

ANNUAL NARRATIVE REPORT

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to

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COUNTY AGRICULTURAL AGENT

COCONINO COUNTY

ARIZONA

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I.

ORGANIZATION

During the spring of this year an annual meeting of the Coconino County Farm Bureau was held, the old officers, Mr. Alfred Skeels of Williams and Mr. J. W. Etter, of Flagstaff, being re-elected President and Vice-president respectively.

One notable accomplishment of the Coconino County Farm Bureau completed this year was that of affecting a flat twenty percent reduction in the assessed valuation of farm lands. This afforded a great deal of farmers considerable relief, and we shall endeavor to make this reduction permanent. The Farm Bureau President followed up this work, going to Nogales to the State Tax Conference following the action of the local board of Equalization.

The Farm Bureau also made possible an exhibit of agricultural products of the county at the annual Flagstaff Industrial Exposition, which excited much favorable comment.

## II.

### PROJECT ACTIVITIES AND RESULTS

## SOIL IMPROVEMENT.

By virtue of two result demonstration which have been put on in Coconino County this season, there has been a greatly increased interest in soil improvement practices. Two demonstration plots were planted, one to rye and the other to vetch, both to be followed by potatoes. The work of Leader Burrus is of particular interest, in that he has been using this method of soil improvement over a period of years. This year, when the potato crop in Doney Park was almost a complete failure, Burrus' crop did fairly well, and the results achieved may be credited directly to the influence of plowing under rye as a green manure crop. Other farmers in the vicinity are realizing the value of this practice, and are also planting rye for green manure, as well as plowing under the summer growth of weeds on land which has not been planted.

Vetch has hardly proven itself adaptable to this country, but we have had no fair trial due to the lack of moisture. Last year indications were that vetch would make a good growth in anything like a normal year, the potatoes grown upon the vetch ground this year yielded around three times as much as did those grown on land from which a crop of oat hay was cut last year. The growth of vetch was not so good this year. This project will be continued next year.

Our figures show that a total of seventeen farmers in this county are now using soil improvement practices.

## SEED POTATO SELECTION.

Especial emphasis has been put upon work on this project, and it is believed that almost every farmers in the county has been reached, either through demonstration or farm visit. Twelve method and three result aemonstrations have been held.

Four farmers brought in certified seed for planting, and Mr. Wm. Rittenhouse of Williams, was instrumental in bringing in three lots of seed for planting. The varieties brought in were White Pearl, Irish Cobbler, Netted Gem and Bliss Triumph. Results indicate that the pearl and cobbler are especially well suited to the higher elevations and heavier soils, whereas, the triumph is particularly valuable as an early potato on the lighter and more cindery lands. The results obtained with netted gem potatoes would hardly justify much planting of this variety until more result demonstration work has been done.

The Peachblow, which is grown by most of the potato growers here, still continues to be the standard variety, and a study of the different varieties compared with Peachblow indicates that it is to be recommended as a late potato on the light lands, particularly in the farming sections east of Flagstaff, comprising those areas known as Black Bill and Doney Parks. The Agent believes that the farmers here should stick to Peachblow and some variety which may prove better than the Peachblow on the heavier lands. Our work will be continued during the coming year in an endeavor to throw more light upon the subject of which is the best potato for the heavier lands. The Peachblow has proven itself over a series of years.

Due to the drought last year, many of the potatoes did not grow large enough for table use, and an effort was made to sell the surplus as seed. No seed was sold out of the county which had not been treated for several years for scab and rhizoctonia. About \$2,500 worth of seed spuds were disposed of in this way. We are up against a similar proposition this year, and the Agent is now looking into the demand from territories which may be in the market for seed.

## INSECT AND DISEASE CONTROL

Considerable losses have been experienced by the fruit growers of this county on account of codling moth, both on Oak Creek and in the Indian orchard at Tuba City. The Agent got in touch with Mr. Harvey K. Meyer, until a short time ago in charge of the Western Navajo Indian Agency, and arranged to have the orchard sprayed under the directions of this office. Last year (1925), hardly an apple could be found that was not wormy. The orchardist sprayed as per directions, and the resultant crop this year was larger and contained less worms than has any crop grown since Mr. Meyer first became connected with the Agency. Superintendent Walker, who took Mr. Meyer's place, was highly satisfied with the results obtained, and has asked the Agent to continue the work during the coming year.

Arrangements have been made for the Agent to personally superintend spraying in the vicinity of Sedona. Practically all of the orchards in that section were sprayed last year, but good control was not secured, probably due to too late spraying. One trouble which we have is that most of the orchards contain a good many varieties of apples and pears, and the bloom from each tree must be treated separately and at different times if the best results are to be secured.

On a visit to Fredonia, an isolated settlement next to the Utah line about three hundred and fifty miles from Flagstaff, the Agent found that the orchards there were producing not more than ten percent of the fruit that they were capable of producing. Practically every farmer was visited and next year should see some control work done there.

Potato disease and insects were not much of a problem in this county this year. Aphis gave considerable trouble, and many farmers received instructions relative to control. Tomato wilt also gave some trouble on Oak Creek, and recommendations were made relative to its control. Due to the dry weather and rather slow growth of truck crops, the losses from aphis were quite high. Grasshoppers gave a great deal of trouble in Doney Park and Black Bill Park, and several farmers were shown how to mix and apply poisoned bran. Not very satisfactory control was had, however, inasmuch as the neighboring range country was heavily stocked with hoppers, and as those in the fields were poisoned, more moved in.

### SEED CORN SELECTION

The corn crop over the county was generally good this season. One of our farmers here is doing a valuable work in seed corn selection, and the Agent assisted him in selecting his seed for the coming year. Three farmers were present and were shown proper methods of selection. Minnesota 13 also gave good results this year, although most of it was caught before maturity the previous season. Cold weather following planting delayed the crop somewhat, necessitating a second planting in several localities.



## LETTUCE GROWING

Two result demonstrations were started. One was lost early in the season because of dry weather. The second did quite well, but did not compare with the crop upon similar ground, grown by the same farmer, during 1925. This work will be continued, as last season's results were not thought to be a fair criterion of what might be done along this line of farming. It is planned to have at least two demonstration plots next year.

### TRUCK GARDENING

Observations of the Agent during the season of 1925 convinced him that there were considerable possibilities in growing root crops for stock feed, and through the cooperation of two seed houses, nine varieties of stock beets and stock carrots were planted. Due to the dry weather, the results were very poor, but this work will be continued next year.

Two cabbage demonstration plots were started. One was lost, due to the dry weather and insects. The other did fairly well. This work will also be continued, as results achieved during the past dry season are not conclusive.

## DAIRY FEEDING AND MANAGEMENT

Corn, when ensiled in cheaply constructed trench silos, has proven a valuable source of winter feed wherever used. The use of this feed has materially increased milk production. Two farmers are cooperating in this work. The agent has spent considerable time with every dairyman in the county, and has gone over their feeding schedule, and made recommendations by which they have been able to establish themselves on a better feeding basis. Two pure-bred dairy bulls have been brought into the county during the past season.

## DAIRY MARKETING

Two dairies have recently ceased retailing, and are selling their milk through the Milk Depot. This leaves only three trucks delivering from house to house. Plans are under way for a cooperative piece of work under which it is planned to sell all milk through the one central organization.

## RODENT CONTROL

More time and effort has been spent by the County Agent on this project than upon any other one project. The prairie dog problem in the farming areas here has been a most important one. Potatoes are seldom bothered, but the dogs follow down corn rows digging up the planted seed, in a good many cases ruining the stand and possibilities of a crop, and also work into and cut down a large amount of grain where the dogs are present in numbers. The large losses have stimulated us to put forth a greater effort towards control, and this season's work practically removed the prairie dogs from four farming sections of the county, namely, Money Park, Black Bill Park, Cliffs and Fort Valley. These four areas were treated with thallium, a new poison developed by Mr. E. E. Horn of the U. S. B. S. Mr. Horn spent the summer here experimenting with this poison, and as soon as the optimum dosage was determined, we got busy, treating the four areas mentioned. Practically one hundred percent extermination was obtained, only a very few dogs being left, and these were gradually cut out by the use of 22 rifles. With a small amount of work next season, the dogs should be completely eliminated from these farming regions.

During the early part of the season the field crew, with Mr. Everett Mercer in charge, treated Anderson Mesa. On an average the dogs were reduced to five percent of their original number. It is planned to continue this work during the early part of the season during the coming year, thallium being used, with a view of completely exterminating them. Anderson Mesa furnishes perhaps the best summer range in Arizona, large areas being considered, and this work will greatly enhance its value as a forage producing area. An interesting sidelight is that we found that dogs, coyotes and cats were poisoned by eating the dead prairie dogs, and we hope to see a material reduction in the number of coyotes inhabiting Anderson Mesa during the coming season.

Complete figures show that 127,585 acres of prairie dog infested land were treated during the past season. 23,386 quarts of poisoned grain were used, and 214 farmers and stockmen cooperated in putting out his poison. A letter from Mr. R. E. Daggs, a sheepman, from Williams, Arizona, shows the value of rodent control insofar as his own case concerned. A quotation from Mr. Daggs' letter follows:

"My ranch of 50,000 acres was treated last year and this year there is practically no dogs left except those which came in from the nearby ranches, which were not treated. The value of the forage saved will run into several thousand dollars."

Another phase of the rodent control work is the poisoning of rats and mice in stores and warehouses, both in town and in the country. A large amount of liquid poison has been distributed, with very good results, Babbitt Brothers Trading Company, who operate stores all along the Santa Fe railroad in this northern country, are using on an average ten gallons of the liquid poison each month, this poison being furnished from this office.

RANGE SUPPLEMENTAL FEEDING

Very little has been done on this project. Arrangements have been made to secure a quantity of tanzig mustard seed for experimental planting this spring. The brome grass demonstration indicates that while this plant may be adapted in the moist sections, that it will gradually die out under arouthy conditions such as we have experienced.

#### FLEECE SELECTION

In our fleece selection work this year, we made an endeavor to determine what range there might be in the weight of fleeces of various ewes within a range band, and did this weighing and judging in the presence of stockmen, discussing with them the range in weights and methods of selection which would enable them to increase the wool production of their range ewes. Two meetings and demonstrations were held, with nine stockmen present. In addition, the Agent and Specialist discussed the work with a number of stockmen. During the coming year we hope to go over an entire band, with the view of gradually increasing their wool production through selection. Fleece weights ranged from three and one-half to fourteen pounds, thus showing a wide variation.

### BETTER SIRES

The Agent helped one sheepman select about one hundred bucks for use on range bands. These bucks were both Hampshire and Rambouillets, the former being used to top mature ewes and the latter being used on the yearling ewes.

Specialist Pickrell and the Agent have spent considerable time on the ranges of various outfits in this county during the past season, and have met with stockmen to discuss improved range methods. Specialist Pickrell has also been instrumental in securing a large number of bulls for use on range outfits in the western part of this county.

### RANGE LIVESTOCK MANAGEMENT

During the past season the Agent was requested by one sheepman to aid him in the selection of ewe lambs from 5500 head of ewes which were to be used in the replacing of old stuff to be sold out. About 800 head of ewe lambs were selected out of possibly 1100. We will go through a similar selective process next year. Figures on the fleece weights of this outfit (average) will be kept, and the improvement noted.

In cooperation with the Bureaus of Animal Industry and Agricultural Economics, five livestock records were secured on outfits in this county. This information should materially aid us in our managerial work.

### DEHORNING

Not much will be done on this project until the fencing project of the Forest Service is carried out, so that all range cattle belonging to one outfit may be separated from cattle of another herd. One stockman, believing in dehorning, will hesitate to do much of it as long as neighboring cattle are left with their horns on. The coming year should see a material increase in the amount of dehorning which is done. Two outfits have signified their intentions of dehorning all steer calves.

## POULTRY CULLING

Practically every farmer in the county has been reached by this work, and most of them are culling their flocks. The commercial poultrymen especially are devoting much time and attention to this work. Specialist Boggs visited the county during the late summer, and most of the larger poultrymen were visited and culling discussed. One demonstration was held in Black Bill Park with twelve farmers present. This work has proven of especial value to the poultrymen here, and culling is becoming a general practice.



## FEEDING AND HOUSING OF POULTRY

Seven new poultry houses have been built this year. Practically every farmer has been given instructions and recommendations for proper feeding of poultry. The Agent has made a special effort to follow up this work and see that farmers were getting the most out of their flocks, considering the facilities which they had.

## BROODING OF BABY CHICKS

Wide publicity was given articles prepared by Specialist L. C. Boggs relative to the feeding and care of baby chicks. Practically all farmers buying baby chicks were visited either by the Agent or by the Agent and Specialist Boggs. Three demonstrations were held with eighteen present. The Agent visited the farmers raising baby chicks periodically in order to see that they were coming along satisfactorily and can report that almost without exception a high percentage of chicks were raised.

The poultry industry has expanded a great deal during the past year, and will continue to expand until eggs enough are produced to supply the local demand. Eggs are now being shipped in from both Colorado and California. A good percentage of chicks raised by farmers should go a long way toward encouraging farmers to buy baby chicks and establish a commercial flock.

BOYS' AND GIRLS' CLUBS

Club work was largely a failure this year. Two garden clubs were started. One at Red Lake was discontinued early in the season, and another at Williams did not fare much better, only three members completing their work. Club work next year will be confined to livestock clubs, no effort being made along the line of gardening unless indications are that the season will be better than last.

FARM AND HOME IMPROVEMENT

Dry weather during the past few months necessitated farmers in Black Hill and Doney Parks hauling water from Cliffs, making an eight mile haul in some instances. This has stimulated the building of cisterns, five of which have been built by farmers in these two parks. In addition, one lighting plant has been installed.

### TUBERCULOSIS ERADICATION

Dr. Crump and the Agent tested two hundred and twenty head of dairy cattle during the early spring, and recently Dr. Lingo, Federal Veterinary, and the Agent have tested out all dairies, as well as completing Doney and Black Bill Parks. So far but two reactors have been found, with no reactors in dairies of the county. We are continuing this work in February and plan to test every dairy cow in the county. Indications are that we can clean up this county within the next year, and then have a modified accredited area.



Dryfarm Minnesota 13 corn, ensiled in a trench silo, furnishes feed for eight months of the year on the farm of the Mountain Dairy. Yield of silage estimated at ten tons per acre.



Filling the trench silo of the Mountain Dairy. The soil, cinery in nature and well-drained, is almost ideal for preservation of silage. More silos, of cheap construction are needed in this county.



Colorado Pinto beans are a surer crop than potatoes on the lands east of Flagstaff, the acreage planted this year being one hundred percent greater than that planted last year.



Imported certified seed was planted this year, and results indicate that we may center upon the Peachblow in the lighter soils, Bliss triumph being planted for an early variety. The lack of moisture made it necessary that we continue our variety test plots another year.





Insect and disease control was not an important factor in the growing of potatoes this year. Potato beetles, in preceding years a very serious menace, gave very little trouble.



One lettuce demonstration that did fairly well this year, although continued dry weather forced much of it to seed. This project will be continued next year.

## OUTLOOK AND RECOMMENDATIONS FOR COMING YEAR

We have just gone through another dry season, there being less moisture this year than last, yet crops have been generally as good as last year. Somewhat more land has been farmed, the great increase being in bean. The farmers left feel that notwithstanding drought they are able to make a success of their farming venture, and on the whole a better morale prevails. Considerable inquiries come to the Agent and to the local Chamber of Commerce relative to lands here, and indications are that with one good season farming will start back to what it was before the series of dry years came on. This will materially aid this office in its work, and extension work should be greater and wider in its scope next year than it has been in this.

Seed potato selection work, as well as the variety test plots, will be continued. Soil improvement projects have proven that greater yields of potatoes may be obtained where a green manure crop precedes potatoes, and we shall continue to emphasize the value of this practice.

A special effort will be put forth in an endeavor to control codling moth. Upper Oak Creek is fairly free, the Tuba City orchards are fairly well under control, and work will be centered next spring in the orchards around Sedona. The farmers there are very willing to cooperate, and we hope to increase the quantity and quality of the fruit grown. Other diseases and insects will be handled as occasion warrants.

The lettuce and truck gardening projects will be continued. The results obtained this year would hardly justify any conclusion as to the possibilities of this type of farming.

T. B. testing will be continued, with a view of cleaning up the county this year. Considerable has been accomplished in the concentration of milk supplies and delivery through one central agency, thus materially reducing costs of delivery, and we shall continue this work. Dairymen will also be given as much aid as possible in outlining feeding practices in order that production may be increased and costs of production lowered.

Rodent control will be especially emphasized. Fort Valley, Cliffs Doney and Black Bill Parks will be gone over to kill the few dogs remaining there, with the view of complete extermination. Anderson Mesa will be treated with the Forest Service cooperating, and we hope to almost, if not completely, eradicate prairie dogs from that section of valuable grazing land.

Range live stock projects will be continued with greater effort being put on them. The Agent is now finding stockmen willing to listen and adopt practices recommended by Specialist Pickrell and himself, and we should materially expand our work this year. The fleece selection project will be especially expanded. Better sires and range livestock management will also have considerable work done on them. The fencing program of the Forest Service will materially aid us in this work.

Practically all farmers and all commercial poultrymen are now culling their own flocks. We shall do some work on this project, emphasizing the value of culling, so that the practice will be continued as a necessary feature of the poultry business.

There should continue to be considerable expansion in the poultry business, hence brooding of baby chicks is a most important project and a special effort will be made to aid all farmers who bring in baby chicks.

Garden clubs will be discontinued until seasons are better. When conditions are such that old experienced gardeners can not make a success of their venture, then we can hardly expect beginners to have much luck. The program calls for three clubs, all of them livestock.