

A N N U A L
N A R R A T I V E - R E P O R T

for

COCHISE COUNTY

Mr. Carmy G. Page
County Agricultural Agent

December 1, 1948

to

November 30, 1949

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III. HIGHLIGHTS

4-H Club Work

The success of the 4-H program for the year was indicated by the improvement in quality of club meetings, individual projects and community activities of clubs. The attendance and participation of club members at the first County 4-H Officers training school, field days on project work, and the first County 4-H Achievement Day are considered most important activities of the year. Credit for the success of this project may be credited to the cooperation of local 4-H Club leaders.

Production of Agricultural Crops

The irrigated acreage of land in the county increased to an estimated 35,000 acres in 1949. This was the third year of increase in acreage from the 12,000 acres under irrigation in 1946. Cotton was produced on 13,500 acres. The cotton insect control program was the most effective program conducted by the Extension Service. The infestation of boll worms and stink bugs in cotton occurred in July, and bollworms continued to warrant close observation and control through August in the Sulphur Spring Valley. Estimates are that control of cotton insects was practiced by 115 farmers on a total of over 10,000 acres.

Vegetable Production

Canneries were operated at Elfrida and the Bisbee-Douglas Airport near Douglas during the year and a chili dehydrating plant was installed at McNeal. These plants in addition to the two dehydrators operated in previous years at Elfrida and McNeal provided local marketing facilities for most of the vegetables produced on over 2000 acres. Chili was produced on over 1700 acres of the above total. Curly top disease was the major limiting factor in vegetable production.

Range Livestock Production

Rainfall was above normal over the County in 1949. Recovery of stands of grass on most ranges was exceptionally good. Average weight of calves marketed in October and November were reported the heaviest for a period of four years. General prices received were from 20¢ to 22¢ per pound for calves. Supplemental feeding on range and control of external parasites on cattle were practiced by more cattlemen in 1949 than in any previous year.

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SPECIALISTS Assisting the Agent in the County and Date Contacted are as Follows:

Agricultural Extension Service and University of Arizona

Date	Specialist	Nature of Assistance
December 1, 2	Mr. A. B. Ballantyne	Plans for Extension Program in communities of St. David and Pomerene
22, 23	Mr. Kenneth L. McKee	4-H Leader's Training and assist Agent with plans for county 4-H program
January 12	Mr. Norris W. Gilbert	Office call
15	Dr. Johnson	Secure local statistics for Housing Survey
21	Mr. Harvey F. Tate	Farm visits regarding chili production
21	Prof. W. E. Bryan	" " " " "
29	Mr. Kenneth L. McKee	Assist with 4-H Club Officers' Training Meeting
February 1, 2, 3	Mr. Harvey F. Tate	Conduct pruning demonstrations
11	Mr. W. R. Van Sant	Farm visits on D.H.I.A.
14	A. B. Ballantyne	Community Water supply at Pomerene
14	Prof. H. V. Smith	" " " "
March 3, 10, 11	Mr. Harvey F. Tate	Office call and farm visits
30	Mr. A. B. Ballantyne	Discuss Charleston Dam project with St. David, Pomerene and Benson communities
April 7, 13	Mr. Harvey F. Tate	Office call and field contacts
12	Mr. Norris W. Gilbert	Office Conference
26	Mr. Howard R. Baker	Office call and field visits
29	Mr. Kenneth L. McKee	Office call and visit 4-H projects

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Agricultural Extension Service and University of Arizona

Date	Specialist	Nature of Assistance
May 2, 3, 26, 27	Dr. J. N. Roney	Farm visits, radio talk and movie on cotton insects
10,11,12,13	Mr. Norris W. Gilbert	Office calls and establish bind-weed control demonstrations. Also discuss grain crops
17	Mr. W. R. Van Sant	Farm visits regarding dairying
17	Mr. Bill Wintermeyer	" " " "
26, 27	Director Chas. U. Pickrell	Office call and talk to Willcox Rotary Club
6, 7	Mr. Harvey F. Tate	Chili plantings from plant selections and tomato variety tests
6, 7	Mr. W. E. Bryan	" " " "
June 1, 3	Mr. Walter Armer	Farm visits on 4-H Beef projects
2	Mr. Harvey F. Tate	Check chili and tomato variety tests
14	Mr. Howard R. Baker	Regarding County Extension Budget
23	Dr. J. N. Roney	Check fields of cotton for insects, chili fields for insects and give radio talk
July 14	Mr. W. R. Van Sant	Farm visits regarding dairying
14	Prof. R. N. Davis	" " " "
15	Prof. L. M. Pultz	Establishing trials of Canaigre in County
18,19,20,21	Dr. J. N. Roney	Meetings on control of cotton and other field insects
14	Mr. A. B. Ballantyne	Meetings on community water supply at St. David and Pomerene
26	Prof. R. B. Streets	Check chili fields for plant disease

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Agricultural Extension Service and University of Arizona

Date	Specialist	Nature of Assistance
August 2	Dr. J. N. Roney	Office call
4, 5, 20	Mr. Walter Armer	Farm visits to 4-H beef projects
20	Director Chas. U. Pickrell	Office call
25	Mr. W. R. Van Sant	Organization of plans
30	Mr. Harvey F. Tate	Mark chili plant selections
30	Prof. W. E. Bryan	" " " "
September 13, 14	Mr. W. R. Van Sant	Farm visits regarding poultry and dairying
15	Director Chas. U. Pickrell	Attend Western Livestock Journal Tour and Organization
21, 22	Mr. Sam Armstrong	Judge exhibits at County Fair
21, 22	Mr. Harvey F. Tate	" " " "
21, 22	Mr. W. R. Van Sant	" " " "
21, 22	Prof. E. B. Stanley	" " " "
22	Mr. Joe McClelland	Take pictures and assist at County Fair
28	Mr. Kenneth L. McKee	4-H Program Planning Conference with Agents
28	Mrs. Ellen M. Kightlinger	" " "
October 3	Mr. Kenneth L. McKee	Office call
3, 29	Mrs. Ellen M. Kightlinger	" " and assist with 4-H Achievement Day
13, 17, 18, 20	Mr. Harvey F. Tate	Office call and work chili selections
17, 18	Prof. W. E. Bryan	Work on chili selection plots
13, 20	Mr. W. R. Van Sant	Office calls
13, 20	Mr. NORRIS W. Gilbert	" "

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Agricultural Extension Service and University of Arizona

Date	Specialist	Nature of Assistance
October 29, 31	Mr. Howard R. Baker	Assist with 4-H Achievement Day and Attend meeting of Agricultural Committee of Douglas Chamber of Com.
29	Miss Mary Gail Bonsall	Help with 4-H Achievement Day
31	Mr. Norris Gilbert	Attend meeting of Agricultural Committee of Douglas Chamber of Commerce
31	Mr. Walter Armer	" " "
November 3	Mr. Fred Jans	Office Conference on organization
3	Mr. Howard R. Baker	" " "

USDA and Other Specialists	Department Represented	Nature of Visit
January 24, 28	Walter L. Diehl (SCS)	Plan meeting and organize a Soil Cons. District
February 10	Al Swansen (SCS)	Office call
3	Geo. E. Freestone (FHA)	Office call regarding loans
23	Walter L. Diehl (SCS)	Office call
March 2, 17, 23	Walter L. Diehl (SCS)	Discuss soils and conservation
4	Karl Harris (SCS)	Farm visits and attend meeting of Willcox Farm Bureau to talk on soils & irrigation

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USDA and Other Specialists

Date	Specialist	Department Represented	Nature of Visit
March 16	Charles Ashby	(St.ES)	Discuss farm labor
16	Mr. Ainslie	(St. ES)	" " "
31	Geo. E. Freestone	(FHA)	Discuss water situation at St. David and Pomerene
31	Robert Craig	(FHA) a	" "
31	Mr. Paul	(FHA)	" "
April 5, 13,22	Geo. E. Freestone	(FHA)	Discuss financing for new water supply at Pomerene
5	Robert Craig	(FHA)	" "
5	Mr. Woods	(FHA)	" "
14	Charles Ashby	(St. ES)	Regarding farm labor
20	A. E. Frazier	(BE)	Check for grasshopper population
20	Mr. Meehan	(BE)	" "
20	J.L.E.Lauderdale	(St.B E)	" "
26,27	Mr. Sharp	(F &WLS)	Regarding rodent control
27	Bill Kauffman	(BE)	Check cotton insects
May 19	Bill Kauffman	(BE)	" " "
19	Mr. Stevenson	(BE)	" " "
24, 31	Walter L. Diehl	(SCS)	Discuss range reseeding
June 8	F. E. Tabor	(F & WLS)	Regarding predatory animal control
8, 23	Mr. Ainslie	(St. ES)	Farm labor

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USDA and Other Specialists

Date	Specialists	Department Represented	Nature of Visit
June 14	Robt. Moats	(BAE)	Secure information on crop acreages
22	Bill Kauffman	(BE)	Check cotton insects
July 13, 15	Ike Rogers	(F & WLS)	Discuss rat ontrol on ranges
13, 15	F. E. Taber	(F & WLS)	" " "
14,22,29	Bill Kauffman	(BE)	Check cotton insects
15	G. A. Russell	(BPI)	Locate acreage for trials for growing Canaigre
15	Mr. Grisholm	(FHA)	Water development at Pomerene and St. David
15,26,29	C. C. Bunch	(FHA)	" " "
15	Mr. Allen	(FHA)	" " "
15,26,29	Mr. Woods	(FHA)	" " "
25, 28	Walter L. Diehl	(SCS)	Regarding experimental grass plantings
26, 29	Geo. E. Freestone	(FHA)	Water developments at Pomerene and St. David
28	L. P. Hamilton	(SCS)	Experiments with grass plantings
28	Al Swansen	(SCS)	" " " "
August 9, 15,20	Geo. E. Freestone	(FHA)	Farm financing
26	Mr. Baird	(B. Recl)	Secure statistical data
31	Bill Kauffman	(BE)	Discuss cotton insects

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USDA and Other Specialists

Date	Specialist	Department Represented	Nature of Visit
September 2,10,11	J.L.EIauderdale	(BE)	Check on grasshopper control
11	Mr. Schmidt	(BE)	" " "
11	Mr. James Dutton	(BE)	" " "
October 12,25	Al Swansen	(SCS)	Discuss conservation program and farm crop production
27	Geo. E. Freestone	(FHA)	Disauss cotton crops in County
November 16	Geo. E. Freestone	(FHA)	Office call
16	Chesley Long	(FHA)	" "
25	Mr. Ainslie	(St. ES)	Discuss farm labor problems

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IV. CHANGES IN EXTENSION ORGANIZATION

A. Personnel

Part time office help was employed as follows:

Miss Eileen Williams - December 1 to 31, 1949

Miss Jennie Lee Pride - August 17 to 30, 1949
May 23 to 28, 1949

Mrs. Connie Massie - October 21 to November 30, 1949

B. Program

There were no changes in organization due to emergency programs.

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V. PROBLEMS DETERMINING EXTENSION PROGRAM

A. Organization - Miscellaneous

1. Veterans Training

Requests were received by the Agent from instructors of On-The-Farm Training for Veterans, regarding sources of information and materials, desired for use in classroom work. Classes conducted in the county under the veterans training program were as follows:

<u>Location</u>	<u>Instructor</u>	<u>Type of Training</u>
Elfrida	Alton M. Ferguson	General Agriculture
San Simon	Jack Hinton	" "
Willcox	Lyle Bull & K. L. Burchard	Farm Crops
Willcox	H. L. Harris	Livestock
St. David	Milo Willis & J. A. Kartchner	General Agriculture
Hereford	Edgar Dinwiddie	" "

The Agent was also contacted in regard to problems of individual veterans participating in the program.

2. County Fair

The Agent attended meetings of the Cochise County Fair Commission, assisted in preparing premium lists, and made individual contacts regarding exhibits for the Fair and general problems regarding organization. Full time from September 19th through September 25th was required on this work.

Other work on Fairs by the Agent was requests for judging at the San Pedro Valley Fair, St. David, October 1st, and at the Graham County Fair, October 21st at Safford. Also, the Agent assisted with plans for the County Agricultural exhibit for the Arison State Fair, Phoenix, November 4 to 13, 1949. The Agricultural Extension Service Office was made available for assembling of exhibits from the Willcox area to be picked up by truck for transporting to both the County and State Fair.

3. Other Agencies

Cooperation with Soil Conservation Service, Production and Marketing Administration, Farmers Home Administration, Arizona State Employment Service, Bureau of Entomology, Fish and Wildlife Service, Bureau of Reclamation were of importance in determining the extension program. Information was supplied to farmers regarding services available through these agencies. The Agent cooperated in providing available agricultural information to these organizations for their programs when requested.

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B. Field Crops

Cotton and vegetable production were of major importance in requirement of the Agent's time. The cotton acreage increased from approximately 8,000 acres in 1948 to 13,500 acres in 1949. Most of the cotton was grown in land which was brought into cultivation during the past two years. Price supports on cotton and the need for a summer-growing cash crop for relatively quick returns, to pay costs of developing new land were principal reasons for the increase in cotton acreage. The general lack of experience of farmers in cotton production, under Cochise County conditions, and the short history of the crop in the county resulted in many requests for information on varieties to be grown and cultural practices.

Recommendations for varieties of miscellaneous hay and grain crops to allow for balanced cropping systems were requested more during the year than in 1948. The main interest in these crops was due to planned government limitation of cotton acreage for 1950.

C. Horticulture

Continuation of work on selecting seed from individual plant selections of chili peppers, follow-up work on Home Beautification projects started in previous years, and community requests for pruning demonstrations were considered in planning work on this project. Also, establishing a cannery at the Bisbee-Douglas Airport and at Elfrida, and additional chili dehydrating facilities at McNeal increased the acreage of all vegetables which in turn required more of the Agent's time for problems relating to this project than in 1948.

D. Weed Control

No organized program of weed control on farms is practiced in the county. Publicity in magazines and general advertising has increased interest in the use of Chemicals to control weeds. This publicity has caused some farmers to search for an easy way to control weeds. The use of chemicals when tried is usually done without the necessary follow-up work. The use of proper cropping systems and cultivation for weed control do not receive the consideration deserved.

E. Plant Diseases

Chili plants were often lost in hotbeds because of failure to sterilize the soil used in the beds and failure to treat seed for disease control.

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Curly top or western yellows practically wiped out all tomato plantings. Farmers stated the loss of chili plants in the field was greater than ever before from curly top.

Blight and rust damage to pinto beans was severe and blight seriously reduced yields of melon crops. Summer rains which started in June and continued through July were a major factor contributing to the importance of these diseases in limiting yields of the above crops.

F. Insect Control

Crickets and Darkling beetles caused damage to same plantings of chili. Most damage was done during the last half of June. Aphis, thrips and beet army worms infested many cotton fields around the 15th of June. Stink bugs, lygus and cotton boll worm infestations appeared in some cotton fields early in July. This was the first year that stink bugs and lygus infestations had been serious enough to be of economic importance. Weather conditions were favorable for a build-up in boll worms earlier than usual due to early summer rains, and they continued to be important in areas when regular dusting for control was not practiced.

Grasshopper infestations appeared in local areas on ranges, and there was considerable interest in some type of program for large scale operation for control. The conditions in the county did not warrant recommendations by the extension office for such a program.

G. Soils

The strong demand for cash crops over a period of years had increased soil problems. Neglect of farmers in following crop rotations and other practices to aid in maintaining or improving soil fertility appears to be mainly responsible for the demand for miscellaneous information on soils. Numerous requests were received by the Agent to take soil samples to send to the University for analysis. Also, a number of farms were visited for discussing general soil management problems. The development of new land through the year brought the total irrigated acreage in the county to over 35,000 acres. In many instances there was not sufficient time allowed for proper preparation of land previous to planting of crops. The deficiency of organic matter in both old farmland and newly developed acreages appeared to be the greatest single factor limiting productivity of soils, where sufficient irrigation water was available for crop production.

H. Irrigation Practices

The continued expansion of land for production of irrigated crops,

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causes many farmers to depend entirely on irrigating land only during the growing season. This limits yields of crops on most instances as the supply of water from wells does not provide sufficient water to keep crops growing satisfactorily. Winter irrigation to build up a reserve of soil moisture is a practice which deserves more consideration. Also, a large percent of the farmland is too steep in grade for economical use of water.

I. Agricultural Engineering

Requests for information on land leveling, irrigation, and farm building plans were the agricultural engineering problems receiving the attention of the Agent. The Agent cooperated with Soil Conservation Service personnel and district committees in considering miscellaneous work on soil and moisture conservation in the various communities in the county.

Projects for providing a community water supply for the village of Pomerene and rehabilitation of the irrigation water facilities for the St. David district were community projects for which assistance of the Extension Service was requested.

J. Poultry

Feed prices compared more favorably with prices received for poultry products. This brought about a general increase in size of both commercial and farm poultry flocks. Egg production in the county was not sufficient to meet local needs. Good management practices are evident in most commercial flocks. Neglect of farmers in caring for small farm flocks limits returns from the enterprise and contributes to a smaller supply of poultry products for market in the county more than the total number of birds justifies.

Diseases in both baby chicks and laying flocks were more prevalent than in 1948. Coccidiosis and New Castle disease were reported to exist in the county. These reports were not received from birds which were sent to laboratories, other than at the University. The use of live virus for control of New Castle disease was used on at least one flock in the county.

K. Animal Husbandry

1. Beef Cattle

The beef cattle industry continues to be the major source of income from agriculture in the county. The drought which had prevailed from 1942 through 1948 broke this year. Winter rains provided excellent growth of weeds on most

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of the higher ranges during the spring months. Summer rains started in the middle of June and continued through July. Very little rainfall was received in August, but showers early in September helped to keep feed conditions on the range good in most areas. Cattle numbers on the range were estimated to be the lowest in over fifty years. This in addition to the favorable rainfall contributed to remarkable recovery of ranges.

Control of flies, grubs, lice and ticks continued to become a practice on more ranches, but needs additional emphasis.

2. Dairy

The production of milk in the county was not enough to meet the local market demand throughout the year, however, further expansion of the dairy industry seemed unjustified due to competition offered by processors shipping milk in from the Salt River Valley. Breeding a larger percentage of cows for early fall freshening would result in improvement in supply of milk during seasons of greatest demand with the present number of dairy cattle in the county. Also, more efficient production may be obtained by a more constructive program of improving quality of herds, and feeding cows according to production. More favorable feed prices than in previous years allowed for greater returns from dairying than in 1948.

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VI. ACTIVITIES AND RESULTS

A. Organization and Miscellaneous

1. Organization

(a) Administration

There were no changes in the county organization during the year. General meetings regarding extension organization and planning which were attended by the Agent were, Annual Conference of Extension Workers, University of Arizona, Tucson, December 8 to 10, 1949; County Agent's Conference, Prescott, September 6 to 9, and Annual Conference, University of Arizona, Tucson, November 15 to 18, 1949.

Assistance on administrative matters was received by the Agent during county visits by Chas. U. Pickrell, State Director of Extension, on May 27th and September 5th. Howard R. Baker, Assistant Director, worked in the county with the Agent on this project and program planning April 26th, June 14th, and October 31st. On April 26th Mr. Baker delivered boxholder letters to be sent out through the County Offices for improving the mailing list. The letters contained a return card listing subjects pertaining to farm homes and farming, which individual farmers could check as requests for types of information they desired from the County Office. 1499 letters were mailed and 323 cards were returned. The county mailing list includes 1254 names and addresses. All postoffices in the county with the exception of Bisbee and Douglas were contacted during the year for assistance in checking mailing lists to eliminate names from the lists of farmers who were deceased or had moved from the communities.

The proposed budget for County Extension Work from the University of Arizona was received June 14th and submitted to R. H. Franklin, McNeal, County Farm Bureau president, for approval. The budget proposed provided for an increase of \$400.00 in the county appropriation for a total of \$240.00. The budget was approved for submitting to the County Board of Supervisors, and was mailed to their office in Bisbee June 15th. This amount proposed was approved by the Board and included in the County Budget.

(b) County Farm Bureau

The annual meeting of the Cochise County Farm Bureau on January 12th at 7:30 p.m. at the McNeal School was attended by the Agent. The election of officers for 1949 was as follows:

Farm Bureau President - R. H. Franklin, McNeal
Vice-President - Wilbur White, St. David
Secretary-Treasurer - C. S. Worldridge, McNeal

Interest was shown in organizing the women in the county in the Associated Farm Bureau Women's Organization, and Mrs. O. H. McLaughlin, McNeal, was elected temporary chairman.

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A. J. Fram of Kyrene, State Farm Bureau President, Wendell Weller, Organizational Director, and Mrs. U. R. Neely, State President of Associated Women, attended the meeting and discussed the State Farm Bureau program. There was an attendance of 53 at the meeting.

(c) Local Farm Bureaus

A meeting of farmers was held at the Willcox High School, January 13th at 7:30 p.m. to consider the need for organizing a Farm Bureau local in the Willcox area. Mr. Fram and Mr. Weller attended the meeting and discussed the state program. Farmers in attendance indicated their interest in organizing a local and elected Roy O. Young as temporary chairman, and set January 25th as a date to further consider the matter. The meeting was scheduled to be held at the Stewart School House. There was a total of 15 at this meeting.

The meeting held at the Stewart School House January 25th elected the following officers for the Willcox Farm Bureau local:

President - Roy O. Young
Vice-President - Dewey A. Pace
Secretary - Catherine Woods
Treasurer - Wilbur Deerman
President of Associated Women - Mrs. Geo. Graves

State representatives of the Farm Bureau attending the meeting were A. J. Fram, Kyrene, President, Wendell Weller, Phoenix, Organizational Director, Mrs. U. R. Neely, President of Associated Women, and John Vossbrink of Tolleson. There was a total attendance of 55 at the meeting.

Presidents of other Farm Bureau locals which had been organized in previous years are as follows:

Double Adobe - E. M. Downs, McNeal
Elfrida-McNeal - J. M. Glasscock, Elfrida
St. David - John McKinney, St. David

(d) Community Programs

Meetings were held at the St. David School December 1st with attendance of 13, and at the L.D.S. Church House, Pomerene December 2nd with attendance of 14. Purpose of the meetings was to secure information from these communities, which would be of value in planning extension work most desired by farmers in the area. Both communities requested that information be prepared on the income which may be expected from agricultural enterprises adapted to small acreages for part time farmers, and status of plans for the Charleston Dam. St. David farmers requested assistance in securing assistance of other agencies (S.C.S. and Farmers Home Adm.) in considering work necessary to increase the supply of irrigation water to farmers and probable costs and financing available

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for the project. Members of the Pomerene Community were most interested in assistance of the Extension Service in making a survey of the quality of domestic water, which may be available for use in providing a community water supply. Also, assistance was desired in securing cost estimates of such a project, and whether Farmers Home Administration financing could be used for the project over a long period of time. Mr. A. B. Ballantyne, Specialist in Rural Sociology, assisted the Agent with the meeting at St. David and was entirely responsible for conducting the meeting at Pomerene. Assistance of Mr. Ballantyne was requested in assembling information for further meetings in these communities in line with requests from farmers in the area.

Follow-up work on these projects was as follows:

A meeting was held at the Church House in Pomerene on Monday evening, March 14th. A. B. Ballantyne, Specialist in Rural Sociology, and Howard V. Smith, Agricultural Chemist, University of Arizona, reported on the findings as a result of the survey made by Mr. Ballantyne in checking the location of wells in the immediate vicinity of Pomerene and the quality of water from these wells. This information was considered in planning for a community water supply. Prof. Smith made recommendations on plans that should be made to safeguard the health of children in the community by using filters for removal of fluorine for drinking water and water used in food preparation. The next step in this project was for the residents of the community to decide whether they wish to go ahead on the project and make arrangements for financing a set up to provide for a community water system.

A meeting for residents of Pomerene and St. David with 31 attending was held at the St. David school on March 30th at which Mr. A. B. Ballantyne, Specialist in Rural Sociology, discussed the plans for the Charleston Dam and the status of the consideration for this project.

George E. Freestone, County Supervisor, Farmers Home Administration, Douglas, and the Agent attended a meeting at Pomerene April 13th for the purpose of discussing the possibilities of securing F.H.A. financing for a community water supply project, and another similar meeting was held May 19th. The results of the survey on wells tested in the community were presented by Mr. Ballantyne at the meeting.

Additional meetings on the above projects were held with representatives of Soil Conservation Service, Production and Marketing Administration, Farmers Home Administration and the Extension Service at St. David July 14th and 26th, and Pomerene September 14th.

The reconstruction of the St. David Canal was approved by the stockholders and an assessment of \$6.00 per share was voted for financing the work. A short term water facilities loan from F.H.A. was applied for by the district for first financing of the project.

Survey work on rehabilitation of the irrigation canal was done by the S.C.S. and a general ditch cleaning operation was completed. Further plans are being made for ditch protection work and for a diversion dam at the head of the ditch.

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The plans for the community water system were approved by the F.H.A. for financing the project. Cost estimates were prepared by F.H.A. engineers after recommendations were made by the U. S. Geological Survey office at Tucson on the best probable location for a well to supply water for the proposed system. Between 36 and 40 families will become consumers of the water provided according to agreements made to date. Articles of Incorporation have been filed by the community in order to receive the F.H.A. loan for financing the project.

2. Miscellaneous

(a) Veterans Training

The Agent cooperated with Instructors of On-The-Farm Training classes in Elfrida, Willcox and St. David by providing bulletins requested for classroom and individual use, also, information on special problems related to individual farms or types of agriculture were provided. Meetings of veterans classes attended by the Agent were:

March 28 - Elfrida - Agent discussed soil management problems and outlook information.

May 24 - Willcox - Agent discussed outlook information and general livestock production.

July 28 - Elfrida - Talk by J. N. Roney, Extension Entomologist on control of field crop insects.

Total attendance at the above meetings was 92.

(b) County Fair

Officers of the Cochise County Fair Association were E. C. Hill, Sr., McNeal, President; Tom Glenn, Douglas, Vice-President; William T. Meredith, Douglas, Treasurer; and William Borcharding, Douglas, Secretary. Frank Lea, Douglass, was hired by the Association as Fair Manager.

The 1949 Cochise County Fair was held at the Bisbee-Douglas Airport, Douglas, September 22nd to 25th. The organization and general fair program with regard to agriculture and livestock exhibits was practically the same as in 1948, except that the 1949 Fair program was four days instead of three and no horse show was included with the Fair.

Number and quality of exhibits were superior to the 1948 display, and products were exhibited from all communities except Hereford. Estimated attendance was 10,000.

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The Agent assisted with the Fair by submitting recommended changes for consideration in setting up the Fair premium lists, attended seven meetings of the Fair Commission and, or department superintendents, contacted farmers regarding exhibiting at the Fair and contacted the University for judges of exhibits at the Fair. Judges furnished by the University and exhibits judged were:

Sam Armstrong, Gila County Agent - Fruit and vegetables
W. R. Van Sant, Poultry & Dairy Specialist - Poultry, rabbit and dairy cattle
E. B. Stanley, Head of Animal Husbandry Dept. - Beef and swine
R. L. Matlock, Head of Agronomy Dept. - Field Crops
Steve Fazio, Prof. of Horticulture - Floriculture

Joe McClelland, Information Specialist, also attended the Fair and assisted in judging booth exhibits and took pictures of exhibits for records and educational use by county extension workers. The Extension Office in Willcox was used as a point for assembling exhibits from the Willcox district to be transported to the County Fair.

Work by the Agent during the Fair consisted mainly of assisting with 4-H Club exhibits and events. (For 4-H exhibits at County Fair refer to combined 4-H Report.)

(c) Other Fairs

The Agent judged farm crop and livestock exhibited at the San Pedro Valley Fair at St. David, October 1st. This Fair was sponsored by the St. David F.F.A. Chapter.

Livestock exhibits were judged by the Agent at the Graham County Fair, Safford, October 21st.

(d) State Fair

The Agent encouraged exhibiting at the State Fair during field visits and office contacts, and the Extension Office was used as a place for assembling exhibits from the Willcox District for transporting to the Fair. (For 4-H exhibits - refer to combined 4-H Report.)

(e) Farm Safety

Two news items were sent to the five county newspapers and two radio Stations regarding farm safety, also, the Agent gave one radio broadcast on safety over Station KAWT, Douglas, during the month of April.

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(f) Publicity

Circular letters, posters, news stories to the five county newspapers and radio broadcasts were used for publicity in conducting the extension program. Thirty-three individual news stories were sent out to the papers and twenty-five radio broadcasts or talks prepared for broadcasting over Station KAWT, Douglas, were made during the year. Two news stories on Cochise County range and farm conditions were prepared for the Cattlelog (Arizona Cattle Growers monthly magazine). Publicity of individual 4-H Club meetings was done by the club news reporters submitting reports direct to the papers and radio stations.

The Agent attended the Radio School for Extension Workers held at the University of Arizona, Tucson, February 7th and 8th.

(g) Other Agencies

Work by the Agent in cooperation with other U.S.D.A. agencies included the community project work as outlined under (d) community programs and meetings as follows:

Willcox Soil Conservation District

A meeting of the Willcox Soil Conservation District was called by Gene Anderson, chairman of the District Board, Friday, January 28th at the Willcox High School, 8:00 p.m. Lynn Anderson, Assistant State Soil Conservation Commissioner, A. R. Swansen, District Conservationist, Douglas, Julian J. Turner, Assistant State Conservationist, Tucson, and Walter L. Diehl, of the Soil Conservation Service, Willcox, Bill Belcher, Administrative Assistant of the Cochise County P.M.A., and the Agent presented the contributions that their respective agencies could make in assisting the work of the newly organized local District. A total of 45 attended the meeting.

The annual meeting of farmers in the county with Farm Ownership loans from the Farmers Home Administration was held at Douglas, February 24. The Agent attended and talked on agricultural problems pertaining to family size farms.

Other work during the year consisted of individual contacts with representatives of Soil Conservation Service, Farmers Home Administration, Production and Marketing Administration, and Arizona State Employment Service to check regarding progress of work or provide information on general or individual problems relating to the work of the organizations. Two contacts were made with Al Swansen of the S.C.S. Office, Douglas, in October and November in making recommendations on recommended crop varieties and general farming practices to be used in setting up individual farm plans for cooperators in Soil Conservation Districts.

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(i) Other

Correspondence with out of state individuals required considerable office time. Most requests were for detailed information on ranching and farming possibilities in the county by residents in eastern states wishing to engage in agricultural work. Also, many office calls were received for general information on available water, productivity of soils, markets, and land values.

Miscellaneous meetings attended by the Agent not listed under other projects were:

August 6 - Valley Guest Day, Elfrida - attendance 3,000

August 5 - Stewart Community Program sponsored by Stewart Homemakers,
Stewart School - attendance 200

May 1 - County Council of Homemakers - Cochise Stronghold - Attendance 184

Rotary club meetings weekly beginning July 15.

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VI. ACTIVITIES AND RESULTS

B. Field Crops

1. Cotton

The 1949 cotton acreage by communities is estimated as follows:

Elfrida - McNeal - Douglas (Whitewater Draw)	4800	acres
Willcox (including Stewart, Kansas & Cochise Communities)	7900	"
San Simon	410	"
Pomerene	300	"
St. David	60	"

Total Estimated acreage 13,470 acres

The increase in cotton acreage of over 5000 acres above the 1948 acreage was generally due to the relatively high price supports on cotton and the farmers need for a cash crop to pay costs of new land development or costs of farms purchased. The short cotton history in the county, and average yield of three-fourths bale to the acre for the 1948 crop caused many farmers to try varieties other than 1517. The 1948 estimate was that 97% of the acreage was planted to the New Mexico 1517 variety. 1949 estimates are 90% of 1517 in the Elfrida-McNeal area and 60% around Willcox. Other varieties planted were Mesilla Valley, Santan, Paula and California 4-42. Also, approximately 10 acres of Amsak (long staple) was planted by Roy Young in the Stewart District.

Cotton planting started during the first week of April, however, general planting did not start until after April 15th and most planting was completed May 10th. Stands of cotton planted before April 1st were generally poor and some replanting was necessary. Stands received on cotton planted after April 15th were generally good. Early growth of cotton was very slow when the cotton was irrigated up or when irrigation water was applied during early stages of growth.

Cotton insect pests were a problem over the cotton growing areas, however, control measures were not necessary in the Pomerene, St. David and San Simon communities. For insect control on cotton refer to Insect Control.

Recommendations on irrigation practice by the Agent were heavy winter irrigation of land for cotton and regular irrigation through July and up to August 15th, with no additional irrigation after that date.

A freeze occurred October 10th, with temperatures of 24 to 28° F. through the Sulphur Spring Valley. Cotton was also frozen in the St. David and Pomerene vicinities, with heavy frosts and some freezing in the San Simon Valley. This freeze seriously damaged all late cotton and also cotton

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irrigated in September. Picking was practically completed by November 30. Some snapping of bolls remained to be done in December. Reports of cotton yields varied from one-half bale to slightly over one bale per acre. Apparently the county average will be less than three-quarters bale per acre. The first frost in 1948 at Willcox was October 25th with the first freeze November 4th. Prospects were good for a higher average yield of cotton this year than in 1948 until the early freeze occurred.

Variety and fertilizer tests on cotton were conducted as follows:

April 19 - T. E. Tillman farm, Stewart Community.

This test was planted on land which was first used for crop production in 1947 and planted to hegari in 1948. The test was planted on the southeast corner of the farm and the order of planting was as follows, starting from the fence on the west side of Ft. Grant Highway: Mesilla Valley - 8 rows; 1517 - 4 rows; Santan - 4 rows; Paula - 4 rows; 4-42 - 4 rows; Arizona 28 - 4 rows; Arizona 33 - 4 rows; Arizona 44 - 4 rows; Pima 32 - 4 rows; S X P - 8 rows; Mesilla Valley -----.

April 20 - Pete Cheek farm, one mile north and two miles east of Elfrida.

The previous crop on this land was cotton. Starting from stake on fence-row on south side of field, plantings from east to west were as follows: S X P - 4 rows; Pima 33 - 8 rows; 4-42 - 4 rows; Santan - 4 rows; Paula - 4 rows; Arizona 28 - 4 rows; Arizona 33 - 4 rows; Arizona 44 - 4 rows; Mesilla Valley - 4 rows; 1517 - 4 rows; The east border of the variety test had been planted to 1517.

April 22 - On farmland rented by Pete Cheek, one mile east of Elfrida.

The previous crop on this land was cotton. Plantings were made from east to west in approximately the middle of the field, border a part of the field which was planted to 1517 on this date: Pima 32 - 4 rows; Paula - 4 rows; Santan - 4 rows; 4-42 - 4 rows; Arizona 28 - 4 rows; Arizona 33 - 4 rows; Arizona 44 - 4 rows; and Mesilla Valley - 4 rows.

The remainder of the seed left from variety tests were given to growers in the San Simon area and planting was as follows: Don Ellison, southeast of San Simon; the above short staple varieties, and Don Foster, north of San Simon, Pima 32 and S X P.

Approximately 20 pounds of Paula seed were furnished by the Agronomy Department of the University to Leo Hooper of the Stewart Community for a test planting of this variety.

A fertilizer test plot was established on the Diamond H. Ranch operated by George Graves on April 18. Plots were 21 x 21 feet, approximately 1/100 of an acre. Rates of application per acre were approximately 375 pounds Ammonium Phosphate, 325 pounds Single Superphosphate, and 175 pounds of Ammonium Nitrate.

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Fertilizer was applied by hand immediately beneath the rows on which cotton was to be planted. Fertilizer was applied approximately 42 feet from the fence-rows and arrangement of the plot was as follows: 8 rows, 21 feet in length, Phosphorous; Check - 8 rows; 16 - 20; Check - 8 rows; Ammonium Nitrate; Check 8 rows.

Yields on the T. E. Tillman farm variety test were not received as the first picking of cotton was made without notifying the Agent. No yields were taken from the fertilizer plots as practically no difference could be observed in the growth of cotton or setting of bolls. The variations in growth of cotton were the same in treated and check plots on the tight soils and on spots with apparent good water penetration.

The yields in pounds of seed cotton on test plots in the Elfrida Community were as follows:

#1 - One mile East of Elfrida - Length of rows approximately .17 miles.

#2 - One mile north and two miles East of Elfrida - Length of rows $\frac{1}{4}$ mile.

Variety	Yield #1 Tests			Yield #2 Tests			Grand Total lbs.	Rank
	1st Picking lbs.	2nd Picking lbs.	Total lbs.	1st Picking lbs.	2nd Picking lbs.	Total lbs.		
Mesilla Valley		379	379	404	125	529	908	8
1517		394	394	375	160	535	929	7
Arizona 44	287	214	501	572	147	719	1220	1
Arizona 33	318	203	521	480	140	620	1141	2
Arizona 28	178	248	426	395	141	536	962	5
* Paula	170	315	485	465	117	582	1067	4
Santan	221	203	424	387	147	534	958	6
4-42	286	215	501	424	166	590	1091	3
* Pima 32	Not picked - Failure							
* S X P	Not Picked - Failure							

* One-half of one row was not planted on Field #1. 149 lbs. first picking and 276 lbs. second picking for total of 425 lbs. increased $\frac{1}{8}$ to give comparable data. The two long staple varieties, Pima 32 and S X P did not mature enough cotton to warrant picking. These varieties were included in the test as some farmers had stated they would grow long staple cotton in 1950 if acreage restrictions were placed on short staple cotton.

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The first picking on test #1 was made October 11th, and on test #2 approximately one week later.

The 1517 stand on test #2 was not equal to stands of other varieties.

General observations during the growing season were that Arizona 28 was late in setting bolls, but set heavy late in the season. Paula and Arizona 33 produced shorter plants than the other varieties. Arizona 33 and Paula opened practically all of cotton before second picking.

Mr. Pete Cheek was most cooperative in planting and harvesting the crop. All labor on the cotton and records of picking weights were made by Mr. Cheek.

Meetings

The Agent attended the meeting of Research and Extension Workers at the University of Arizona, Tucson, February 14. Purpose of the meeting was for discussion of the various phases of cotton production and marketing and research work being conducted on the project.

The Field Day at the Safford Experiment Farm on June 4th was attended by the Agent.

County Meetings

J. T. Stovall, Secretary-Treasurer of the 1517 Cotton Association, Las Cruces, New Mexico, attended the meetings of cotton growers at the McNeal School, July 20th and at the Stewart School July 21st. Mr. Stovall discussed plans for the 1517 lint certification program for 1949. Arrangements were made with A. H. Putts, Manager of the Cochise County Gins, to purchase tags on a community basis for the Elfrida Gin since about 90% of the cotton in that gin area was 1517. The tags were ordered by Mr. Putts and all cotton certified by the grower as 1517 was tagged by the gin employees. Cost of tags were charged to the growers on the basis of the number of bales tagged. Mr. Stovall recommended that growers in the Willcox area purchase tags individually considering that 40% or more of the cotton acreage had been planted to varieties other than 1517. Total attendance at these two meetings was 89.

Cotton classing and marketing was discussed at a meeting at the Stewart School House August 29. This meeting was arranged for by Mr. Putts, operator of the county gins. Hughes Butterworth, Officer in Charge of Cotton Branch PMA, El Paso, Texas, and L. G. Crittendon, in charge of the Cotton Branch PMA, Phoenix, Arizona, were at the meeting. Mr. Butterworth talked on the importance of ginning different types of cotton separate in order to receive best prices, and also the advantages or value to communities marketing properly labelled cotton over a period of time. The loss in trying to market cotton of mixed staple and strength in the same bale was stressed especially. A total of 23 attended the meeting with representation of farmers from both gin districts.

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Cotton Classing Service

Forms requesting free cotton classing service were prepared in the county office on June 14 and signatures of County Farm Bureau members as the sponsoring organization were secured on that date. The application was signed by R. H. Franklin, McNeal, E. M. Downs, McNeal, and James Glasscock, Elfrida. F. A. B. MacKeil of the El Paso Cotton Classing Office stopped at the Extension Office in Willcox, June 16th and took the application with him to the Phoenix office. Cotton classing for the gins in the county was handled by the El Paso, Texas classing office.

2. Other Field Crops

Corn

The corn variety tests were continued on the C. E. Anderson Farm, Willcox. The outline of the test is as follows:

Corn Variety Test - C. E. Anderson Farm
Willcox

Approximately 54 ft. per planting
3 ft. between
3 replications

West of field to be planted to corn (Funks 711)

Planted:- June 13, 1949

N

Rows

<u>1 - 2</u> Texas 8	<u>3 - 4</u> Texas 9W	<u>5 - 6</u> Texas 12	<u>7 - 8</u> Texas 24	<u>9 - 10</u> Funks 711
United 72	United 7320	United 65	Pioneer 302	Mexican June
Texas 9W	Texas 12	Texas 24	Funks 711	Texas 8
<u>W</u> United 7320	United 65	Pioneer 302	Mexican June	United 72
Texas 12	Texas 24	Funks 711	Texas 8	Texas 9W
United 65	Pioneer	Mexican June	United 72	United 7320

E

A good stand of all varieties was received and satisfactory growth was made. The test had not been harvested at the time of writing this report, however, a summary of tests conducted in the county in previous years is included.

SUMMARY OF CORN VARIETY TESTS - Harvested 5-Year Period, 1944-48, Incl.
(Varieties not tested over one year, or discontinued in 1946
not included except for 1948)

Variety	1937	1944		1945		1946		1947		1948		Averages	
	Bu. per acre Anderson	Bu. per acre Anderson	Bu. per acre Nichols	Bu. per acre Anderson	Bu. per acre McBride	Bu. per acre Anderson	Bu. per acre Anderson	Bu. per acre Anderson	Shell- ing % Anderson	Bu. per acre Anderson	Shell- ing % Anderson	And- erson Test	Shell- ing % All Tests
Funks G-711		52.1	103.0	128.5	69.0	111.6	79.1	84.0		84.9	82.7	91.2	89.7
Texas No. 12		71.4	54.2	110.3	77.5	95.9	78.0	84.1		104.4	84.6	92.0	84.5
Texas No. 8		77.9	43.5	105.0	64.6	100.9				96.1	83.1	95.0	88.3
Pioneer 300		94.9	77.3	114.5		101.9	77.7	82.4		90.7	83.0	95.9	92.8
Mexican June	62.19												
United Hybrid 7320						75.1	85.6	80.3		89.3	77.0	86.1	84.6
Texas Hybrid 9W										104.6	85.6		
Texas 8 X							95.4	84.8		85.4	86.9	90.4	85.85
Mex. June										84.2	81.9		
United Hybrid 72										80.5	83.6		
United Hybrid 128										78.5	82.6		
Funks G-702		78.8	144.4	116.9	62.1	104.7						100.1	81.4
Kansas 2234		65.7	144.4	110.9	47.6	81.2						85.9	70.0

George Anderson Farm, Sulphur Springs Community, 20 miles southeast of Willcox

H. W. Nichols Farm, Stewart District, 11 miles northwest of Willcox

Lon McBride Farm, McNeal, Double Adobe Community

COCHISE COUNTY FAIR

Display of Corn Exhibits



Left to right --

George Freestone, Douglas, Supt. of Farm Crops
Department

R. L. Matlock, Head of Agronomy Department,
University of Arizona, Judge

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Small Grains

Small grain production was of minor importance in acreage, however, satisfactory yields were received from most plantings. The highest yields reported were an average of 25 sacks of wheat per acre on the Leon Church farm in the Stewart Community and 3300 lbs barley per acre on Willow Farms operated by E. C. Hill, Jr., McNeal. Markton Oats was recommended for pasture and satisfactory yields were received when early fall planting was practiced.

Grain Sorghums

Hegari was the principal grain sorghum crop. Most fields were harvested for silage or bound for sale to feeders. Several complaints were received stating that hegari lodged and had to be harvested by binding in order to avoid losses which would occur if combines were used.

Forages

Alfalfa was the principal forage crop produced. Summer rains during harvest damaged a major part of both the second and third cuttings of hay.

Sweet Sudan was the principal summer pasture crop. A number of requests were received during the year on the advisability of planting permanent pastures. The Agent provided information on recommended mixtures, however, in all cases farmers were informed that the high requirements of irrigation water for satisfactory yields should be considered before planting such crops. Also, the past reports of losses of cattle on pastures containing legumes was mentioned.

Beans

Approximately 700 acres of pinto beans were planted in the Elfrida - McNeal and Willcox districts. Rust and blight seriously reduced yields on most fields. In some instances yields were too low to pay for harvesting.

Broom Corn

Several requests were received in January for information on broom corn production in the county. This was due to publicity in the Douglas Dispatch stating plans for setting up a broom factory in Douglas. Norris Gilbert, Extension Agronomist, contacted Extension Service representatives in Oklahoma, Kansas,

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Colorado, New Mexico, and Texas for information on the economic and culture of the crop. Most of the information on the subject was received from New Mexico A and M College which was given in a state bulletin on the economics of broomcorn production in that state. This information was given to R. H. Franklin, County Farm Bureau President. In all contacts made by the Agent regarding this enterprize attempts of farmers to grow the crop in this area were discouraged. From information available it appears that this would not be a profitable crop to be grown in this area where costs of production are considerably greater than in the areas where most broomcorn is produced.

Specialist Assistance

The services of Norris Gilbert, Extension Agronomist, was secured in securing materials for variety tests and the specialist was contacted regarding all special problems relating to Extension Work in farm crop production.

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VI. ACTIVITIES AND RESULTS

C. Horticulture

1. Vegetables

Chili

Mr. W. E. Bryan of the Department of Agronomy, University of Arizona, Mr. Harvey F. Tate, Extension Horticulturist, and the Agent contacted R. H. Franklin, McNeal, January 21st regarding plans for increasing production of seed from selections of chili peppers. Mr. Bryan and Mr. Tate had made selection of peppers from desirable plants in the Elfrida-McNeal area in 1946. Plantings from these selections were made in 1947 on the S. L. Brockman farm in Elfrida, and J. L. Schad farm in San Simon in 1948. Mr. Franklin agreed to cooperate during the 1949 crop year in growing peppers from 18 plant selections and also 2½ pounds of seed for production of seed to be made available to chili growers in 1950. This contact was very timely as Mr. Franklin had stated a request for assistance of the University in improving the chili peppers in the Elfrida area before the plan for this increase in seed production was discussed with him. This had come about due to a discussion which Mr. Franklin had with one of the processors of chili who planned to set up a processing plant in the McNeal community. The fact that work had been carried on during the last three years on this particular phase of chili production was well received.

The chili seed was delivered to Mr. Franklin on February 5th and plantings were made in the frames the following week. A satisfactory stand of plants was produced, however, the ventilation was not satisfactory in the structure covering the plants, and weak spindly plants were produced. It was not possible to properly harden the plants before setting out in the field.

The Agent assisted Mr. Tate and Mr. Bryan in supervising the transplanting of 16 plant selections to the field May 6th. Transplanting labor was furnished by Mr. Franklin. 100 plants of each selection were set out. High winds during the week following transplanting reduced the stand approximately 70%. The Agent reset plants of part of the selections on May 10th, and transplanted from 50 to 75 plants from eighteen selections May 16. The number of plants surviving after two weeks was satisfactory, apparently due to deeper planting. Damage by crickets was quite serious in the later planting during the first ten days in June. This in addition to late planting did not allow for satisfactory comparison of selections in this plot.

The plantings on the Franklin Farm were inspected by Mr. Tate and Prof. Bryan, August 20th. Also, approximately 30 plant selections were marked from the field owned by Luciano Ramirez on that date. Plans were to check the plants at maturity and choose the most outstanding specimens for a seed supply to test in 1950. The Agent checked the selections on the Franklin Farm in September and marked outstanding individual plants in the various plots produced from seed furnished by the University.

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Prof. W. E. Bryan and Harvey F. Tate, University of Arizona, worked in the Elfrida-McNeal area October 17 and 18 making chili plant selections in order to secure seed for continuing work in improving quality of chili peppers through use of seed from individual plant selections in 1950. Twenty-two selections were made at the Luciano Ramirez farm, Elfrida, in addition to general field selections made at the R. H. Franklin farm, McNeal. Selections were also made from the plantings on Mr. Franklin's farm from seed of 16 selections made in previous years. One selection in the plot was outstanding in yield and type as compared with other plantings. The average from most of the selections was above the average of other chili on the farm in uniformity of type and general quality. Differences in yield were also evident.

Chili production in 1949 was from approximately 1700 acres in the Elfrida-McNeal area and between 20 and 30 acres in the Stewart district. Some picking of green chili was started July 25th. Yields were less than in 1948, due to generally poor stands. The principal cause of reduction of yields was due to curly top or Western yellows. This disease was reported to be the most severe in chili for 1949 than at any previous time. Considerable loss of crop was also caused by the freeze of October 10th.

Early planted chili, on level land, which received applications of fertilizer made profitable returns to farmers. Seed planted in place did not mature a crop as early as that produced from transplants. Green chili was marketed at the canneries which were set up during the year at Elfrida and at the Bisbee-Douglas Airport near Douglas. Also a major part of the green chili was sold to processors in El Paso. Red Chili was marketed to the dehydrator at Elfrida and two dehydrators located near the R.E.A. Plant at McNeal. This was the first year of operation for one of the McNeal dehydrators.

Spinach

Canyon State Canneries, Inc. leased buildings at the Bisbee-Douglas Airport and set up a cannery. Work started for assembling the plant in January 1949. Contracts were made with farmers providing \$40.00 per ton for spinach delivered to the plant. Six growers planted spinach on a total of 135 acres. Production was satisfactory on only the crop produced by Lon McBride, H. G. McBride and E. C. Hill, Sr., and these Double Adobe farmers were the only ones marketing the crop. Failures of spinach were mainly due to improper seedbed preparation and failure to apply commercial fertilizers.

The first spinach was harvested for the cannery by Lon McBride on April 25th. Harvesting was completed about May 12th. Part of the crop was lost due to continued break-downs at the cannery. This delay resulted in some of the crop passing the stage of maturity desired for canning. Part of the harvested acreage on the E. C. Hill farm yielded 4.8 tons per acre.

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Tomatoes

Canyon State Canneries set up their plant, mainly for the purpose of processing tomatoes. Early reports were that contracts on 400 or 500 acres were desired to supply the cannery. Plans were to package tomatoes for marketing when the demand would justify and can the remainder of the crop.

Harvey F. Tate, Extension Horticulturist, and the Agent attended a meeting of officials of the cannery and R. H. Franklin, County Farm Bureau president, at the Gadsden Hotel, February 1st. General information on recommended varieties of tomatoes, fertilizer recommendations and disease control were discussed at the meeting. Mr. Tate and the Agent stressed the damage from loss of tomatoes which occurred some years due to the Western Yellows disease, and also, the need for contracting small acreages with farmers who didn't have previous experience growing tomatoes. Also, it was stated that a fair estimate of yields could not be made since the crop had not been grown in large acreages in the county in the past.

The estimated acreage of tomatoes transplanted in May and seeded in place in April did not exceed 100 acres. Losses from curly top (Western Yellows) practically eliminated all plantings and no tomatoes were delivered on the contracts. After indications of nearly complete failure were evident, the cannery started canning green chili.

- A tomato variety test was placed on the Lon McBride farm, McNeal. 600 feet of row of six varieties were planted in place April 23rd, and approximately 100 transplants (300 feet of row) were transplanted May 7th.

<u>Variety</u>	<u>Transplanted May 7</u>	<u>Seeded Approx. April 23</u>
Row 1 - Marglobe	100 transplants (300 ft.)	Seed-sown in row (600 ft.)
Row 2 - Rutgers	100 transplants (300 ft.)	Seed-sown in row (600 ft.)
Row 3 - Pearson	100 transplants (300 ft.)	Seed-sown in row (600 ft.)
Row 4 - Break O'Day	100 transplants (300 ft.)	Seed-sown in row (600 ft.)
Row 5 - Stokesdale	100 transplants (300 ft.)	Seed-sown in row (600 ft.)
Row 6 - Garden State	100 transplants (300 ft.)	Seed-sown in row (600 ft.)

Plans were that the test should give yield data on the varieties as well as method of planting. The curly top disease killed practically all plants. Losses ranged up to 99% in some rows.

PRUNING DEMONSTRATION



Harvey F. Tate, Extension Horticulturist, demonstrating
pruning of fruit trees, H. H. Turner Farm, Willcox,
February 1, 1949

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2 Fruit Production

Plans were made the first of January for demonstrations on pruning fruit trees and ornamental plants, scheduled for February 1, 2 and 3. 980 copies of a circular letter were mailed on January 26th stating the schedule for meetings planned, and news items regarding the same were mailed to the county newspapers and radio stations, January 25th.

The pruning demonstrations conducted with the assistance of Harvey F. Tate, Extension Horticulturist, were well attended and considerable interest in the work was evident. The schedule of meetings and attendance was as follows:

Feb. 1 - 9:30 a.m.	- H. H. Turner Farm, Stewart District	- Attendance	56
" 1 - 2:00 p.m.	- Mrs. W. N. Puckett Home, Warren	- "	24
" 2 - 10:00 a.m.	- J. A. Bigelow Home, Douglas	- "	20
" 2 - 2:00 p.m.	- Phil Yard Farm, McNeal	- "	18
" 3 - 10:00 a.m.	- Edgar Dinwiddie Home, Hereford	- "	13
" 3 - 2:30 p.m.	- C. B. White Farm, St. David	- "	53

Practically all work at these pruning demonstrations was on fruit trees. However, pruning of grapes was demonstrated at the meeting in Douglas and St. David.

Mr. Harvey Tate and the Agent made two wire recordings on the subject of pruning and general care of fruit crops for Cochise County to be broadcast over Station KAWT.

The Agent conducted a demonstration on the pruning of grapes at the Rex Emerick Farm on February 21st and there was an attendance of 6 at the meeting.

3. Home Beautification

Work on this project consisted of follow-up work with home visits by the Agent and Specialist at demonstration homes established in 1948, at the following farms, R. G. McBride, McNeal; O. H. McLaughlin, McNeal; and J. M. Glasscock, Elfrida.

Assistance of Harvey F. Tate, Extension Horticulturist, was received in demonstrating pruning and discussing miscellaneous problems with regard to recommended varieties and culture of ornamental plants at the pruning demonstrations at Phil Yard's Home, McNeal, and Mrs. W. N. Puckett, Warren, February 1st and 2nd.

One radio transcription was prepared by the Agent on care of plantings for home beautification for broadcasting on Station KAWT, Douglas, March 28th.

The Agent attended the joint meeting of University of Arizona research and Extension Workers in Phoenix, February 14. Research work being conducted and general field problems regarding vegetable production were considered.

Pruning Demonstrations Announced

February 1, 2, 3, 1949

To Demonstrate Pruning in Farm, Ranch Meetings

Harvey F. Tate, extension horticulturist, University of Arizona, will conduct pruning demonstrations in Cochise county according to the following schedule:

Tuesday—9:30 a.m.: H. H. Turner ranch, Willcox; 2 p.m.: W. N. Puckett residence, 303 Thirteenth terrace, Warren.

Wednesday—10 a.m.: J. A. Bigelow residence, 526 Carmelita, Douglas; 2 p.m.: Phil Yard ranch, McNeal.

Thursday — 10 a.m.: Edgar Dinwiddie ranch, Hereford; 2:30 p.m.: C. B. White (Paradise ranch), St. David.

Carney G. Page of Willcox, county agent, stated that pruning fruit trees will be given major emphasis at these demonstrations, however, general problems relating to pruning and care of ornamental shrubs and trees will also be discussed at the meetings.

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D. Weed Control

Weed control continues to be a major and important item which deserves more consideration on most farms. Very few cases of a well organized plan being operated for control of weeds have been observed by the Agent.

Two weed control tests were made by the Agent May 12th and 13th, with the assistance of Norris Gilbert, Extension Agronomist. Spraying of Bindweed with Ester of 2-4-D was done at the W. H. Young Farm, Willcox. The first application apparently killed over one-half of the stand. Plans were made for Mr. Young to continue spraying the control area as needed. This work, however, was not done and the stand of bindweed by September appeared as thick as before the work started.

Russian Knapweed and whorled milkweed were sprayed with the ester of 2-4-D on the O. O. Danielson farm, San Simon. The spraying was of no value in control of these weeds.

The Agent has recommended, crop rotation and intensive cultivation as the most practical means of controlling most noxious weeds. The use of 2-4-D for control of bindweed is recommended if consistent work is done for a period of at least two years with some follow-up required in years following to destroy seedling plants.

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E. Plant Diseases

R. B. Streets, Plant Pathologist, University of Arizona, worked with the Agent July 26, checking vegetable fields in the Elfrida and McNeal areas for diseases. A considerable amount of drop of blossoms on chili appeared to be the result of the effect of the curly top disease. Curly top caused practically a complete loss of the tomato acreage contracts with the Canyon State Cannery located at the Bisbee-Douglas Airport.

Blight and rust damage to beans was severe during the summer months. The fact that rains started June 15th and continued through July and again in early September was credited with causing heavier infestations of these diseases than was experienced in recent years.

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F. Insect Control

Field Crop Insects

This was one of the major projects considered in the county program for the year. Meetings on the project were as follows:

<u>Date</u>	<u>Place</u>	<u>Kind</u>	<u>Attendance</u>	<u>Program</u>
Mar. 10th	Stewart School, Willcox	Community	17	Led by the County Agent. Plans for Control of Cotton insects if serious infestation occurs.
May 26th	San Simon High School	"	18	Dr. J. N. Roney, Ext. Entomologist, showed moving picture & cotton insects, and discussed general insect control on farm crops.
July 19th	Elfrida (Pearce School)	Veterans On-Farm Training class	43	Talk by J. N. Roney on control of farm crop insects and external parasites on livestock.
July 20th	Elfrida, C. G. Krug Farm	Demonstration	17	Demonstration by Dr. Roney on making cotton insect counts.
July 20th	McNeal School	Community	47	Talk by Dr. Roney on control of cotton insects and other field crop insects.
July 21st	Stewart School, Willcox	Community	42	" " "

Dr. J. N. Roney, Extension Entomologist, worked in the county June 23rd while the Agent was on leave, checking chili and cotton insect infestations. Dr. Roney prepared a news article for the Douglas and Bisbee papers stating that chili peppers were being injured to some extent by flea beetles, crickets and darkling beetles, and stated that recommendations were to dust with 10% DDT at

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the rate of 20 pounds per acre with ground machinery for control of these pests. Cotton inspected by Dr. Roney did not indicate insect injury of any economic importance at that time. Dr. Roney also prepared a radio transcription for Radio Station KAWT at Douglas regarding his field inspections, and his recommendations.

Aphis, thrip and beet army worm infestations were general in cotton fields in the Willcox, San Simon and Elfrida districts in May. Heaviest infestations appeared about the middle of the month. No control with insecticides was recommended as parasites were active in controlling these insects. No loss of stands of cotton were observed or reported.

This project required a major part of the Agent's time during July and August in checking cotton for insects. Frequent rains apparently favored a rapid build-up of cotton insects, mainly lygus, stink bugs, and bollworms. Stink bug counts indicated quite a wide distribution of these pests the last two weeks in July. Average counts in some fields were from 6 to 12 per 100 sweeps. Lygus counts averaged from 5 to 8 per 100 sweeps in some fields. Lygus were most numerous in the Willcox area. Numbers of Lygus were usually light in the Elfrida district. Bollworms appeared in sufficient numbers to warrant control in some fields from July 10th to 20th. The first dusting of cotton for insect control was started about July 10th in the Elfrida district. Bill Kauffman of the Bureau of Entomology checked fields in the Sulphur Spring Valley each week during July and August, and reports on insect counts were given to radio stations and county newspapers each week by J. N. Roney, Extension Entomologist.

514 copies of a circular letter were mailed to farmers announcing meetings in July on cotton insects with Dr. J. N. Roney, Extension Entomologist. Also, news stories were prepared for the five county papers and two radio stations.

Control of insects required three applications of insecticides in a number of cotton fields. Control was only temporary when the first dusting for bollworm was not followed with a second application in ten to fourteen days. Stink bug infestation practically disappeared in August. Insect counts in the Pomerene, St. David and San Simon communities did not justify recommended control measures. It is estimated that insect control measures were practiced on 10,000 acres of cotton.

The Agent prepared a radio transcription in April and Dr. Roney assisted the Agent in preparing two transcriptions in July on control of field crop insect pests. These were for broadcasting over Station KAWT, Douglas.

Grasshopper Control

Some reports of grasshopper infestations on rangeland were received the last ten days in July. No serious infestations were observed. Hoppers were concentrated in hatching areas but didn't appear to be in sufficient numbers to cause wide-spread damage. The Agent recommended control measures be practiced in order to prevent spread of the hoppers. This recommendation didn't receive much consideration as there was a general desire for a government program for preparing and distributing baits.

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Considerable publicity appeared in newspapers in Southeast Arizona during the month of September concerning what was reported to be a serious grasshopper infestation in rangeland in Santa Cruz, Cochise, Pima and Graham Counties. Grasshoppers were numerous in spots in Cochise County rangeland, however, the infestation was not serious and publicity in newspapers overestimated damage done. Grasshopper infestations in the county were heaviest on a few sections of range on the east side of the Whetstone Mountains above Benson and in the vicinity of Pearce.

J. L. E. Lauderdale, State Entomologist, and Bureau of Entomology workers under the supervision of Jim Dutton, Entomologist of Denver set up for mixing bait at the Willcox Airport, September 8. Bait was spread by airplane in the vicinity of the Larsen Ranch of Graham County, September 9th and 10th. The work was completed and workers left or prepared for leaving September 11th. 132 partially filled sacks of bait were on hand after spreading by plane was completed and this supply was offered to the Agent and accepted for issuing to farmers or ranchers for grasshopper control. The bait was stored at the Victor Shaver lumber yard in a building that could be kept locked. Several tons of unused bran was stored at the Shaver lumber yard by the Bureau of Entomology.

Reports were that from 60% to 80% kills were obtained in the Graham County area where the bait was distributed.

21 sacks of prepared dry bait with chlorodane were distributed to farmers and ranchers from the supply left after the experimental control program in Graham County. Also, 253 pounds of sodium fluosilicate were issued from the office during the year for mixing of baits. This material is from supplies remaining on storage at the County Office from previous programs of the Grasshopper Control Division of the Bureau of Entomology.

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VI. ACTIVITIES AND RESULTS

G. Soil Management and Irrigation Practice

Soil management problems were considered in the program by answering requests for information on special soil problems and general recommendations in circular letters and radio broadcasts. Poor soil structure and resulting poor water penetration is the principal cause of complaints of poor crop yields. Crop rotation practices providing for an increase in organic content of soils, deep tillage, and winter irrigation were general recommendations made for improving most soils.

Soil samples were sent in to the Agricultural Chemistry and Soils Department, University of Arizona, for analysis from Diamond H Ranch, Cook Cattle Company ranch, and farms owned by E. C. Russell and R. A. Davis, Willcox; Oscar Amberson, Elfrida; C. B. White and the Mormon Church, St. David; Joe Peddicord and E. M. Downs, McNeal; and the Naegle farm at Pomerene.

Karl Harris, Research Worker with the Soil Conservation Service in cooperation with the University of Arizona worked with the Agent March 14th in checking some problem soils in the Stewart District. Also, Mr. Harris talked at a meeting of the Willcox Farm Bureau on the subject of soils management and irrigation practice. Total attendance at the meeting was 34.

Meetings attended by the Agent for discussion of soil management problems were:

February 15 - Bisbee Garden Club, Bisbee - Attendance 53 -
March 28 - On-The Farm Training Class, Elfrida - Attendance 26

387 copies of a circular letter were mailed to farmers in December 1948. Recommendations in the letter were plowing land and leaving rough through the winter, winter storage of soil moisture and early leveling operations in preparing for farming in 1949. A letter stating similar recommendations was mailed to all farmers in November 1949.

Radio broadcasts on this project by the Agent over Station KAWT, Douglas were, Soil and water Management, January 22; Value of Organic matter in Soils, January 25; Irrigation and Soil Management Practices recommended for row crops, April.

Cooperative Extension Work
in
Agriculture and Home Economics
State of Arizona
Willcox

University of Arizona
College of Agriculture
U. S. Department of Agriculture
And Cochise County Cooperating

Agricultural Extension Service
Home Demonstration Work
County Agent Work

November 1, 1949

NOTHING NEW

JUST REMINDERS

TO THE FARMERS OF COCHISE COUNTY:

The following suggestions are for your consideration on soil and water management on your farm.



Winter irrigation -- Water stored in the first 6 feet of soil is more effectively stored than any other, since the water loss by evaporation never goes below the first six or eight inches. On tight soils, irrigation water penetrates better in cool, than in warm weather. Store water in the soil.

Land leveling -- All work on land leveling should be done at the earliest possible date in order to insure more efficient use of water as well as saving soil.

When possible, it is recommended practice to plow tight soils deep and rough, and to leave them that way as long as possible before irrigating. The airing and drying improves their tilth.

If you have sufficient irrigation water, some green manure crop should be planted on part of your land each year. Turning under a heavy green manure crop is an efficient method of maintaining soil fertility and allows better water penetration. The addition of organic matter improves all soils.

Very truly yours,

Carney G. Page
Carney G. Page
County Agricultural Agent
Willcox, Arizona

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H. Rodent Control

The Agent provided information on rodent control recommendations to farmers and ranchers requesting the information. Special requests were referred to the State Office of the Fish and Wildlife Service in Phoenix. Office contacts by representatives of the Phoenix Office were by Ike Rogers, F. E. Taber and Mr. Sharp.

VI. ACTIVITIES AND RESULTS

I. Engineering

The Agent attended the business meeting of Sulphur Springs Valley Electric Cooperative, Inc. (District #1) at Willcox, December 30th. Attendance at the meeting was 40. It was announced at the meeting that unless additional power was received by the cooperative that it would be necessary to discontinue hooking up irrigation wells to all farmers who had made application for electric hookup after the first week in January 1948.

Shortage of power was a problem on some farms operating pumps with electricity during the summer months, however, the shortage was not as severe as in 1948.

Work on this project consisted of answering individual requests for general information on farm buildings, and supplying blue prints for miscellaneous buildings and farm structures. Also, land leveling recommendations were considered.

A supply of blanks for registering wells with the State Land Department were kept in the county office and distributed to farmers on request.

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.VI. ACTIVITIES AND RESULTS

J. Poultry

Disease control in poultry flocks was the principal problem requiring time of the Agent on this project. Poultrymen generally reported that disease problems were greater than in the two previous years. Newcastle and Coccidiosis were reported as causing some losses in the Elfrida and McNeal communities. This was the first time that these diseases were reported in poultry flocks in the county. Ernest Bohn, Elfrida, vaccinated a flock of hens and baby chicks with live virus for control of Newcastle disease. The Agent recommended strict sanitation as being the best practice for control of Newcastle disease and in no case was the use of live virus recommended. The above reports on diseases of chicken were not made by the Animal Pathology Department Laboratory at the University of Arizona.

Fowl pox was reported in many farm flocks in October. The practice of vaccinating is general in commercial flocks in the county and judging from this years experience it should be a more common practice in small flocks. Sulfa drugs were recommended for control of colds and intestinal diseases of chickens and satisfactory results were received from their use when treatment was started immediately after disease symptoms appeared.

Growers were encouraged to purchase chicks only from hatcheries operating under the U. S. Poultry Improvement plan. Mimeographed material listing Arizona hatcheries approved were mailed to poultrymen early in the year. News articles on poultry management and control of lice were sent out to the county news papers in April, and a radio program was prepared by the Agent for broadcasting over the Douglas Station in March, with regard to advantages of purchasing high quality chicks and producing them under strict sanitary conditions. Ralph Van Sant, Poultry and Dairy Specialist, and the Agent prepared a radio transcription on poultry production, February 11th.

Control of Beef Cattle Insects

Many Cattle Have Lice

If your cattle are standing around rubbing against all kinds of objects and not feeding, chances are they have lice. That's the observation of J. N. Roney, entomologist, and Walter Armer, animal husbandman, for the Agricultural Extension Service at the University of Arizona.

Recent cold weather was ideal for the increase of lice on livestock. In many cases, lice may be annoying the animals so much that they do not feed and are not gaining any weight.

Three species of lice may be found on the animals in Arizona. Two are of the sucking type and the other is a cutter type. The two sucking lice reproduce very rapidly during cool or colder weather and their feeding may kill some animals if they are not controlled.

When the sucking lice are present in great numbers, they may appear as patches of black spots on the brisket, around the head, or between the hind legs. When they become bad, they may be found all over the animal's body. Close examination will show that the sucking lice are of a blue-grey color.

The cutter lice are smaller and of a reddish brown color. They usually are discovered by appearance of bald spots on the animal caused by the lice cutting the animal's hair.

A new insecticide known as benzene Hexachloride (sometimes called BHC) will control lice and eggs in one application. Recommendations and instructions for applying are available from the local county agricultural agent.

VI. ACTIVITIES AND RESULTS

K. Animal Husbandry

1. Beef Cattle

492 copies of a circular letter prepared by J. N. Roney, Extension Entomologist, and Walter Armer, Extension Animal Husbandman, stating recommendations for control of grub, ear ticks and lice were mailed to cattlemen, December 24, 1948. The practice of controlling these parasites is continuing to increase, as indicated by the number of ranchers buying spraying equipment for the first time. The greatest help in encouraging the practice of control of external parasites mentioned above and horn flies is the statements of satisfactory results received by cattlemen who have accepted the practice. Statements on the percentage of control vary but in all reports received by the Agent, cattlemen who have practiced an organized plan for control of external parasites, consider the practice profitable.

The condition of ranges improved throughout the year. Most ranchers started increasing their herds by saving a larger percent of heifers from the 1949 calf crop.

Supplemental feeding on range of the cottonseed meal and salt mixture was practiced by more cattlemen in 1949 than in 1948 and a number of cattlemen state they will continue the practice even with a good winter feed supply on ranges. Reported advantages are higher percent calf crop and heavier weaning weights of calves, as compared with herds on similar range with no supplemental feeding.

Loco weeds were numerous on ranges in the spring and many cattlemen stated interest in work to eradicate these weeds. No losses of cattle were reported from eating loco. The wide distribution of the plants on some ranges would make eradication costs prohibitive.

Losses of cattle were reported in the Douglas area and on the Ernest Browning ranch north of Willcox in October. Plants containing the poison were not identified. Symptoms of the poisoned animals indicated prussic acid poisoning. Cattlemen reported "Hills of Gold" as the plant causing losses. Tests made at the Animal Pathology Laboratory, University of Arizona on specimens of the plants did not indicate that poisonous materials were present in "Hills of Gold."

Meetings on this project attended by the Agent were:

<u>Date</u>	<u>Place</u>	<u>Kind</u>	<u>Att.</u>	<u>Purpose</u>
January 30	- W. C. Riggs Ranch, Dos Cabezas	- Demonstration	- 5	- Control of Lumpy jaw
February 26	- Willcox	- Board of Dir. Cochise-Graham Cattle Growers	- 17	- Special Meeting

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<u>Date</u>	<u>Place</u>	<u>Kind</u>	<u>Att.</u>	<u>Purpose</u>
May 24	- Willcox	- On-The-Farm Training Class	23	- Talk by Agent on livestock production
September 15-	Sierma Bonital-Ranch, Willcox	Western Livestock Journal Tour	90	- Inspect cattle feeding operations
September 15-	Rancho Sacatal-Dos Cabezas	" " "	150	- Inspect purebred Hereford herd
November 1	- Willcox	- On-The-Farm Training Class	28	- Livestock production, E. V. Stone, speaker
November 19	- Tombstone	- Arizona Cattle Growers	120	- Quarterly meeting of Board of Directors

2. Dairy

The Agent worked with the County D.H.I.A. in contacting dairymen regarding management and feeding practices. Ralph Van Sant, Poultry and Dairy Specialist, made corrections in testers reports for 1948 and the Agent made the necessary corrections in the individual herd books in January 1949. Mrs. Barbara Hill, McNeal, Supervisor of the County Association resigned in October 1949 and J. M. Dawson, McNeal, was employed as supervisor beginning in November 1949. A summary of the testing program is included with this report. Mrs. Van Sant prepared monthly summaries of the county and state D.H.I.A. work each month and these reports were mailed to all D.H.I.A. members from the University. The Agent mailed copies of the Association Constitution and By-Laws to all members of the association in November 1949.

Other work on this project included 82 copies of circular on control of grubs mailed to dairymen and farmers, December 1, 1948, two blue prints of milking barns mailed to dairymen, recommendations for surfacing dairy barn floor with carborundum grits provided for Giflan Farms, Elfrida. A radio transcription on Dairy Production for broadcasting over Station KAWT, Douglas was prepared by Mr. Van Sant and the Agent, February 11th. Mr. Van Sant assisted the Agent on the Poultry and Dairy projects by conferences in the county office and field visits, February 11th, May 17th, July 14th and September 13th and 14th. Mr. Bill Wintermeyer, Dairy Specialist, USDA Washington, D. C. visited the county with Mr. Van Sant, May 17th to check the dairy project work in the county.

The Agent assisted R. N. Davis, head of Dairy Department, University of Arizona, and Mr. Van Sant in securing hay for dairy feeding experiments at the University. The hay was inspected July 14th, and arrangements were made to purchase 20 tons from Wendell Montierth of the Stewart Community. 10 tons of both first and second cuttings of alfalfa were secured. The hay was from the same field and had been cut at the same stage of growth. Purpose of the experiment is to compare the value of the different cutting for milk production.

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In April an effort was made by county milk producers to influence the city authorities in Bisbee and Douglas to pass ordinances prohibiting out of county milk processors from marketing milk in those cities. An ordinance was passed in Bisbee, however, it was ruled unconstitutional by the State Supreme Court in November. The Agent attended the meeting of milk producers and the Douglas City Council April 11th, when the matter was considered. The Douglas City officials decided that they could not legally prohibit the sale of such milk, when the product met the requirements of the State Health Department.

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SUMMARY
Cochise County Dairy Herd Improvement Association Records

Testing By the Month

Months	1947-48		1948-49		
	Herds	Cows	Herds	Cows	
October			5	113	
November			5	164	
December			4	118	
January			4	116	
February	4	96	4	111	
March	4	112	4	113	
April	4	119	4	112	
May	4	111	4	113	
June	4	109	5	147	
July	5	115	5	144	
August	5	134	7	303	
September	5	141	6	304	
Ave. 1948	4.4	117	4.75	157	

Herd Averages for the Year
(First complete year's record on herds)

Key No.	Owner	Breed	Year DHIA	Cow Years	Ave. Milk	%	Ave. Fat	No. Cows Over 100
401	E. C. Hill, Jr.	G H & G	1	33.36	8,608	3.95	340.2	3
402	Giflan Farms	R B S & Mix	1	30.34	9,181	4.0	367.4	5
403	Ed J. Collett	Mixed	1	28.60	6,801	3.75	255.4	0
406	Hugh Mayfield	Mixed	1	15.77	7,902	3.79	299.9	0

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ASSOCIATION AVERAGES FOR YEAR

Year	Ave. No. of Herds on Test per Mo.	No. of Herds Repres- ented	Cow Years Repres- ented	Ave. Milk	Ave. Test	Ave. Fat	Ave.Val- ue of Product per Cow Year	No.Cows Produc- ing over 400# Fat	No.Cows Culled
1949	4.75	4	108.8	8,187	3.90	319.5	487.5	8	14

Cow Years Reporting Feed Cost	Ave. Cost of Pasture per Cow Year	Ave. Cost Roughage per Cow Year	Ave. Cost per Cow Year	Total Cost of Feed per Cow Year	Value of Product over Feed Cost per Cow Year
108.8	38.51	131.72	98.25	268.48	218.75

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VI. ACTIVITIES AND RESULTS

I. Agricultural Economics

Extension work on agricultural economics was in connection with other projects. Miscellaneous information on marketing cotton, hegari and beans, including loans available through the Production and Marketing Administration was provided in answer to requests for information on these crops. Marketing problems on sale of alfalfa and other forage crops were also considered. Outlook information on the various crops produced in the county was provided at meetings and in answer to individual requests.

Financing of operations for the year was a major problem concerning farmers. Limited finances or late credit arrangements prevented many operators from practicing efficient farming practices. Credit provided by oil companies and grocery stores was taxed to the limit in some communities. Banks and other farm financing agencies were reported to be conservative in making loans on real estate and farming operations, due to the limited information on ground water resources in the Sulphur Spring Valley and the fact that cotton had not been proven as a profitable crop for Cochise County.

Labor for cotton picking was limited in October. Attempts were made by some cotton farmers to secure laborers to pick cotton for 2¢ per pound. Higher wages in the Salt River Valley and in Pima and Pinal Counties in addition to more favorable working conditions caused most transient labor to move to those areas. Early picking was mostly limited to farms where picking rates of \$2.50 were offered. The prevailing rates in November were around \$3.00 per hundred. Over 80% of the crop was picked out by November 30th. Favorable weather conditions for harvesting cotton existed throughout the months of October and November. One mechanical picker operated in the Stewart District.

Meetings concerning Agricultural Economics not reported under other projects are as follows:

<u>Date</u>	<u>Place</u>	<u>Kind</u>	<u>Att.</u>	<u>Talk by Agent</u>
February 14	- Willcox	- County Council of Homemakers	- 37	- Agricultural outlook information
February 26	- Elfrida	- Local Farm Bureau	- 35	- Agricultural outlook information and Farm Crop Production
March 31	- San Simon	- S.C.S. District meeting	- 18	- " " "
February 24	- Douglas	- Farm Ownership Loan clients F.F.A.	- 35	- Agricultural Outlook & miscellaneous Farm Crop Production
April 11	- Douglas	- City Councilmen, Milk producers, processors & consumers	- 125	- Consider milk ordinance to prohibit sale of milk processed outside of County

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<u>Date</u>	<u>Place</u>	<u>Kind</u>	<u>Att.</u>	<u>Talk by Agent</u>
August 18	- Douglas	- Kiwanis Club	- 48	- Talk by Agent on Agricultural outlook
September 1	- Willcox	- Rotary Club	- 42	- Vocational Talk by Agent
October 10-11	- Bisbee	- Greater Arizona- Clinic 3 meetings	348	- Agent presented information on Agricultural assets of the County

Howard R. Baker, Assistant Director, Norris W. Gilbert, Extension Agronomist, Walter Armer, Animal Husbandman, and the Agent attended a meeting of the Agricultural Committee of the Douglas Chamber of Commerce, Monday, October 31st to discuss possible adjustments in agricultural production in the county to meet the condition being brought about by reduction of cotton acreages under the PMA program for 1950. Cattle feeding as an outlet for feed production was considered. Suggestions were that cattle finishing should not be undertaken on a large scale by inexperienced feeders. Also, Extension Service representatives were agreed that chili production should not be increased over 1949 plantings. The need for more efficient use of irrigation water, land leveling and greater use of green manure crops were also recommended for consideration, for improvement of returns from farms.

The total estimated irrigated acreage in Cochise County for 1949 is 35,900 acres. This is an increase of 7,000 over the estimate of 28,000 in 1948.

The estimated acreages by communities of land cleared for farming is as follows:

Elfrida-McNeal-Douglas (Whitewater Draw area)	16,000 A.
Willcox (including Stewart, Kansas & Cochise Communities)	15,000 A.
San Simon	1,200 A.
Bowie	120 A.
Hereford	2,000 A.
St. David	1,300 A.
Pomerene	700 A.
Cascabel	50 A.
Estimated Total	36,370 A.

The acreage breakdown estimate for communities includes irrigated land, dry farmed acreage, cleared but not farmed in 1949, or in the process of being prepared for farming in 1950. Over 300 acres have been cleared in the county west of Rodeo, New Mexico, and clearing of a much larger acreage is planned, if additional irrigation wells are developed. Approximately 100 acres of this land was farmed in 1949.

The following records of irrigated acreages in Cochise County was received from George W. Barr, Agricultural Economist, University of Arizona, Tucson.

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ACREAGE IRRIGATED IN COCHISE COUNTY

For figures 1900-1935, County Planning Study of 1936.
For later figures, Census for year 1939 and Arizona
Agriculture for years 1941 through 1948.

1900	. . . . .	5,000	acres
1909	. . . . .	5,000	"
1910	. . . . .	5,500	"
1912	. . . . .	6,000	"
1915	. . . . .	11,000	"
1919	. . . . .	13,000	"
1920	. . . . .	12,000	"
1928	. . . . .	7,000	"
1929	. . . . .	6,300	"
1934	. . . . .	8,000	"
1935	. . . . .	8,000	"
1936	. . . . .	8,000	"
1939	. . . . .	11,500	"
1940	. . . . .	8,300	"
1941	. . . . .	12,000	"
1942	. . . . .	12,000	"
1943	. . . . .	10,000	"
1944	10,000	"
1945	12,000	"
1946	12,000	"
1947	23,000	"

M. 4-H Clubs

(See combined Annual Report)

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VII. OUTLOOK AND RECOMMENDATIONS

1. Field Crops

Great change of acreages of various farm crops in the county will be necessary in 1950 in comparison with 1949 due to P.M.A. acreage allotments on cotton. Most of the acreage for replacing cotton will be for production of feed crops. Higher costs of production of field crops in the county in comparison with lower valleys in the state will not permit profitable sale of feed crops to these areas. Farm plans providing for more livestock on farms to consume feed produced appears to be the solution to the problem.

Light soils which will require considerable expense for improving to a stage where satisfactory crop yields may be produced should be retired from cultivation. Further expansion of the cultivated acreage in the county should not be encouraged until a thorough study of underground water resources is completed.

Variety tests on cotton and corn should be continued in 1950 and establishing variety tests on small grains and grain sorghums should be done if cooperators are secured.

2. Horticulture

Growing of vegetable crops on a large scale should not be recommended unless satisfactory contracts for sale are made previous to planting. Chili production is expected to continue as the most important vegetable crop in the county. Competition from production in other areas is expected to be greater in 1950 than the past two years, and lower prices for the crop may be expected. The extension program should include more information to chili producers on efficient methods of growing plants in the cold frames and greater emphasis on the importance of proper seedbed preparation.

Selection of seed from individual plant selections also is a practice needing more attention of growers in order to produce more uniform and higher yielding crops. Work on improving chili by plantings from individual plant selections should be continued by the University.

3. Soils and Irrigation Practice

The acreage allotments on cotton should result in more varied types of crops being grown on individual farms.

Soil improvement practices are of major importance for increasing average yields of crops.

Carmy G. Page
Cochise County
1949

Recommended points needing emphasis in the Extension Program are, planning acreage for crop production on each farm in line with water supply, improvement in irrigation structures and land leveling, growing more legumes or green manure crops, winter storage of water in the soil, and desirable tillage practices to maintain or improve soil structure.

4. Poultry

Greatest consideration in the program on this project should be given to improvement of the farm flock. Buying chicks from hatcheries participating in the National Poultry Improvement Plan should be encouraged. Advantages of feeding for profitable production, culling, and control of diseases and parasites should also be included in the educational program.

5. Animal Husbandry

Beef

Ranges have improved throughout the county in 1949 due to favorable rainfall. Restocking of ranges will continue in 1950 if favorable rainfall is received. The practice of controlling lice, ear ticks, grubs and flies is increasing, however, continued publicity on this practice should be a part of the extension program. Also, special attention to selecting only desirable type and quality of replacements for breeding herds should be stressed.

Dairy

Extension work on this project should include special work with members of the Dairy Herd Improvement Association to encourage greater use of information obtained from records during the first year of operation of the program and appreciation of further benefits that may be received from records kept over a period of years. The agent should stress the need for feeding cows according to production, breeding of a larger percentage of cows for fall freshening, care in selection of herd sires, and value of records of production for improvement of the dairy industry in the county. These points should be considered in the county program for all dairymen. Greater participation in the Cochise County D.H.I.A. program should be encouraged in the Bisbee, Douglas and Elfrida area. Also, more sanitary practices should be included in the operation of most dairies.

6. Agricultural Economics

Efficiency in production of all agricultural products is of greatest importance to consider on this project. Considerable turnover in land ownership may be expected in 1950.

Carmy G. Page
Cochise County
1949

The program in extension work on this project should give greatest emphasis to keeping the agricultural interests informed on trends in markets and encourage increased efficiency in handling present farm land. Keeping records of cost of production is a project which should be of major benefit to farmers. Prospective farmers should be advised on points to consider in selecting a farm. Indications are that further expansion of the present cultivated acreage in the county may prove detrimental to the various farming communities. More information is needed on the available supply of underground water, especially in the principal farming districts.

7. 4-H Club Work

See combined 4-H Club Report

8. County Fair

A permanent location for the County Fair is the most important item, which should be considered in 1950. Building space for exhibits has been excellent in the Airport buildings the past two years, however, the disadvantages in cost of preparing the buildings for the Fair each year when only temporary leases are permitted seems to outweigh advantages of this location. If a permanent location is agreed upon, improvements added each year could be made with less cost over a period of time than is possible at the Airport. Also, the need for entertainment features and space for various entertainment will be necessary if interest in the County Fair continues.

9. Miscellaneous

The extension program should include publicity through news stories, circular letters and radio broadcasts on recommendations for control of weeds, plant diseases and farm crop insects, rodent control, and agricultural engineering aids toward more efficient farming in addition to major projects listed above. Demonstrations should be included as a teaching aid on all projects when possible. Cooperators for demonstrations, variety tests, etc. should be carefully selected. Detailed information on the purpose of demonstrations should be discussed with cooperators. Demonstrations should be conducted only where cooperators indicate a great deal of interest in the project.