

COUNTY  
AGRICULTURAL  
AGENTS' REPORTS

APACHE - YUMA

1949

ANNUAL NARRATIVE REPORT

Apache County, 1949

by

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County Agricultural Agent

St. Johns, Arizona

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### III.. Summary of Activities and Accomplishments

Our program of work is developed as a result of surveys made in the county; consultations with farmers and farm organizations; and with the help of the Director and the Specialists.

We have continued to work with our livestock interests in the control of grubs, lice, horn and deer flies. One dipping with EEC and DDT is far superior to our old method of dipping twice with rotenone and sulphur. Also we have helped out with range poison plants and supplemental feed for range cattle.

One of our very big problems in this county is the control of bindweed, blueweed, cocklebur's, willows, etc. We have recommended this year over previous years 2,4-D and have had wonderful success in the treatment of weeds with this material. Because of climate, precipitation and various other factors which varies with practically every farm its been impossible for us to make a blank recommendation which will apply to all farmers.

Demonstrations were given in horticulture on the pruning of fruit trees, selection of fruit for commercial use and lectures given on the proper planting of fruit trees.

After we held meetings with the dairymen and W. R. Van Sant, Dairy Specialist from the University, we decided that the dairy business in this county would have to be a fairly big business to be profitable to our dairymen because all milk would soon have to be pasturized.

The cream products in this county which could be shipped to creameries would be of such low grade that it would compete with ole margarine and therefore would not be profitable to our dairymen.

Under the supervision of the Horticulture Department of the University 51 different varieties of potatoes were planted without getting any results that we can recommend. We are hoping that this work will be continued another year.

Commercial fertilizers used at Alpine did not show any increase in crops but we are inclined to think that possibly it might be due to the time of application and

therefore more work will have to be done on this project another year.

We had a successful county fair this year with 314 people entering exhibits, entering 1,272 exhibits which were awarded 255 blue ribbons and 204 red ribbons.

Our livestock exhibit at the fair was not very good mainly because we did not have enough buildings to exhibit the livestock in.

Our grasshopper problem this year was taken care of with turkeys and the spraying of vegetation with chlordane and DHC.

In club work we had 56 boys enrolled with a completion of 35. We also made a trip to the 4-H Club Round-up in Tucson, and we also had some 4-H exhibits at the county fair.

Through the cooperation of Dr. J. N. Roney, Extension Entomologist from the University, illustrated lectures were given in Round Valley and St. Johns on city sanitation and the cities followed through very well with our recommendations. We will continue along this line next year more extensively.

At our Extension Schools we had as speakers Mr. W. R. Van Sant, Poultry and Dairy Specialist, Mr. Norris W. Gilbert, Extension Agronomist, Dr. J. N. Roney, Extension Entomologist and Mr. Harvey F. Tate, Extension Horticulturist all from the University.

We had 145 persons at both of our Extension Schools.

In landscaping two meetings were held and two homes were landscaped.

## ANNUAL NARRATIVE REPORT

### IV. County Program of Work.

Our program of work is developed along about the following lines:

We have a Director; Assistant Director; and Specialist's both women and men at the University whose business it is to keep a lookout for any additional information that the people of this county might need. Through meetings, demonstrations, letters, etc. this information is carried to the County Agent and the people of the county. Also the County Agent is constantly on the lookout for any particular piece of work that the farmers are doing that some other farmer might be benefited by knowing. Through field trips, pictures and collected data this information is redistributed to other farmers of the county. All in all when this method of adult education is put into effect and carried out over the years a lot of practical information is given to our people. Of course it is understood that we do not know all the answers but it is our plan to give all the information that is known to the people as soon as possible.

Our reports state that we have made so many field visits, farm visits and have had so many office calls. By way of information a farm visit is made either to give the farmer information or to collect a little information from the farmer. The office call is calls made by farmers for information that they desire. It is not always easy to tabulate the results of the information disseminated by the above method but by checking results over the years this information does do a lot of good. It not only helps the person we give it to but they in turn pass it on to their neighbors. As an example of this type of information; some years ago when the present County Agent was in the county for the first time we did not have a modern poultry house in the county. Through demonstrations, field visits and office calls modern poultry houses and modern methods of feeding poultry now are every place we go in the county.

#### A. Project Activities and Results.

##### 1. Range Livestock

Our range livestock industry has presented a lot of problems to us during the past years. With this industry we try to help them all we can in an educational way to solve their problems.

We have Specialist's at the University who can help us a great deal along this line. During the past few

years we have worked with Dr. J. N. Roney, Extension Entomologist from the University of Arizona, on insect control, and also with Mr. Walter D. Armer, Extension Animal Husbandman, from the University of Arizona, on general livestock practices.

The problem of flies have been a very serious one with our people for years particularly those in the mountains where they have a lot of deer flies which cause a great deal of trouble to the livestock industry there from 3 to 6 weeks in the summer. The deer fly problem was attacked through the cooperation of Dr. Roney by applying sprays and dipping the cattle according to the best recommendations known to the University.

At one experiment carried on near Big Lake before the cattle were dipped they would congregate for several days, about 150 head of them, near Big Lake in order to ward off those big deer flies, after spraying, however they did not congregate for the balance of the year in this area.

We have also worked with our livestock people in the control of grubs and ticks. In both of these fields we have made a great deal of progress.

a. Grubs

Since the heel fly which causes the grubs can only be attacked and eliminated in the grub stage while coming out on the back it is necessary that we treat the animals when the grubs are coming out on the animals back. This varies from the first to the last of December according to the elevation that the cattle are raised in as well as the temperature of the springs that we have in this county. Generally, we figure a very early spring gives us early grubs whereas a late cold spring gives us late grubs. We through personal visits, circular letters and news items gave the public this information plus the additional information of the material to be used. The information we gave on the control of grubs in a circular letter was as follows:

The grub (heel fly) can be controlled by spraying rotenone on the backs of the cattle when the grubs start coming out. Generally they start to come out in December and continue until February. Therefore, anytime that you see the grubs coming out of the backs of the animals treat them and then in another 30 days give them another treatment.

Rotenone and sulphur may be applied in dust form and when it is mix equal parts of each, and dust it on the backs of the animals breaking the scabs on the back with a brush or a strong glove.

5 pounds of 5% rotenone and 10 pounds of wettable

sulphur may be mixed in 100 gallons of water and sprayed on their backs. When this is done be sure and mix the rotenone in a few gallons of HOT water and then pour it into your other solution.

Laverl Hall, Harry Wilhelm, Willie Richey, Lockhart and Traweek Ranches, and others treated their cattle for grubs last winter. We are hoping and believing that the practice of controlling grubs is becoming a common practice so that our cattlemen will take care of the grub program as well as they now do their blow flies or any of the other practices of the cattle production program.

Probably to a person not familiar with the amount of effort necessary to get our livestock people converted to the advantages of treating for grubs, plus the technique of performing this treatment, they might not think that it necessitates very much effort. However, many demonstrations were given; many letters following up demonstrations were written and many Extension Schools have been carried through in order to get this program going.

Our estimate is that we have 40,000 head of range cattle in this county. Of this number we think that at least 10,000 head were treated for grubs last year. This we feel is quite an improvement since just a few years ago none of our cattle were treated for grubs.

b. Lice and Flies

Our program this year in the control of lice and flies has met with a great deal of success. We have given a lot of demonstrations, checked on the results of the spraying and given out a lot of information on the best method of applying the spray material, as a result of which some of our ranchers in practically every community have done a considerable lot of spraying and dipping for flies and lice.

At Alpine for the first time in that communities history practically every cow was dipped twice this year. In Nutrioso, Lloyd Wilkins, Weg Sharp, Walter Jarvis and others sprayed for lice and flies. The Lockhart Ranch has sprayed their cattle several times this year for flies and lice.

The Traweek's who have dipped their cattle for some years with a Cooper's dip have changed to our gamma isomer benzene hexachloride (BHC) and DDT formula and bought a spray rig which they are using several times each year. Their plan is to spray their cattle after branding with the hope that it will

keep off a lot of blow flies as well as the horn flies and lice.

The Big Lake Allotment, Three-Way Allotment and others in Round Valley are spraying their cattle several times a year just as a matter of routine practice.

In St. Johns we have two spray rigs that are used quite a bit and quite a few of our people have sprayed their cattle for the first time this past season.

At Vernon, Concho and Hunt the cattlemen there are using both dipping vats and spray rigs to control their lice and flies.

According to Dr. J. N. Roney, Extension Entomologist, we have sucking and chewing lice on our livestock in this county. Also, according to Dr. Roney the adult, young and eggs may be controlled with a spray or dip of  $\frac{1}{4}$  pounds of 6% gamma isomer wettable benzene hexachloride (BHC) to 100 gallons of water. If a 12% is secured use 2 pounds to 100 gallons of water. One application is supposed to eliminate the lice from cattle. Generally it takes from  $\frac{1}{2}$  to 1 gallon of this to cover a cow very thoroughly.

When we started on our lice control work some 4 or 5 years ago the best material we had for the control of lice was rotenone and sulphur. Since this would only kill the live lice and not the eggs it was necessary to dip the cattle twice 20 days apart in order to do a good job in lice control. However, now with gamma isomer benzene hexachloride (BHC) and DDT one dipping does the job that the two used to do. This certainly is a big help in the control of lice compared to just a few years ago.

We are very fortunate to have an Extension Entomologist such as Dr. J. N. Roney who constantly keeps us posted on new developments on the control of parasites on livestock and because of this we attempt to keep the cattlemen posted.

#### c. Lumpy Jaw and Cancer Eye

A few years ago our ranchers were particularly interested in the control and curing both of lumpy jaw and cancer eye. Now, however, they are not particularly interested in curing this because they seldom recover when they have either one of these ailments. We do

give demonstrations on the control of this trouble but not as much as we used to do.

d. Poison Plants

During the past years we have put on an educational campaign to acquaint our ranchers with the poison plants we have and the best methods we have of controlling them. However, occasionally a new man on the job does have some trouble. This happened this year. One Mr. Tony Baca of Hunt this year put about 30 head of yearlings, which he had just brought into the county, on a small 30 acre pasture which had a very limited amount of forage for cattle. This forage which he did have happened to have a lot of whorl milk weed in it. Since the cattle were not accustomed to poison plants they ate both the poison plants and the grass. As a result 8 head of yearlings died in one day. This was a direct result of whorl milk weed poisoning.

It was rather hard for Mr. Baca to believe that a small amount of whorl milk weed could kill so many cattle. Since some rabbits had been poisoned with arsenic poisoning on alfalfa leaves in that neighborhood, Mr. Baca was inclined to believe that it was arsenic poisoning instead of whorl milk weed poisoning. However, we sent in some of the stomachs of these dead animals to the University to have them tested for arsenic poisoning in the stomachs of these animals the only conclusion that we could draw was that it was only from whorl milk weed that these deaths occurred.

There are a lot of people in this county who feed hay with whorl milk weed in it and just why more poisoning of cattle is not done, is not scientifically known as far as I know. There must be an immunity to whorl milk weed developed by the cattle or more of them would die in this county than does from it. However, invariably when any strange cattle come on the range and come in contact with our poison plants they generally die when they start grazing on our ranges. Later on as they get used to our poison plants they do not seem to die from them. The only way that I can account for this is that they either get used to the plants and avoid eating them or they develop an immunity to them.

e. Cattle Feeding

Ever since the recorded history of the local

people in this country about 8 to 12 years bad winter would arrive in the form of snow and ice which would cause 50 to 90 per cent of cattle losses among the cattle. More and more, naturally, the people have been trying to avoid this calamity when it arrives and preparations have been made by various people in various degrees to feed cattle in the winter months in this county. During the past years a lot of supplemental feed has been stored and fed to cattle when the snow was bad. Also, a great deal of cotton seed cake and salt mix have been shipped in and fed to the cattle. This year however more local feed has been produced and stored, possibly more than any year in the history of this county. A lot of our people have thousands of bales of hay stored to be used for the winter months.

Laverl Hall, Harbon Heap, Byron Heap, E. I. Whiting, L. P. Sherwood, Bill Spence, Mitt Wiltbank and Bobby Trammell all have silos in addition to the hay and cotton seed cake and salt mix that they have. In other words it looks like now that the cattle industry of Apache County is by far more on a stable basis than it ever has been in its history. Anyway we feel that we have enough feed stored to put us through a rather hard winter.

## 2. Weeds

One of the very very large problems of this county for the last 15 years, as well as now, is the control of weeds such as bindweed, blueweed cocklebur's, sunflowers, willows, etc. The first we recommended for weed control was an acid arsenic solution but this did not do the job at all. However, as a result of experimental work carried on in this county we recommended Sodium Chlorates, 6 pounds to the square rod for the control of weeds. This did a very wonderful job and helped a lot except it was quite expensive. And then along came the 2,4-D chemical in its various forms which we have been recommending the last few years. This past year we spent quite a bit of time in our Extension School on weed control work. Mr. Norris W. Gilbert, Extension Agronomist from the University of Arizona, gave us some lectures on weed control after which we gave a demonstration with a spray rig with a 30 foot boom attached to it. We also made many field calls checking on this work and making suggestions as to the best method of applying 2,4-D.

Up to date we have not been 100 per cent successful with all the work of our 2,4-D applications. We are making progress and it looks like we will be able to control our weeds if not completely eliminate them if all our farmers will continue with the work in the future as they have done in the past.

For example with the control of annual weeds such as sunflowers and cocklebur's it is necessary to put on the full recommended strength and at such a time as when the weeds are young that it will get on the weeds instead of the corn or the other crops that are planted on the land. In order to do this it has been necessary to have a power sprayer attached to a horse drawn cart so that this can be applied any time it is desired regardless of rain or any other weather condition. This will help us a lot because in the past our farmers would let a rain storm help them from cutting on the 2,4-D at the proper time.

We have recommended that even though corn is sprayed where only a small amount of weeds is noticeable among the rows of corn that the full strength of the solution be applied. If this is done enough will be sure to get on the weeds even though a considerable amount does get on the corn it will kill the weeds. It has been our observation that when weeds do not have enough 2,4-D to kill them within two to three weeks their new growth will start at that time which will make the spraying a worthless proposition.

We have sprayed quite a few ditch banks this year attempting to eliminate willows and other vegetation on the banks of the ditches. As far as we could tell this fall the ditch bank work was a wonderful success. However, we are reserving our decision on the matter until spring to see if it has permanently killed or temporarily killed these willows and vines.

Our work with hoary cress indicates a good kill can be made with one application of 2,4-D. However, we are confident that this could not be entirely eliminated without following through for three consecutive years.

It does not seem that hoary cress can be killed when it is a few weeks old. We seemed to get the best results by spraying it just as the cress is flowering out. This is rather unfortunate because very often when a farmer does not spray until they have flowered they will not spray until the cress has gone to seed, which

is the thing that we don't want.

However, as the years go on our farmers are learning more about our weeds and are spraying them when they should be sprayed than they have in the past.

Thus our farmers have asked the Extension Service to solve one of their real problems. We feel that we have helped them a lot and that we can solve this problem if we can but have the cooperation of our farmers. We know that our farmers will just have to follow our recommendations as to time and amounts of applying these chemicals.

### 3. Horticulture

Horticulture in this county has never as yet reached any great commercial proportions. However, because of the quality of the fruit produced both in color and taste, and which we think is the best in the west, that this could be very profitably commercialized. This we did not believe could be done a few years ago when it necessitated about 15 sprayings for the control of codling moth, and no control measures whatever for the woolly apple aphids were known. Now, however, since we can control the codling moth with 3 sprayings of DDT starting when the apples are about the size of your thumb and continuing every 15 or 20 days thereafter for 3 consecutive sprayings, and since the woolly apple aphids can be controlled with a parasite, which we have introduced and now is doing a lot of good in the county, we feel that horticulture could and should be commercialized in the county.

This last year we gave five demonstrations on fruit tree pruning. At the fair we gave demonstrations on the quality of fruits needed for commercial purposes. We got the spraying of fruit trees in Round Valley, St. Johns, and Concho put over in pretty good style. We did not however get three sprayings of the fruit trees as we had planned in all orchards as we will try to put this over another year. As a result of which we did not get the results from our spraying work that we should have done and that the public rightly could have expected from it. We have however made some wonderful progress in the basic operations of horticulture in this county and feel that we shall grow into commercial proportions right along. Anyway this shall be our objective for another year. I am confident I am expressing the views of our Extension Horticulturist, Mr. Harvey F. Tate, in making these statements.

However, our farmers will just have to follow recommendations in order to control the insects that they have in their orchards.

#### 4. Dairying

It has been our constant effort for years in this county to get our dairying operations on a commercial basis. For this purpose we had our Dairy & Poultry Specialist, Mr. W. R. Van Sant from the University, with us trying to help us out in this endeavor. At a meeting held in the county with our dairymen some of the things that we discussed are as follows:

Regulations for dairymen are gradually tightening so that soon they will only be able to sell pasturized milk to the public. Sometimes these regulations are on a Federal level and other times they are on a State level, but the public is demanding more rigid regulations on the sale of dairy products all the time. The dairy business in Arizona from now on is strictly a big business and cannot be run very economically under 30 to 40 cows. When this is done dairy cow testing associations can be established and more efficient butter fat produced. Generally speaking it costs in this state \$260 a year to feed a cow and therefore if cows are not good cows and managed efficiently there will be little or no profit in the dairy business. Some of our dairymen are producing butter fat for 66¢ a pound for the cost of the feed. Whereas others it is costing them 93¢ a pound. Mr. Van Sant said that proved sires would have to be used in the future if the dairymen in the county ever expect to make a profit in the dairy business.

Briefly we would have to figure the ration of feed for the dairy animals that we have at one pound of grain for every 4 pounds of weight in Jersey cows, and 1 pound of grain for every 7 pounds of weight in Holstein cows. As a result of our meetings and discussing it with our dairymen and everything considered, the following recommendations for the near future were made:

All dairymen who are now selling grade-B raw milk should continue as long as they care to but that as soon as any county, city or state regulations are past prohibiting the sale of grade-B raw milk that then will be the time for the dairymen in the county to make the necessary changes to produce pasturized grade-A milk. Therefore, because of the fact that rules and regulations are making it impossible for a few people

with a small herd of cows to make much money out of it, we cannot recommend that very many people go into the dairy business in the county at this time.

We have always thought that we could go into the cheese business and turn our efforts in that endeavor to cash but now it is expected that milk used for cheese production will have to be pasturized this making it impossible for a man to go into the cheese business except on quite a large scale.

We have also thought that our dairymen could go into the production of butter fat shipping the product out of the county but the greater part of the butter fat that we produce in the county with our methods that we are using and long distances to ship it will be of such low grade that we can only produce butter fat that will have to compete with ole margarine. It is our candid opinion that this grade of product cannot be economically produced in this county. This opinion does not make us feel too good about the dairy business because now we will have to think of the dairy business as big business or nothing. In other words a few cows would not pay as they have in the past.

#### 5. Field Crops

In the past years we have preformed a lot of field tests attempting to determine the best field crops which included alfalfa, wheat, oats, barley, corn, etc. adaptable to our elevation and climate. This past year we had an experiment carried on under the direction of the Horticultural Department at the University of Arizona to determine the best varieties of potatoes for our county. The following varieties were planted:

#### 1949 Potato Variety Test - Paul Eagar Ranch - Eagar, Ariz.

<u>Row</u>	<u>Variety</u>		
1	Alaska	13	Minn. 21
2	Minn. 42	14	Alaska
3	Satapa	15	118.42-6-44 (Early Ohio x 20-4)
4	Minn. 23	16	121.42-2-44 (Cobbler x 20-20)
5	35.43-3-45	17	118.42-1-44 (Cobbler x 20-4)
6	Waseca	18	138.42-2-44 (Warba x 20-20)
7	Teton	19	127.42-1-44 (Triumph x 8-1)
8	Kennebec	20	10.44-7-46 (Russett Burbank x 15-2)
9	Calrose	21	16.44-4-46 (Red Warba x 14-6-2)
10	Red Warba	22	10.44-6-46 (Russet Burbank x 15-2)
11	Cobbler	23	10.44-2-46 (Russet Burbank x 15-2)
12	White Warba	24	16.44-3-46 (Red Warba x 14-6-2)

- 25 22.44-4-46 (White Rose x 15-2)
- 26 12.44-2-46 (Russet Burbank x 20-20)
- 27 18.44-2-46 (Red Warba x 56-1)
- 28 12.44-3-46 (Russet Burbank x 20-20)
- 29 1.44-2-46 (Cobbler x 86-1)
- 30 16.44-1-46 (Red Warba x 14-6-2)
- 31 11.44-1-46 (Russet Burbank x 20-4)
- 32 16.44-2-46 (Red Warba x 14-6-2)
- 33 23.44-1-46 (White Rose x 20-4)
- 34 3.44-1-46 (Houma x 15-2)
- 35 White Rose
- 36 Triumph
- 37 Kennebec
- 38 White Warba
- 39 Erie
- 40 Teton
- 41 Chippewa
- 42 Marygold
- 43 Mohawk
- 44 Red Warba
- 45 Katahdin
- 46 121.42-2-44
- 47 118.42-1-44
- 48 148.42-6-44
- 49 138.42-2-44
- 50 Alaska
- 51 Alaska

However we did not get results to justify any recommendation for the best variety for next year. This just indicates that we must have a great deal more work done on potato production in the county than we have had in the past. We sincerely hope this work will continue another year or two.

We also did a field test on the use of commercial fertilizers at Alpine. After our checking of the results of this work we could not see where the commercial fertilizer plots were better than the others.

We put on phosphate fertilizer and probably should have put on the nitrogen fertilizer which we hope to work on next year.

Willard Skousen also used some commercial fertilizers and our observation of this work indicated that we could not tell any appreciable increase due to the commercial fertilizers. We are, however, expecting to continue this work next year using possibly a little different type of commercial fertilizer to see if we can't find something to fertilize our soils with that can be economically applied.

Also we had quite a few reports on our field crops indicating that production was not as it should be. After tests were sent in to the University we found that much of our losses were due to smuts. We therefore, another season will have to put on a campaign for smut control so the people will follow through with this work.

We also need to do some testing on the best silage corn for our county. While we have done a lot of work along this line, yet as the present time we do not have any standard variety that we can recommend. In our county with the varying elevations that we have it is very important that we continue our work in trying to find the best silage corn for our county.

We have had quite a little bit of silage put up this year all of them using a trench silo. Some of them have just made a trench silo without walling up the sides, others have walled up the sides with stone masonry while others have used boards for walling. We feel that our people know that if they are going to use silos year after year that the rock walling is by far the most economical.

For the most part we have recommended that trench silos be 8 feet deep, 8 feet wide at the bottom, and 8 feet wide at the top. If silos are built such as this it gives enough slope that rock masonry can be successfully used for silos in this county.

During the last year we have cooperated with Elmo Jarvis, St. Johns, and Hyrum Nelson, Round Valley, in trying to establish a better method of planting alfalfa than we normally have used. It's our candid opinion that the best seed bed for alfalfa is a year old grain stubble. Mr. Jarvis and Mr. Nelson have both used this method successfully, and we therefore are now recommending that year old grain stubble be used for seed beds for new alfalfa.

## 6. County Fair

Our Fair Commission this year consisted of Ove Oversen, St. Johns, Chairman, Leslie Noble, Alpine, and Ted Fleschauer, Chambers, as members, who conducted our fair on September 29-30, and October 1.

The county fair this year was a success and better in most respects than ever before. We had people from

way down on the Blue, Beaver Head Lodge, out Vernon way, Concho, Hunt and a good variety from all over the county which was very much better than what we have had in any other one year.

With the addition of some livestock buildings, pens, coops, etc. we can make our fair next year much more attractive than it was this year.

We attempted to do the judging while the crowd was on the grounds, but this did not go over too successfully. Another year we fully expect to have the afternoon of the last day devoted to educational demonstrations by the judges of the exhibits after they have been judged previously by them. In other words we will have a loud speaker used over which we will have the judges explain just why the blue ribbons were awarded to a lot or all of the exhibits. This we will do in the women's and agricultural departments.

We had 314 people entering exhibits in the fair with a total of 1,272 exhibits entered. There were 255 blue ribbons awarded, and 204 red ribbons awarded.

Our judging in all departments was excellently done. We received no complaints from anybody about the judging and we feel that the judges should be highly complimented because of their cooperative spirit during the fair and of their excellent judging of the fair exhibits.

We are confident that more people are becoming educated as to picking their exhibits of fair products than ever before. In some of the departments the Agent does not have to worry about them now because the people know how to take care of them in good shape.

## 7. Grasshoppers

As usual we had a grasshopper outbreak in May of this year, and as usual the people became worried about the grasshoppers eating up their crops. The outbreak was exceptionally severe in St. Johns because in past years they did not do as much as other places in the county to eliminate the grasshoppers. However, in St. Johns, E. I. Whiting shipped in 1500 turkeys which took care of the grasshoppers pretty well in the St. Johns area. We

attempted to have these turkeys taken to Alpine but it did not work out ~~so~~ we could not do it. However, in the St. Johns area where these turkeys were herded around the grasshoppers became very scarce in a short while. We, therefore, can highly recommend turkeys for the elimination of grasshoppers and we feel that where good business methods are practiced in the marketing of these turkeys that they can make a little money on them.

In Alpine and other parts of the county spray rigs were secured so that they could spray their grain with chlordane and gamma isomer benzene hexachloride (BHC) instead of putting out the poisons as in the past. We are not recommending for future years the poison bait as in the past but the use of a chlordane spray on the crops instead or the use of turkeys.

The formula for the poison bait used in the past is as follows:

2 quarts of Sodium Arsenite to 100 pounds of material (bran and sawdust).

6 pounds of Sodium Fluosilicates to 100 pounds of material (bran and sawdust).

Mix 1 part bran to 2 parts sawdust.

Mix bran and sawdust together (1 of bran; 2 of sawdust), then mix Sodium Arsenite and water; then mix all these together. Mix bran and Sodium Fluosilicates and sawdust together, then add about 5 gallons of water to a hundred pounds of the mixture.

Our recommendations for next year will not be the poison formula given above but will be the chlordane and toxaphene applied as a spray or as a dust.

Also according to the best information the spray gives a longer kill period where the residuals effect is longer lasting from one to three weeks under most conditions. We will recommend that they use from one to one and a half pounds of technical chlordane or 2 pounds of technical toxaphene per acre. We are going to insist that they do not use more than this because where more ~~is~~ used the ~~danger~~ to cattle is increased, besides it is not necessary to do a good job if they follow the recommendations accurately.

The farmers will have to understand that the recommendations will have to be followed and that the forage on which this material has been sprayed cannot be fed to dairy animals or animals being finished for slaughter.

We will expect to put on an educational campaign giving the best methods of applying this material either the latter part of April or the first of May.

## 8. 4-H Club

### County Situation

Our 4-H club picture from the county level is that we should have 4-H club work in Alpine, Nutrioso, Eagar, Springerville, St. Johns and Sanders.

The approximate number of rural youth who are of club age in the above communities are as follows:

Alpine - - - - -	12
Nutrioso - - - - -	10
Eagar - - - - -	30
Springerville - - - - -	20
St. Johns - - - - -	30
Sanders - - - - -	25

We do have Boy Scout Organizations in St. Johns, Eagar and Springerville, but none in Sanders, Alpine and Nutrioso.

Our recreation facilities for the county is exceptionally good in that we have fishing streams for summer and a lot of other interesting trips that could be made to the Salt Lake, Indian Village (Zuni) and Inscription Rock, etc. We don't feel that we have to leave our county very far to have all the recreation necessary for our club activities.

Our potential leadership should be good but actually because of Scout work and other activities its hard to get leaders that will take care of our club activities.

Our community centers for 4-H activities are school houses except for Sanders where the school is used part of the time but they do have there a club house which is used to a considerable extent.

### Statistical Summary

4 4-H Clubs  
4 Leaders (lay)  
56 Members enrolled  
35 Members completing projects  
5 Achievement days were held  
1 County Fair

### Organization and Planning

Our clubs were organized, generally, in communities rather than just towns. For example, Sanders club takes in Lupton, Chambers, and Sanders; Alpine includes Nutrioso and Alpine. However, in St. Johns and Eagar we only have individual communities represented.

### Leadership of 4-H Club Work

Two years ago Mr. McKee and Mrs. Kightlinger gave some leadership training meetings in the county for boys and girls leaders. This last year Mrs. Kightlinger gave leadership meetings to prospective leaders for girls clubs. We think that these meetings by the State Officials did quite a little bit of good because it gave our local leaders a good picture of club work, what they could do and what they couldn't do, and what was expected of them and the other people in the organization. It also helped materially in giving them the information so that they would not expect the County Agent and the County Home Demonstration Agent to do all the club work.

Our junior leaders helped in the way that they took up the work when the leaders were away and in one community where the senior leaders failed to do the work the only thing we had was the junior club leaders and they are doing a fairly good job and I think will make good club leaders later on. Practically all our leadership comes from the lay leader of the community about half of whom have children.

We have had leaders who have stayed with us as long as 15 years and at the present time we have one club leader who has been with us for 8 years.

### 4-H Club Activities

Our 4-H club activities have consisted of attending local meetings or visiting local purebred hereford cattle and the Round-up trip to Tucson. For the most

part these activities were financed by the parents of the children. However, at Sanders the club there gave dances the net proceeds of which went into the fund for club activities.

Our outlook for club work is better than it has been because we are now where we can have club trips which we could not have during the war which stimulates club activities. We are going to have to hold more leadership meetings using Mr. McKee and other State Leaders to give lectures at these leadership meetings in order to get better club leaders.

## B. Miscellaneous Activities

### 1. City Sanitation

This year for the first time we put on a campaign for the control of mosquitoes and flies in the towns of Apache County, mainly the towns of St. Johns, Eagar and Springerville. We have also attempted to put over a fly control program for dairy barns.

This was a very bad year for flies since we had more moisture than usual, but where our dairymen and towns people put on a sanitation campaign in connection with the elimination of flies and mosquitoes it was a success. Where there was a complaint of the ineffectiveness of the insecticides used, it generally was that they used the insecticides too late or did not use the insecticides recommended or the insecticides were improperly applied, but generally it was a lack of sanitation.

Without exception when we called the attention of our dairymen to the fact that sanitary methods should be applied to their corrals and barns, it was always the same reply that they were too busy to practice any sanitary methods.

It has been estimated by some authorities that we generally have one thousand fly maggots, and one thousand fly pupae per cubic foot of piled manure. Since fly generations can be completed in about one week of hot summer weather, and the population increases several thousand percent for a single generation, it is easy to understand why we get so many flies when the breeding areas are so common and not controlled. We are emphatically recommending that our dairymen use a proven recommendation for

the control of insects early in the year, practice common dairy sanitation and spray all buildings such as barns, chicken coops, hog houses, outdoor toilets and such other places at the time that they spray their dairy barns. It is our opinion that BHC and DDT will do a good job of fly and mosquito control where sanitary methods are applied and nothing will be effective if sanitary methods are overlooked.

We are putting on a vigorous campaign to follow up the work done last year and we will insist that spraying operations start early in the year and that sanitary methods be followed continuously by repeated sanitary operations.

Last year we recommended the spraying of buildings, dairy barns, etc. both inside and out with 17 pounds of 12% gamma isomer wettable benzene hexachloride (BHC) to 100 gallons of water put on with a power sprayer with a mechanical agitator in order to keep the BHC suspended so it could be put on with a great lot of force. We are also recommending the use of 8 pounds of 25% lindane to 100 gallons of water.

## 2. Extension School

We held our Extension School this year in the county on February 23 and 24. At St. Johns we had about 100 present, and in Round Valley we had about 45 present this included both students and farmers.

The Extension School began with a discussion on poultry by Mr. W. R. Van Sant, Poultry & Dairy Specialist, from the University of Arizona, followed by the discussion of soils by Norris W. Gilbert, Extension Agronomist from the University of Arizona.

During the afternoon session of the Extension School, insects (plant and animal) was discussed by Dr. J. N. Roney, Extension Entomologist from the University of Arizona. Weed control was given by Norris W. Gilbert, Extension Agronomist, and home gardens and orchards was given by Harvey F. Tate, Extension Horticulturist from the University of Arizona.

During the evening an illustrated lecture on home beautification was given.

We also had demonstrations on how to use spray machinery to control weeds.

These Extension Schools are serving our people in many ways, principally in giving them a lot of information in just a few days on subjects that they are interested in at the time the lectures were given. We are contemplating continuing with these Extension Schools each year.

### 3. Farm and Garden Notes:

#### In Paper and By Letters

We have sent to the local paper about every week articles to be published in the paper on agricultural subjects but not many have been published. Seemingly the local paper does not have space for this material. We have, therefore, sent out this year 11 circular letters containing current and timely information on agricultural subjects.

In the future this will be our main method of distributing agricultural information that can be put in circular letters.

### 4. SCS

We have tried to attend as many SCS meetings as possible but have not been very successful in contacting them at the time they hold their meetings.

We have worked with them in field work on several farms but to no great extent. We think, however, that next year we will attend their monthly meetings and work with them more in field work than we did last year.

### 5. Home Beautification

We held two meetings on home beautification landscaped two homes and made the following recommendations for the best varieties of deciduous and evergreen shade trees to be planted in this area:

#### Deciduous Trees

Ash, Arizona; Ash, Male Green; Cottonwood, Narrow-Leaned; Cottonwood, Great Plains; Elm, American; Elm, Chinese; Locust, Black; Locust, Thornless Honey; Maple, Silver; Maple, Sugar; Maple, Red Schwedler; Mulberry, Kingan Fruitless; Olive, Russian; Plane or Sycamore, European; Poplar, Bolleana; Poplar, Carolina; Poplar, Lombardy;

Willow, Weeping; Cherry, Flowering; Crab, Flowering;  
Plum, Flowering; Hawthorne, Flowering; Red Bud, American.

Evergreens

Cedar, Atlas; Fir, Silver; Fir, Douglas; Juniper,  
Rocky Mountain; Juniper, Red Cedar; Pine, Western Yellow;  
Pine, Austrian; Spruce, Colorado; Spruce, Engelmann;  
Spruce, Norway; Spruce, White.



Fig. Spraying cattle Crosby Ranch east of Springerville, 1949.



Fig. Spraying cattle at St. Johns with bean sprayer, 1949.

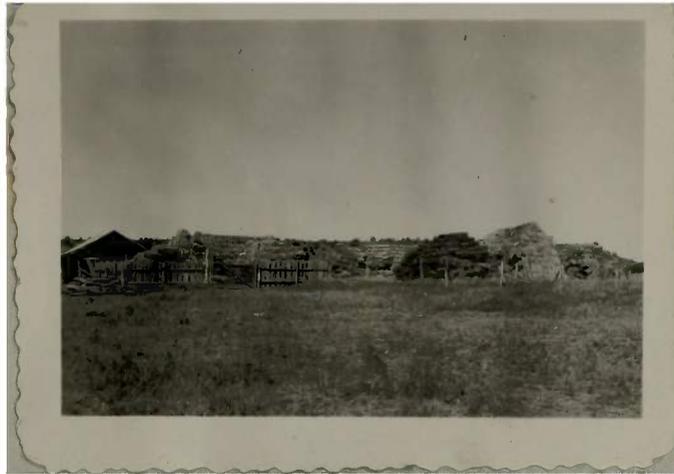


Fig. Supplemental feed of Bobby Trammell's, Springerville, 1949.



Fig. Stacking bales of hay at Albert Brown's, St. Johns, 1949.



Fig.        Dipping cattle at Alpine, 1949.



Fig.        Meeting Annual Beef Cattle Tour, 1949.



Fig. Corn picker in action at Hunt, 1949.



Fig. Hay stacking device made by Gleason Sherwood, St. Johns, 1949.



Fig. Packing and covering silage, Albert Brown's, St. Johns, 1949.



Fig. Cutting silage in the field, Springerville, 1949.



Fig. Showing timber flies on bull, Big Lake Allotment, 1949.



Fig. Lumpy Jaw Treatment, 1949.



Fig. Lining trench silo with boards, Bill Spence Ranch,  
Springerville, 1949.



Fig. Walling trench silo with rock, 1949.  
*L P Sherwood 5/2/49*



Fig. Demonstration of weed spraying equipment with large boom, St. Johns, 1949.



Fig. Willows and weeds on ditch banks sprayed with DDT at Eagar, 1949.



*Fruit*

Fig. Spraying trees at Eagar, 1949.



Fig. Judging cattle Milky Way Hereford Ranch, 1949.



Fig. Good stand of alfalfa, 1949.



Fig. Pile of corn at Hunt, 1949.



Fig. Turkeys coming out of the roost, St. Johns, 1949.



Fig. Fixing weed spray rig at Alpine, 1949.



.Fig. 4-H Club meeting at Sanders, 1949



Fig. Turkeys at roost in St. Johns, 1949.



Fig. 4-H Club project at Eagar, 1949.



Fig. 4-H Club project at Eagar, 1949.