

ANNUAL NARRATIVE REPORT

STATE: ARIZONA

COUNTY: YAVAPAI

REPORT OF:

ALVIN ALLEN

FROM: APRIL 18, 1951 to

NOVEMBER 30, 1951

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4.4 Computation
per unit size
= 65.19

$$\begin{array}{r} 158 \overline{) 103.00} \\ \underline{948} \\ 820 \\ \underline{790} \\ 300 \\ \underline{158} \\ 1420 \\ \underline{1322} \end{array}$$

K.L.M.

HIGHLIGHTS:

Yavapai County covers an area of approximately 8,500 square miles with a range in elevation from 3,000 to 7,000 feet. Most of the area is utilized by approximately three hundred cattlemen in the grazing industry. According to the 1945 census we have approximately eight hundred farmers which includes the cattle rancher and according to this figure we have about five hundred farmers on eleven hundred acres of irrigated lands. Dry land farming is not practiced here because of insufficient rainfall during many years. We have two main farming areas, Chino Valley and Verde Valley. These two areas are approximately fifty miles apart and are divided by a range of high mountains. Some new land has been brought into crop production since 1945 under pump irrigation.

Four-H Club Work

This program is increasing in popularity. Eleven clubs (five agricultural and six Home Economics) enrolled sixty boys and ninety-eight girls. Sixty-three and seventy-five one hundredths percent of these (or one hundred and three members) completed their project. This compares to seventy-five members who completed in 1949-50 club year.

The Prescott Kiwanis club has an outstanding program to stimulate 4-H club work by recognizing outstanding club members at an annual recognition luncheon and by visiting local 4-H clubs each year.

Horticulture

Fruit and vegetable production is an important phase of the economy of this county. The agent assisted orchardists and gardeners by advising on production and marketing problems through field visits, personal letters, three result demonstrations, circular letters, talks by specialists at meetings, distribution of state and federal bulletins, telephone calls, radio programs, and office visits. Special projects in this field were:

- a. Texas Root Rot
- b. Chlorosis
- c. Lawns (Blue-Grass)
- d. Insect control

- e. Fire Blight
- f. Varieties

Livestock

Grazing of cattle is our most important single economic agricultural industry. Both purebred and range cattle breeders make up the industry with the farmer gaining wide recognition for their cattle.

The agent worked closely with the Yavapai Cattle Growers. Special projects were:

- a. Grasshopper Control on Ranges
- b. Control of Livestock Pests
- c. Diseases of Livestock
- d. Trace Mineral Study of Grasses

Dairy

The number of dairies in Yavapai County has grown from seven in 1950 to ten in 1951. This growth is partly due to population increases in the Verde Valley. High cost of alfalfa hay has made this venture less profitable than in the past. Wherever permanent irrigated pasture is available, dairying has a much better chance for success. The Verde Valley offers most opportunity for this pasture.

An educational campaign to eradicate brucellosis is planned by this office for 1952.

Poultry

Cage-laying plants are increasing in number in this county. Four small plants with a combined capacity of approximately twenty-five hundred layers are ready for a winter test. If this construction proves practical under our cold temperatures, this capacity will probably be doubled or tripled next summer.

The agent works closely with the Yavapai Poultry Producers Association in presenting an educational program.

Special projects and topics are:

- a. Poultry Housing
- b. Feeds and Feeding
- c. Disease and Insect Control
- d. Marketing
- e. Hatchery Problems
- f. Sanitation

Agronomy

The agent established two result demonstrations in this project in October 1951. These are winter grain variety tests. The one on Lester Sanders' farm in Chino Valley tests six varieties of winter barley. If successful, a variety that will give some winter pasture and will not winterkill will be selected. The demonstration planting on farm of Gil Harris of Camp Verde, tests eight varieties of wheat, seven of which are winter wheats. Yields and other pertinent data will be taken in 1952.

Special projects in this field are:

- a. Winter Grain Varieties
- b. Irrigation and Soil Problems
- c. Pinto Beans
- d. Miscellaneous

Entomology

The agent is indebted to assistance of Dr. J. N. Roney for help on control of grasshoppers and other insect problems. The use of Aldrin as a spray was very successful in this county in the past year. The agent used news articles, circular letters and bulletins to get latest recommendations on control of hoppers to the farmers and ranchers.

Three fly control meetings reached one hundred and seventy-five people in three communities with information on this subject.

AGRICULTURAL SITUATION:

Yavapai County has a land area of 5,178,240 acres of which 3,161,781 acres are in cultivated farms and cattle ranches. The major portion of this area is grazing land utilized by approximately three hundred cattlemen.

There are approximately 50,000 head of mature cattle in the county. This compares with 33,000 in 1940. Our cattle industry has made a relatively favorable progress with most phases of range management. However, there is considerable room for improvement in the quality of beef cattle, range reseeding, marketing and parasite control. A parasite control program was initiated three years ago. This program has accomplished favorable results but a continuation of this project is warranted for at least another year.

Sheep numbers have declined for the past ten years with a population today of approximately 3,500. This compares to a population of approximately 17,000 in 1940. The chief reasons for this decline is that higher cash returns could be had from grazing beef cattle. Also a lack of skilled labor was a factor in changing from sheep to the cattle business. In the past year more farm flocks have been established. A flock of 2000 head has moved into Big Chino Valley.

Cultivated farming is becoming increasingly important to our agriculture. Many ranchers are developing small acreages to furnish supplemental feed for their cattle. Also several farmers are developing new land and cultivated farming is becoming every increasingly important due to our increasing population.

All of our crop land is irrigated comprising approximately 12,500 compared to approximately 11,000 acres in 1940.

Approximately 5,500 acres are irrigated by pump and the remaining acreage is irrigated from small river diversions. Also 2,500 acres in the Chino area are supplied water from two storage reservoirs and a pumping plant. Amounts of storage water varies considerably from year to year.

The major crops grown are alfalfa, small grains, dry edible pinto beans, deciduous fruits and truck crops. Considerable improvement with many phases of our cultivated farming is most pressing. Some of the apparent needed improvements include marketing, improved and/or recommended varieties, crop management and soils management.

Dairying is not an extensive enterprise in our county because of two principle limiting factors, namely: limited local markets and long distances to large markets over mountainous roads. We have ten dairies with a total of approximately 500 cows. These dairies are doing a fairly good job of supplying the county with milk. Improved feeding and marketing methods and control of Brucellosis are three most important problems in this industry.

Poultry production has been on the upward trend for several years. Chickens raised today are estimated at 85,000 compared to 45,000 in 1940. These figures include chickens raised for egg production, broilers and fryers but egg production constitutes the major portion of our poultry industry. Marketing is our chief problem with our poultry and poultry products. There is considerable room for improvement in disease control. Three years ago a county poultry association was organized and it is contributing a great deal toward the development of our poultry industry. The agent is working closely with this group on the marketing and disease problems, both of which are most pressing at the present. Marketing conditions can be materially improved in this area which would contribute much to the growth of the industry.

ORGANIZATION:

A. Extension

The agent attended district conferences for agents of Northern Arizona counties on April 30, in Prescott and on July 31, 1951 at Flagstaff. These conferences provided valuable instruction on preparation of annual reports and plans of work. Also the meetings provided for exchange of ideas among agents on various extension programs in each county. It is the opinion of this agent that possibly two such conferences should be held annually.

The present agent reported for duty in Yavapai County on April 18, 1951. He replaced the former agent, E. F. Thacker, who resigned as of April 1, 1951

B. Farm Groups

Farm Bureau

This group has four locals, at Chino Valley, Skull Valley, Humboldt, and Camp Verde. The agent cooperated with three of these locals in planning and conducting educational programs on farm topics. The Yavapai County Farm Bureau has a new set of officers. They are Floyd Hawkins of Chino, President; Elmer Young of Dewey, Vice-President and Lois Sanderson, Secretary-Treasurer. Mrs. Kenneth Hall, Chino, is President of Farm Bureau Women. The Camp Verde local was inactive during summer months but is now revived.

Floyd Hawkins is now State President of Farm Bureaus.

Yavapai Cattle Growers

The Yavapai Cattle Growers has a membership of approximately 150 ranchers. The group was active throughout the year. They hold regular monthly meetings which the agent attends whenever possible and assists on problems which are of an extension nature.

This group again conducted an annual calf sale and free barbecue. They sold seventy-two head of range calves weighing 470.8 pounds each for \$42.69 @ cwt. to M. O. Best, Phoenix feeder. Four tons of salt were donated by K. H. Harmon, Glendale. One ton sold for \$35.00 to J. J. Coughlin

and three tons to Frank Kinley, Glendale, for \$33.00 @ ton. An estimated 2400 persons attended this event.

Junior Cattle Growers

This group was active during a part of the past year. E. S. Turville and this agent are cooperating in promoting an educational program for the group. However, interest among members is lagging and outlook for the group is not encouraging.

Yavapai County Poultry Producers Association

The agent worked closely with this group and carried on an educational program dealing with topics of interest to poultrymen.

Yavapai Dairy Goat Association

The agent was active in organizing the Yavapai Dairy Goat Association in August 1951. Several breeders of dairy goats in the vicinity of Prescott felt that this would serve their interests by providing an organized educational program through the Extension Service and by uniting the group in their efforts to expand this small industry in Yavapai County. Officers of this group are: Mrs. Dorothy Dalke, President; Mr. Jack Walker, Vice-President; and Mrs. Helen Perkins, Secretary.

Homemakers

The agent gave a short talk on farm outlook at a Bi-county meeting of Homemakers on October 26 in Flagstaff. Approximately 45 people attended this meeting.

Yavapai County Agricultural Mobilization Committee

The agent is an ex-officio member of this committee, consisting of representatives of most United States Department of Agriculture agencies and Extension Service and Vocational Agriculture.

The agent participated in Family Farm Policy Review meetings at Skull Valley, Chino Valley and Humboldt. Attendance was poor and business was principally of Production and Marketing Administration nature. These meetings were, in opinion of this agent, not worthwhile from an Extension viewpoint.

Other Organizations

The agent cooperated with the following agencies: Soil Conservation Service, Production and Marketing Administration, Forestry Service, Farmers Home Administration and Fish and Wildlife Service.

PROGRAM PLANNING:

Program planning as an organized Extension activity reached three communities in 1951. The agent met with program committees from Farm Bureau locals in Humboldt and Chino Valley to plan an educational program. Through cooperation of Bob Herdman, Executive Secretary of Arizona Federation of Farm Bureau, the agent planned an educational program that could be carried out in three locals during the same time of month. These three locals agreed to schedule their meetings on consecutive days in order to make best use of Extension personnel. These meetings were geared to meet needs of the community as expressed by the committees.

Black Canyon local chose the following topics for Extension programs: Farm Accounts and Income Taxes, Marketing of Poultry and Beef Cattle, Diseases of Livestock.

The Chino local asked for programs on Crop Diversification, 4-H Clubs, Farm Accounts and Income Tax.

The Skull Valley (Triangle Local) group asked for Livestock Diseases and Income Tax and Farm Accounts.

The agent was assisted by specialists in conduct of these programs.

INFORMATION PROGRAM:

Newspapers and Magazines

The agent prepared twenty-one news articles including four feature stories for publication in both the daily and the weekly newspapers serving Yavapai County. These articles were sometimes dictated to reporters while others were written by the agent. Yavapai County is served by the Prescott Courier, a daily, and two weeklies - The Messenger and The Verde Independent. The latter does not make much use of educational articles unless they are given a definite local slant, using local names of people and places, etc.

The agent prepared four articles for "Arizona Cattlelog" and one for "Arizona Stockman."

Radio

Yavapai County is served by one radio station, KYCA in Prescott. Its listening audience is principally Prescott and very few rural areas are reached by its broadcasts. The agent has made very little use of this information tool for that reason. However, he presented two radio programs designed to create more interest in our County Fair.

Circular Letters

Twenty-six circular letters carried advice to farmers and ranchers of the county from the county agent. A total of eight thousand two hundred and five copies were mailed to rural people.

State and Federal Bulletins

The county agent distributed approximately two thousand state and federal bulletins to Yavapai County farmers and ranchers in 1951.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF ARIZONA
P. O. BOX 388
PRESCOTT

UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE
U. S. DEPARTMENT OF AGRICULTURE
AND YAVAPAI COUNTY COOPERATING

AGRICULTURAL EXTENSION SERVICE
HOME DEMONSTRATION WORK
COUNTY AGENT WORK

October 29, 1951

Dear Fruit Grower:

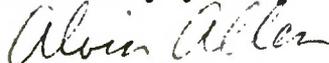
Now that frost has come, fruit growers should get ready to spray their apples, peaches, pears and other fruit trees with a dormant, lime-sulphur spray. This spray will help kill scale insects, spider mites and mildew. A spray should be applied as soon as the trees are in full dormancy. A second spray should be applied in January or February just before the buds swell. Orchard owners who practice this spray program will overcome a lot of trouble for next year.

Lime-sulphur may be purchased in the dry powder to be dissolved in water or one may secure the liquid lime-sulphur. In either case, follow directions for dilution. Be certain to prepare a dormant strength for winter use.

A good spraying during the winter months may mean very little injury by spider mites during the summer. Spray the trees and any foliage or grass under the trees.

For more detailed information on spraying programs to control fruit tree insects, write us for a copy of Extension Circular #148, "Fruit Insect Control Hints."

Sincerely yours,



Alvin Allen
COUNTY AGRICULTURAL AGENT

PREPARED BY:
J. N. Roney
Extension Entomologist

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF ARIZONA
P. O. BOX 388
PRESCOTT

UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE
U. S. DEPARTMENT OF AGRICULTURE
AND YAVAPAI COUNTY COOPERATING

July 17, 1951

AGRICULTURAL EXTENSION SERVICE
HOME DEMONSTRATION WORK
COUNTY AGENT WORK

Dear Friend:

Here is a Safety Calendar for your observance during National Farm Safety week, July 22-28. Perhaps it will help you make your farm and home a safer place to live.

A MINIMUM DAILY PROGRAM FOR THE WEEK

- Sunday -- Safety is Humaritarian
Banish fatigue and tension of routine living.
Plan to avoid an over-crowded schedule.
- Monday -- Home Safety
Make stairs and steps safe.
Avoid slippery floors and "throw" rugs.
Keep matches out of children's reach.
- Tuesday -- Livestock
Keep small children away from livestock.
Check and repair livestock equipment.
Avoid handling the bull -- use a safe bull pen.
- Wednesday -- Falls
Repair or discard broken, unsafe ladders.
Place guards at hazardous places.
- Thursday -- Highway Traffic
Remove trees and shrubs from farm driveway entrances.
Learn and obey proper signals and signs on the highway.
Provide lights on all equipment moved after dark.
- Friday -- Machinery
Keep children away from machinery.
Do not oil or adjust machines in motion.
- Saturday -- Review Day
Check up on any farm and farm home hazards that might have been overlooked.

Yours for safer living,

Alvin Allen

Alvin Allen
COUNTY AGRICULTURAL AGENT

AA:P

Visual Aids

The agent showed five educational films to one hundred and fifty eight rural people at nine meetings. These films covered the following subjects: 4-H club Congress, Feeding 4-H Beef Projects, Control of Brucellosis, National Dairy Goat Convention, Salt River Valley Irrigation System. These were motion picture films. More films would have been used if this office had a projector for this type film.

PROJECT NO. 3 - HORTICULTURE

A. Control of Orchard Insects

Yavapai County orchards and vineyards have had a very successful year in 1951. This in spite of the usual insect attacks. Most troublesome insect was the peach tree borer which attacks trees at the ground level and below. The agent advised use of paradichlorobenzene crystals in a shallow trench at base of the tree, covering the crystals with soil. This treatment gave good results except where the operator failed to follow directions and placed the crystals too far away from the trunk.

Codling Moth Controlled by Spraying

This insect would have caused more losses in commercial orchards than any other insect, but these growers have followed directions of the Extension Service in spraying at the proper time with DDT. With few exceptions, commercial operators had a very successful apple and pear crop because of control of the codling moth. Several home orchardists, who haven't good spraying equipment suffered heavy losses as a result of this insect's attacks.

While this method of spray treatment controls the moth, the agent is looking toward a possible outbreak of red spider mite in Oak Creek orchards next spring as a result of DDT killing off the beneficial insects.

The agent mailed one hundred and fifty copies of a circular letter prepared by Dr. J. N. Roney to Yavapai fruit growers in October. This letter (sample) is included in this report under "Information Program."

B. Disease Control

Yavapai farmers called for advice from this agent in 1951 on crown gall, nematodes and root rot. Other diseases encountered were Mosaic on beans, fusarium root rot of sweet corn, vegetable soft-rot of onion, Rhizoctonia root rot of lawns, and fire blight of pears and apples.

Crown gall on a four year old peach orchard caused loss of two hundred and thirty five trees out of two hundred and fifty owned by Glenn Newell, Cornville. Every tree that

was dug up showed several large galls on the roots. The trees were unthrifty and no larger than vigorous one year old trees should be. Mr. Newell has asked the nursery (Stark's) for compensation of his loss since the trees were evidently infected at time of planting.

The agent diagnosed this disease and sent a sample to University of Arizona Plant Pathology Laboratory for verification.

Texas root rot caused more losses (scattered trees, however) than any other disease in Yavapai orchards in 1951. All of these losses occurred in the Verde Valley.

The Extension Horticultural Specialist, Mr. Tate, and Mr. Thacker, former county agent, planted an experimental orchard in Cottonwood in 1948 on Mark Barker's place. This test was designed to prevent Texas root rot by treating the tree holes at time of planting. Checks, or untreated trees, were left for future information. All of the trees have made excellent growth to date except one Winesap apple tree which died in late Summer of 1951. This was a treated tree, indicating that tree treatment is no guarantee against root rot losses. However, the agent and specialist will treat the soil of this tree hole with a larvacide and replant to a Western Schley pecan tree, which is more resistant to Texas root rot.

Fire Blight "Prunes" Yavapai Orchards

Fire blight causes dieback of apples and pears in all major fruit producing areas of Yavapai County. This disease is not easily controlled. The county agent has advised fruit growers to prune out "blighted" wood, making the cut at least six to eight inches below diseased portion of the wood. Losses in orchards are usually scattered where such a procedure is followed.

Nematodes are a serious soil problem in many home orchards and gardens in the Verde Valley. No economical soil treatment for control of nematodes is known as yet and this agent has no plans for experiments in that direction.

C. Orchard Management

Yavapai orchardists have many problems in orchard management. Irrigation and soil problems, varieties of fruit trees and vegetables best adapted to local climate and soils.

The agent and the specialist, Mr. H. F. Tate, visited orchards in Fair Oaks, Chino Valley, Miller Valley, Skull Valley, Cottonwood, Camp Verde, Cornville and Red Rock. This is a very practical means of giving on-the-spot information on orchard problems. The program reached approximately twenty-five orchard operators in 1951.

D. Lettuce Varieties Test

The agent, through cooperation and assistance of Mr. H. F. Tate, established a lettuce variety test on Bill Wright's farm near Cottonwood. The object of the test was to find a lettuce variety that has good shipping qualities, firm heads, good color, and a minimum of tip-burn. Dr. Foster, of University of Arizona Vegetable Research Farm, at Tempe, gave invaluable assistance by harvesting seeds from six of the outstanding varieties being tested at the research farm. He gave us seed for the test planting which was made July 13, 1951. Design of this test is shown on the attached sheet.

The only variety which did not bolt heavily or show some other objectionable feature was Casey's 32370, which compared favorably with the Great Lakes strains grown commercially by Mr. Wright.

A duplicate test was established on the Frank Sine farm in Skull Valley in August. However, Mr. Sine, moved to California shortly after and the weeds claimed the lettuce planting.

E. Cucumber Production

J. A. Medd, Ferguson Valley farmer, has grown cucumbers successfully for the past few years. This is the only commercial planting in the county. We have very little information from our Experiment Station on cucumber culture. Information on fertilizers for cucumbers is especially needed. The agent plans to begin such a project in 1952.

PLOT OF LETTUCE VARIETY TEST AT FARM OF W. H. WRIGHT
COTTONWOOD, ARIZONA

Planted July 13, 1951

:	:
: East 1/2 row - #6 (Great Lakes 59, Capital 47083)	:
: East row - #5 (" " Casey's 32370)	:
: East row - #4 (" " Rohnert, Germain's 2750)	:
: East row - #3 (Premier Great Lakes, Casey's F. M. 32869)	:
: East row - #2 (A-36, Casey's 1-32A)	:
: East row - #1 (Progress Germain's 2477)	:
:	:

Soil Probing on above test 7-18-1951

Soil classification (Field observation only)

0 - 18" Sandy Clay Loam
18 - 36" Silty Clay Loam
36 - 48" Clay Loam
48 - 60" Caliche concretions (unconsolidated)

Commercial (16-20-0) fertilizer at rate of 200 lbs. per acre had been used on this ground prior to planting. Soil laboratory analysis of the ground showed the following in the 0-12" zone:

pH	7.2
TSS	185 ppm
PO ₄	12 "
B	25 "

F. Orchard Irrigation

The agent, assisted by Mr. H. Ray, Soils Specialist and Mr. J. E. Middleton, Irrigation Specialist, made a topog. map of John Ropeter's orchard at Yava. They advised Mr. Ropeter on changing direction of his irrigation runs and construction of a new ditch. The agents also advised him on construction of a water reservoir near his irrigation well.

G. Lawns

Yavapai lawns above 4000 feet are bluegrass lawns. These lawns have not thrived in the past two years and the agent planned a small experiment to test value of commercial fertilizers on blue grass. This test was conducted on the Courthouse Plaza. Mr. E. S. Turville, County Agent at Large, assisted the agent. The plan of this test is included on the attached sheet.

From these tests the agent concludes that blue grass lawns near Prescott will respond to nitrogen fertilizers but applications of ammonium nitrate at rates of 108.9 pounds per acre or less will give only temporary response. At least one hundred and fifty pounds per acre should probably be applied.

The United States Department of Agriculture has tested Merion blue grass for over twelve years in several states and this grass promises to be much superior to common blue grass strains. The agent plans a test lawn of this strain for June, 1952.

H. Miscellaneous Horticulture Projects

Fair Exhibits

The agent wrote a series of three articles on proper selection of fruits and vegetables for exhibition at the County Fair. These articles were printed in three county papers and were well received. Mr. H. F. Tate provided technical material for these articles. Partly because of this program and because of a favorable fruit season, the Horticultural exhibit at the County Fair was the best seen here in many years. Support of the Verde Valley people was much improved over past years.

FERTILIZER TEST ON COURTHOUSE LAWN
Treated May 29, 1951

10 ft.

10 ft.	#2	#1
	1/4# Ammonium Nitrate or 108.9# per acre	1/4# Urea or 108.9# per acre
	#4	#3
	3 oz. Urea or 81.6# per acre	1/4# Treble Superphosphate or 108.9# per acre
	#6	#5
	3 oz. Treble Superphosphate or 81.6# per acre	3 oz. Ammonium Nitrate or 81.6# per acre

NORTH

Chlorosis

The agent conducted a test on treatment of rose bushes for chlorosis control at home of Mrs. A. H. Favour, Prescott. Soil probings showed pervious caliche soil at 18" to 24" depth. The agent treated one bush by a band of iron sulphate crystals in a trench at the base of the plant, following by an irrigation. Another rose bush close by received treatment by driving a 2" x 16" long pipe at an angle of about 45° to a depth of 12". The pipe was removed and the soil core knocked out before replacing the pipe. One cup of iron sulphate crystals was poured into the pipe and the plant was then irrigated through the pipe. Mrs. Favour reported in three weeks that the last rose had recovered almost completely from chlorosis while the other had shown little response.

PROJECT NO. 4 - LIVESTOCK

A. Trace Minerals Study in Range Grasses

Local ranchers have expressed opinion that a borderline deficiency of trace minerals in range grasses may exist at certain seasons in some sections of the county. The Chino Valley is one of such areas. A Chino Valley rancher recently reported two instances where cattle on native grasses are unthrifty and two cows were lost in the past year from unexplained causes. The veterinarian is said to have been unable to find the trouble.

This is reported, not because the agent has done any organized work on the problem as yet, but because the University of Arizona Experiment Station has a study underway in Yavapai County to determine if such a trace mineral deficiency does exist. The agent will cooperate in this study in 1952 as needed.

B. Control of Livestock Parasites

Demonstrations by past county agents and specialists have shown Yavapai ranchers the value of spraying cattle with DDT, Benzene Hexachloride and a "sticker", such as bentonite sulphur, to control lice and horn flies. Rotenone sprays have been used effectively to control grubs.

The agent mailed two circular letters to two hundred and fifty ranchers describing use of these methods and calling attention to advantage of Smear EQ-335 over Smear 62 in control of screwworms. Dr. J. N. Roney, Extension Entomologist, materially assisted by presenting two talks to ranchers and farmers on control of Livestock Pests. The agent distributed copies of Extension Circular "Control of Livestock Pests" at these meetings. The Cattle Growers organization aids in this project.

C. Grasshopper Control on Ranges

Grasshoppers seriously threatened ranges in the county south and southeast of Seligman in September of this year. When ranchers appealed to this agent for help, he called Dr. J. N. Roney, Extension Entomologist, and

J. L. E. Lauderdale, State Entomologist for assistance. Through their aid a survey of the area was made and the Federal and State Entomologists estimated that 80,000 - 90,000 acres were infested. They counted nine to twenty-six hoppers per square yard. The chief species was a Gladstonii hopper, usually of no economic importance. However, the experts felt that it was too late in the season to attempt spray control since the hoppers were already breeding and laying eggs and had apparently ceased feeding heavily. Ranges suffered loss of considerable grass, however, as later survey by this agent and Dr. Roney revealed. This area will be surveyed early next summer by Mr. Schmitt, Federal Entomologist, and a Federal-State-rancher control program will be launched if needed.

D. Poisonous Plants

Poisonous plants gave Yavapai ranchers very little trouble in 1951. Some reports of cattle losses reached the county agent's office but most of these were bloat trouble apparently. The Belden 32 Ranch, near Kirkland, reported one death and another cow down in July. The agent investigated but could find no poisonous weeds that could be blamed for the trouble. Samples of several unknown plants were sent to the University for identification. None of these plants were poisonous insofar as we know.

E. Permanent (Irrigated) Pastures

Interest in irrigated pastures for beef cattle has increased in this county. The agent advised twelve ranchers on the problem of rates of seeding, varieties of grasses and legumes, fertilizer for permanent pastures, etc.

The agent advised R. P. Connally of Skull Valley to plant strawberry clover and orchard grass on a soil that has a rather high water table. Mr. Middleton and Mr. Ray (soil specialist) assisted the agent in detecting a stratified, impacted soil condition on this land which was to be planted to pasture.

A noxious weed, yellow-spined thistle, has given much trouble in the Williamson Valley. This weed has a vegetative root and the plant is very difficult to eradi-

cate. The agent gathered a sample from Long Meadow Ranch and sent it to the University of Arizona for identification. The rancher, Jack Dew, has tried 2,4-D sprays and digging the plant up with a hoe. Neither method succeeded more than temporarily. The presence of legumes in this meadow makes further use of 2,4-D inadvisable.

PROJECT NO. 5 - DAIRY

A. Brucellosis Control

Yavapai dairymen are not all conscious of the need for eradication of brucellosis. One large dairy near Prescott has never had a bangs test for his herd. He has refused to cooperate in the federal program to test herds and eliminate reactors. There are many family cows in the county that have never been tested for bangs or have not been tested in several years. This condition represents a health menace and a serious loss of income to commercial dairymen. United States Department of Agriculture officials estimate that brucellosis in a herd can cause 20% drop in milk and 40% loss of calves.

The agent has met with Dr. M. R. Lee, Federal Veterinarian and Dr. R. J. Hight, State Veterinarian and discussed groundwork for an organized county educational campaign to eradicate brucellosis. Dr. Lee provided a film on this subject that was shown to a farmer group at Skull Valley.

B. Yavapai Dairy Goat Association

The agent materially assisted a group of people interested in dairy goats in organization of the Yavapai Dairy Goat Association. This agent felt that this group could be of considerable assistance in the brucellosis eradication campaign. The group has held two regular meetings since organization in August, 1951. They were successful in presenting a creditable exhibit of dairy goats at the County Fair, the first such exhibit ever to be held in this county. This group has also been instrumental in supporting 4-H club dairy goat projects for the coming year. The agent has outlined an educational program for the group and will assist in presentation of such.

As dairying had not yet reached importance as a major industry in this county, very little assistance from the agent was needed in 1951. However, at least three new herds have developed in recent months and this industry may grow even more in 1952.

PROJECT NO. 6 - POULTRY

A. Marketing

Yavapai county poultrymen are expanding their laying flocks and a number of new poultrymen have entered the field. This has created a marketing problem in the late winter and spring when there is a surplus of eggs. Whenever surpluses exist in Kansas and/or California, the local market feels the impact of competition from these areas. Fast, refrigerated trucks have brought this competition into more prominence in recent years. Improvement in quality of local eggs is a partial solution but is not enough. The agent feels that a local survey of egg and poultry markets will answer some of our problems for the producer. Mr. Thomas Stubblefield, Extension Economist, will be asked to cooperate in this program in 1952.

B. Poultry Housing

This problem has increased importance in this county due to influx of new poultrymen and interest in cage laying plants. Newer poultrymen as well as older ones are interested in details of construction and the practicability of cage plants in the higher elevations, especially over 4000-4500 feet. These plants must make use of automatic water systems and this creates a problem under freezing temperatures.

Four new cage-laying plants are ready for a winter test and the agent plans to inspect these during the winter to make notes and suggestions.

C. Miscellaneous Poultry Problems

The agent advised county poultrymen on routine problems of management in 1951. He prepared a talk on Controlled Feeding of Grain vs. Free Choice Feeding for presentation at the Yavapai Poultry Association.

This group holds regular monthly meetings and attendance has varied from three to twenty-nine. Some friction among the group has lessened attendance at meetings but the association has served to steady egg prices and has also been a media through which the county agent

presents an educational program.

Poultry diseases caused some loss in 1951 in this county. Heaviest loss was an outbreak of cholera in Cottonwood. The agent assisted in diagnosing the disease with help of Dr. Pistor. The agent advised poultrymen to put Sulmet in the drinking water and destroy any diseased birds. The agent secured assistance of Dr. William J. Pistor and Ralph VanSant, Extension Poultry Specialist who gave talks on disease control at the annual meeting of the association. These two also visited the local hatchery to make suggestions on management.

PROJECT NO. 7 - AGRONOMY

A. Winter Grain Tests

Chino Valley farmers are looking for a winter barley which can be planted in the early fall and will not winter kill. Barley is becoming an increasingly important crop with the drop in bean acreage. The agent had this in mind when he established a test of six barley varieties on the farm of Lester Sanders, Chino Valley. The attached sheet gives details of this test which was planted October 15, 1951.

The agent is indebted to cooperation of Mr. A. K. Hepperly, Agricultural Agent for Burlington Rail Line, who sent twenty pounds of seed of Pueblo barley with his compliments. Mr. F. A. Chisholm, Extension Agronomist of University of Wyoming, and Mr. Howard Ray, our Extension Soils Specialist, also cooperated in securing seed for both the barley and wheat tests.

The agent established a winter wheat variety test on farm of Gil Harris, Camp Verde, on October 9, 1951. This test contains eight varieties of wheat, seven of which are winter wheats. While the eighth variety, Awned Onas, is a spring wheat and is not a milling wheat, the agent feels it should be included in the test. It has yielded very high in tests at lower elevations and its milling qualities would not matter in the Camp Verde area where the wheat is all fed locally. The design of this test is shown on the attached sheet.

The agent assisted Sam Benedict, Camp Verde in securing seed of Palestine oats for a trial planting.

B. Irrigation

The agent visited Yavapai farms in company of James Middleton, Extension Irrigation Specialist, in four days to advise on irrigation problems and practices. Farmers expressed appreciation for these recommendations on pumping equipment, leveling of land, construction of reservoirs, measurement of water, penetration problems, etc.

The agent and Mr. Middleton also met with the Verde Valley farmers at a water meeting to discuss irrigation water problems. The agent assisted the County Farm

Bureau and Cattle Growers to call and plan a county-wide meeting to discuss proposals for a state water code. Farmers and ranchers of this county are keenly alert to the problems created by a water code and by lack of a water code.

C. Pinto Beans

Farmers in Chino Valley grew approximately sixteen hundred acres of dry pinto beans in 1951. This crop promises to be lower acreage in 1952. However, growers have one serious production problem which deserves attention of the Extension Service. This is control of the corn earworm which causes heavy losses in maturing pods of beans. The agent and Dr. Roney, Extension Entomologist, visited bean fields in early August but could find no worm damage. However, the worms were present but apparently in small numbers at end of August. This problem will be studied by the agent and Dr. Roney in 1952.

The agent advised farmers on bean varieties, mosaic control, insect control and fertilizing in 1951. Black-eyed peas were planted on small scale on three Chino farms this year. The agent advised against large scale plantings until more was known about them in this area. Shattering and harvest problems made the crop unprofitable this year.

D. Miscellaneous

The agent observed one field of bald barley in Chino Valley which was a total loss because of covered smut. This incident did much to convince Chino farmers that seed treatment pays well.

WINTER BARLEY VARIETY TEST
Lester Sanders Farm, Chino Valley

Tenkow	Missouri B-400	Trebi	Pueblo	Arivat	New Mex. Winter	Missouri B-400
24	23	22	21	20	19	19-A
New Mex. Winter	Trebi	Pueblo	Arivat	Tenkow	Missouri B-400	Missouri B-400
13	14	15	16	17	18	18-A
Trebi	Arivat	Tenkow	New Mex. Winter	Missouri B-400	Pueblo	Missouri B-400
12	11	10	9	8	7	7-A
Missouri B-400	Pueblo	Arivat	Trebi	Tenkow	New Mex. Winter	New Mex. Winter
1	2	3	4	5	6	6-A

Planting Date: October 15, 1951

Planting Rates: No. 27 plate on plots 1, 8, 18, 23
(or 1/4#/4 plots) (37#/acre)

No. 30 plate on plots 6, 9, 13, 19
(or 60#/acre)

No. 33 plate on all other plots
(or 95#/acre)

Soil Moisture: Ample to depth of 3 1/2 ft. but insufficient in upper 2 inches.
Barley planted dry with Planet Junior.

Soil Texture: Uniform clay loam down to 3 1/2 ft. Gray soil begins at 3 1/2 ft.

WINTER WHEAT VARIETY TEST
 Gil Harris Farm - Camp Verde

-N-

Cheyenne	Wichita	Awmed	Pawnee	Nebred	Tenmarq	Commanche	Turkey
Red	Onas	Onas	Onas	Onas	Onas	Onas	Red
25	31	30	29	28	27	26	25
Wichita	Tenmarq	Nebred	Turkey	Comanche	Cheyenne	Pawnee	Awmed
Onas	Onas	Onas	Red	Onas	Onas	Onas	Onas
17	23	22	21	20	19	18	17
Comanche	Turkey	Awmed	Tenmarq	Wichita	Pawnee	Cheyenne	Nebred
Red	Red	Onas	Onas	Onas	Onas	Onas	Onas
9	15	14	13	12	11	10	9
Cheyenne	Comanche	Nebred	Pawnee	Turkey	Wichita	Awmed	Tenmarq
Onas	Onas	Onas	Onas	Red	Onas	Onas	Onas
1	7	6	5	4	3	2	1

NOTE: Soil samples taken at south end of plots #13 and #29.

Planting rates varied from 3/4 to 7/8 lbs. for the four plots, depending on size of variety. A No. 26 plate was used on Tenmarq plots and was changed to No. 27 on others.

Size of plots: 21 ft. x 40" - 5 rows planted per plot; four replications.

Soil moisture at planting date (Oct. 9, 1951) was not sufficient in top three inches. Cooperator agreed to irrigate. Moisture was ample at 3 to 12 inch depth only.

Topography of land is rolling in this field. Slopes too steep for best irrigation results. Site of plots is at lower end of field in comparatively flat spot.

1 2/1

PROJECT NO. 10 - ENTOMOLOGY

Insect control is a major problem in Yavapai County. Grasshoppers were a serious threat to cropland in Verde Valley this year. The agent mailed two hundred and eighty copies of a circular letter advising farmers on control of grasshoppers. A copy of this letter is attached. Dr. J. N. Roney, Extension Entomologist, aided materially by visiting farmers with the agent to advise on grasshopper control in alfalfa fields.

Fly control was an important project in 1951. Dr. J. N. Roney, Miss Hughes, and the agent cooperated in three meetings in three communities. Local leaders arranged the meeting with help of Miss Hughes, Home Demonstration Agent. The agent assisted with showing of motion films at these meetings while Dr. Roney made interesting talks on the health menace of flies and on practical means of preventing fly breeding and on control by spraying.

The agent gave advice to county residents on termite control, cockroaches, ants and other household insects.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF ARIZONA
—
PRESCOTT

UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE
U. S. DEPARTMENT OF AGRICULTURE
AND YAVAPAI COUNTY COOPERATING

AGRICULTURAL EXTENSION SERVICE
HOME DEMONSTRATION WORK
COUNTY AGENT WORK

June 27, 1951

Dear Cooperator:

The Agricultural Extension Service now has two new bulletins containing the latest recommendations for control of Grasshoppers on rangelands and on croplands.



You will be particularly interested in recommendations for use of Aldrin, newest of an every-growing list of insecticides. It is more economical and more effective at low application rates than other sprays you may have used. Two ounces per acre of actual Aldrin secures excellent kill of hoppers.

TIME to spray --- when hoppers are less than half grown.

POISON sprays and baits must be handled with respect --- loss of livestock and/or human lives may be the result if you fail to follow directions.

Write this office for free copy of these latest recommendations:

Circular 188 - "Grasshopper Control on Arizona Ranges."

Circular 189 - "Control Grasshoppers on Crop Land,"

Sincerely yours,

Alvin Allen
COUNTY AGRICULTURAL AGENT

AA:P

OUTLOOK AND RECOMMENDATIONS:

This county has a rather unstable agriculture in a part of the Chino Valley. The upper and eastern part of the Valley has had practically no irrigation water in the last three years. The outlook for this area is not encouraging. The water situation in the Verde Valley is very unsettled at present. The coming year may see some changes in irrigation practices in order to save water. This hinges on passage of an underground water code for the State and upon re-opening of the Kent decree to apply it to the Verde Valley.

Trends

Chino Valley shows sign of a shift from pinto beans to barley and wheat for cash crops. More alfalfa and more farm flocks of sheep are in sight. Also the presence of two thousand head of sheep on Big Chino ranges may indicate a change-over to sheep in this section. More corn for silage and construction of new trench silos are in prospect for Chino Valley.

Verde Valley indicates more commercial poultry flocks, both laying and broiler flocks. Increased acreage of permanent irrigated pasture is taking place. Large farms are being broken up and sold in smaller parcels, requiring new dwellings, etc. Farm land may become too valuable to farm in late 1952 or 1953, depending on how soon the new Black Canyon Highway is completed to the Verde Valley. More small fruit orchards and possibly more commercial orchards can be expected as a result of improved markets.

This agent is too new in this county to make concrete recommendations for the area. There is much room for improvement and farm problems are becoming more apparent to the agent. This is a challenge which should result in an extension program aimed at helping rural people with their most pressing needs - the agent's time will not permit more than that, it appears. Marketing and finding new crops of higher return per acre would seem to be almost as important as water conservation.