased in the Valley and to what extent?
CUCUMBERS (SEED)

I. What is the trend of cucumber seed production in the Valley?

II. What proportion of the entire production of cucumber seed is produced in the Valley?

III. What is the total quantity of cucumber seed required?

IV. What has been the influence of quality in maintaining the production of cucumber seed in the Valley?

V. Under what conditions should the production of cucumber seed be increased or decreased and to what extent?

CUCUMBERS (PICKLES)

I. What is the trend of pickle acreage in the Arkansas Valley? In Colorado? In the Western States?

II. What is the volume of the pickling station business in the Valley?

III. What diseases and pests hinder the production of pickles?

IV. What crops fit into a cropping system with pickles?

V. What is the outlook for the pickle industry?

VI. Under what conditions should the acreage of pickles be increased or decreased in the Valley and to what extent?
CANTALOUPES (Seed)

I. What is the trend in the production of cantaloupe seed in the Arkansas Valley?

II. What percent of the entire production of cantaloupe seed is produced in the Arkansas Valley?

III. What is the requirement of cantaloupe seed (quantity)?

IV. What has been the influence of quality in maintaining the present production of cantaloupe seed in the Valley?

V. Under what conditions should cantaloupe seed production be increased or decreased and to what extent?

CANTALOUPES (Commercial)

I. What is the trend in cantaloupe acreage in the Arkansas Valley? In Colorado? In the Western States? In the United States?

II. When does the crop come onto the markets from the Valley? From other production areas?

III. How many carloads are shipped from other areas during the Valley shipping season?

IV. What diseases and pests hinder the production of cantaloupes in the Valley?

V. What crops fit into a cropping system with cantaloupes?

VI. Under what conditions should the cantaloupe acreage be increased or decreased in the Valley and to what extent?