

ANNUAL NARRATIVE REPORT

July 15, 1925

to

December 1, 1925

K. K. HENNESS

COUNTY AGRICULTURAL AGENT

COCOMINO COUNTY

ARIZONA

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I.

ORGANIZATION

## ORGANIZATION

During the spring of this year, previous to the appointment of the new Agent, an annual meeting of the Coconino County Farm Bureau was held, at which time Alfred Skeels of Williams was elected President, and J. W. Etter, of Flagstaff, Secretary. The old Directors held over.

The Agent has conferred with the Directors several times regarding the work in this county for the balance of this year, and for the coming year.

Inasmuch as the projects and plan of work for the year 1925 had been worked out, and a half year of work done on these projects by the former County Agent, it was deemed advisable that the new Agent continue the plan of work laid out with very few modifications. For the coming year, however, it is planned to extend the work in animal husbandry, inasmuch as range sheep and cattle are two of the major agricultural enterprises in this county.

II.

PROJECT ACTIVITIES AND RESULTS

### SOIL IMPROVEMENT

The program of the work for this year called for six farmers to adopt soil improvement practices. The summer through which we just passed was very dry until late, and the value of soil improvement by the plowing under of green manure crops has been emphasized by the better conditions of crops in fields in which it has been practiced. The Agent has taken advantage of this condition to stress the value of green manure crops. To date eleven farmers have plowed under green manure crops. Three leaders are assisting in this work.

One demonstration plot using vetch as a green manure crop, preceding potatoes, has been established. The vetch made a very good growth and has been recently plowed under. Potatoes will be grown upon this plot next summer, as well as on an adjacent plot from which a grain hay crop was taken this year.

### SEED POTATO SELECTION

The Agent has given two demonstrations in potato seed selection, at which eight farmers were present. Considerable interest was stimulated, and two farmers who were present at the first demonstration bought seed from the same field, making their own selection, using the methods shown by the Agent. One of these farmers plans on establishing a seed plot next year. The Agent will render assistance in establishing the plot, rouging during the summer, and selection of the seed for the following spring.

The potato crop of this county was largely a failure this year, due in large measure to the long dry spell following the spring rains. It has been evident in many cases that if proper seed selection methods had been practiced better results might have been secured. The Agent has stimulated considerable interest in seed potato selection and improvement, and believes that several seed plots may be established next spring, where proper rouging, digging and storing methods may be used with the view of obtaining an improvement in the seed produced. Due to high prices caused by the 32 percent shortage of potatoes over the United States, based on October 1st estimates, many farmers in the Salt River Valley are planning on planting early potatoes. Several inquiries for seed have come, and the Agent has been able to emphasize to the farmers here that had they been growing properly selected seed that there would be a ready market for any surplus which they might have at exceptionally good prices. Some seed will be moved from this County at very satisfactory prices. Had proper seed selection been used, the volume would be considerably greater.

### INSECT AND DISEASE CONTROL.

Early in the summer considerable damage was done by Colorado potato beetles. Two farmers received instructions in spraying, and one was assisted

in the purchase of a sprayer. One demonstration in spraying was also given. The losses from beetles, however, were not so high this year as in previous years, inasmuch as a good many farmers are making spraying a regular part of their potato growing operations.

Aphis gave considerable trouble with cabbage and cauliflower. Recommendations for control were made, and proper spraying gave complete control.

Orchards in Oak Creek and at Tuba City are becoming badly infested with codling moth, powdery mildew, and borers in some cases. Instructions have been given for spraying next spring, in order that control may be established. Arrangements have been made with Mr. Harvey Meyer, Superintendent of the Western Navajo Indian Agency, for the Agent to direct spraying operations in the Reservation orchards next spring.

Losses in potatoes because of blight were slight this year. Two farmers were given directions for spraying.

Dr. Oscar C. Bartlett, State Entomologist, and the Agent spent one day among the potato and bean fields of the County, visiting several farms and investigating the disease situation. Dr. Bartlett rendered very valuable aid to the Agent, and assisted in pointing out the value of crop rotation and seed treatment in order to control losses from disease.

#### SEED CORN SELECTION

One demonstration was given in seed corn selection with three farmers present. Considerable work needs to be done in this county in order to secure a corn that will mature sufficiently for ensilage on the higher elevations. So far Minnesota thirteen has given best results. By proper selection it is hoped that better grain yields may be secured.

#### WALNUT GRAFTING

The walnut grafting in Oak Creek Canyon has apparently given fair results. The Agent made one visit inspecting the grafts, many of which were growing, although several had been broken off and injured in other ways. Poor results have been secured at Cedar Ranch, probably due in large measure to the high elevation.

#### LETTUCE GROWING

Considerable interest was shown in the growing of lettuce in this County this year. Two demonstration plots had been established, one under irri-

gation and another where soil and moisture conditions were much better than over most of the county. The Agent kept a record on the dry farm lettuce, three-fourths of an acre returning a gross income of \$380.00, the expenses, including labor, packing and rent being \$60.00. There are a few acres in the county which because of being protected hold moisture longer in the summer, and two demonstration plots are planned for next year. There is a ready demand for summer lettuce from tourist trade, and there is room for increased production before any need be shipped out.

Arrangements were made with a Phoenix firm for the handling of the lettuce crop of two farmers, who wished to ship in carload lots. Instructions were also given to one farmer relative to the handling and marketing of lettuce.

Several small areas in the County may be irrigated, and a demonstration plot of lettuce under irrigation is planned for next year.

#### TRUCK GROWING

Assistance was given by the Agent in the marketing of cabbage and carrots in mixed carlots. The acreage of cabbage, cauliflower and carrots was considerably greater this year than in previous years, and some difficulty was experienced in getting rid of the product at satisfactory prices, particularly that much of it came on late in the season. As much of this was under irrigation and was of late planting, it will be possible to plant somewhat earlier any mature the crop while the local demand will take care of it, this doing away with the necessity of shipping later in the season.

#### DAIRY FEEDING AND MANAGEMENT

Instructions have been given relative to the feeding of corn silage and supplementation with protein-rich feeds. One farmer was also given instructions for the construction of a trench silo of two hundred and forty tons capacity, and another was given instructions for increasing the capacity of his silo. The Agent also gave directions for the cutting of a corn crop on fifty-five acres and the putting of it into a silo. There was some excess fodder which was shocked and will later be put into the silo under the supervision of the Agent when space is available.

There are a good many very poor cows in this county, and the Agent has instructed several farmers in the proper selection of dairy animals. One pure-bred bull was secured. More are needed.

### DAIRY MARKETING

A good many cows have been shipped in during the past four months, and more interest is being shown in dairying, this interest being particularly stimulated by the fact that there is a ready market for all surplus milk for manufacture by the establishment of a milk depot. The Agent and two of the dairymen have devoted considerable time working out a plan where all the milk produced may be handled from the central depot; it is believed that this method of distribution will considerably reduce costs and be more efficient.

The Agent spent two days with State Dairy Inspector J. R. Jennings going about to the various dairies giving instructions for the production of cleaner milk. Later the Agent assisted two dairymen in promoting cleaner methods of handling milk.

### SUPPLEMENTAL RANGE FEEDING

The Brome and Crested Wheat Grass seed which was sown on the Cedar Ranch last spring made a good start, but was hardly well-established before heavy grazing killed much of it out. The Agent and Mr. Corbett, manager of the outfit, are planning on planting more Brome Grass next year, inasmuch as it made the best showing.

### BETTER SIRES

Three demonstrations in selection of range bucks were held, with representative range stockmen present. Both the Rambouillet and Hampshire breeds were represented. The bucks used as demonstration material were brought in this summer from the Salt Lake City Ram Sale, and probably represent the best blood and type that has ever been brought into Arizona. They should serve as a great aid to us in inducing other sheepmen to improve their breeding methods. On the same field trip Extension Specialist Pickrell and the Agent inspected feeder and fat lambs, using them to show the variance in the type and breeding of the saleable product which may be caused by the use of poorly bred bucks.

Several cattle ranges were visited, and the Agent and Mr. Pickrell pointed out to the cattlemen visited the value of using better and more bulls.

Because of hard times in the cattle business, many cattlemen are using less bulls than are necessary, many of the bulls used being very inferior. Others are not breeders, and as a result the calf crop of this high country has for several years past been very light. Much work is necessary in order to increase the calf crop.

## RANGE LIVESTOCK MANAGEMENT

Range management, ranging of sheep and cattle on the same range, marketing, handling of cattle in order to increase the calf crop, culling and replacement with young she-stuff, and other timely range subjects were discussed at a series of meetings with range sheepmen and cattlemen. One cattleman, running sheep on the same range, was given directions for the handling of his sheep outfit, as regards time of breeding, winter handling, and lambing.

A number of cattle ranches were visited, the Agent and Specialist Pickrell discussing the advantages of dehorning, squeeze chutes, water development and tank construction.

## FLEECE SELECTION

No work was done on this project, but arrangements have been made to have a series of demonstrations conducted by Extension Specialist Pickrell and the Agent in fleece selection and culling.

## POULTRY CULLING

Shortly after coming here, the Agent and Extension Specialist Boggs arranged for a series of culling demonstrations. Three were held while Mr. Boggs was here, and others were conducted later by the Agent. Practically every poultry raiser in the County has been reached by this work, and many are culling their own flocks according to our directions.

## POULTRY FEEDING AND MANAGEMENT

Much interest is being shown in poultry, several commercial plants having been established, and others are planning on increasing their flocks. Many baby chicks will be brought in, and it is planned to give a series of demonstrations in their feeding and care.

Fifty high-grade pullets were secured for one cooperator. Three farmers were advised as to the construction of poultry houses, and two others received instructions relative to remodeling of houses.

### FARM MECHANICS

Instructions have been given for the construction of two silos and one stock tank. The Agent also looked over plans for a dairy barn now being constructed, and suggested changes which are being made.

Directions were also given to three farmers who wished to develop and store spring water for irrigation. The Agent visited these farms and gave personal assistance in planning the work.

### RODENT CONTROL

A complete report of the work done in cooperation with the Biological Survey from March 15, 1925 to October 10, 1925, shows that one hundred and sixty-five farmers assisted in distributing 3841 quarts of poisoned grain, 269 quarts of prebait, and 154 quarts of carbon bisulphide, this in treating 30,545 acres of prairie dog infested lands. Two field parties worked during the season in the vicinity of Flagstaff, and another in the vicinity of Williams on range land. These parties treated many farms which are not listed under cooperators, although some of the farmers assisted.

The Coconino Field Party used 13,310 quarts of poisoned grain and 7,360 quarts of prebait in treating 129,460 acres, while the Tusayan Field Party used 2,940 quarts of poisoned grain and 1,280 quarts of prebait in treating 16,800 acres. The third party working under Rodent Leader Foster used 4,180 quarts of poisoned grain and 4,260 quarts of prebait in treating 23,800 acres of land.

A grand total shows that 165 cooperators assisted in the work, that 24,271 quarts of poisoned grain, 13,169 quarts of prebait and 154 quarts of carbon bisulphide were used in treating 200,605 acres of prairie dog infested lands.

The Agent and Mr. Mercer, Rodent Leader, made several trips distributing poison grain and prebait, both for prairie dogs and squirrels, and gave instructions for its use. The Coconino field party, working on forest lands, spent considerable time in and about the farming districts East and North of Flagstaff. A special effort was made to have the farmers assist while the outside lands were treated, and very excellent control was secured.

Eight business firms in Flagstaff were given poison for rats and mice, and all report excellent results. Gophers gave considerable trouble in alfalfa, and three farmers have been given instructions and poison for their control.

### BOYS' AND GIRLS' CLUB WORK

The Agent planned only to continue the club work which was already established for this year. Two clubs were established - a Garden Club at Red Lake, under the leadership of Mrs. Claud Hume, and a Poultry Club at Williams, under the leadership of Mr. Harry Shill. The Agent visited these clubs several times, once in the company of Mr. Ballantyne and Miss Bouton, when Achievement Day for the Garden Club was held. Due to the dry year the results were not very encouraging.

The Agent held Achievement Day for the Poultry Club, three members completing their work. The boys are now working on their demonstration material, and a demonstration team may be sent to Tucson. The Agent has rendered personal assistance to the boys in their demonstration work.

Leader Shill and the Agent are planning on establishing both Poultry and Garden Clubs at Williams next year. It is also possible that clubs may be established at Winona, Doney Park and Sedona. Work for next year will depend largely upon the season.

### FARM ACCOUNTS

Two farm accounts are established, and the Agent has rendered assistance in this work. The Agent also assisted in drawing up two lease contracts.

### FARM HOME IMPROVEMENT

Two farmers were given instructions relative to the installation of cisterns. Several others have received advice regarding planting of ornamental trees and shrubs, and in care of home gardens.

### MISCELLANEOUS

The Agent spent seven days with State Fair Commissioner C. D. Sanderson in collecting and arranging exhibits for the State Fair. Later the Agent attended the Fair, helping in arranging and showing the exhibits. Coconino County ranked third in counties, won eighty-four prizes, besides two sweepstakes and the largest dry farm exhibit.

Three days were spent with Profs. E. B. Stanley and E. L. Scott in selecting lambs and ewes for the winter experimental work of the animal husbandry section.

During harvest season the Agent secured a number of men for farmers who needed help during the busy season.

III.

OUTLOOK AND RECOMMENDATIONS FOR COMING YEAR

## OUTLOOK AND RECOMMENDATIONS FOR COMING YEAR

Dry years have shown the value of the plowing under of green manure crops, and it should be possible to induce many more farmers to realize the value of this practice than have hitherto used it.

The seed potato selection work will be continued. Special emphasis has been given this work in order that seed could be obtained for seed plots next year.

The orchards of this County are becoming badly infested with disease and insects, and it is planned to make an especial effort to establish control next spring.

There is a ready demand for lettuce and other truck crops. Two demonstration plots of lettuce are planned, and another of cauliflower and cabbage. The acreage of garden truck will be considerably expanded, and it is planned to devote considerable time to this work, inasmuch as it offers great possibilities.

Dairying is rapidly increasing. Many new dairy cows have been brought into the county during the past season, most of these cows being of very good quality. There are many poor cows, however, and work needs to be done to stimulate better breeding methods and selection in order to weed out the undesirable cows. A testing association is badly needed in order to show the dairymen just what cows are boarders and what cows are carrying the load, and it is planned to start work on this project. It is also planned to continue the T. B. eradication work in cooperation with the United States Bureau of Animal Industry. Plans are now under way for the establishment of an organization to facilitate handling of milk through a central depot, thus increasing the efficiency of the handling and lowering the cost.

Brome Grass as a range forage gave fair to good results this past year, and more seed will be planted next spring.

There are great possibilities in Extension Animal Husbandry in this County. Owing to the financial condition of the cattle industry during the past four years, outfits have deteriorated, the calf crop in this high country dropping to a very low percentage. More and better bulls are needed, and improved methods of handling, such as squeeze chutes, dehorning, and culling are needed if money is to be made. Many outfits are endeavoring to breed cattle on high ranges here which will return a much greater revenue if used for steers, and work should be done to induce cattlemen to see the possibilities of great income from the steer proposition.

Financially, the sheep industry is much better off than is the cattle business. Some money is available for improvements, a most important consideration in getting our work across to the stockman. Demonstrations are planned in the culling of range ewes at shearing time, according to yield and quality of fleece, as well as conformation, in order to increase the yield of wool. Some very good results should be secured in this work, although it will take

two or three years of work on the same outfit before real results may be apparent. Many sheep outfits are using poor bucks, and work will be done to stimulate the use of better sires. Well-bred bucks recently brought in should help greatly in this work.

Practically every farmer in the county has been reached in poultry culling demonstration work. Several farmers are culling their own flocks very carefully, and next year should show results for the work which has been done on this project. Practically every poultryman has also received proper instructions in feeding and management of poultry, and the results are becoming very apparent.

The Rodent Control Project will be continued, with the Forest Service and County cooperating with the United States Biological Survey. The results of the past summer's work were excellent in most cases. Stockmen realize the value of the work, and next year several large areas of prairie dog infested lands may be treated at the expense of the land owner. An especial effort will be made early next spring to control squirrels in Oak Creek Canyon, as well as to clean up farming areas which were worked over this season.

Boys' and Girls' Club work will be expanded if the season warrants it. Club work has been hard to establish during dry years, particularly since the soil available is usually not of the best type in that particular area. Two large clubs are planned at Williams under the leadership of Mr. Harry Shill, and it is believed that considerably more interest will be developed in that work.

PROGRAM OF EXTENSION WORK  
 COCONINO COUNTY  
 1926

Project	Communities in which work will be done	No. of Dem.	Method of Procedure	Goals, 1926
Soil Improvement	Black Bill Park Doney Park Flagstaff Garland Prairie Red Lake Valley	10	The Agent with help of leaders will give seven demonstrations on use of rye for green manure. Two farmers will use sweet clover and one vetch, studying best cultural methods.	Fifteen farmers adopt soil improvement practices.
Seed Potato Selection	Kendrick Park Hart Prairie Doney Park Flagstaff	5	Seed potatoes, hill selected by Agent in 1925 will be planted in seed plots, <i>rw</i> dug during summer and dug and stored separately for planting following year. Agent will also make bin selections in spring. All seed for seed plots to be treated for scab and rhizoctonia.	Four farmers to use hill selection and <i>rw</i> roguing methods.
Insect and Disease Control	Garland Prairie Black Bill Park Red Lake Valley Spring Valley Oak Creek Tuba City	8	The Agent will give demonstration in potato and blister beetle control, aphid spraying on truck crops, in control of bean thrip, blight and rhizoctonia. A special effort will be made to effect control of codling moth and powdery mildew in Oak Creek and Tuba City orchards.	Twelve farmers to use control methods.

PROGRAM OF EXTENSION WORK  
(Cont'd.)

Seed Corn Selection	Dead Man Flat Black Bill Park	2	Agent will demonstrate proper methods of seed selection.	Three farmers selecting seed corn.
Lettuce Growing	Fort Valley Spring Valley	2	Two demonstration plots of lettuce.	To secure data on lettuce possibilities with particular reference to increasing acreage where lettuce may be grown.
Walnut Grafting	Oak Creek	1	One demonstration by Agent.	Increased interest in this work
Truck Growing	Spring Valley	3	Three demonstration plots of cabbage, cauliflower and other truck crops.	Increased interest in truck growing.
Dairy Feeding and Management	Black Bill Park Flagstaff Doney Park Red Lake Valley	5	Three demonstrations in feeding dairy cattle. Two demonstrations in dairy cattle judging and selection.	Increased interest in dairy cattle breeding and selection. One additional silo.
Dairy Marketing	Flagstaff	1	Marketing dairy products through central depot.	Cheaper and more efficient handling of milk, particularly of surplus.
Range Supplementary Feeding.	Cedar Ranch	1	Use of grasses for supplementary feed for range stock.	Increased interest in range feed supplementation wherever possible and practical.
Fleece Selection	On lambing ranges	2	Demonstrations in selection of range ewes according to fleece quality and weight, as well as conformation, at time of shearing.	Two outfits practicing fleece selection in order to grade up their range bands.

PROGRAM OF EXTENSION WORK  
(Cont'd.)

Dehorning	Seligman Williams Clay Park	4	Agent and Specialist in Animal Husbandry will demonstrate methods and value of dehorning.	Three cattlemen dehorning calves.
Better Sires	Seligman Ash Fork Valle	3	Agent and Specialist in Animal Husbandry will demonstrate methods of selecting and handling better sires. One cooperater will study cost of maintaining range bucks, percent of losses, causes of losses, etc.	Four stockmen using better sires.
Range Livestock Management	Seligman Ash Fork Flagstaff Williams	3	Meetings with stockmen are planned to discuss improved range livestock handling, such as use of squeeze chutes, culling, pasture management and water development.	Four stockmen using better methods of management.
Poultry Culling	Williams Red Lake Doney Park Garland Prairie	6	Agent and Specialist will conduct six culling demonstrations.	Ten farmers culling their own flocks.
Feeding and Housing of Poultry	Williams Red Lake Doney Park Black Bill Park Garland Prairie	4	Four demonstrations in housing and feeding.	Seven farmers using improved housing and feeding methods.
Brooding of Baby Chicks	Williams Garland Prairie	3	Three demonstrations by County Agent and Specialist in proper methods of handling baby chicks.	Five farmers using improved methods.

PROGRAM OF EXTENSION WORK  
(Cont'd.)

Boys' and Girls'	Williams Red Lake Flagstaff	4	Organize four clubs. 1 poultry and 3 garden clubs.	75 percent com- pletion.
Farm Accounts	Black Bill Park	2	Agent will give per- sonal assistance in keeping farm accounts.	Three farm accounts.
Farm Home Improvement	Black Bill Park Spring Valley Doney Park Red Lake Valley	3	Two demonstration home gardens. One demon- stration cistern build- ing.	Three cisterns. Ten home gardens.

APPROVED: \_\_\_\_\_  
Date

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President County Farm Bureau

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Director of Extension

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County Extension Agent.

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County Home Demonstration Agent.