

ANNUAL REPORT

OF

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Pinal County

December 1, 1952 - November 30, 1953

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SUMMARY

Final average cotton yield in Pinal County for 1952 on approximately 265,000 acres of short staple cotton was 669 pounds per acre. On approximately 12,000 acres of long staple cotton, the average yield was 329 pounds per acre. It is estimated that, at the writing of this report, on approximately 250,000 acres of short staple cotton the yield will be 735 pounds per acre. Acreage of long staple cotton has dropped in 1953 to 7,000 acres and yield is expected to run about 350 pounds of lint per acre. There are several reasons for the increase in yield over the 1952 average, but the main reasons are: Unusually low infestations of harmful insects, increase in land leveling and better land preparation, more efficient use of fertilizers, and favorable weather conditions for cotton production and harvesting. Harvesting as of November 30th are about 65% complete with a total of 210,000 bales harvested. There are at present 600 machines working in the fields with 350 more machines available. Migrant hand labor for picking cotton is estimated at 15,500. Approximately 70% of the harvesting is being done by machines.

Two Pinal County Cotton Improvement Associations have been reorganized for the purpose of receiving free cotton classing service under Smith-Doxey. The Pinal Acala Cotton Improvement Association has a total of 662 growers, and the Pinal American-Egyptian Cotton Improvement Association has 74 members.

Two cotton fertilizer tests were completed with the final harvesting early in January, 1953. Two cotton fertilizer tests were established and applied in May, 1953, the results of which will be reported in next year's report as they are only partially harvested. Using past years' work and continuing to conduct this type of work, Extension recommendations will keep pace with changes in soil fertility and cropping.

Three cotton variety tests were established in the Stanfield area in an attempt to demonstrate to growers in that area, by field demonstrations, that A-44 will equal or out-yield the less desirable varieties now being grown. California 442 and the new variety WR442 are also included in these variety tests. Yield data will be reported from these tests as soon as harvesting is completed.

Assistance was given growers in providing technical information and field surveys in regard to insect problems. Information was made available to growers through newspaper articles, radio programs, bulletins, and insect meetings. Insect problems during this past season never became severe because of large numbers of predatory insects and other conditions unfavorable to the build-up of harmful cotton insects.

Cotton diseases received considerable attention during the past season and particularly late in the season. A cool spring resulted in an increase in the incidence of damping off, which necessitated replanting on quite a large acreage. Probably also due to the cool spring and lower temperatures during the year, incidence of verticillium wilt on a particular type of soil increased seriously. A survey of several thousand acres was conducted to determine extent of the disease and resultant decrease in yield. It is estimated that approximately 15,000 acres of some of the most productive land is infected by the disease organism, with some 30,000 additional acres of the same soil type that could possibly become infected under continued cropping in cotton. Growers estimate a loss of up to 50% in yield on heavily infected land.

Small grain production is of minor importance in the cropping set-up in Pinal County. Sorghum production this past year was estimated at 3,000 acres. Barley acreage was approximately 30,000 acres. Acreages of small grains will unquestionably increase during the next crop year due to the cut in cotton acreages and the increased interest in livestock feeding operations.

Acreage of alfalfa, at approximately 35,000 acres, is also a minor crop being used primarily as a soil builder and conditioner. A relatively small acreage is planted to Northern varieties for seed production. Seed is also produced on a portion of the Southern adapted varieties in the summer after the water is taken from the alfalfa and used for cotton. Also due to cuts in cotton acreage and interest in livestock feeding, interest has increased in alfalfa and the acreage will probably increase by 20,000 acres or more.

Dairy Herd Improvement Work in Pinal County is incorporated with Pima County and is handled through the Specialist and the Dairy Herd Improvement Association Supervisor. Membership of Pinal dairymen in the Association now totals 8 with 578 cows on test.

The 4-H Club program in the county has progressed even though under somewhat stressed conditions. Lack of transportation of members to meetings, shortage of highly trained personnel for leaders of all clubs that could be organized, and lack of parent understanding and support are the main obstacles at this time. It is felt that concentrated effort on acquiring better parent cooperation will greatly reduce our general problems. The 4-H Club Fair was a great success from a standpoint of work accomplished by members and quality of stock 4-H members had fed for show and sale at auction. Quality of work and interest of members is exceptionally good, and enrollments will increase with an increase in trained leaders.

Information on all phases of Extension work is presented through three five-minute radio programs a week with time being allotted to 4-H, Home Demonstratio, and adult work. Ninety-seven radio programs were presented during the year. The County Agent's Column, 4-H News, and Homemakers Hints appear in the five county weekly newspapers each week. During the year 270 articles appeared in each of the five papers. Circular letters and meetings also are used extensively to get information to interested people.

Farm Bureau membership stands at 340 with six locals meeting once a month and one meeting a month of the Board of Directors. Farm Bureau, being an all-farmer organization, presents Extension with an ideal organization through which to do a better and more complete job of information. The Farm Bureau is very cooperative toward our work and is helpful in its assistance.

I. SITUATION

Cotton yields are expected to average close to 1½ bales per acre on the 250,000 acres planted this year. Weather conditions have been favorable to high production. Water supplies have been stressed and in most areas considerable repair was necessary on pumping plants to keep them operating under the summer load. Gravity water supplies are depleted and considerable run-off is needed to provide water for the crops to be planted on Project lands.

Pinal cotton acreage for the 1954 crop year will be cut to approximately 125,000 acres unless compromise legislation is passed to raise the nation's allotted cotton acreage. The cut in cotton acreage will have a severe effect on farmers and business in general, since Pinal County has always been the "cotton county" of the state. Adjustments in cropping are going to be necessary to keep farm income at a reasonable level.

Cotton diseases during the year have come in for quite a deal of consideration this past year. Probable main reason for increase in disease incidence has been cool spring and occasional cool periods during entire season. Rhizoctonia and verticillium wilt caused most concern, with spotty areas of Texas Root Rot. Insect problems have been at a minimum. Very few fields suffered damage, and this damage from spotty infestations of woollyworms and leaf perforator late in the season.

Drought conditions in the rangeland portion of the county, combined with much lower beef prices, has put quite a few cattlemen in a poor financial position. Generally, feed conditions on ranges in Pinal County have been serious the entire summer, and several operators sold in order to avoid expensive feeding programs, especially since the outlook does not present much chance of cattle prices increasing.

Farm wages have been quite high during the past year but will have to drop because of the future drop in farmer income. This drop might create some shortages of labor unless overall employment takes a drop. Hand pickers have received \$3.00 per cwt. on this year's crop. Machine harvesting has varied from \$1.50 to \$2.00 per cwt., depending on whether the farmer or the custom picker applied the defoliant.

Interest in crops to replace cotton has increased during the past three months with growers requesting information on small grains, alfalfa, pasture grasses, castor beans, and soy beans.

Livestock feeding, because of cheaper feeds and possible large supplies, has taken on increased importance in Pinal County's agricultural set-up. Dairying has been profitable

due to lower prices of hay and grain and probably will continue profitable. Poultry production under such favorable conditions of egg-feed ratio should increase.

Vegetable growers are modifying and changing their processing equipment to better compete in the market and are also testing several additional types and varieties of vegetables to produce along with their production of carrots, potatoes, and watermelons.

Supplies of all equipment, seed, fertilizer, and insecticides have been adequate during the year and will probably be in even greater supply for the next crop year.

II. ORGANIZATION

A. Extension Organization

The Assistant County Agricultural Agent carried the entire work of Extension in Pinal County for the first eight months of the year. The County Agent and a Home Demonstration Agent were appointed for Pinal County the 1st of August. The Home Demonstration Agent resigned the 30th of September, and the position was filled again October 12th. The second Home Demonstration Agent resigned effective the 30th of November. The Home Demonstration Agent's position is expected to be taken again shortly after the 1st of December. Extension work and results are very much in demand in Pinal County, and with an adequate staff will be of even greater assistance to all phases of the county's agriculture.

B. Organized Agricultural Groups

A large amount of assistance to Extension in program planning and in getting information to the growers comes from the Farm Bureau locals. Through being present at Farm Bureau meetings, and often by supplying programs for meetings, Extension information is continuously being presented to the people it is to reach. Program planning and the work resulting is more direct and effective when assistance is had from the growers themselves.

The two Pinal County Cotton Improvement Associations are reorganized each year by the County Agent so that growers, all of whom are members of the Association, receive free classing of their cotton. Pinal County Acala Improvement Association has 662 members, and the Pinal County American-Egyptian Cotton Improvement Association has 74 members.

The Dairy Herd Improvement Association is incorporated with that of Pima County and is handled by the Dairy Specialist, Pima County Agent's Office, and supervisor of the Pima-Pinal Dairy Herd Improvement Association. The two county Dairy Herd Improvement Associations are incorporated in order to provide sufficient cows on test to make a full time testing job and relieve the problem of continually having to train new testers for a part time job.

III. PROGRAM PLANNING

Cotton, being the major crop in Pinal County, receives major consideration in program planning. Emphasis is placed on all phases of cotton production with project demonstrations on cotton fertilization, cotton varieties, and insect control. Plans for the next year's work are put in an outline form to include projects, communities serviced, number of demonstrations, description of work to be done including specialists help. Plan of work is based on the needs of agriculture as requested by growers and with help from agricultural groups such as Farm Bureau.

Plan of work for 4-H is based on recommendations from the Pinal County 4-H Leaders Council, requests from members, and when possible, from parents of 4-H members. The combined thinking of all these groups with thoughts of the Agents make a complete program.

IV. INFORMATION PROGRAM

Newspaper

During the year, our "County Agent's Column" appeared in each of the five weekly county papers - Eloy Enterprise, Casa Grande Dispatch, Coolidge Examiner, Superior Sun, and Florence Blade-Tribune. A "4-H Column" also appears in the same papers each week as does our Home Demonstration Agent's column "Homemakers Hints". Two hundred nineteen covered farm news on all projects, thirty-eight articles were devoted to 4-H club work, and fifty-two on Home Demonstration work. An article was prepared by the Assistant County Agent for the "Arizona Stockman" magazine on "Cotton Production in Pinal County".

For the first portion of the year, radio information was carried on one fifteen minute program a week on radio station KCKY in Coolidge. The program was changed to three five-minute programs a week and is continuing as such. The Agents will increase their radio information to five programs a week as soon as personnel is steady. Sixty-five radio programs were on agriculture, 21 carried 4-H news, and 11 were devoted to the Home Demonstration Agent reports.

Circular letters prove very effective as a means of getting specific information to a number of people in a short time. Circular letters are distributed in all phases of Extension work and have been prepared for cotton fertilizer test results, cotton insect control meetings, and cotton defoliation as well as for 4-H meetings and notices of judging practices as well as many others. Seventy-five circular letters were prepared and 4,409 copies distributed. Effort is directed toward keeping our mailing lists current and reach as many growers as possible.

Four thousand five hundred and thirty-three circulars were distributed by Agents during the year. Special concentration on circular distribution was on all phases of cotton production and 4-H project material.

Slide project and moving picture projector are visual aids equipment used. The equipment is used when possible in meetings of all types to better emphasize main points of the meeting and to create interest in meetings. Slides and film have been extremely helpful in 4-H club work and insect control and especially in regard to insect identification.

County Agent's Office

BY TED H. SIEK

Pinal County Agricultural Agent

GRADE OF FEEDER DECIDES PROFIT

How long should a beef animal be fed?

Common and medium grade feeder steers will gain as rapidly as good and choice steers under similar conditions. However, carcass yield and quality of the common and medium grades will be inferior. The lower grades won't take as much finish as the higher grade animals.

Steers of dairy breeds - if they are of heavy frame, may make as good daily gains as the beef breeds with a lower cost for each 100 pounds of gain. Here, though, the yield off high quality cuts will be lower and the price at the market will be less.

If feeds are plentiful these guides could be observed:

1. Short-feed common cattle.
2. Feed good cattle to a good finish.
3. Feed choice cattle to a choice finish.

In this way you can make the most logical use of the animal's possibilities.

CHECK ON WATER MANAGEMENT NOW

It's time now to check the efficiency of your water management.

A good irrigation system includes ditches that are large enough to properly handle the available water and distribute the water to all parts of the farm. Pipe lines or level ditches between two or more pumps may help in water distribution.

Labor is a premium. It's easy to pay out more money for labor than for water with a poor irrigating system. Reduce the labor wherever it is possible and still be able to give the farm proper irrigation.

If the irrigation labor costs are too high, check the ditch system and level of the land. Even penetration on the entire field reduces the amount of waste water and labor requirements.

Land that isn't properly leveled will give poor crop response. Check on the growth of the crops now, poor irrigation will be reflected by poor crop growth.

Luxuriant growth at the head and end of the field with poor growth in the middle indicates ponding at the tail end and a lack of good water distribution. Either land leveling to the proper slope or a different method of water application is needed. The same will apply where not enough water reaches the end of the field for good penetration. Also, excessive tail water may indicate that the water is applied too fast.

CASTOR BEANS

For those growers who may be interested in trying a crop of Castor Beans, some information is available at the County Agent's Office. This information is from work done in Yuma County but there will be, as soon as this year's crop is harvested, considerably more information from Maricopa County which would definitely fit into our cropping conditions here in Pinal County.

BARLEY FERTILIZATION

To growers anticipating the planting of barley or alfalfa following crops such as sorghum, Hegari, or cotton should figure on plowing 50 units of Nitrogen under with the stubble from the previous crop in order that the Nitrogen will be available for the crop being planted.

Nitrogen requirements for barley vary from 50 to 100 pounds of actual Nitrogen per acre, depending upon soil types and cropping conditions.

Copy of the "County Agent's Column" which appears in five newspapers in the county each week.

COOPERATIVE EXTENSION WORK
 IN
 AGRICULTURE AND HOME ECONOMICS
 STATE OF ARIZONA
CASA GRANDE

UNIVERSITY OF ARIZONA
 COLLEGE OF AGRICULTURE
 U.S. DEPARTMENT OF AGRICULTURE
 PINAL COUNTY COOPERATING

AGRICULTURAL EXTENSION SERVICE
 HOME DEMONSTRATION WORK
 COUNTY AGENT WORK

September 18, 1953

Dear Cotton Grower:

Enclosed is Extension Circular 203, "Defoliating Cotton in Arizona - 1953". I hope this material will be of assistance to you in obtaining better defoliation.

Each field will present a different problem because of differences in cultural practices throughout the season and differences in plant growth at the time defoliation is desired.

If you can use our assistance in determining optimum time for application of defoliant materials or any other phases of cotton production, call us at 3221, Casa Grande, or drop in the office in the City Hall. We will be glad to check your field for you.

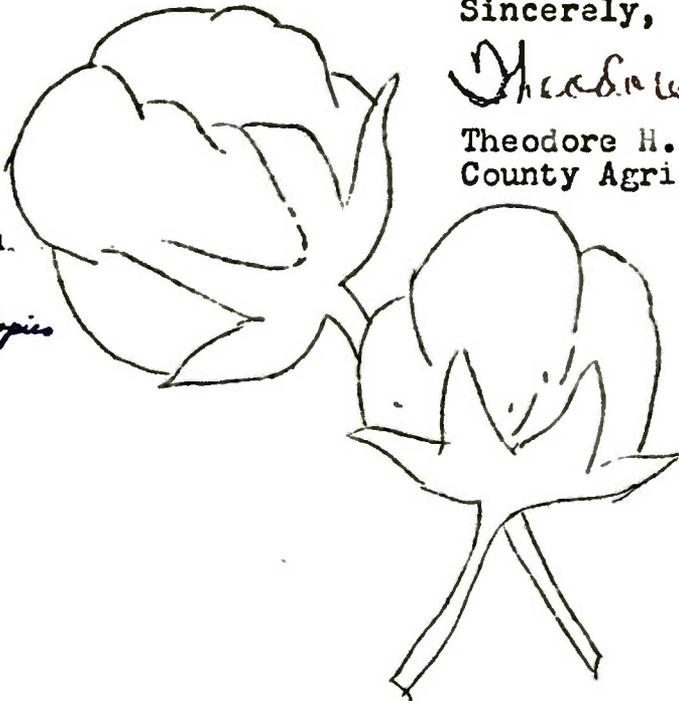
Sincerely,

Theodore H. Siek

Theodore H. Siek
 County Agricultural Agent

THS/lh.
 Enc.

225 Copies



This is a copy of a circular letter sent out in regard to cotton defoliation.

V. PROJECTS

2. 4-H Club Work

High point in 4-H Club work was the 4-H Fair held at Kenilworth School April 17 and 18. The Fair was very successful in operation and in quality of club work, both in Home Economics projects and livestock projects. Several compliments were forthcoming in regard to finish on the beef projects offered at the auction.

The 1952-53 year was probably the low point as to enrollments and the 1953-54 year should show considerable improvement in enrollments and also in completions. Quality of work has been steadily improving and parents are becoming more cooperative as they better understand the program and benefits their children receive from being 4-H members.

Thirty-eight news articles and 17 radio programs were conducted to emphasize 4-H club work.

3. Horticulture

Several pruning demonstrations were held in the county during the month of January. These demonstrations were arranged by the local office and conducted by the specialist. Two demonstrations were conducted in the Winkelman area, one in the La Palma area, and one at Casa Grande. Attendance at these demonstrations totaled about 100.

A flower show is held in conjunction with the 4-H Fair. This flower show is judged by the Specialist, and interest in this phase is increasing.

The remainder of work in this project was to handle house calls and other calls on questions regarding all phases of home beautification, grapes, lawn care, fruit trees, diseases and insect control of all ornamentals. The Extension Plant Pathologist and Extension Entomologist were used very extensively in regard to problems in their fields in this project. Recommendations were also made on fertilization of lawns, ornamental, fruit and citrus trees.

Twenty-three news articles and nineteen radio programs were used to publicize meetings and discuss other problems in regard to this project.

4. Livestock

a. Range Improvement

No work done on this project.

b. Livestock Feeding

In January, Dr. Bartley Camdon, of the University of Arizona, gave a very interesting and informative talk on rations and functions of the rumen and was well received by 45 members and guests of the Winkelman Farm Bureau.

Dr. Pistor, Head of the Animal Pathology Department, at the University of Arizona, talked to 20 members of the Winkelman Farm Bureau in March on cattle diseases and control measures, and mentioned several points on poisonous weeds.

Several inquiries were answered in regard to various phases of livestock feeding. Thirteen news articles and seven radio programs dealt with this project.

c. Livestock Insect Control

Dr. J. N. Roney, Extension Entomologist, spoke to a group of Farm Bureau members of the Winkelman Local on the subject of controlling livestock insects. Several inquiries were received on livestock insect control.

5. Dairy

No organized work, except D. H. I. A., which is conducted through the Pima County Agent and Specialist, is conducted in this project although occasional inquiries are made in regard to various phases of dairying. A detailed list of dairy management practices was made by the supervisor of the D. H. I. A. and given to the Specialist.

Information on this project consisted of two news articles and three radio programs.

6. Poultry

No organized work in this project was done. Calls were limited to calls on management and diseases of small farm flocks. Possibilities of commercial poultry plants have been discussed with several people.

A news article was prepared in regard to the use of geese in cotton weed control; two other news articles and two radio programs were written on poultry.

7. Agronomy

A. Cotton

1. Cotton Fertilization

A considerable amount of program concentration was on cotton fertilization, with inquiries on various problems. Recommendations were made on fertilization of cotton taking into consideration past cropping, fertilizer history, soil types, and irrigation practices. Information was made available on various forms of nitrogen fertilizers and their relative values as well as benefits to be expected from phosphate fertilization for cotton. It has been shown from past test work that generally phosphate fertilization on cotton is not economical. Recommendations were made on fertilizer placement and time of application.

Three cotton fertilizer tests were conducted in Pinal County during the year. Two tests were harvested with one being lost. Details of these cotton fertilizer tests are submitted.

Elliott Cotton Fertilizer Test
1952
Summary of Data*

Treat. No.	Treatment	1st picking		2nd picking		Total	
		Seed Cotton	Lint**	Seed Cotton	Lint	Seed Cotton	Lint
1	0 - 0 - 0	1386	499	357	129	1743	628
2	50 - 0 - 0	1904	685	380	137	2284	822
3	100-0-0	2004	721	333	120	(2337)	(841)
4	150-0-0	2213	797	284	102	(2497)	(899)
5	100 - 50 - 0	2032	732	289	104	(2321)	(836)
6	0 - 50 - 0	1313	473	370	133	1683	606
LSD .05		274	99	44	16	302	109
LSD .01		389	140	62	22	431	155

* Yields are averages of 3 replications and are expressed as pounds per acre.

** Seed cotton yields were multiplied by 0.36 to obtain yields of lint.

H. L. Holland Cotton Fertilizer Test
 Pinal County
 1952

Treat. No.	Treatment N - P ₂ O ₅ - K ₂ O	Plot Yields (Sum of 2 middle rows)				Average Seed Cotton		Ave. lbs/a Lint*	
		Rep. I	Rep. II	Rep. III	Rep. IV	Average	Seed Cotton		
1	0 - 0 - 0	487	475	435	461	464	2423	872	
2	50 - 0 - 0	475	447	541	466	482	2517	906	
3	100 - 0 - 0	447	482	526	463	480	2506	902	
4	150 - 0 - 0	398	445	495	476	454	2371	854	
5	100-50 - 0	505	464	520	497	496	2590	932	
6	0 - 50 - 0	469	435	451	458	453	2365	851	
LSD .05								NS	NS

* Seed cotton yields multiplied by 0.36 to obtain yields of lint.

NS -Non-significant

Summary of the Elliott cotton fertilizer tests indicate that yields were increased by the addition of Nitrogen fertilizer up to 50# of Nitrogen per acre. The treatment of 50# of P_2O_5 gave no response in yield over the check plot that received no fertilizer of any type. The treatment 100 - 50 - 0 yielded no more than the 100 - 0 - 0 treatment. In the Holland test no increase was realized from fertilization.

The results from the tests were reported to farmers by Mr. Howard Ray, Extension Soils Specialist, at cotton meetings held at Stanfield and Coolidge. The information was also provided to growers through news articles and radio programs.

Growers are well aware of the economical value of cotton fertilization, and in particular, the value of Nitrogen fertilization. The commercial fertilizer dealers are now, as in the past, attempting to sell the grower on all types of mixed fertilizers, and these commercial men have been quite successful even though they can offer no conclusive proof on their claims. Mixed fertilizers are expensive and unless yields are very materially increased over a straight Nitrogen program, which we doubt in most cases, the growers are losing a lot of money.

Two cotton fertilizer tests were applied in May, both in the Casa Grande area. The cooperators are Lee Dryden and Noel Martin. Unfortunately, the Martin test was lost, and no data was taken. The Dryden test has been picked once and yield date will be made available as soon as the figures are computed and analyzed. The results will be given to growers at a cotton meeting by the Specialist in the early spring.

Information on the fertilizer phase of cotton production was made through ten news articles and seven radio programs.

2. Varieties

A-44 is by far the more predominant variety of cotton being produced in Pinal County. The Pinal County Improvement Associations were reorganized in order that growers can obtain free classing of their cotton under Smith-Doxey legislation. The Smith-Doxey reports break acreages down as to varieties as follows:

<u>Variety</u>	<u>Acreage</u>	<u>% of short staple</u>
A-44	186,109	73.44%
A-33	4,950	1.95%
A-28	2,270	.89%
P-18	325	.128%
Cal 442	10,260	4.05%
Other	36,653	14.46%
Long Staple	7,834	

Most of the acreage of varieties other than A-44 is being grown in the Stanfield area. Variety tests are concentrated in the Stanfield area in order to present facts to growers that A-44 is superior to other varieties.

Three varieties demonstrations were established in the Stanfield area.

Ben Kortsen - Stanfield

4 rows each variety - 1 mile rows

2 replications of each variety

A-44

A-33

Cal 442

WR 442

Bud Smith - Stanfield

4 rows each variety - 1/4 mile rows

4 replications of each variety

A-44

A-33

P-18

Cal 442

WR 442

One variety test was lost because of inadequate stand.

First pickings have been harvested, data will be reported when final pickings are completed. Ginning percentages, length and strength of staple and quality data will be taken from all varieties so this information can be presented to growers along with yield.

3. Cotton Insect Control

Emphasis on insect control and identification varies to a certain extent with problems of growers and crop infestation. Damage from insects this past year was very low. Growers seem to know less, generally, about insects than any other phase of cotton production. To a large extent, growers depend on "sweepers" from commercial firms to take counts and recommendations, which can be very expensive to the grower if the person making the recommendations is a little more anxious to make a sale than to protect the farmer.

The Assistant County Agent organized a cotton meeting in the Stanfield area, which was attended by 25 growers. Another meeting on cotton insects was conducted at 11-Mile Corner.

A cotton insect meeting was conducted by the Specialist at Casa Grande in June at which time he discussed identification of harmful insects, counts necessary for economical control, and then through field demonstrations demonstrated to growers the proper methods of sweeping and further assisted

them in the identification of harmful insects. This type of meeting is very well received by growers and have a definite part of our insect control program.

During the summer months of July, August, and September most of Extension's effort is directed toward assisting growers in regard to insect problems. A large majority of field visits are made to discuss with growers' insect problems.

Damaging infestations of insects were spotty over the county and were primarily bollworms, leaf perforators, and woollyworms. Sale of dusts were materially less than in past years.

Insect information was distributed through 13 news articles and 10 radio programs. A copy of the "Cotton Insect-1953", prepared by the Specialist, was distributed to each grower on the mailing list.



A part of the group which attended the Cotton Insect demonstration in June which was conducted by Dr. J. M. Roney.



Dr. J. N. Roney demonstrating to a group of growers the proper method of sweeping a field for cotton insects.

4. Cotton Diseases

a. Soreshin

Soreshin, commonly referred to as "damping off", caused many growers in Pinal County to replant, and resulted in losses to the growers, from later plantings and also from poorer stands and weaker plants in fields not considered damaged enough for replanting. Losses from soreshin are hard to estimate but were costly in several cases.

b. Verticilium wilt

Verticilium wilt, not considered a problem in Pinal County, became very serious on quite an extensive acreage this past crop year. The disease was limited to the Pima soil series, clay and silty clay soil types, which is concentrated South of Eloy and along the Gila River north of Florence, and is extremely fertile.

The Agent, in cooperation with Dr. Ross Allen, Associate Professor of Plant Pathology, University of Arizona, and the Extension Specialist, found verticilium wilt evidence in cotton on approximately 15,000 acres. There are approximately 30,000 additional acres that could be infected under the right conditions.

Dr. Presley, U. S. D. A. wilt specialist, accompanied the Agent, Dr. Ross Allen, Robert Peebles, and several members of the U. S. D. A. Field Station staff from Sacaton on a tour of wilt-infected areas. Dr. Presley, having been at Sacaton for several years, was surprised to observe the severe infestation in Pinal County.

A cooperator near Eloy has been acquired to conduct test work next season to attempt to minimize effects and resultant yield losses from verticilium wilt.

c. Crazy top

Crazy top in cotton, generally not quite so widespread this past year, is and has been a serious problem to Pinal growers. Considered to be of a physiological nature related to poor water penetration, it is still not fully understood. Several growers feel it is a problem of fertility and might be right. Recommendations are to plant land to alfalfa in order to improve penetration and soil fertility, but, because of high water requirements of alfalfa and low net income, growers would like to find another means of preventing the rapid vegetative growth referred to as crazy top. A cooperator has been acquired and will put 20 acres of cotton on land that has produced "crazy" cotton for three years in order to provide this office an opportunity to try several factors in an effort to overcome this "crazy" condition.

d. Minor Cotton Diseases

1. Root Rot

At present root rot infestations are limited to a very small acreage of cotton in Pinal County. Excessive losses of production are pretty well limited to individual growers where the disease presents a problem.

This disease, while of a minor nature at present, is increasing to a certain extent, and without proper control measures practiced, could become more serious in this county.

2. Root Knot Nematodes

A very small acreage of our sandy cotton land is infested with the Root Knot Nematode, and in these areas production is considerably less than it would be under controlled cultural practices. A small amount of work has been done on fumigation for Root Knot Nematodes and has proven economical in most cases.

If cooperators are secured, demonstration work on control of Root Knot Nematode will be conducted in cooperation with Harold Reynolds, Nematologist, from the U. S. D. A. Field Station at Sacaton.

Material on cotton disease identification and possible control means was presented in 23 news articles and 6 radio programs.

5. Cotton Defoliation

The use of defoliants has been widespread in Pinal County this past year. It is estimated that 50% of the acreage in the county was defoliated as compared to 30% last year. Early jobs of defoliants were successful. As the season progressed, effect of materials was not quite so favorable. Magnesium chlorate, sold under several trade names, was the most widely used material for defoliation.

Mechanical harvesting is closely allied to defoliation in that a good job of leaf drop is required for most efficient mechanical harvesting. Both of these practices will have to receive more consideration in order to keep growers' net income high and to supplement a very inadequate supply of hand pickers. From 900 to 1000 machines are available for harvesting the remainder of this year's crop. This Agent presented a talk on defoliation and its effect on machine picking at a "cotton picker" school held by a local implement dealer. Defoliation and machine harvesting were covered by three news articles and five radio programs.

6. Miscellaneous cotton production activities

Information on all phases of cotton production has been presented to growers in Pinal County through the county staff. Radio programs, news articles, and circulars stressed importance of field preparation, irrigation, cultivation, rate of planting, planting dates, and spacing, and these subjects were discussed with growers along with major topics, but received no major emphasis.

Soil temperatures were taken on one farm in West Coolidge to give growers an indication of temperatures at the time they were planting. Information on tests conducted by the University of Arizona Experimental Farms on soil temperature experiments was made available to growers along with the soil temperatures recorded at West Coolidge.

Weed control is a subject on which more data is needed, and more emphasis should be placed on this subject. Weeds, primarily Johnson Grass and annual Morning Glory, are costing growers in reduced yields, high labor costs, reduced picker efficiency, and poorer quality cotton. 2-4-D damage was observed in several fields of cotton and was assumed to have occurred when a batch of insecticide was being mixed near a partially opened drum of 2-4-D.

B. Alfalfa

No major emphasis was placed on this project and work in this line consisted of answering questions put forth by growers during the year. Information on varieties, pasturing, ensilage, grazing, and seed production was given to interested growers.

More inquiries on alfalfa have been received since announcement of the cotton acreage allotments and several thousand additional acres of alfalfa have been planted. Most of the alfalfa is being planted with barley as growers feel they need a barley crop in order to carry the alfalfa the first year.

Two fertilizer tests on barley and alfalfa are lined up, and one phosphate fertilizer test is being considered for this next cropping year. More emphasis will be placed on proper care of alfalfa in an effort to make the alfalfa crop a paying crop rather than a soil builder with no regard to cash income.

C. Barley

Barley acreages in the past have varied in relation to water and land needed for cotton. The crop has been used primarily for soil building and only when water would not be needed for cotton. A small amount of Certified seed is produced in the county. Interest for the coming crop year has increased as has the acreage of barley being planted. Growers, generally, are figuring close on production costs and trying to produce the crop for a profit. Much more consideration is being placed on proper cultural practices, including fertilization and irrigation.

Information was given to growers on all phases of production as well as on the economic outlook and need for adequate storage. Six news articles and 7 radio programs dealt with this project.

Three barley tests are being considered this next crop year. Two cooperators have been acquired and another is being contacted. More information is needed on all these minor crops and more demonstration work is needed to show growers the value of the practices Extension recommends.

D. Sorghum Grains

County acreage of sorghums was estimated at 3,000 acres. About one-third of this acreage was producing Certified seed of several varieties.

Information through 8 news articles and 5 radio programs stressed Certified Seed production, rate and depth of planting, ensilage, and varieties.

Acreage of sorghum will increase materially this next crop year as several growers, who in the past have not produced sorghum, are planning to double crop barley and sorghum as part of their farming program. Much more local information is needed in this project as very little is available for growers now. Work in this project will be determined by available time that can be taken from cotton problems during the late summer.

E. Miscellaneous Agronomic Crops

1. Castor Beans

A limited acreage of castor beans has been grown in this county the past year. This small acreage was made up from several growers who planted 20 to 40 acres as a test of the crop. Information from these growers and from growers in Maricopa County who are producing several hundred acres will be given to growers interested. This office is not recommending large plantings this year until growers themselves get more experience and more data available on this crop.

2. Papago Peas

No peas are being used in this county, but interest in Papago Peas for green manure crop, particularly on tight soil where the grower doesn't want to produce alfalfa, has been shown. Papago Peas have been recommended on land the winter before the land is put into cotton, particularly in years of allotments. Some growers have shown interest in the peas for seed, but no plantings have been made as yet.

8. Irrigation

Work in this project has been of a general nature giving information on questions. Data was given on costs of water for various crops and recommendations were made on efficient practices. Efforts were directed toward convincing growers that cotton can be irrigated too late in the fall and put the crop in condition for excessive frost damage.

Cost data and information was given to some growers on water return systems to more efficiently use available water supplies. Considerable costs were necessary in some areas to keep pumps operating and cotton irrigated. Growers, more and more, are realizing the need for water conservation and are making plans to adopt practices to this end.

Twenty-seven water samples, both for domestic and irrigation purposes, were sent to the University for analysis; these analyses were then interpreted for the grower.

9. Engineering

Work in this project was in the nature of giving infor-

mation to questions of growers on pumping plants, wells, and mechanical harvesting equipment.

10. Entomology

Work in cotton listed under Agronomy - Cotton - Cotton Insect Control. Additional work listed under Horticulture.

Two meetings were held in February, with the Specialist, and Homemakers Clubs - one in Ray and one in Superior - on control of houseflies. An insect meeting on livestock reported under Project - Livestock.

In March another Household Pest meeting was conducted by the Specialist at 11-Mile Corner. In June members of Homemakers Clubs were presented a program on fly control and another Household Insect program was presented to homemakers in Casa Grande, both meetings conducted by the Specialist. Reception of this material by the Homemakers was very enthusiastic, and the members desire more of this work.

Members of this office attended the 2nd Annual Defoliation and Insect Control Conference in Phoenix March 9, 10, and 11. Research men from the Western Cotton States gave very interesting information of work being done in each state.

11. Soils

A. Fertilization

Discussed under specific crop under Project 7 - Agronomy.

B. Problem Soils

Three cooperators were contacted and asked to cooperate in the application of Vermiculite on their land. No results from these tests have been received by this office.

Information on deep plowing, use of green manure crops, alfalfa, gypsum, manure, and other soil correctives is presented to growers through field calls, radio and news articles. Most of the "slick" ground, through proper handling, has been improved but poor water penetration is still a problem in certain areas, and is no doubt one of the causes of crazy top cotton. Land levelling is continuing at a high rate and must be encouraged, along with deep plowing on tight soils, in order to make this type of land more productive.

Twenty-seven soil analyses were sent from the county and interpretations made to growers.

A County Agent's Conference was attended in Yuma March 30 and 31. Emphasis was placed on soil analyses and interpretation, and was extremely informative, and the information

valuable to Agents in soils work.

12. Rural Sociology

No activity in this project.

13. Agricultural Economics

Information from the Specialist and other sources is discussed with growers continuously in prices and outlook of the entire agricultural picture. Efforts in getting information on quotas to growers and cooperation with the local committeemen on quotas has been one phase of our work in this project.

This office assisted the local F. H. A. Agent in regard to emergency livestock loans by contacting livestock men in regard to this livestock financial assistance. A letter and fact sheet on emergency financing was sent to 125 names on our mailing list and received considerable response. A copy of this letter is submitted.

14. Plant Pathology

Work in cotton discussed under "Cotton Diseases"
Work done on lawns, trees, and ornamentals discussed under Project 3 - Horticulture.

Miscellaneous Extension Activities

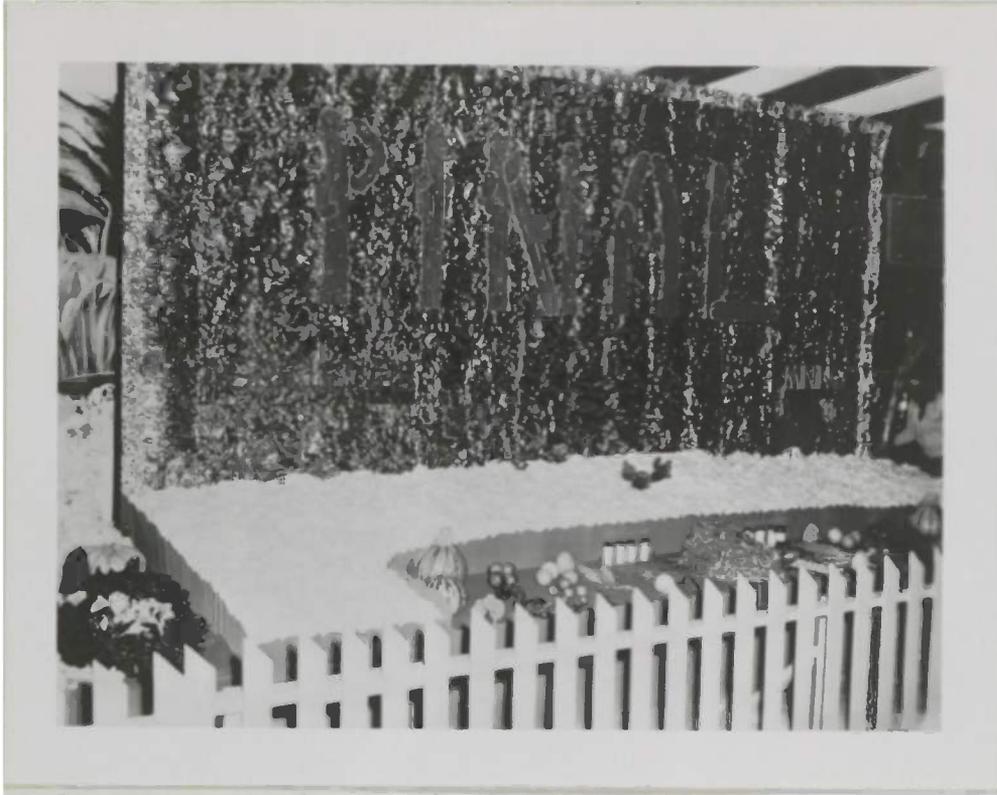
Budget was submitted to and approved by the Board of Directors of the Pinal County Farm Bureau and Pinal County Board of Supervisors.

Inventory of county equipment was checked and submitted to the state office.

The Annual Conference of Extension personnel was held in Tucson December 9th to 12th.

The Pinal County State Fair Booth took sixth place in booth competition. Pinal County's exhibits, based on total points from ribbons won, placed second - a very few points under Maricopa County.

County Fair Commissioner, A. F. Peters, was in charge of the booth and did a very commendable job in preparation of the booth and in acquiring exhibits and displays for the State Fair. We are submitting a picture of Pinal County's booth.



Pinal County's booth at the State
Fair held in Phoenix November 6-15,
1953.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF ARIZONA

CASA GRANDE

UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE
S. DEPARTMENT OF AGRICULTURE
PINAL COUNTY COOPERATING

AGRICULTURAL EXTENSION SERVICE
HOME DEMONSTRATION WORK
COUNTY AGENT WORK

November 23, 1953

SUBJECT: SPECIAL LIVESTOCK LOANS

Dear Livestock Producer:

Enclosed is a fact sheet on the special livestock loans, one of several measures taken by Congress to help livestock producers continue their operations.

These loans are administered by Mr. Lyle Whitmer, F.H.A. representative, whose office is in Florence. Additional information to those livestock producers interested can be obtained from the F.H.A. office in Florence or the County Agent's office in Casa Grande.

Sincerely,


Theodore H. Siek
County Agricultural Agent

THS/lh
Enc.

FACT SHEET ON SPECIAL LIVESTOCK LOANS

Purpose: The special livestock loan program is one of several measures taken to help livestock producers continue their operations.

Who May Borrow: Established producers and feeders of cattle, sheep, and goats, except commercial feed lot operators, who:

1. - are temporarily unable to get from commercial banks, cooperative lending agencies, or other responsible sources, the credit needed to continue their normal livestock operations;
2. - have a good past record of livestock operations;
3. - have reasonable prospects for success with the help of a loan.

Uses of Loan Funds: These loans are made to meet usual expenses necessary to successful livestock operations, such as the purchase or production of feed, and replacing, hiring or repairing of farm machinery and equipment. Loans also may be made for the restocking of herds, if the applicant can carry his present herd, plus the additional livestock to be purchased, without buying a substantial portion of his feed. Loans are not made to expand operations substantially or to pay existing debts, except current incidental bills.

Long Terms: Loans bear 5 percent interest and are to be repaid as rapidly as possible, according to a schedule based on the applicant's ability to repay, but may not extend beyond three years. Loans will be secured in their full amount by the personal obligation and available security of the applicant. Other creditors are not asked to subordinate their liens, but are expected to stand by and to agree that a reasonable part of the applicant's normal income from livestock can be used in repaying the loan. The standby agreement is required to give the farmer a fair chance to work out of his difficulties resulting from the emergency.

Loan Approval: A state or local livestock loan committee, appointed by the Secretary of Agriculture, decides whether the applicant is eligible and approves the loan. An application for a loan of more than \$50,000 must have final approval by the Secretary.

Where to Apply: Applications for special livestock loans may be made at county offices of the Farmers Home Administration, or may be referred to the State Special Livestock Loan Committee.

Authority: The special livestock loans are authorized under Section 2(c) of Public Law 38, 81st Congress, as amended by Public Law 115, 83rd Congress. The special livestock loan program became effective in July, 1953, and is authorized for a period of two years from that date.

VI. OUTLOOK AND RECOMMENDATIONS

Growers in Pinal County, having devoted their efforts principally toward cotton production, face a serious problem this next crop year due to cotton acreage controls and the necessity of changing to less profitable crops and crops that require more water. The water situation is not good in most cases, and for Project farmers, it is very bad. There is no water storage available for Project lands at present, and considerable run-off will be necessary for Project lands to receive more than the half acre-foot allotted to them this past year. Cotton acreage allotted to Pinal County growers for 1954 is at present set at approximately 125,000 acres or 41% of the average of the past three years. It is possible that before planting, compromise legislation will be passed to increase our acreage.

Supplies of equipment, fertilizers, seed, insecticides, and numerous other commodities the farmer uses in his operations are in good supply and competition for the farm dollar is going to be very keen. Conditions being as they are, the farmer should be well-serviced with products he wants and can afford to buy. Also, because of reduced cotton acreage and generally lower farm prices, competition among farmers will sharpen, and as has happened the past two years, the less efficient operators will be forced into other fields.

We can expect tremendous increases in small grain planting and alfalfa. Extension is faced with the immediate task of providing information for growers on small grains, alfalfa, and other miscellaneous crops on which information pertaining to this area is practically non-existent because of past emphasis on cotton production. Efforts are going to have to be directed toward gathering information and conducting field demonstrations in these minor crops, and continue to provide the growers up-to-date information on cotton production so that incomes will be kept as high as possible.

Increased interest in all phases of livestock feeding, dairying and poultry will be noted due to reduced cotton acreages, larger supplies of grain concentrates and pastures, and in price relationships.

Diversification in crops and livestock and better crop management will no doubt result from cotton legislation and probably make the future overall situation much better, but not without causing severe readjustments. Growers are well aware of their problems and problems of agriculture in general and are, for the most part, confident that agriculture's position will improve.

Program emphasis will have to be altered from that of past years because of forced cropping changes and increased interest in livestock operations. Planning of the program is going to require very careful consideration in order to keep emphasis where growers are most vitally in need of Extension information.

Demonstration work in all phases of barley and alfalfa production will be stressed during the coming crop year. Our tentative plans are to conduct several tests on rate of planting and fertilization of barley, phosphate fertilization of alfalfa, rate of planting and fertilization of barley when planted with alfalfa.

We must also continue to demonstrate as many phases of cotton production as possible in order that Extension information is current to the problems of the growers. Cotton fertilizer and variety demonstrations will be conducted as they have in the past, but plans have been made and cooperators secured for demonstration work on verticillium wilt and crazy top in cotton.

Increasing population trends in the cities of Pinal County will also require more concentration on Home Beautification as well as insect and disease control of ornamental plants and trees.

It is also necessary to keep in mind ways and means of cutting costs of production, and in cotton this can be done by complete mechanization. As time permits this office will be presenting information and demonstration results to all interested growers.

We will have to continue to work closely with the University Experimental Farm and other research organizations to obtain the best known information on all phases of cropping and livestock. After the information is obtained, every means must be used to get this information to a majority of the growers in the county. Close cooperation with other governmental agencies will be continued so that agriculture can best be adequately served. Cooperation will be continued with farmers' organizations in order to get information to as many growers as possible.