

A N N U A L R E P O R T
O F
K. K. HENNESS
COUNTY AGRICULTURAL AGENT

PINAL COUNTY
ARIZONA

FOR YEAR ENDING NOVEMBER 30, 1930

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III. The Agricultural Situation in Pinal County

In planning the work of the County Agricultural Agent for the extension year beginning December 1, 1929, and ending November 30, 1930, the County Agricultural Agent and the Pinal County Farm Bureau recognized that there would be a very great increase in the acreage of irrigated land, caused in the main by the fact that storage water was in storage and available for the lands of the Coolidge Project.

Due to financial conditions, which were rapidly becoming more stringent, it was not anticipated that there would be any rapid development of pump acreage, and later experience showed this assumption to be true. However, there were some few new wells put in, mostly in the La Palma district and in the Eloy district.

Indications were that a large part of the Agent's time would be spent on problems confronting the cotton grower. Approximately 18,000 acres of cotton were grown during the crop season of 1929, and it was estimated that 40,000 acres would be devoted to this crop during the season of 1930. Actually 42,000 acres were planted.

With this great increase in acreage of farming land, it was thot timely that the Agent particularly stress work in the proper levelling and preparation of farm land. It will be noted that Project X - Land Levelling and Preparation, was given particular attention during the extension year.

During this year, arrangements have been made whereby Electric power has been furnished to power users for farming purposes in the vicinity of Maricopa. This development is known as Pinal County Electrical District No. 3, and some development, largely citrus, has already been started there.

While final arrangements have not been completed in Pinal County Electrical District No. 4, it is anticipated that they will be in due course of time, probably within the present year, and additional power lines will be constructed there to serve the lands of this district. Some additional development was made during the early part of the year, thru extensions of power lines from Electrical District No. 2.

The Randolph Irrigation District which is also in process of organization should result in some additional development during the coming year.

Prices received for practically all farm commodities produced in this area have been substantially smaller during the past year, which has been a very unfortunate situation, inasmuch as it is greatly hampering development in this area.

Recognizing the need for proper crop rotation if highest and most profitable yields of cotton are to be secured, the Pinal County Farm Bureau and the County Agricultural Agent have urged a larger acreage of alfalfa in the crop program. Cotton is an excellent crop for the development of new land, inasmuch as it is easily financed, and it puts land into condition for the planting of alfalfa. The growing of this crop enables the farmer to find any irregularities in the levelling of his land, which may then be eliminated before planting it down to alfalfa. It now appears to be the right and proper time for farmers to begin planning their crop operations so that they may gradually build up at least part of their soil thru the use of alfalfa, or alfalfa and livestock. The support of the County Agricultural Agent by the Pinal County Farm Bureau in this regard has been most whole-hearted, and it is believed it will result in a well-defined start being made this year in establishing a better crop rotation.

The growing of fall and spring lettuce, and cantaloupes, has increased, particularly in the Eloy district, and of necessity more time has been devoted to work along this line. Studies of market conditions have shown that the growing of early fall lettuce in this area is founded upon the right economic basis, and may be considerably increased before any large surplus may be produced. The same cannot be said of the spring deal, however.

There is a gradual increase in the feeding of livestock, and dairying, and during the coming extension year more time will have to be devoted to this work.

IV. Status of County Extension Organization

1. Form of Organization - Changes and Development

The Pinal County Farm Bureau has made, during the past extension year, rapid development in its organization and membership. Mr. H. M. Bowen, Organization Specialist for the American Farm Bureau Federation, visited the County at the request of the County Farm Bureau, and aided in a membership drive which built up the membership of the County Farm Bureau substantially. The Casa Grande local now has 58 members, and substantial increases were also made in other local districts. A notable increase in the activity of the Farm Bureau has resulted.

Work in this county is being carried on largely thru the Pinal County Farm Bureau and associated local farm bureaus. There are two active local bureaus in the county, and five districts, including these two, maintain representation in the County Farm Bureau. The County Farm Bureau is composed of two delegates from each of the five districts, which constitutes the Board of Directors, and which carry on the business of the County Farm Bureau.

The Board of Directors and Secretary of Pinal County Electrical District No. 2 have cooperated with the County Farm Bureau and the County Agricultural Agent, as have the Board of Directors and Secretary of the San Carlos Irrigation and Drainage District, and Mr. N. W. Irsfeld, Engineer of the U. S. Indian Service. Civic clubs and chambers of commerce and farm loan associations have also furnished splendid cooperation.

The Pinal County Farm Bureau has been active this year. They have cooperated with the County Agricultural Agent in his work, and have been of real service in the bettering of farm conditions in Pinal County. Among the most noteworthy activities of the County Farm Bureau are:

They acted as County Fair Commissioners, appointing a Fair Committee which named Fred Rathbun Fair Commissioner, and put on the finest County Fair which has so far been held. It must also be mentioned that the Coolidge Chamber of Commerce furnished the most whole-hearted support, and much credit for the success of the fair is due to them, and to Mr. T. E. Eaton, Chairman of their Fair Committee.

As before stated, the Pinal County Farm Bureau put on an extensive farm bureau membership drive, and have thus gained an increase in membership, along with which has come an increase in activity. Farm bureau membership cards were printed, and have been furnished members for attachment to gates of fences in front of their homes. The County Farm Bureau is now in excellent financial condition.

The second year of a three-year plan for gopher control was carried thru to completion during the year, with the entire infested area trapped over. Arrangements were also completed for similar support by interested agencies during the winter of 1930-31.

Another matter in which the Pinal County Farm Bureau was much interested was the protection of this area from pink boll worm. Committees representing the Farm Bureau met with the Governor, Attorney General, and Arizona Commission of Agriculture and Horticulture, and urged upon them the necessity of inspection stations to adequately protect this valley. Their efforts finally resulted in inspection stations being put in, which are in operation at the present time.

The County Farm Bureau, as in previous years, cooperated with the Nevada Consolidated Copper Company in advertising the resources of Pinal County in various State papers and outside magazines.

Some time and effort have been given toward the organization of a cooperative oil mill, gins and crop finance organization. Negotiations are still under way in this regard.

A committee from the County Farm Bureau represented the farmers of this county at a meeting in Phoenix, called to discuss the tax situation and operation of House Bill No. 127.

At the invitation of the County Farm Bureau Walter Strong, President of the Arizona State Farm Bureau, addressed a meeting of the Casa Grande Farm Bureau, on the subject of "Why Farm Bureaus."A

The County Farm Bureau cooperated with the Arizona Cotton Growers Association in securing the cooperation of farmers in meeting the expenses of importing labor to pick cotton. As a result practically 100 percent of Pinal County's farmers are members of the Association.

The Pinal County Farm Bureau is now cooperating with the County Agricultural Agent in the making of an economic survey of the agricultural situation in Pinal County. A committee has been appointed to represent the Farm Bureau, which committee will be augmented by representatives of the three chambers of commerce of the valley, and representatives of the irrigation districts and banks. It is hoped that this survey will result in the establishment of a better crop system in this valley.

2. Function of Local People, Committees and Project Leaders in Developing the Program of Work.

Practically all work carried on by the Pinal County Farm Bureau and the local bureaus is thru committees. Whenever anything comes up in which the farmers are interested, a committee is appointed and with the Agent the proposition is worked out. This is a satisfactory way, and is giving good results in this county. Project leaders assist in putting over the various projects.

3. General Policies

The relationship between the County Agricultural Agent's Office and that of the County and local Farm Bureaus has been most cordial.

The Farm Bureau expects to and does work with the Agent in anything which may be to the helpful interest of agriculture in the County, and during this year the results have been particularly gratifying.

V. Program of Work, Goals Established, Methods Employed, and Results Achieved.

1. Factors Considered and Methods Used in Determining Program of Work.

At the beginning of the extension year there was ample storage water available in the Coolidge Dam to care for all the lands of the Project which might be put in. Landowners were planning to develop their properties, and indications were that there would be a rapid increase in acreage under water. Conditions indicated, however, that there would not be large increase in the number of electrical pumps.

The Pinal County Farm Bureau and the Agricultural Agent considered the proposition, and after some time decided upon an extension program covering the following projects:

- Improved Orchard Irrigation
- Improved Cotton Irrigation
- Improved Conditions on Tight Lands
- Improved Crop Stands
- Pure Seed Cotton
- Boys' and Girls' Club Work
- Rodent Control
- Better Sires
- Cow Testing
- Land Levelling and Preparation
- Improved Check Gates and Turnouts

Among these projects it was planned to put special emphasis upon Improved Cotton Irrigation, Improved Conditions on Tight Lands, Improved Crop Stands, Boys' and Girls' Club Work, and Land Levelling and Preparation, inasmuch as it was felt that work could be put to better advantage upon these projects during this year. Other fields not covered by these projects were to be covered as problems presented themselves, and at such times as the Agent deemed it necessary.

On some of these Projects the work and result achieved have exceeded our expectations. Two have been practically dropped, and the balance have been worked on thruout the year.

Extension work is going ahead rapidly in this county, there constantly being more questions brot to the Agent's Office. The more than doubling of the farming area has brot many new farmers into the County, and has caused a great increase in the amount of work to be handled.

2. Project Activities and Results.

I. Improved Orchard Irrigation

Mr. Frank T. Gilbert, who had been cooperating on this Project, early in the year decided that his orchard would never be a commercial success, and dug it out. This Project has been brought to a close, for the present at least. It is hoped that the work of the Agent and Former Specialist E. S. Turville in the Gilbert orchard has at least brought to the attention of workers along this line the need of experimental research in the solving of some of the problems which confront the grower of deciduous fruit in southern Arizona.

A good deal of interest was manifested by growers of deciduous fruit in our work at the Gilbert orchard.

A large number of inquiries relative to the irrigation of fruit trees and their care have come to the Agent, and recommendations given. Work of this kind has covered problems relative to irrigation and care of deciduous fruit trees, dates, citrus, and ornamental trees.

II. Improved Cotton Irrigation

Our work has been particularly active on this Project. Surveys made during December, 1929, show that our work is showing real results, and observations made during this year show a gradual adopting into farming practice of the principles advocated by this office. Large amounts of publicity have been given this Project, both thru the local press, circular letters, meetings and farm visits, and methods advocated are gradually being accepted as good farming practice.

During January the Agent addressed a meeting of farmers at Coolidge on the matter of cotton irrigation, twenty-five being present. During the spring season 84 farmers were advised relative to best irrigation methods. Work in this regard was heavy due to the fact that many of our farmers were farming new land for the first time.

150 copies of a circular letter were prepared and mailed to valley farmers, prior to the planting season, giving the suggestions of this office relative to best methods of securing cotton stands and best methods of irrigation. These circular letters were also printed in the four valley papers.

Mr. V. V. Williams of Casa Grande cooperated with the Agent on this Project, handling 160 acres of cotton as a demonstration under directions from this office. So far results on crop yields are not complete, hence cannot be reported at this time.

The Agent assisted Mr. Jean C. Miller, formerly Acting Specialist in Agronomy and Irrigation Practice, in a field study of moisture penetration in cotton and alfalfa fields, and later in the fall repeated the observations. Sheets covering the record

of individual farms have been completed and are in the Office of the Director. Tentative arrangements have been made for the Agent to assist in the writing up of a report on this work.

In this work the Agent and Acting Specialist Miller endeavored wherever possible to have the farmer assist in taking the observations. In many cases they opened the farmer's eyes to problems in irrigation which he did not think existed.

During the early and late summer silty water caused some trouble in that sufficient penetration could not be secured. The Agent advised farmers to cultivate wherever the cotton was not too large to permit, which was done in many cases, this breaking up the silt layer and permitting water to penetrate better at the next irrigation.

III. Improved Conditions on Tight Lands

The Agent has realized more and more the need for work upon this subject, with the view of finding out how this type of soil may be brot into quick and profitable production.

Investigations made early in the year brot out the following facts:

Soil survey maps, as prepared by E. C. Eckmann and party of the U. S. Bureau of Soils, covered under "Advance Sheets - Field Operations of the Bureau of Soils, 1917.", show in the neighborhood of 6,000 acres of "tight" soils, classed as "McClellan Clay Loam", within the San Carlos Irrigation and Drainage District.

Field observations made by the County Agent show that up to the present no successful method of farming these soils has been found, altho they gradually make some improvement under irrigation.

Further field observations have shown that the depth of the fine silt deposit ranges from four inches to a depth of twelve inches, the Agent never having encountered a silt layer deeper than the latter figure. Below this silt layer is a sandy type of soil, which is of a texture usually found to be desirable when put under irrigation.

These and other data were submitted to Dr. P. S. Burgess, of the Agricultural Experiment Station, and a survey of the valley made by the Agent and Dr. Burgess. Later the matter was discussed in a meeting with Director E. D. Ball, of the Experiment Station, and Director P. H. Ross of the Agricultural Extension Service, with the result that the Agent was authorized to locate an area of suitable ground of this type, so that the University might lease it for demonstrational purposes. This was done, and in July a lease was negotiated with Mr. H. B. Holt, of San Francisco, whereby the University took over ten acres of this land for a period of five years.

Briefly, the following has been accomplished upon this demonstration:

Five acres of the land was plowed to a depth of twelve inches or better, this to mix some of the sandy sub-soil with the silty top soil. The land was then levelled, bordered and ditched, and one ton of gypsum to the acre applied and disced in. Then two and one-half acre feet of water was put thru the soil. Following this, the land was allowed to dry out sufficiently to permit re-working of the borders, and then irrigated lightly and planted to barley and sour clover. At the date of the writing of this report it is in an excellent stand.

Complete records of the work on this demonstration are on file in the Agent's office, as are photographs covering the work.

Wide interest has been shown in this demonstration, particularly now that the field is up in a fine stand of barley and clover. Over fifty farmers have visited the demonstration, as have representatives of the several irrigation districts.

Thirteen farmers having this type of soil have visited the Agent and discussed with him methods for improving their soil.

IV. Improved Crop Stands

Early in March a circular letter was mailed to 150 farmers covering best methods of securing stands of cotton on new land, and preventing damage from spring winds. These circular letters were also published by the valley papers.

14 farmers requested and secured information from the Agent relative to securing satisfactory stands of alfalfa. 54 received similar information thru office calls and visits of the Agent, covering cotton.

Due to rains at planting time, much trouble was occasioned in several fields due to the ground crusting over. The Agent received several inquiries, and visited the fields in question and recommended treatment. Some of the fields were reirrigated, and others were harrowed and in two cases a planter had the wheels wrapped with barb wire and the running of the planter over the same track cracked the ground and permitted the cotton to come thru.

A number of farmers made plans to plant on the moisture put in the new ground on account of the heavy rain, and as many as could be reached were discouraged from doing this by the Agent. Later conclusions were that it was poor practice not to irrigate new land before planting.

V. Pure Seed Cotton

Arrangements were made early for a number of farmers to pool their orders and secure a car of Coachella Valley Acala seed. This did not go thru altho one grower secured one ton.

The Agent had worked during the previous year in an effort to have established a pure seed farm in an isolated area by one of our cotton companies. It was found not possible to do this, hence this part of the Project has been dropped and in the future will be carried along as miscellaneous work.

VI. Boys' and Girls' Club Work

The La Palma Cotton Club was started during April, with five boys planting an acre of cotton each. Four of these boys have practically carried their work thru to completion, but all the cotton is not picked at the date of the writing of this report, so complete returns are not in.

This club is under the leadership of Mr. Orville Hess, who has made an excellent club leader, and next year will no doubt increase the club membership. Several meetings have been held, and the Agent has discussed cotton planting, cultivation, irrigation, both before and after planting, and varieties. Club records are up in very excellent shape, as is the record of the Secretary.

The Agent and Leader Hess attended the Club Conference at Tucson, and secured some ideas which should help in club work in this territory.

Each of the boys exhibited cotton lint and seed cotton samples at the Pinal County Fair, and also at the Arizona State Fair, winning several ribbons. Three of them also exhibited cotton plants.

Efforts were made to organize a dairy calf club, but were finally abandoned.

More needs to be done in club work next year. It is planned to increase the cotton club membership, under the leadership of Mr. Hess, and to also organize a cotton club in the Coolidge territory. Due to the high percentage of tenant farmers it is very hard to successfully put over club work on a large scale. The La Palma community is one in which the farmers own their own farms, and club work has taken hold there in good shape.

VII. Rodent Control

One hundred and thirty cooperators secured poison for the control of rodents during the extension year, using 1,812 quarts of poison bait in protecting 29,530 acres of crops from rodents.

In gopher control, the following cooperation was secured by the Agent and Specialist Ben Foster:

San Carlos Irrigation and Drainage District
(two men for two months)
U. S. Indian Service
(two men for two months)
Pinal County Electrical District No. 2
(\$200 to be used for labor)

The entire project area was trapped over, as was also certain infested areas outside the project but within Electrical District No. 2. This completes the second year of our 3-year program to get the gopher under complete control.

Ground squirrels and mice did some damage to early fall lettuce in the Eloy territory, and also to spring melons, and poison grain was put out by the Agent and cooperators and good control secured. Acreage involved in this work was 900.

Lettuce birds also gave trouble, and thru the efforts of this office excellent control was secured.

VIII. Better Sires.

Several farmers have been put in touch with breeders of registered cattle, and the Agent has done his best to induce more farmers to secure registered dairy bulls. Only one pure-bred bull was brot into the County this year, the Agent aiding the purchaser, Mr. W. S. Prouty, to select the bull.

During the Pinal County Fair a judging contest was conducted by the Agent and Specialist Clyde F. Rowe, with 47 entrants. A pure-bred and registered Holstein bull calf from the Coman Holstein Farms of Phoenix was given by the Fair Committee of the Pinal County Farm Bureau as first prize. This bull will go to one of the herds of Pinal County.

Wide interest was shown in the judging contest. Five classes of dairy cattle were judged, the procedure being to have the farmers give their placings on the cattle, this being followed by a placing by Specialist Rowe, he giving his reasons for so doing.

With the return of better financial conditions it is believed that we can show more outstanding results on this Project.

IX. Cow Testing

The Pinal County Herd Improvement Association is still in a very healthy condition. Two herds have been lost and two gained during the year. The testing is being done by Mr. Williams this year, who comes down from Maricopa County each month to make the tests. Mr. Williams spends the balance of the month testing in the Maricopa County Herd Improvement Association.

Specialist Rowe and the Agent held a meeting of the members of the association, at which meeting Mr. Rowe discussed the value of cow testing records and their application. Feeding practice was also discussed. Both members and non-members attended this meeting.

The herd of the Pima Indian Agency has been added to membership in the Pinal County Cow Testing Association.

The Agent and Mr. Williams have visited other dairymen in order to interest them in joining the association, and results from this work should be forthcoming during the coming year.

X. Land Levelling and Preparation

This has been one of our major projects, and some outstanding results have been secured. It is timely, in that during the past two years large acreages of desert land have been brot into cultivation. There will continue to be an increase of farmed land during the next few years, and work on this Project should be continued.

Most of the work done upon this Project was done during December, January, February, March, April and May, and consisted of demonstrations of the use of the farm level by the Agent, and the laying out of various pieces of new land for irrigation.

Farmers to whom the Agent has demonstrated the use of the farm level, and whom the Agent has helped lay out their farms, or parts of their farms, for water, are the following:

W. C. Pate, M. M. Kinard, J. C. Slater, Mrs. Sam Darter, Carl Enloe, Chris Christensen, Roger Palmer, J. R. Kirkland, H. S. Forster, Earl McKee, Hansen and Kortsen, W. H. Lane, J. R. Sutton, Chas. N. Wirth, C. O. Collettere, A. G. Curry, Harvey Hess, Stokes, Hartman and Williams, Peter H. Ethington, and Roland Curry.

Twelve of these farmers have later used one of the office levels in continuing the work outlined by the County Agent. Several others have seen the use of the level demonstrated by the Agent, and have used it in work on their farms.

3224 acres of land were laid out for water during the year by the Agent, and a checkup at the end of the crop season showed that in each case where the ground was properly prepared to remove small irregularities that the results were satisfactory.

Talks were given by the Agent at two farm bureau meetings, Casa Grande and Signal Peak, at which levelling and preparation of land were discussed. Also the Agent gave a talk on this subject before a meeting of farmers at Coolidge, 25 being present.

During the Extension Conference, the Agent outlined some of the features of this work, calling attention to the fact that we have labored for a long time under the assumption that there was a correct slope or fall for alfalfa, grain, cotton, etc., whereas experimental research and observation show that the proper slope is no slope at all, but level from the ditch to the end of the border.

The work of Specialist Jean C. Miller, in the counties of Pima, Pinal and Maricopa, was an outgrowth of discussion along this line, and it is believed that a new field for extension work has been opened.

XI. Improved Check Gates and Turnouts

Work on this project has been confined to emphasizing the installation of proper equipment to better handle water.

The Agent furnished information and assisted in outlining methods for the installation of irrigation boxes on 816 acres of land. Two farmers also used the office form in constructing check gates in ditches upon their farms.

In the development of new land it is often inadvisable to install permanent turnout equipment before it has been definitely determined just where and at what level they should be placed. Especial emphasis should be placed upon this Project during the coming year, inasmuch as ditches on new land are now fairly well set, and experience has shown what equipment is needed.

XII. Miscellaneous

During this year a very large amount of miscellaneous work has been carried on by the County Agricultural Agent. This has been covered in monthly reports, and for this annual report the most important of this work will be mentioned.

A study has been made by the Agent of lettuce and melon growing in the Eloy district, and in the Florence and Coolidge areas. This study has been very helpful to the Agent in aiding these growers in their problems.

The Agent has cooperated at all times with the Pinal County Farm Bureau and the various local bureaus in arranging educational programs for their meetings. Moving pictures have been shown, slide lectures, etc., and various men from the University of Arizona, State Departments, Sacaton Experiment Station, United States Department of Agriculture and Agricultural Extension Service have appeared on these programs.

The Agent cooperated with the Pinal County Farm Bureau and the Arizona Cotton Growers Association in arranging meetings to secure the cooperation of Pinal County Farmers in the work of bringing labor into the County.

A meeting was arranged by the Agent for the purpose of having farmers hear Byron Hunter, of the U. S. Bureau of Agricultural Economics, and Director P. H. Ross, of the Agricultural Extension Service, discuss the economic outlook. The dark picture painted by Mr. Hunter was not favorably received by some people, but it helped many in their operations, and practically 100 percent of the predictions made by Mr. Hunter have come to pass.

Four farmers have received instruction relative to the building of citrus lathhouses, and relative to planting of citrus seed. Many others have received information relative to planting and care of young citrus. Two date offshoot removal and planting

demonstrations were conducted by Prof. D. W. Albert and the Agent, with 35 and 20 farmers present. The Agent also cooperated with the Sacaton Experiment Station in establishing two demonstrational plantings of date palms in this area, consisting of 16 palms each. One of these was planted on very "tight" land at the Casa Grande Fig Farms, and the other in soil adjacent to the mountains near Casa Grande.

In company with Mr. C. M. Cornman, large turkey grower, and Specialist Rowe, the Agent made an inspection of various brooders in the Phoenix area.

The Agent organized local committees in the various districts, whose function it was to trace down the origin of any cottonseed which was to be used for planting. One load of seed was located which came from Salt River Valley without sterilization treatment, and this was immediately transported back to Phoenix.

Numerous inquiries were handled relative to feeding and management of poultry, and poultry diseases.

The Agent has met with and discussed feeding and breeding problems with practically every dairyman in Pinal County during the year. Also Specialist Rowe discussed feeding and management at the annual meeting of the Herd Improvement Association.

Numerous inquiries have come into the office relative to the control of insect pests. Among these have been looper worms, corn ear worms, aphids, striped cucumber beetles, cut worms, grasshoppers and crickets. Also many inquiries relative to ant control have been handled. An article was prepared on the latter subject, which was published by the four local papers.

Information was furnished growers relative to the building of two trench and one upright silo.

The Agent has cooperated with the Warden of the Arizona State Prison and Mr. Wm. Knight, Prison Farmer, in the management of the Prison Farm.

Thru the cooperation of the Pinal County Farm Bureau, the budget of this office was increased so as to permit of a full-time Home Demonstration Agent.

The Agent has addressed the two Rotary Clubs of the Valley, and also the Casa Grande Lions Club, on subjects relative to agriculture.

Publicity was given to a meeting called in Phoenix for the purpose of organizing a State Dairy Council, and the Agent and six dairymen from this vicinity attended the meeting. Also the Agent cooperated with this organization in a survey relative to use of dairy cattle in the farming of this county.

A field test of Sodium Nitrate on cotton was started, thru the cooperation of Mr. V. V. Williams, of Hartman and Williams Farms, and also the Chilean Nitrate Corporation. 100 pounds was applied at squaring time to one-third acre of cotton. Complete reports on crop yields are not in, but apparently the fertilized plot will outyield the check plots on either side of it.

During the year the Agent has furnished growers with market information on hay and grapes and cabbage, and assisted in putting growers of various crops in touch with markets.

A large number of inquiries of a veterinary nature have been handled by this office. No veterinarian is available in this County, so most of these inquiries come to the office of the Agent.

The Agent and Dr. Barr, of the Agricultural Extension Service, met and arranged a cooperative study which will furnish about ten farm records on the cost of producing cotton in this area.

Some damage was done in various parts of the valley to cotton crops by the corn ear worm. Ginning interests brought airplanes to the valley, and thousands of acres were dusted. The Agent and men from the office of the State Entomologist made inspection trips over the valley, and at the request of growers gave instructions relative to whether or not the dusting would pay.

Due to the illness of Mr. Fred Rathbun, Fair Manager, a larger proportion of this work than usual fell to the lot of the Agent. He was made superintendent of the livestock department, and is pleased to report that over 50 head of livestock were shown at this first livestock exhibition. A judging contest for farmers and boys and girls was also held, with wide interest being shown.

The Agent assisted the officials of the Casa Grande and Florence Farm Loan Associations in arranging a meeting at Florence to discuss ways and means of securing farm loans for lands under the San Carlos Project.

Prof. M. F. Wharton, at the invitation of the Agent, addressed the Casa Grande Farm Bureau on the subject of "Vegetable Gardening", and prepared a planting outline for the use of local gardeners.

Another piece of work which has not been very productive of results as yet, but which is rapidly getting under way, is the matter of an economic study of the agricultural situation of Pinal County, by a committee composed of members of the Pinal County Farm Bureau, the three Chambers of Commerce of the Valley, representatives of the irrigation districts and also the banks. The purpose of this survey is to analyze our present crop system and make recommendations relative to our planting and agricultural program. Dr. Geo. W. Barr is to cooperate in this work.

Arrangements have been made for re-testing of the dairy herds of Pinal County, and men from the Bureau of Animal Industry are now in the field, their schedule being arranged by the Agent.

The Agent arranged a meeting of farmers to hear Mr. M. C. Gay, representing the Federal Farm Board. Mr. Gay outlined the work of the Federal Farm Board, and also outlined conditions under the act which would permit the farmers of this area to organize a cooperative which would benefit under the act.

VI. Outlook and Recommendations

Extension work is growing in Pinal County. The demands upon the Office of the County Agricultural Agent are rapidly increasing, and will no doubt continue to increase thruout the coming year. There will be further increase in acreage of farmed lands, tho probably considerably less than last year. There is also a gradual tendency toward the cutting up of farms into smaller acreage, this resulting in more farmers requiring the services offered by this office.

Farms developed last year are a year older, and the pioneer development has taken place. With the beginning of the second crop year more attention will have to be paid to permanent developments such as better levelling, inauguration of crop rotation systems, turnout and headgate construction, farm buildings, etc. This will make further demands upon our office.

Cotton will continue to be the leading crop, and Project II, Improved Cotton Irrigation, will call for a large amount of time as it has done this year. Project IV, Improved Crop Stands, will also require as much if not more time than did this project during the past extension year.

Boys' and Girls' Club Work will be increased, particularly in cotton club work. One additional leader at least will be secured in the Coolidge district, and a cotton club organized there.

Rodent Control work, as it is now being handled, is going ahead satisfactorily, and will be kept upon the same basis. Labor and money is available, and only awaiting the beginning of active work early in January.

The Pinal County Herd Improvement Association is upon a good basis, but efforts should be made to secure additional membership.

With the assistance of Dr. Geo. W. Barr, the Agent will secure a number of farm records covering the costs of production of short staple cotton upon the farms of this County, both upon pump lands and upon lands watered from the Coolidge Dam. This work is particularly timely and the data gained will prove of great value in our work.

Work on Project III, Improved Conditions on Tight Lands, will be continued. The first few months of the development on the leased ground has shown good results, and we are very hopeful that our demonstration will result in rapid improvement of this soil. Wide interest has been created among the farmers, and many of them are visiting the demonstration and observing the results secured.

More time will have to be devoted to organization, in that our Pinal County Farm Bureau needs more active locals in its membership, thru which the Agent can work. Local Farm Bureaus should be established at Coolidge, La Palma and Florence.

Economic studies now under way covering the agriculture of Pinal County should also prove of value in our work. Dr. Geo. W. Barr will assist in compiling and interpreting the data secured, and his services should be of much help in its application to our conditions.

Program of Work - 1931

Pinal County

Project	No. Communities in which work will be done	No. of Demos.	Goals Established
II - Improved Cotton Irrigation	5	2	A better understanding of best methods of cotton irrigation, and twenty farmers using improved methods
III - Improved Conditions on Tight Lands	4	1	Continue work on Demonstration on H. B. Holt ranch. A better understanding of methods of handling tight land, and five more farmers using improved method
IV - Improved Crop Stands	5	1	Fifteen farmers secure better stands of cotton, and eight better stands of alfalfa
VI - Boys' and Girls' Club Work	5	2	Fifteen boys complete 1st and second year in cotton club work
VII - Rodent Control	2		Wider interest in club work
VIII - Better Sires	5		Continuance of adequately financed plan as now in effect. Total area of gopher infested land again treated. Wider distribution of rabbit poison
IX - Cow Testing	5		Five new pure-bred bulls brot in.
X - Land Levelling and Preparation	5	20	Five new members in Pinal County Herd Improvement Association
XI - Improved Check Gates and Turnouts	5	1	Twenty better levelled and laid out farms
XII - Costs of Production - Cotton*	5	10	Six new farms equipped with good type of checks and turnouts
			Secure records on at least ten cotton crops

* New Project started at the beginning of the new extension year, in cooperation with the Pinal County Farm Bureau and Dr. Geo. W. Barr



**Date offshoot removal and planting demonstration
at the home of Jean Vallette in Casa Grande, May 9,
1930.**

**Thirty-five farmers were present at this demonstration
and much interest was shown. The growing of dates
is gradually increasing, a number of small plantings
having been made.**



Date offshoot removal and planting demonstration
on the ranch of Arnold Hafzinger, near Florence,
May 9, 1930.

A demonstration planting was made on this farm
five years ago, Mr. Hafzinger cooperating with the
University of Arizona.

In addition to this cooperative planting, another
was made the same year on the F. T. Gilbert ranch,
and this year two were made, on the Casa Grande Fig
Farm and on the ranch of Frank Williams. The latter
two plantings were established by the Sacaton Experiment
Station.



Dairy cattle judging contest, held at the Pinal County Fair, Coolidge, Arizona, November 6, 1930.

This contest was conducted by Specialist Clyde F. Rowe and the Agent, and five rings of dairy cattle were judged, the procedure being for the farmers to turn in their placings on signed cards, which was followed by the placing of the class by Mr. Esve, and his reasons for so doing.

First prize in this contest was a pure-bred and registered Holstein bull calf, this prize being given to stimulate interest in pure-bred sires.

Photograph showing large part of the demonstration area in the reclaiming of "tight" or "slick" soils. This photograph shows the area in its original desert condition. Note the absence of desert growth which is typical of this type of soil.

As part of our work in Project III, Improved Conditions on Tight Lands, the Agricultural Extension Service and the Agricultural Experiment Station of the University of Arizona have outlined a demonstration in the development of this type of land.

The diked area on the left marks the approximate south boundary of our demonstration area.

A later stage in the tight soil demonstration.

The land has been plowed 12" deep, levelled, bordered, and has had gypsum applied at the rate of 1 ton per acre.

Note the gypsum spread on the border on right side of picture, and team and disc discing it into soil on left hand.

Photograph shows irrigation water on demonstration area. Thru proper levelling and installation of turnouts it was possible to hold water on all parts of the field for as long a period as desired.

Preparing the seed-bed on the demonstration area. The land was first harrowed, then re-harrowed, then the clods broken up with a cultipacker. This was followed by double-discing and drilling in of sour clover and barley. Then it was run over with a cultipacker again.

The "tight" soil demonstration thirty days after planting. Note the good stand of grain.

There is an abundance of moisture in the soil, and it is not planned to irrigate until early in February.

This photograph was taken three days after a rain. Note the water standing on the "slick" soil just outside the fence, while it has all disappeared within the developed area.

Removed for
Annual Report

Grade.

Dairy cattle judging contest, held at the Pinal County Fair, Coolidge, Arizona, November 6, 1930.

This contest was conducted by Specialist Clyde E. Rowe and the Agent, and five rings of dairy cattle were judged, the procedure being for the farmers to turn in their placings on signed cards, which was followed by the placing of the class by Mr. Rowe, and his reasons for so doing.

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Remained for 2 1/2 ft
accumulated

Good

The "tight" soil demonstration thirty days after planting. Note the good stand of grain.

There is an abundance of moisture in the soil, and it is not planned to irrigate until early in February.

This photograph was taken three days after a rain. Note the water standing on the "slick" soil just outside the fence, while it has all disappeared within the developed area.