

ANNUAL NARRATIVE REPORT

1921

By

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COUNTY AGRICULTURAL AGENT

COCONINO COUNTY

ARIZONA.

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I.

STATUS OF FARM BUREAU ORGANIZATION.

I.

STATUS OF FARM BUREAU ORGANIZATION.

1. The Farm Bureau was re-organized in July of this year on a Ten Dollar (\$10.00) membership basis. The County is divided into four divisions, and a delegate from each division comprises the Executive Committee. The County is divided as follows:

Williams and Red Lake,
Garland Prairie, Spring Valley and
Flagstaff, the latter includes Doney and Black Bill
Parks.

There are 115 members, a large per cent.
of which gave their personal note. These notes
are now being paid. Each day new members are sign-
ing up.

The membership drive was conducted by Mr.
Dovaine, of Phoenix. He canvassed the County and
secured about seventy-five members.
Shortly after the drive a meeting was called for the
purpose of electing officers and outlining work which
was to be done:

L. E. Johnson, of Flagstaff, was elected
President,
George McDougal, of Williams, Vice-Presi-
dent,
L. W. Cureton, of Williams, Secretary and
Treasurer.

An Executive Committee was also elected. This Com-
mittee meets every month in the County Agent's Office.

It is the policy of the organization for next
year to foster a few well defined field and crop dem-
onstrations. This has been started before, but
has never been successful - because they lacked proper
leadership.

Community locals have been holding regular
meetings, which the County Agent attends whenever pos-
sible.

2. Besides the regular activities of a Farm
Bureau the organization is fostering a Marketing Asso-
ciation - known as the Coconino Farm Bureau Marketing
Association. It is made up of all the Farm Bureau

Members, and is incorporated without Capital Stock, to buy and market farm produce and supplies. A Business Manager is employed to handle all business, and act as Secretary.

Since July the organization has saved its members \$53,000.00, approximately. It has handled

60,000	Sacks,
150 ⁴ / ₄	Sack Twine,
2,000 ⁴ / ₄	Binder Twine,
500 ⁴ / ₄	Copper Sulphate,

and other small articles.

They are storing and selling at present about 25 cars of Potatoes; and have helped a lot in keeping prices on Potatoes on a high level locally.

Plans are on foot now to amend the Articles of Incorporation, so as to include a Capital Stock. This will be used in building a central warehouse for handling and grading Potatoes. The plans call for this warehouse to be operating next Fall.

Lack of co-operation between the farmers, themselves, has been the largest obstacle in the road of progress. A few seem to lack confidence, and try to spread pessimistic reports. This has had some effect, but high hopes for success are fostered by the majority.

II.

PROGRAMS OF WORK.

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1. Coconino County represents a very interesting and extensive field for definite programs of work. Its crops are only a few in number, but the existing conditions seem to complicate our plans, until it is hard to find out just where to stop.

This is the second largest County in the United States, and has over 11,000,000 acres. Only about 25,000 acres are at present under cultivation. The Communities are scattered, and climatic conditions vary to quite an extent in every community. Elevations vary from 8500 feet to 4500 feet. Rainfall varies from 17 inches to 23 inches. These things taken together require varied and more or less indefinite programs.

Consequently, until the Farm Bureaus are functioning properly in every community it will be necessary to have a few definite projects, and a number of indefinite outlines of work to fit the varying conditions.

Farming in Northern Arizona is still in its infancy. A great majority of the farmers are homesteaders, who still have one or two years before they get title to their land. We have people from every walk in life settling here, which means a very unsettled condition for a few years to come. These people are very eager to learn, and they depend a great deal on the County Agent.

With the re-organization of the Farm Bureau a more definite program can be followed. The main pieces of work which are required are as follows:

- Increased production on available lands,
- More definite cropping systems,
- Better cultural methods and improved grading of produce for market.

With the above program in mind the Agent has been working up a definite set of projects.

III.

CROPS.

CROPS.

1.

POTATOES, the leading crop in the County, have a very good chance to be called "Mortgage Lifters" this year. The yield and quality were very good, the average yield was about tripled, and prices to date have been good.

- (a) Selecting and planting of good seed was more evident this year than ever before. The farmers who followed instructions given by the Agent in this work have increased their yield in nearly every case, and also quality.

An attempt was made to bring in a car of certified Peachblow seed from Colorado, this did not materialize because of the excess already held in the County from last year.

For next year's crop, - farmers are being advised to carefully select seed, both in field and bins - also to plant larger, and cut seed especially in bin selected stock.

- (b) Seed treating to prevent Rhizoctonia and scab was practiced by a good many, however not as much as expected, because of lack of money. The results where seed was not treated were such that the farmers who were skeptical about the benefits have stated that another year they will treat. Those that treated are convinced, almost to a man, that it pays well.

Plans are under way now for several organized demonstrations for both treating and results of treatment.

Four small demonstrations on preparing mixtures were held on different farms in May. Written instructions were furnished for twenty-eight farmers. The material used in treating seed was purchased through this office prior to the time of the Farm Bureau.

Fields not treated, as high as 30% disease was noticeable, and those treated showed a variation of from 1% to 10%; variation due to diseased soil.

- (c) Early Blight appeared late in the summer in most of the districts. Material for spraying

was ordered, and the Agent, together with State Field Entomologist, kept a constant look out for indications of a rapid spread. Out of fifteen farmers advised by Agent to spray, ten did - with the result of saving most of the crops.

In districts where rains were lighter and more scattered spraying was not advised. One farmer sprayed too late, and lost 40% of his crop.

Plans for next year include at least two sprayings: One at the time the plants are eight inches high - and before the disease shows. Several new machines are ordered. It appears that in years where the rainfall is normal the disease does not do much damage, but where there is excessive rain the Blight can hardly be checked when once started. The loss from the disease can be totally eliminated by spraying at the proper time.

The Colorado potato beetle and blister beetles did considerable damage in the Williams and Spring Valley Districts. Several fields were almost totally destroyed before spraying material could be secured. These pests seem to come at uneven intervals, therefore the farmers were not ready to spray.

- (d) Fall and Summer plowing for potatoes is being used by all potato growers in the County. This puts the ground in good shape to catch all winter moisture. Farmers are being advised to use the harrow extensively in the Spring, this keeps the weeds checked and firms the soil and preserves moisture.

That cultivation is being advised up to the time when potatoes are well set, then a ditcher is used to put them in rows for protection from early frost.

- (e) Harvesting by modern potato machinery is becoming habitual. Most of the farmers have large diggers. For immediate shipment it is recommended that potatoes be sorted by machine in the field. For later shipment this is done in the cellar.

- (f) For grading market potatoes a special effort has been put forth to induce the farmers to grade all round varieties over a two inch screen, and the long varieties over an inch and seven eighths. The local merchants were unable to secure the proper size screens in time to accommodate all those who wanted them, however a supply is here now, and most of the stock now in storage will be graded according to the standards set by the Farm Bureau. Merchants who are buying local potatoes are working with the organization along this line.

2. WHEAT. Although a smaller acreage was planted this year, and conditions were not good, next to potatoes this is the main cash crop. Hard spring varieties are planted only, such as Marquis, Defiance and Red Russian - the latter only on small basis.

Winter varieties were tried, but were not satisfactory. The summer rains came about the time it should be harvested.

- (a) It is commonly conceded that Marquis and Defiance are best adapted for conditions in this County. There is a few days difference in time of maturing.

- (b) Seed treatment for Smut was practiced quite extensively, only rarely is any smut seen in any of the fields. The Formaldehyde treatment is used, and good results both in disease control and stand have been obtained.

Wheat Rust was responsible for about 20% loss this year. Some localities were hurt worse than others. The disease hit late and caused lots of shriveled grain. The Rust is worse during wet seasons, and effects soft wheat more than hard varieties.

- (c) The Flagstaff Milling Company buys over 90% of the Wheat grown in the County. This gives a good market.

- (d) The mill also has a cleaning machine which is used to clean seed, and is very satisfactory.

3. OATS. This year over 800,000 pounds of seed oats were planted for grain and hay. It was the cheapest seed to be had. This is the largest acreage ever planted in the County.

(a) Germination tests were carried on for the farmers, who were planting their own seed.

(b) Most of these Oats were shipped from Colorado, and were Swedish Select White Oats, some Red Oats were planted.

For the first time an outside market was needed this Fall. Heretofore there were not enough Oats grown to supply the local demand.

4. BARLEY. This crop is only grown on a small scale, but produces well. Where a farmer has hogs he was advised to grow it for feed.

(a) All Barley planted was treated for Smut.

5. RYE. This crop is being used for early spring pasture and green manure. Over 300 acres were plowed under this summer preparatory to planting potatoes. The farmers are advised to plant in Fall or early Spring, and as soon as the grain is high enough in the summer it is plowed under. This is discussed farther under Soil Improvement.

6. CORN. Demonstrations have shown that Corn can be grown and matured sufficient for silage in nearly any place in the County.

(a) Early varieties are being planted, and several have shown advantages for conditions here.

(b) Seed testing and selection information was given to ten farmers - who were interested.

(c) Corn is one of the main crops grown around Fredonia, north of the Grand Canyon. The farmers there all have a few cattle, and Corn with Alfalfa is fed.

7. BEANS, are grown mostly by the Indians, however in a few localities around Flagstaff they are grown. The harvesting and threshing is all

done by hand, consequently the acreage is small and scattered.

- (a) The Colorado Pinto is most extensively planted, with other mixed varieties grown for experimental purposes.

8. SWEET CLOVER AND ALFALFA. Several farmers were induced to try a few acres of Sweet Clover. Where the seed was drilled in it failed. Where it was sown broadcast a fair stand was secured.

Two sheep growers planted some in their pastures, and reported fair success.

Two farmers succeeded in securing a stand of Alfalfa on about fifteen acres of spring prepared land. Ordinarily they are advised to plant in the summer after the rains start.

9. ORCHARDS. The late frost this summer killed all the fruit. Information on pruning was given to three farmers on Oak Creek. Also information on varieties to plant.

IV.

SOIL IMPROVEMENT.

SOIL IMPROVEMENTS.

1.

GREEN MANURE. Farmers were advised to summer fallow and plow under some green vegetation for next year's potato crop. This was practiced in a few instances last year, with splendid results. On one farm where the yield for the last three years was under Thirty sacks of Potatoes to the acre, a crop of Rye was plowed under in the summer and re-plowed last spring - the result was 100 sacks per acre this fall. There were other instances similar, and the result is that during the late summer months over 300 acres of potato land was prepared. Some Oats were plowed under, also weeds.

The nature of the soil in most parts of the County is such that three years cropping without manure, of some kind, is all the soil can stand.

It is safe to say that 90% of the farmers realize this now, and are farming accordingly.

It is quite easy for most of the farmers to use first and second year sod, because only a small portion of their places are cultivated as yet.

(a)

Sweet Clover has been tried in several instances, and it was almost impossible to get a stand. However, attempts are being made to keep up this work, and eventually there will be considerably acreage planted each year.

2.

Two methods are being advised at present, and until a legume of some kind is found to grow well. One is to summer fallow part of the ground each year and grow potatoes followed by grain. The other is potatoes followed by grain two years, the end of the third year some green growth or lots of stubble is plowed early in the fall and plowed deep.

V.

RODENT CONTROL.

RODENT CONTROL.

1. This work was carried on in co-operation with the U. S. Biological Survey under the direction of D. A. Gilchrist and his assistants. Poison grain was mixed and distributed from this office.
2. A special appropriation of \$200.00 was secured from the Board of Supervisors. This enabled us to distribute 20 quarts of poison grain free to each farmer and stockman.
3. Two hundred and eight farmers received poison grain, and about 1240 acres of land was treated. Fifty to Seventy-five per cent of the Rodents were killed.

Prairie dogs, gophers, and rock squirrels are the rodents that cause the greatest damage each year. The poison grain was followed with carbon bisulphide gas and traps.

The Agent personally worked on six (6) farms poisoning and trapping gophers to demonstrate that the land could be cleared. The farmers were advised to work some every week on the gophers; and where this was done the fields were cleaned up.

The open winter last year made the prairie dogs hard to poison this spring. The dogs were seen outside nearly every day during the winter, consequently when we started our campaign they were not hungry - and would not eat the poison so readily.

This is our largest and most effective project. More farmers are reached, and the results are more convincing than anything else attempted. Plans for next year are already under way, and it is hoped that double the results can be secured.

VI.

LIVE STOCK.

LIVE STOCK.

Live stock industry ranks second to the lumbering in Coconino County. It is an old and established business under control of large interests. Each year closer relations are established between stockmen and the extension service.

1. Predatory Animal Control has been the largest individual piece of work done through this office. H. E. Musgrave of the U. S. Biological Survey has direct charge of the work, and uses the County Agent to help in distributing poison to co-operators.
2. Three silos were constructed this year for feeding a few cows and steers through the winter. Nearly all the farmers have their own milk cows, and are slowly realizing the fact that live stock is necessary in permanent farming. The water question is the limiting factor that has made live stock on the farm almost impracticable. The majority of the farmers have to haul water several miles.

Balanced rations were worked out for two farmers, one for cattle and one for hogs.

3. Hogs are becoming more numerous each year. This is being stimulated by the increase in corn production. Here again they are confronted by the water question.

A peculiar disease broke out on one farm where there were over one hundred pigs. About 95 were killed. The loss was entirely among the younger stock. It was a throat disease. The pens and corrals have been thoroughly cleaned and fumigated, preparatory to re-stocking. The case was reported to the State Veterinarian and the University - to date they are not entirely agreed on diagnosis, - as far as I can learn.

The County Agent has assisted three farmers to secure pure bred pigs.

4 .

Poultry culling demonstrations were conducted on three farms, by R. W. Thompson. This work was comparatively new, and considerable interest was shown. Two of the demonstrations were held in Williams and Red Lake, the other at Flagstaff.

Information was given to three farmers concerning the construction of chicken houses. The Agent co-operated with Mr. Wells, of Williams, in selling white leghorn cocks. Mr. Wells has an up to date chicken ranch, and is making money.

Improved poultry on the farm is one of the projects for the coming year.

VII.**MARKETING.**

MARKETING.

With the advent of an incorporated Marketing Association the farmers have a splendid opportunity to avail themselves of many opportunities in both buying and selling.

1.

All spraying material was purchased through the organization, at a saving of several cents a pound. Whenever possible the Business Manager would give the business to the local dealers, in this way it has been possible to maintain a friendly attitude between local business houses and the Farm Bureau.

(a) Sixty Thousand (60,000) sacks were purchased, these were all new sacks, and bought at eight cents. The original price was 14 cents.

(b) Fifteen hundred pounds (1500#) of Binder Trino was purchased at a saving of Four cents on the pound.

All materials were purchased locally.

(c) The Organization has been able, by causing competition, to keep the price of Potatoes up. At the same time they handled twenty-five cars at prices a little higher than farmers could get any place else.

The increased yield necessitated the organization to locate storage in order to save a portion of the crop. The storage was located in Phoenix, and arrangements were made with the Banks to prepay the freight charges, so that any member could ship if he was forced to.

It is estimated that the Organization has saved \$53,000.00 for the farmers in Coconino County.

VIII.

FARM ECONOMICS.

FARM ECONOMICS.

- (1) Three farm account books were given out, one of these is being kept - according to instructions from this office.

Two farmers were assisted in drawing up leases.

- (2) Two Hundred and Eight (208) farm laborers were furnished through the County Agent.

Sixteen (16) farmers were assisted in securing farm machinery, such as sprayers, threshing machinery and potato machinery.

IX.

MISCELLANEOUS.

MISCELLANEOUS.

1. The local farm bureau at Doney Park organized a Water Users' Association, to develop water for domestic use. They filed on water in Schultz Pass, developed it, and piped it to a place on the Grand Canyon road - half-way between Doney and Black Bill Parks. The farmers did all the work. They signed notes with the Bank for Two thousand Dollars (\$2,000.00) and purchased Five (5) miles of pipe.

This project puts the water at a point where it can be hauled cheaply. Heretofore the water was hauled from a temporary community well, and from town - a distance varying from five to ten miles.

In widely scattered settlements, such as are found in this County, a County Agent is called on for a large amount of help by individuals, which can hardly be classified any place in this report. He is called upon to settle arguments between neighbors, and between farmers and merchants. He is called on to write letters, fill out crop reports, and send for bulletins and catalogs.

X.

CHARACTER AND SCOPE OF OFFICE AND FIELD SERVICE.

CHARACTER AND SCOPE OF OFFICE AND FIELD SERVICE.

County Agent work in Coconino County carries with it a varied scope peculiar to a large thinly settled County.

There is an estimate of Two hundred and Fifty farmers scattered over the large area South of the Grand Canyon.

There is estimated to be between Fifty and One hundred farmers North of the Canyon - near the Utah Line. This area is known as the Strip, and is almost inaccessible by Auto, and requires a trip through three states by rail. Consequently, the whole County cannot be covered very often.

Most of the work done by the County Agent is concentrated in seven communities - located around Flagstaff and Williams; this includes the Grand Canyon and Oak Creek Districts.

For nine months during the year it requires around One thousand miles of Auto travel a month to cover this district. Three months in the year the roads are generally impassible because of snow and mud.

The field work in the past has been mostly "trouble shooting", in answer to calls, and general farm visits, relative to existing conditions. There is a lack of definite co-operation and project work, due to several reasons, the main one being the lack of permanent farmers. The original settlers being of the type that are trying something new, and are not satisfied. This is gradually being overcome, but it will require a few years yet. The newness of the farming game in this County will keep it in the experimental stage for a few years to come. By this I mean the elementary experimental stage. Farming is not a success here, only in a very few instances. The possibilities are here, but it will require a stable class of farmers to realize them.

Organization, I believe, is the keynote to more satisfactory field work, with more definite ends in view.

The office services here are very limited, under present conditions. Only four or five of the farmers have telephones. They all have to come to town for their mail. Consequently office visits by the farmers are necessary in order for them to get information outside of the field service.

This is a good thing in only one particular: The office affords a place for the farmers to come for bulletins, farm papers and consultations.

During the winter months office service is the only way there is to carry on the work, severe weather making it hard for the farmers to get to town - except a few times during the winter.