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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.

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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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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 dairyman 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.

Will Morrison, Chairman, Rocky Ford
J. B. Moyer, Wiley
W. D. Neale, Rocky Ford
J. H. Wasson, Rocky Ford
Wm. Rickman, Rocky Ford
W. I. Sanford, Pueblo, Route 1
R. H. James, Rocky Ford
Wm. McKee, Penrose
N. E. Sanborn, Secretary, Denver

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.

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 under flow 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.

COLORADO

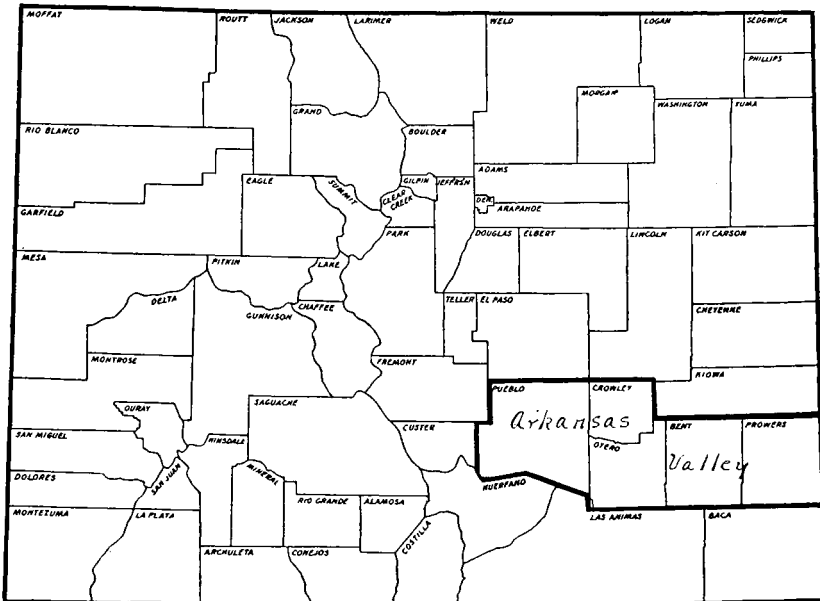


TABLE I—LAND CLASSIFICATION, 1924

	Area (acres)	Percent agricultural land	Percent agricultural land		
			Irrigated	Grazing	Dryland farming
Bent	975,360	68.01	7.26	92.04	.70
Crowley	517,120	77.13	10.43	86.52	3.05
Otero	805,760	67.05	14.74	80.64	4.62
Prowers	1,043,200	90.65	10.43	26.25	63.32
Pueblo	1,557,120	71.80	4.13	88.75	7.12
Arkansas valley	4,898,560	74.8	8.6	71.7	19.7

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

Corn	129,096 acres	Beans	18,841 acres
Alfalfa	126,979 acres	Barley	13,718 acres
Grain sorghum	76,642 acres	Oats	12,601 acres
Wheat	58,055 acres	Cantaloupes	8,678 acres
Sugar beets	40,200 acres	Cucumbers	4,821 acres

During the same year there were reported the following numbers of livestock:

Horses and mules.....	36,286	Sheep	47,971
Beef cattle	75,728 ₁	Swine	25,396
Dairy cows	11,843	Poultry	320,088

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 thruout the year is shown in table II.

TABLE II—RAINFALL

Month	Holly	Lamar	Las Animas	Pueblo	Rocky Ford
January	0.26	0.30	0.19	0.35	0.25
February	0.62	0.61	0.45	0.47	0.33
March	0.46	0.81	0.53	0.86	0.56
April	1.80	1.87	1.54	1.43	1.66
May	1.91	2.05	1.92	1.68	1.77
June	2.06	2.10	1.42	1.47	1.40
July	2.54	2.66	2.17	1.97	2.55
August	2.24	2.00	1.62	1.57	1.36
September	1.21	1.19	1.00	0.62	0.80
October	0.61	0.86	0.69	0.70	0.85
November	0.50	0.41	0.32	0.37	0.41
December	0.46	0.70	0.44	0.46	0.46
Total	14.67	15.56	12.29	11.95	12.40

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.

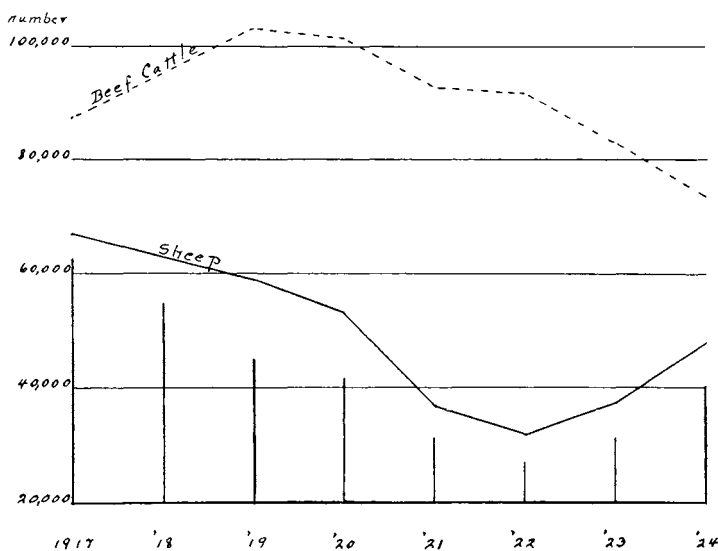


Chart I.—Changes in numbers of beef cattle and sheep, Arkansas Valley.

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:

Year	Cattle on feed in transit
1919.....	13,958
1920.....	15,245
1921.....	15,609
1922.....	6,703
1923.....	13,709
1924.....	9,314

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.

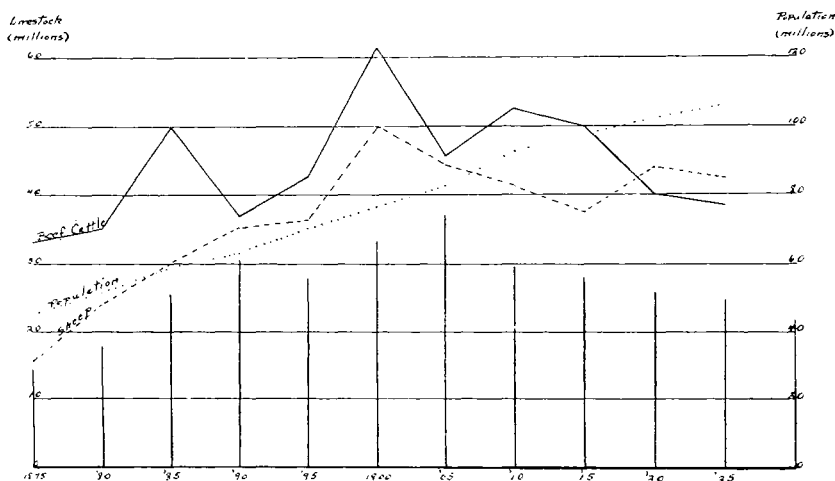


Chart II.—United States trends of beef cattle, sheep and population.

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 per cent 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.

* Colorado, Utah, Idaho, Nevada, Montana, Wyoming, New Mexico, Arizona, California, Oregon and Washington.

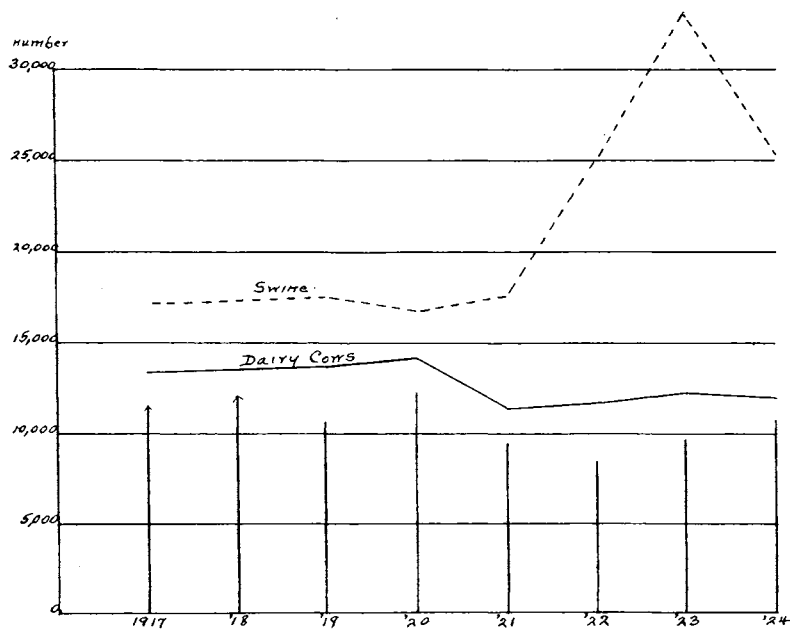


Chart III.—Changes in numbers of dairy cows and swine, Arkansas Valley.

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

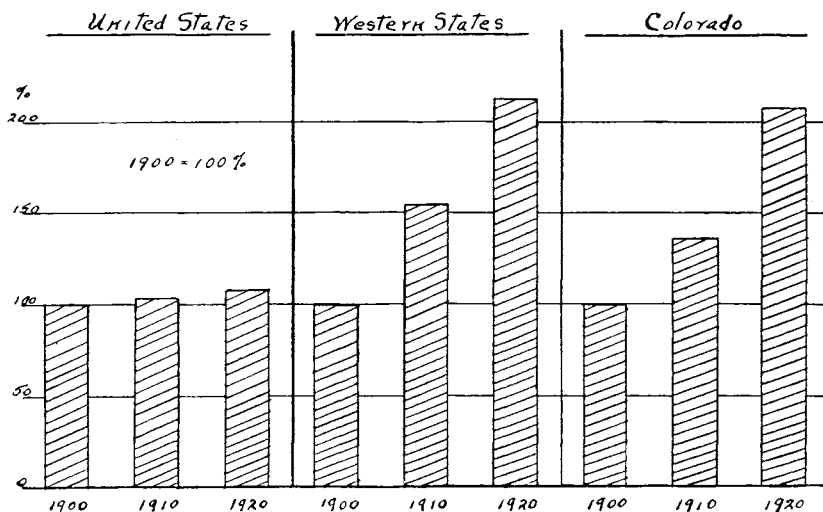


Chart IV.—Dairy production trends, United States, Western States, Colorado.

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:

Whole milk.....	54.75 gallons
Butter	17.25 pounds
Cheese	4.2 pounds
Ice cream	2.5 gallons
Condensed and Evaporated Milk.....	14.05 pounds

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 capital 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:

1919.....	70,749
1920.....	84,704
1921.....	120,351
1922.....	173,822
1923.....	207,310
1924.....	149,925

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.

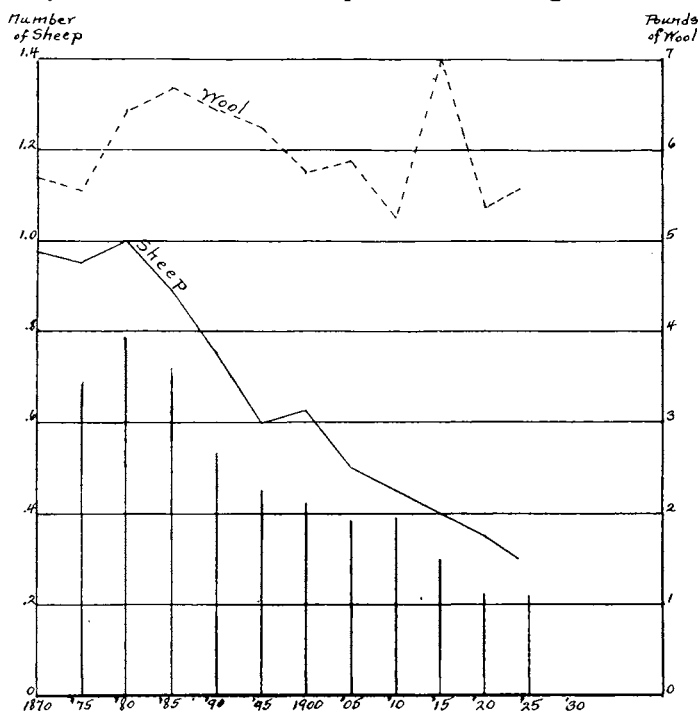


Chart V.—Pounds of wool consumed and number of sheep per capita in the United States.

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.

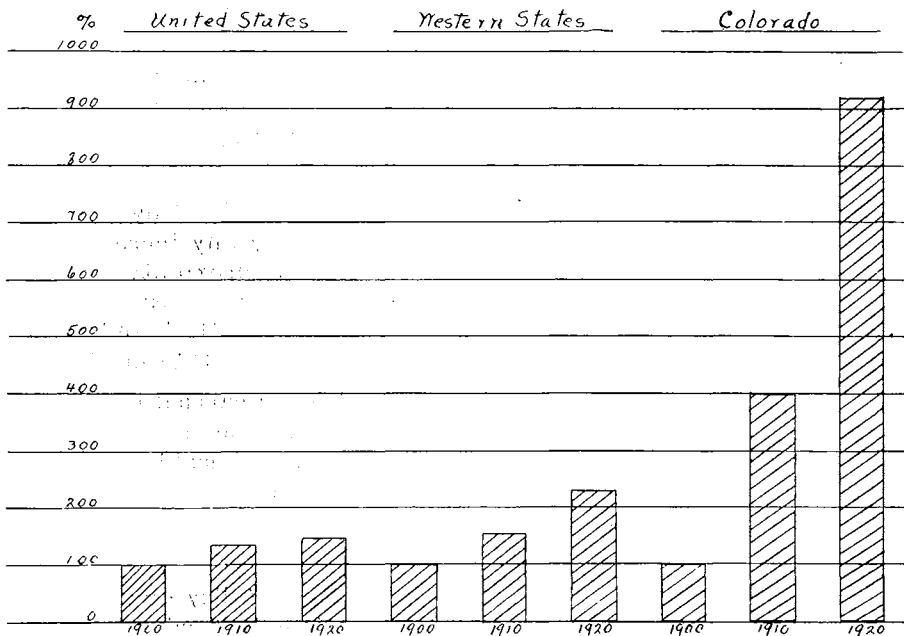


Chart VI.—Swine production trends, United States, Western States, Colorado.

1910-14 = 100

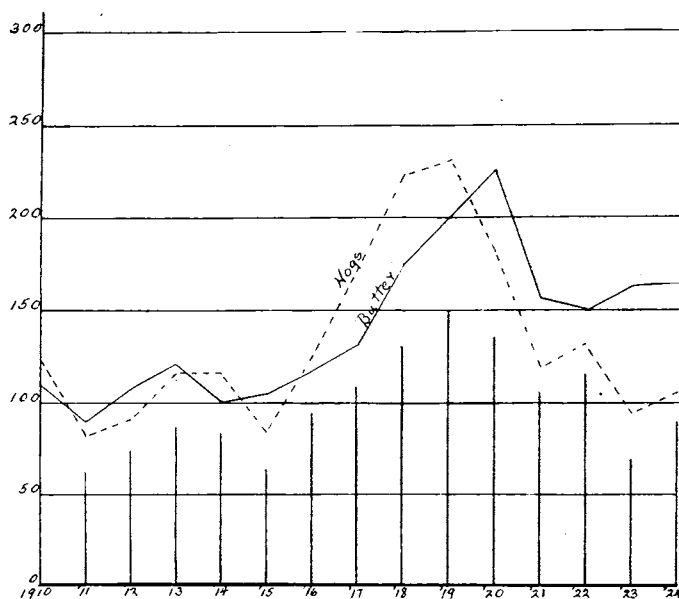


Chart VII.—Price relationship of hogs and butter.

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

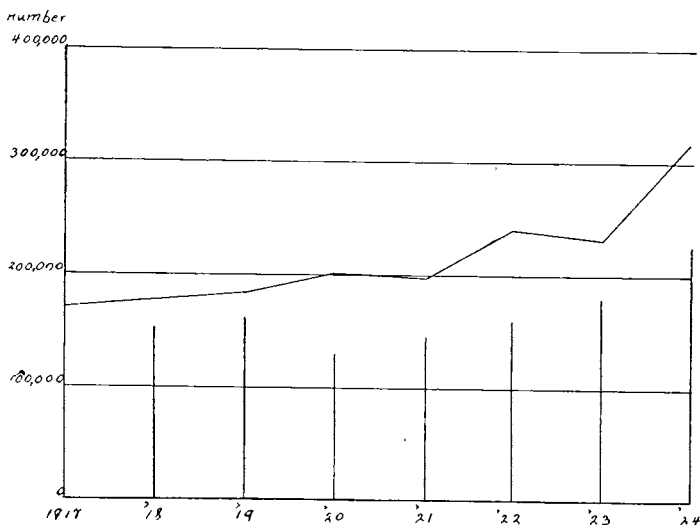


Chart VIII.—Changes in numbers of poultry, Arkansas Valley.

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

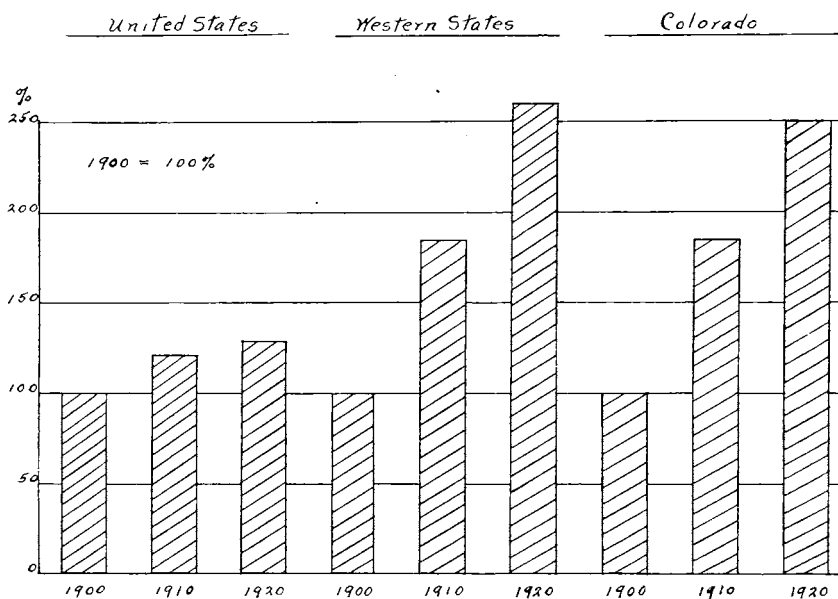


Chart IX.—Trend in egg production, United States, Western States, Colorado.

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

1910-14 = 100

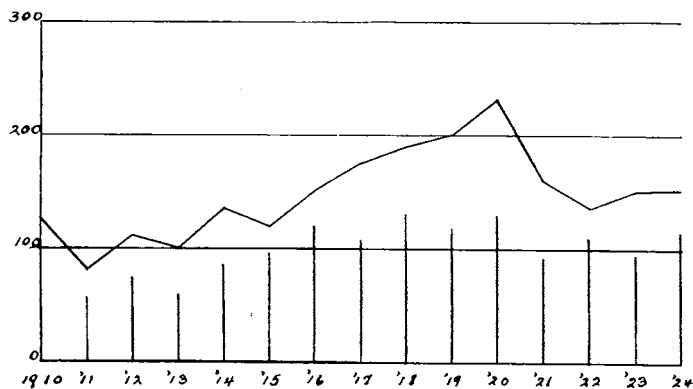


Chart X.—The relative price of eggs.

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.

County	Percent of irrigated land in alfalfa	
	1923	1924
Bent	33	49
Crowley	16	28
Otero	27	27
Prowers	32	40
Pueblo	47	60
Arkansas Valley	32	42

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
(000 omitted)

Year	Colorado	United States
1919	620	8,629
1920	647	9,131
1921	638	9,228
1922	669	9,369
1923	650	9,816
1924	803	10,453

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:

County	Percent of alfalfa produced shipped out in 1924
Bent	42
Crowley	61
Otero	10
Prowers	26
Pueblo	44
Arkansas Valley	27

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:

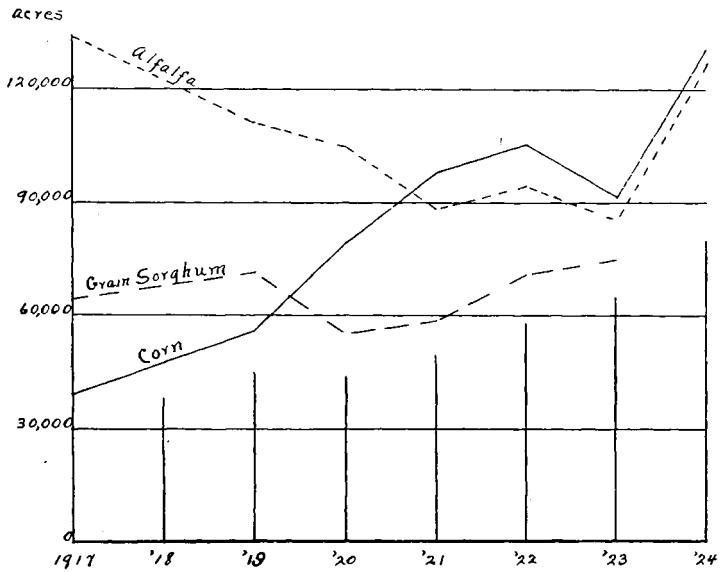


Chart XI.—Alfalfa, grain sorghum and corn acreage trends, Arkansas Valley.

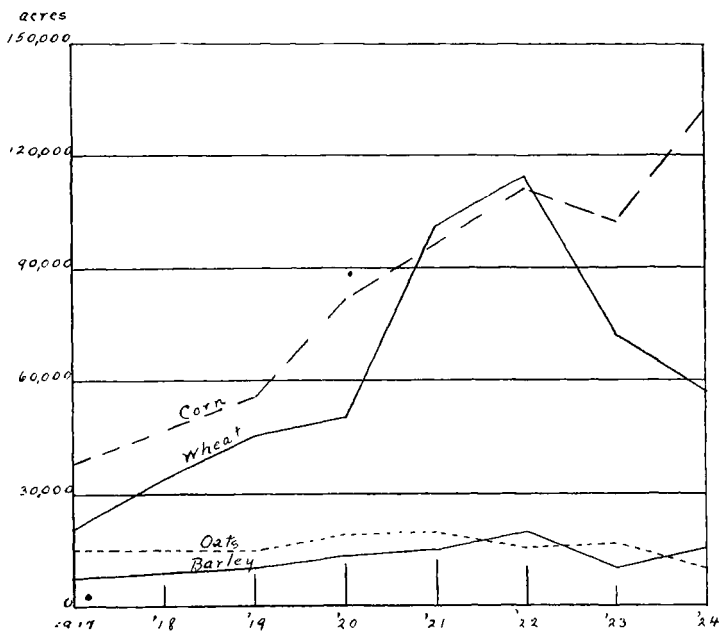


Chart XII.—Corn, wheat, oats, and barley acreage trends, Arkansas Valley.

Orchard grass	15 lbs.
Awnless Brome	15 lbs.
Meadow Fesque	10 lbs.
Timothy	6 lbs.
Yellow Sweet Clover.....	4 lbs.
<hr/>	
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:

Year	Average wheat yield per acre
1919	21.0
1920	22.8
1921	19.7
1922	15.9
1923	15.2
1924	17.0

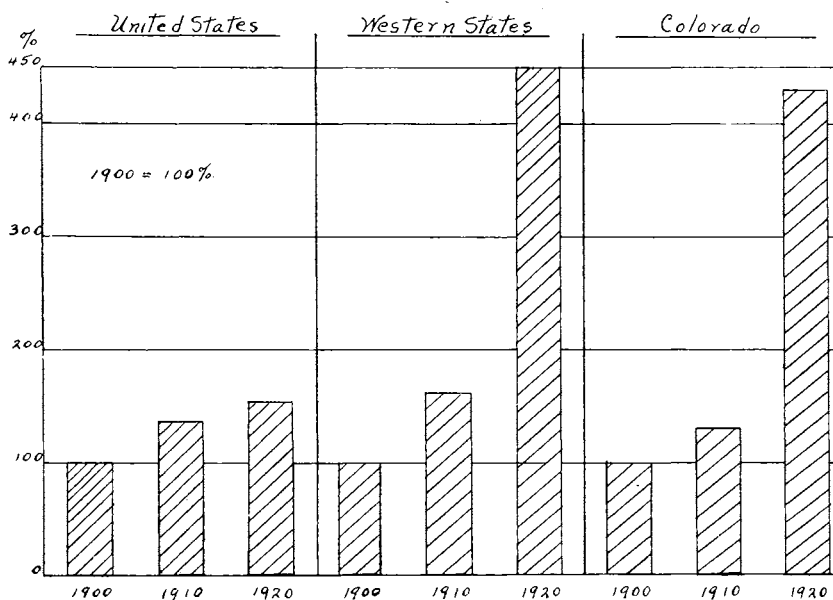


Chart XIII.—Corn production trends.

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

Year	Production (1,000 bushels)		Exports (percent)
	Colorado	United States	
1910		635,000	10.9
1911		621,000	12.8
1912		730,000	19.6
1913		763,000	19.1
1914		891,000	37.3
1915		1,026,000	23.7
1916		636,000	32.0
1917	13,536	637,000	20.8
1918	15,400	921,000	31.2
1919	16,615	970,000	22.7
1920	22,821	833,000	43.9
1921	23,239	814,000	34.3
1922	21,776	867,000	25.6
1923	18,272	786,000	19.9
1924	21,030	873,000	9.0

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 23 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.

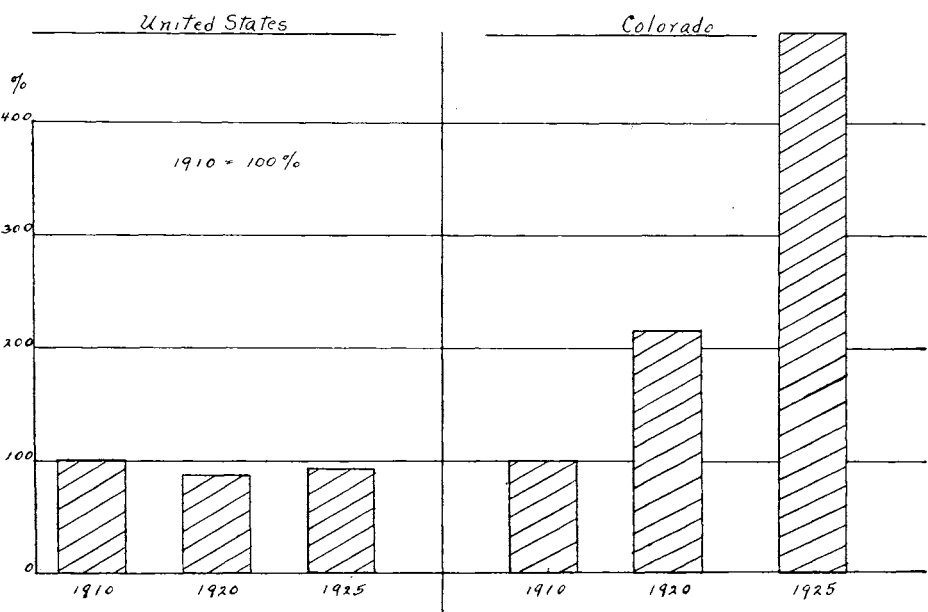


Chart XIV.—Acreage trend of barley.

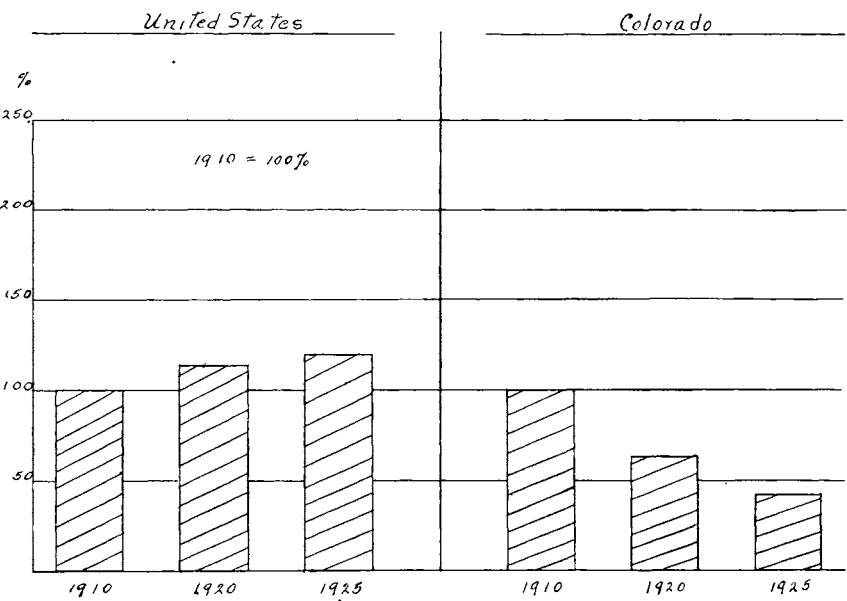


Chart XV.—Acreage trend of oats.

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:

County	Acres Contracted
Bent	3,539
Crowley	7,600
Otero	15,516
Prowers	8,993
Pueblo	4,675
Total	40,323

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:

County	Percent of irrigated area to beets
Bent	8.9
Crowley	17.7
Otero	20.3
Prowers	8.7
Pueblo	10.4
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.

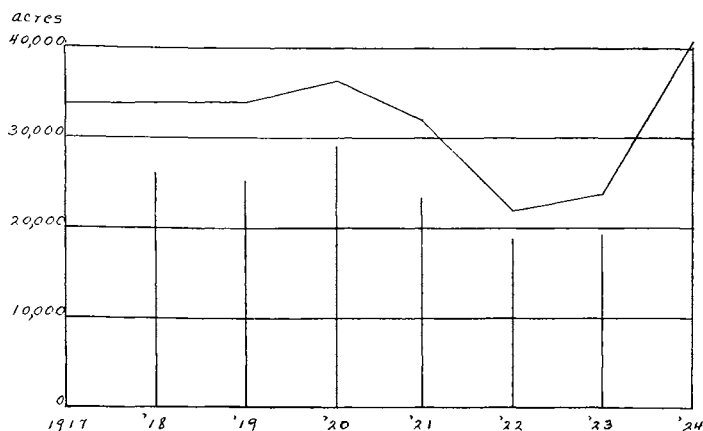


Chart XVI.—Trend of sugar beet acreage, Arkansas Valley.

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

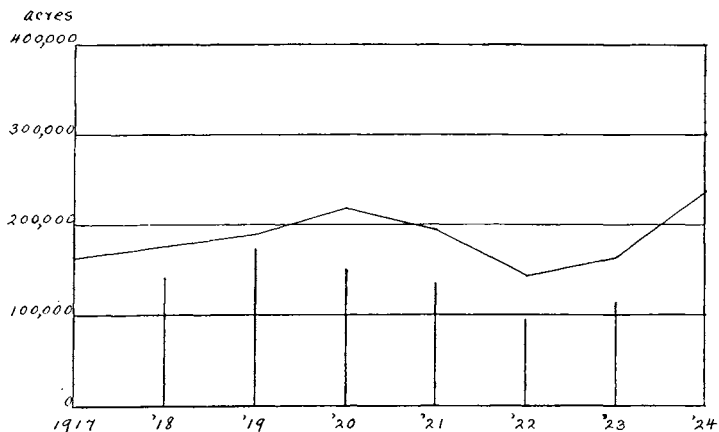


Chart XVII.—Colorado sugar beet acreage trend.

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.

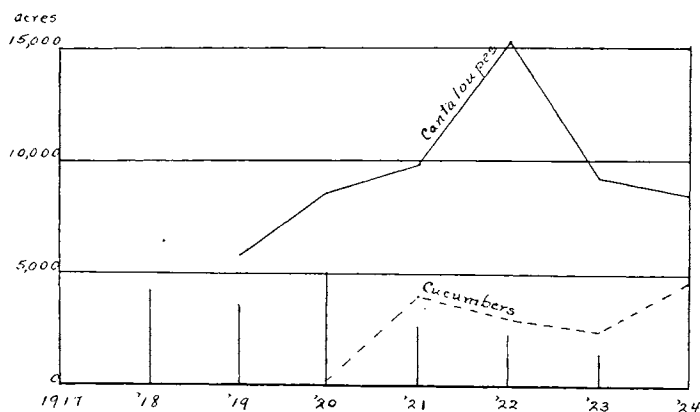


Chart XVIII.—Cantaloupe and cucumber acreage trend, Arkansas Valley.

TABLE V.—CUCUMBER ACREAGE

Year	PICKLES		TABLE
	Colorado	United States	United States
1918.....	2,140	64,430	12,110
1919.....	2,140	50,200	14,610
1920.....	1,880	50,570	15,860
1921.....	3,850	63,220	17,390
1922.....	3,080	52,830	29,370
1923.....	3,250	64,480	27,480
1924.....	4,260	92,900	36,680

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 VI—LATE CANTALOUPE ACREAGE

Year	Colorado	New Mexico	Washington	Michigan	New Jersey
1918.....	4,600	630	300	1,000	4,020
1919.....	6,690	1,300	550	990	4,270
1920.....	8,280	2,520	710	980	4,380
1921.....	8,200	1,000	420	930	4,520
1922.....	14,000	1,100	1,120	1,500	3,360
1923.....	8,620	1,400	770	1,600	3,860
1924.....	7,170	2,100	850	1,700	4,360

TABLE VII—CANTALOUPE UNLOADS

City	1923	1924
Chicago	256	468
Cincinnati	80	159
Cleveland	49	129
Kansas City	49	64
New York	568	302
Philadelphia	166	189
Pittsburg	202	200
St. Louis	98	146

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 VIII—CANTALOUPE SHIPMENTS

State	1920	1921	1922	1923
August				
Colorado	264	1,259	1,276	278
California	3,136	1,298	1,139	1,600
Delaware	501	923	744	789
Indiana	592	127	169	428
Maryland	751	1,095	766	986
New Mexico	863	414	254	278
New Jersey	84	233	42	82
Washington	134	146	242	67
September				
Colorado	2,088	1,849	2,689	1,853
California	165	188	229	602
Nevada		2	80	84
Washington	187	59	114	101
Michigan	122	15	150	78

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-

tuations 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

Year	CANNING			LATE TABLE	
	Colorado	Calif.	Utah	Colorado	Calif.
1918.....	2,440	44,540	5,680	610	9,620
1919.....	2,600	44,910	4,850	650	9,200
1920.....	2,530	28,340	4,220	630	12,150
1921.....	730	6,860	1,250	180	5,350
1922.....	2,200	24,140	3,820	490	6,040
1923.....	2,860	30,760	4,890	970	11,900
1924.....	1,880	26,760	5,480	330	11,470

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

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

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.

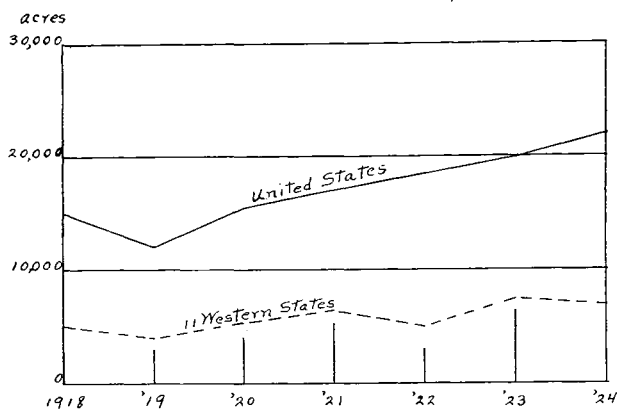


Chart XIX.—Celery acreage trend.

TABLE XI—LATE CELERY ACREAGE

Year	Colorado	Oregon	Michigan	New York
1918.....	200	...	2,940	3,200
1919.....	350	...	2,560	2,860
1920.....	410	...	3,060	3,020
1921.....	400	110	2,930	2,940
1922.....	600	90	4,090	3,530
1923.....	670	150	4,120	4,000
1924.....	800	160	3,940	4,720

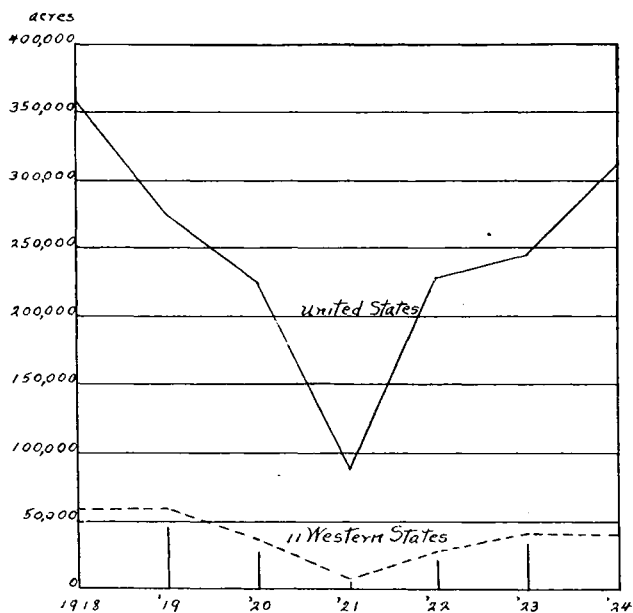


Chart XX.—Canning tomato acreage trend.

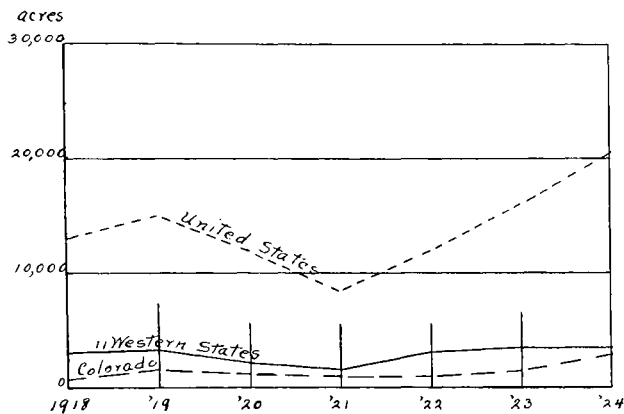


Chart XXI.—Canning bean acreage trend.

TABLE XII—CAULIFLOWER ACREAGE

Year	Colorado	California	Oregon	New York
1920-21.....	...	6,190	460	1,860
1921-22.....	...	6,700	310	2,249
1922-23.....	260	7,260	510	3,500
1923-24.....	400	6,550	1,820	4,350

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

Name and Address.	Committee.
Anderson, J. L., Las Animas	Sheep
Barnhart, C. H., Pueblo	Truck
Birkett, Dixon, Pueblo	Hogs
Bishop, Geo. W., Pueblo, R. 1	Poultry
Blinn, P. K., Rocky Ford	Irrigation
Bristol, Noice D., Rocky Ford	Truck
Bundick, J. N., Rocky Ford	Sugar beets
Cleave, A., Rocky Ford	Grain crops
Cook, Raymond H., Olney Springs	Hogs
Cover, C. J., Rocky Ford	Grain crops
Cressy, S. W., Rocky Ford	Irrigation
Davidson, Fred, Las Animas	Hogs
Davis, W. S., Pueblo	Sheep
DeCarlos, Tony, Pueblo	Truck
Droge, W. F., Rocky Ford	Sugar beets
Dye, Horace, Manzanola	Conference Chairman
Ellis, R. L., Pueblo	Truck
Erion, J. G., Pueblo	Grain crops
Fairbanks, B. W., Fort Collins	Sheep
Fauber, H. B., Rocky Ford	General
Gerecke, E. H., Lamar	Sugar beets
Hartman, Roy, Pueblo, R. 1, Box 196	Sugar beets
Haver, Fred, Boone	Forage crops
Hepler, R. W., Manzanola	Truck
Himes, E. F., Pueblo	Dairying
Holm, J. H., Rocky Ford	Dairying
Huston, Oscar, La Junta	Poultry
James, R. H., Rocky Ford	Vine crops
Jamieson, P. C., Littleton	Poultry
Kibbey, R. C., Swink	Hogs
Kidder, Waldo, Fort Collins	Grain crops
Knapp, H. A., Rocky Ford	Poultry
Kyffin, J. W., Pueblo	Sheep
Leonard, J. H., Holly	Dairying
Mariott, W. D., Omaha, Neb.	Beef cattle
Mraiott, W. S., Pueblo	Beef cattle
Mayhew, J. H., La Junta	Forage crops
Merritt, Eugene, Washington, D. C.	General
McKee, Wm., Penrose	Vine crops
McCann, Roud, Fort Collins	Conference Secretary
Miller, Roy E., Rocky Ford	Irrigation
Moorhouse, L. A., Fort Collins	Beef cattle

Name and Address.	Committee.
Morrison, Will, Rocky Ford	Vine crops
Monahan, Kasper, Pueblo	Truck crops
Morton, Geo. E., Fort Collins	Dairying
Moyer, J. B., Wiley	Vine crops
Neale, W. D., Rocky Ford	Vine crops
Olin, W. H., Denver	Sheep
Pedersen, C. A., Lamar	Sheep
Penley, G. L., Lamar	Hogs
Purvis, James, Las Animas	Forage crops
Reed, R. M., Lamar	Dairying
Rickman, Wm., Rocky Ford	Vine crops
Robinson, O. L., Las Animas	Sheep
Rose, J. E., Lamar	Poultry
Royal, Frank H., Manzanola	Grain crops
Sanborn, N. E., Denver	Vine crops
Sandsten, E. P., Fort Collins	Truck crops
Sanford, W. I., Pueblo, R. 1	Vine crops
Sawhill, W. H., Pueblo	Truck crops
Shelton, B. A., La Junta	Grain crops
Sherman, H. C., Rocky Ford	Grain crops
Sickenberger, W. L., Manzanola,	Forage crops
Sinding, K. J., Rocky Ford	Dairying
Skuderna, A. W., Rocky Ford	Sugar beets
Smith, E. D., Fort Collins	Forage crops
Smithers, P. L., Canon City	Hogs
Simpson, T. F., Manzanola	Hogs
Stauffer, B. F., Rocky Ford	Beef cattle
Sult, E. F., Rocky Ford	Grain crops
Summers, Thos. H., Fort Collins	General
Wallace, Glenn F., St. Louis, Mo.	Trucks
Ward, Justice C., Rocky Ford	Irrigation
Washburn, J. G., La Junta	Beef cattle
Wasson, J. H., Rocky Ford	Vine crops
White, A. O., Pueblo	Hogs
White, Chas. E., Rocky Ford	Irrigation
Williams, G. W., La Junta	Beef cattle

A list of the men who were invited but could not attend the conference.

Name and Address.	Committee.
Abel, Fred, Ordway	Sugar beets
Abbott, H. C., Las Animas	Poultry
Ascherman, Henry, Rocky Ford	Beef cattle
Bauer, Carl, Fowler	Sheep
Bauman, J. B., Lamar	Beef cattle
Beach, C. W., Pueblo	Irrigation
Blotz, A., Rocky Ford	Grain crops
Caspar, Frank, Swink	Sugar beets
Center, G. H., Lamar	Poultry
Clevenger, J. E., Rocky Ford	Poultry
Close, Jas., Ordway	Sugar beets
Cooper, Roy, Lamar	Forage crops
Cowdon, John, Olney Springs	Vine crops
Crow, Frank, Rocky Ford	Grain crops
Crow, Otis, Rocky Ford	Hogs
Darrow, Earl, Pueblo	Dairying
Davidson, John C., Las Animas	Beef cattle
Decker, H. F., Bristol	Hogs
Fasnacht, F. C., Wiley	Grain
Fitzsimmons, French, Las Animas	Dairying
Ford, L. E., Denver, Burlington Ry.	Beef cattle
French, H. E., Pueblo	Beef cattle
Gahagan, F. D., Pueblo	Beef cattle
Gray, P. A., Pueblo	Truck crops
Haines, Irwin, Rocky Ford	Sheep
Heath, T. H., Lamar	Sheep
House, E. B., Fort Collins	Irrigation
Hunter, Louis, Rocky Ford	Beef cattle
Ingrum, Bart, Manzanola	Sheep
Kezer, Alvin, Fort Collins	Grain crops
Lane, Chas. W., Topeka, Kan.	Vine crops
Larrick, J. H., Lamar	Sugar beets
Leasure, Henry, Lamar	Vine crops
Malone, Tom, Boone	Beef cattle
Marshall, Claude, La Junta	Beef cattle
Mayhew, J. B., Lamar	Irrigation
McClusky, H. B., La Junta	Dairying
McGrath, Neil, Lamar	Grain crops
McGrath, Ray, Lamar	Sheep
McMillan, Donald, Lamar	Beef cattle
Melton, John L., Las Animas	Sugar beets

Name and Address.	Committee.
Nevius, Harry, Lamar -----	Forage crops
Nowels, A. R., Lamar -----	Beef cattle
Nuckolls, Harvey, Pueblo -----	Hogs
Parshall, R. L., Fort Collins -----	Irrigation
Partridge, W. S., Holly -----	Forage crops
Pitman, J. B., Las Animas -----	Beef cattle
Powell, Ben F., Las Animas -----	Irrigation
Putnam, W. W., Denver -----	Grain crops
Ratzlaff, H. B., Las Animas -----	Hogs
Ryan, J. B., Rocky Ford -----	Vine crops
Ryus, W. F., Trinidad -----	Sheep
Scott, P. G., Las Animas -----	Sheep
Sollee, Wesley, Pueblo -----	Poultry
Thomas, D. W., Denver -----	Dairying
Tolton, Arthur, Las Animas -----	Sheep
Wagner, E. J., Lamar -----	Beef cattle
Ware, Jack, Boone -----	Beef cattle
Weihsing, Henry, Rocky Ford -----	Dairying
Williams, R. R., Pueblo -----	Truck crops



CO-OPERATIVE EXTENSION WORK IN
AGRICULTURE AND HOME ECONOMICS, COLORADO AGRICULTURAL COLLEGE
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DISTRIBUTED IN FURTHERANCE OF ACTS OF CONGRESS
OF MAY 8 AND JUNE 30, 1914