PIMA COUNTY, ARIZONA

ANNUAL REPORT

ALVIN ALLEN
ASSISTANT COUNTY AGRICULTURAL AGENT

DECEMBER 1, 1949 TO NOVEMBER 30, 1950

I N D E X

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1950

ADULT PROGRAM

ORGANIZATION

The assistant agent cooperated with the Marana Farm Bureau during 1949-1950. Mr. Earl Horton was elected President and Mr. Charles Harmon, Secretary and Treasurer. The assistant agent met with this organization whenever possible to assist with the Bureau's program. Mr. Harvey Tate, Extension Horticulturist, accompanied the assistant agent on one occasion to address the group on the subject of "Farm and Home Landscaping".

The Southern Arizona Rabbit Breeders Association continued to be active during the past year. The assistant agent did very little work with this group. The organization seems to be able to handle its own affairs very well with very little need of help from the extension office. However, the assistant agent has cooperated with this group in planning a 4-H club educational program designed to encourage club members to raise rabbits and to learn how to select good rabbits.

The assistant agent has worked closely with the Pima County 4-H Club Leader's Association in planning the county 4-H club program. However, there was need for fewer meetings of this organization during 1949-1950. The group has not been active for the past six months.

The Pima County 4-H Club Council was organized in May, 1950. This group is not a council in the true sense of the word since it was organized principally for the purpose of enlisting the aid of businessmen in planning the county 4-H club Fair. Also, the group has promised to aid in recruiting leaders for 4-H clubs whenever necessary. Only two meetings of the organization have been held since it was activated. At one meeting the group met with representatives from the University College of Agriculture to discuss granting of college credits to University students who assisted in leading 4-H clubs. As a result of this meeting it was mutually agreed that such a plan was not practical.

The Pima County 4-H Club Educational Committee was active during 1949-1950 on the same basis as in the past years.

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INFORMATION PROGRAM

The assistant agent used the radio broadcast 17 times in the past year to instruct county residents, both 4-H members and adults, in farming information. The facilities of Radio Station KOPO were used. This broadcast was 11:00 a.m. on Saturdays for 12 to 14 minutes. However, the time was changed during the year to 8:45 a.m. on Saturdays. All three county extension agents take turns at these broadcasts. Very few interview-type broadcasts have been used during the past year. Most of these programs have made use of news releases from the extension information specialist office, supplemented by local interest news stories and information topics prepared by extension agents.

The local press printed 10 news articles during the year which were prepared by the assistant agent or publicity for such articles was arranged by the assistant agent. All of these were 4-H publicity stories. Two daily newspapers and one weekly are using material prepared by this office. Cooperation from these publications has improved during the past year and relations have been good.

The assistant agent prepared 25 circular letters of which 1,580 copies were mailed as a means of informing county 4-H club members and leaders of meetings, plans for 4-H program and information on 4-H projects.

The assistant agent used kodachrome slides and educational motion pictures throughout the year. All of this material was used in connection with the 4-H club program. Kodachrome slides showing breeds of livestock, poultry and dairy animals were used to good advantage. Also, this agent used a series of kodachrome slides belonging to the Extension Horticulturist to instruct 4-H club members in landscaping their homes. The county extension office is building and improving its files of kodachrome slides for use of both adult and 4-H club information programs. The assistant agent also used kodachrome slides of 4-H club members and their projects, as well as slides taken at 4-H Fairs, to arouse and maintain interest in the 4-H club program. These slides are used at local 4-H club meetings and in window displays during National 4-H Club Week. Both club members and parents enjoy seeing themselves in 4-H club action shots.

Personal contacts with both adults and 4-H club members continues to be an important means of putting across the extension information program. Office calls as well as personal visits to the farm home are useful in explaining and demonstrating extension information programs.

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PROJECTS

AGRONOMY

During 1949-1950 the assistant agent had less time to devote to the adult program due to an additional assignment of Santa Cruz County to conduct a 4-H club program there. However, county residents continue to contact the assistant agent both in office calls and by telephone to obtain information regarding fertilizer recommendations, irrigation practices, soil requirements and the planting data, etc., for small grains, alfalfa and sorghums. There have been very few requests for information on the use of 2,4-D to control weeds in field crops. Farmers continue to prefer hand labor in controlling pigweed and Johnson grass in field crops.

Insect problems confronting cotton farmers has been the major field in which farmers have required extension help. Control of corn earworms and grasshoppers was also an important problem of farmers.

County farmers and suburban residents with small acreages continue to show some interest in the use of permanent pastures for horse pastures and dairy pastures. Most of the questions in this field that are asked the assistant agent came from people who were either new at farming or were new at farming in this section of the country.

The assistant agent devoted 4 days to helping the agent in the cotton improvement program. This consisted of helping to record harvest data from cotton fertilizer test plantings.

PROJECTS (continued)

HORTICULTURE

The assistant agent devoted 14½ days to advising county farmers and home owners on horticultural problems. Garden, landscaping and fruit planting problems required a major portion of this agent's time in the field of horticulture.

The use of commercial fertilizers for gardens and lawns has continued at a rapid rate throughout 1949-1950. This results in many questions directed to the county extension office regarding use of commercial and barnyard fertilizers. The assistant agent met with the Emery Park Womens' Club to discuss fall gardening plans and problems and to answer questions from the group. Copies of Extension Circulars "Lawns for Arizona", "Arizona Home Gardening" and the "fertilizer Handbook for Arizona Farmers" were distributed to the group.

Insect problems with gardens, fruits and ornamentals have continued to be serious problems during the spring and summer months. This agent has given extension recommendations regarding control of these insects by means of the telephone, whenever possible, and distribution of extension bulletins. However, it is often necessary to make "service" calls to homes and farms to identify insects and also to diagnose plant disease troubles. Such calls are kept to a minimum since they are both time consuming and expensive. Office visits were also useful in advising county residents on such problems.

Since the extension office is located in a larger residential and business area, many calls for advice on landscaping problems and care of ornamentals reach the extension office from city residents. The telephone and office visits are methods used to advise such persons.

The assistant agent visited the Beal Fruit Ranch near Sopori on three occasions during the past year. The purpose of these visits was to advise the owner on fertilizer recommendations and use of the wind machine to control frost damage.

Since no work has been done at the Arizona Experiment Station on use of wind machines in deciduous orchards, the agent had to obtain information from the Farm Advisor in Los Angeles County, California. In the Sopori area it is quite possible that a wind machine might be more practical than smudge pots in controlling frost damage. The Beal Orchard consists of about 7 acres of apricots, 2½ acres of peaches and ½ acre of cherries. Mr. Beal has used ammonium sulphate on some peach trees to control root rot. Also, iron sulphate crystals have been used to correct iron chlorosis.

This agent observed two instances of what appears to be canker on fruitless mulberry trunks. The lesions were 12 to 30 inches from the base of the tree and were exuding sap. From one of these lesions bark-scrapings yielded several small pupae. These insect pupae were turned over to the Entomology Department of the University of Arizona for further study. It is not known whether the insect is a cause of the cankers or is only a secondary result.

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PROJECTS (continued)

PROJECT #1 - POULTRY

The writer devoted 12 days to advising county flock owners on poultry problems. This project consists of advice to flock owners on control of such diseases as Newcastle, Fowl Pox, Bronchitis and Laryngotracheitis and where to buy quality baby chicks. By far, the greater number of questions reaching this agent concerned poultry housing problems and plans. Because of this the assistant agent made a study, in cooperation with Mr. Wesley McCartney, Manager of the Valley View Poultry Farm, to determine which types of housing are most suitable for commercial egg production in the Tucson area.

DISEASE CONTROL

Bronchitis and Tracheitis caused production losses in laying flocks during July and August, 1949, although very few mortality cases were reported. The most serious disease, from the loss standpoint, was attributed to what is apparently a new disease in this area. This disease is called, for want of a better name, Wild Chicken Disease. It is apparently a disease affecting the nerves in such a way that the chickens become excitable. The entire flock will suddenly fly into the air and scratch and claw one another causing tears in the flesh on the back and head. One flock in the Avra Valley district was reportedly timed and found that the flock in a one hour period flew up in this manner at the rate of once every two minutes. Losses resulting from infected wounds and from poor gains were estimated in some flocks as high as 35%. The disease was investigated in the Avra Valley and in the Cortaro district by this agent, accompanied by Mr. Ralph Van Sant, Extension Poultry Specialist, and Mr. H. B. Hinds, Associate Professor of Poultry Husbandry at the University of Arizona. After comparing reports from several flocks, the only consistant occurance that was common to all flocks was that the disease struck during the hot months. No apparent relation of the disease to brand of feed used could be established. Both high protein feeds and ordinary mashes caused the trouble. All instances of trouble occurred in broiler flocks at 6 to 10 weeks of age. The most common age appeared to be 8 weeks when the disease struck. Newcastle Disease has been very well controlled in most commercial flocks in this county by vaccination at 4 to 6 weeks of age.

POULTRY HOUSING

During the past year there continued to be interest in expansion of the poultry industry in the Tucson area. Due to a serious price drop during the summer in the price of broilers, more interest has been placed in recent months on laying units. This has raised the question of what type of housing to recommend to new producers in this area. With the

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PROJECTS (continued)

PROJECT #1 - POULTRY (continued)

POULTRY HOUSING (continued)

object of trying to make it easier to recommend a practical type of poultry laying house to these people, this agent made a study of poultry house types and materials. The Manager of the Valley View Poultry Farm, largest commercial laying plant in the county, cooperated in this study. Houses of different sizes with some construction materials and details changed were used in this study. Thermometers were then placed at various points in these houses at the hen level to determine effects of painting roofs with aluminum paint as compared to unpainted metal roofs. In all of these buildings most of the sides and ends were made of 4 ft. wood lath on heavier frames. Three types of roofs and roof locations were used to determine the most satisfactory location and arrangement. Community nests were used in all houses with the double deck nest compared with the lower single deck. Ventilation was observed during the summer months to determine which type of construction kept the birds cooler. Production of the birds and death loss from heat were how to measure the cooling efficiency of the houses in conjunction with thermometer readings.

In planning these houses, consideration was given cooling efficiency, control of drafts during cold weather, arrangement of roofs and nests and doors to the building in order to make cleaning of the houses easier. As a result of this study this agent and the Manager of the Valley View Farm have concluded that the most practical type of laying house for the large commercial producer is a house 48 by 28 feet, having aluminum roof with north and south ends and east side made of wood slats spaced 1 inch apart and the west side made of aluminum-on-wood frames hinged at the top to allow the entire west side to be raised from the bottom up. Two small doors 4 ft. wide are needed in the center on the west side with a large end door 8 ft. wide and 9 ft. high at each end. The roof is gable type with a ventilating space at the top on the ends 18 inches at its deepest part and approximately 8 feet at its widest part. The roosts should be the horizontal type and should be placed on the east side near the center of the building. These roosts are 14 feet by 24 feet and are placed over a droppings pit which is fenced off from the birds. The nests should be community type nests with the single tier nest used for Rhode Island Reds and a double deck nest for White Leghorns to conserve space. Such a building will house 600 White Leghorn layers or 550 Rhode Island Reds.

Thermometer tests in these buildings at the same time reveal that the buildings having unpainted roofs were 2° to 6° hotter at the hen level than was the temperature in the building having an aluminum painted roof. No houses were used in this study that had an all aluminum roof, although one is in the process of construction at the moment. It is expected that this type of roofing will be even more effective than the aluminum paint

PROJECTS (continued)

PROJECT #1 - POULTRY (continued)

POULTRY HOUSING (continued)

in reducing the temperature.

Since material for these buildings was bought at less than wholesale costs and no accurate record of labor cost was kept, it was not possible to obtain a reliable figure on the costs of this type house. However, it is estimated it would cost approximately $2.25 per bird. In order to show results of this study more clearly, photographs of the three major types of houses observed are included in this report. They have been arbitrarily designated as types A, B, and C, with type C being the one considered most satisfactory. This house can also be used for the smaller producer with equal satisfaction.

More study of this housing problem now seems to be in order with the increased interest in cage-laying plants. During the summer of 1950 a Mr. Vandercolk, in the Flowing Wells District, constructed a 5,000 bird cage laying plant using the most modern equipment and plans that he could find. This producer has kept an accurate record of costs on this plant and has offered to make them available to this office. Since time did not permit a detailed study of this plant during the past year, this agent plans to record this data during the coming year. By that time it is hoped that some production records for this type of house can also be observed.

MARKETING

Within the last three weeks the broiler production business has boomed in the Avra Valley, located 24 miles west of Tucson behind the Tucson Mountains. Market roads to this district are only fair and producers found early in 1950 that they were in dire straits with their marketing of broilers. Demand had so sharply reduced in January that growers were offered only 28¢ a pound by the Tucson Poultry Processing Plant for live broilers. This left no margin of profit in most instances for growers. In self defense this community, which produces approximately 145,000 broilers yearly, banded together to pool their labor and capital in construction of a small poultry dressing plant. Two of the larger growers arranged the financing and the neighboring growers contributed their time and labor. A Mr. Battin and a Mr. Pitts formed a partnership and neighboring producers agreed to patronize the plant and also to assist with the labor whenever necessary. The birds were dressed at the plant and stored in a cold storage room where they were picked up by Swift and Company at about three times a week and sold to customers of Swifts. This arrangement has been very satisfactory and apparently will continue. Producers found that at times they did not have sufficient volume to meet the demand and on at least one occasion

PROJECTS (continued)

PROJECT #1 - POULTRY (continued)

MARKETING (continued)

a truckload of live broilers from Arkansas were shipped in to the plant. These broilers reached the plant in very good shape and could not be distinguished from local birds when dressed. This is an example of what happens when a market area has not sufficient competition to encourage a profit to the producers. It is worthy of note that within 10 days after this plant started production the local processing plant in Tucson raised their price 8¢ per pound in order to obtain local birds.

HATCHERIES

Pima County has only one reliable commercial hatchery of any size. This hatchery has had the reputation of being a good, reliable source of baby chicks. However, during the past two years it has been noted that a number of complaints from growers have reached this office. It appears that the quality of White Leghorn baby chicks produced by this hatchery has deteriorated considerably but this does not seem to be entirely the fault of the hatcheryman. This owner has tried to trace the trouble and found that it apparently goes back to breeding management in supply flocks. The baby chicks are very unthrifty and soon become sleepy and losses have been as high as 30% to 50% in some orders. There is a possibility that too much inbreeding in supply flocks may have contributed to this trouble and the hatcheryman is making every effort to control this trouble. New Hampshire baby chicks from this hatcheryman continue to be a very high quality.

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PROJECTS (continued)

DAIRY

The assistant agent was able to do very little work in this field during the past year because of his duties with 4-H clubs. There are three retail dairies and nine smaller dairies in Pima County who sell wholesale to the other three. Twelve dairymen belong to the Pima-Pinal D.H.I.A. The cow tester, Mr. Bernard Law, is doing an excellent job and has all of the herds that he can handle. There is no chance of expansion of this program at present.

Mr. John Raskob has built a new milking parlor and is building up a fine herd of registered guernseys on East River Road. This promises to be one of the dairy showplaces of the county.

Prospective dairymen who have tried to start new dairies in this area have found that they must buy out existing dairies in order to have a market for their milk. This situation exists because there is already a sufficient supply of liquid milk in Tucson. Although some milk is brought into the area from Maricopa and Pinal counties, it can be brought in cheap enough to favorably compete against any new herds. The market for liquid milk is good at present and promises to remain good as the city expands.

Artificial insemination of dairy cattle continues to be important in Pima county although the larger dairymen have not become converted to the idea enough to sell all of their own dairy bulls. Mr. Lester Woods, the only trained artificial inseminator in this county, has done most of his work with family cows and small dairymen. He reports that larger dairymen often will not call in the artificial inseminator until they begin to have breeding troubles with certain cows. This means that the inseminator begins his work under a handicap where his chances of success are considerably reduced.

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PROJECTS (continued)

RABBITS

The assistant agent's work with this project was very meager during 1949-1950. It consisted entirely of advice to people seeking a source of good breeding stock and to a few people who were having trouble with rabbit diseases. So little work was done by this agent in this project that there is nothing of major importance to report.

Type "A" Laying House (Exterior View)

Dimensions: 16 ft. by 36 ft.

Capacity: 300 Layers (Rhode Island Reds)

Construction: 1 strip of corrugated iron at base;
Channel sheet metal roofing
Sides - 48 in. wood lath, placed vertical
Length is north and south with double door on west and one opening into poultry run on east
Non-Portable construction
Gable Rood

Remarks: Farm Manager's comments - "House is too narrow for adequate cooling for Rhode Island Reds. Greater width would allow more shade from roof. Reds will not use top row of nests; however, Leghorns make good use of double deck nests. Size of house is best suited to 300-Leghorn laying unit. This type of house would be suited to small producer if Leghorns are housed instead of Reds."

Type "A" House (Interior View)

Water System: Automatic-float-valve type; container placed outside the building. Metal water trough necessitates use of chemical 1.

Feeders: Ten 5 ft. feeders per 300 birds.

Remarks: 2 inch pulleys and ¼ inch cotton ropes would facilitate raising and lowering roosts. Note that birds cannot contaminate water by roosting above trough.

Type "A" House (Interior View)

Roosts: Two 6 ft. sections, hinged at back, can be elevated at front for ease of cleaning dropping pit. "Chicken wire" keeps birds out of pit.

Inside View of Type "A" House

Nests: Double deck community nests - size 2 ft. by 2 ft. - 8 nests per tier (4 nests back to back)

Type "B" Laying House

Dimensions: 34 ft.by 108 ft.

Capacity: 1,800 Layers (Rhode Island Reds)

Construction: Roof of channel sheet metal painted with aluminum paint.
Sides and ends of 48 in. wood lath
House is divided in center by mesh-wire partition
Flaps on west side can be opened to improve cooling.
Ventilators on roof are 8 ft. long.

Remarks: Farm manager feels that cooling would be improved by building ventilators full length of roof. This building could also be improved by construction of large doors at each end to allow truck to enter building when cleaning out litter and replacing with new litter. Horizontal-type roosts have proven more satisfactory than roosts placed on 35° slope. This has reduced mortality from colds and requires less roost space since hens make better use of roosts.

Inside View of Type "B" House

Roosts - Horizontal Type

Type "C" Laying House

Dimensions: 28 ft. by 48 ft.

Capacity: 600 Layers

Construction: Ends and east side made of wood lath on 2 in. by 4 in. frame.
West side made of 3-vee crimp sheet iron painted with aluminum paint. Entire west side is hinged at top to allow flaps to be elevated in summer.
Roof - same material as west sides.
Vents at each end
Large doors at ends for ease of cleaning

Remarks: This type of house has given best results of any type tried at Valley View Farm. Hen-level thermometers. Used before and after painting all metal on this type house has shown that painting with aluminum paint reduced the hen-level temperature 2 to 6 degrees, depending on strength of air currents. Egg production in painted house was maintained at a rate of 52% (July and August, 1949) while production in unpainted house at same time was only 43%.

Type "C" Laying House

Showing end doors to permit truck
to enter when changing litter,
cleaning house, etc.

Type "C" Laying House

Interior view showing location of roosts on 1 side with nests at either end.

Roosts - 14 ft. by 24 ft.

Remarks: By placing roosts along the east wall and using horizontal, low roosts the building can be entered from one end with a truck to give greatest ease in cleaning. It is noteworthy, also, that the hens spend considerable time on the roosts even in daytime - this keeping the open floor relatively free of droppings.

Brooder Houses at Valley View Farm

Runs: 12 ft. by 40 ft.

Capacity: 650 chicks per run

Shade: Open-gable shed
16 ft. span

Remarks: Shade arrangement is not satisfactory. Chicks will not readily cross sunny area in order to reach shade in runs. Shed should be extension of brooder-house roof.

Brooder House, showing method of unloading mash from truck to hopper inside brooder house.

Funnel: Lip of funnel is 5½ ft. from ground. Each funnel holds two 100 lb. sacks of mash.

Feed truck used for feeding laying mash to hens.

Capacity: 2,200 lbs. of laying mash

Inside View of Feed Storage Room at Valley View Farm

Dimensions:

Outer - 60 ft. by 60 ft. including two sheds (12 ft. shed on each side)

Inner - 36 ft. by 60 ft. Feed storage space

Remarks: This feed storage space is designed to take care of feed needs for a poultry farm of about 30,000 laying hens, including feed for growing necessary replacement stock.

Eggs are sold wholesale to plant which does its own candling of eggs, but all eggs are graded for weight at the farm. All cracked eggs are sorted out and sold retail at the farm. Eggs are gathered 4 times daily in summer season.

Interior View of Egg-grading Room at Valley View Poultry Farm

Egg baskets - are all made of rubber-coated steel wire.

Cooling is by means of blower-type evaporative cooler (opening of cooler is directly behind the egg grader on far wall.