

ANNUAL REPORTS

OF

COUNTY AGRICULTURAL AGENTS

APACHE - MARICOPA

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ANNUAL REPORTS
OF
COUNTY AGRICULTURAL AGENTS

APACHE - MARICOPA

1951

U. of A.

ANNUAL NARRATIVE REPORT

Apache County, 1951

by

D. W. Rogers

County Agricultural Agent

St. Johns, Arizona

TABLE OF CONTENTS

- I. Cover and Title Page
- II. Table of Contents
- III. Summary of Activities and Accomplishments
- IV. County Program of Work
 - A. Project Activities and Results
 - 1. Weeds
 - 2. Horticulture
 - 3. Range Livestock
 - 4. Dairying
 - 5. Field Crops
 - 6. Irrigation
 - 7. Poultry
 - 8. County Fair
 - 9. Grasshoppers
 - 10. 4-H Club
 - B. Miscellaneous Activities
 - 1. Landscaping
 - 2. SCS
 - 3. AAA
 - 4. Farmers Home Administration
 - 5. Annual Conference
 - 6. Safety
 - 7. War Board

III. Summary of Activities and Accomplishments

Our program of work, as stated last year, is developed as a result of information collected from the Agricultural Experiment Stations throughout the Nation, from Specialists, County Agent contacts with farmers, and from surveys made of farm conditions in the county.

Fundamentally, our main job boils down to adult agricultural education. This work is accomplished by farm visits, office calls, field trips, demonstrations, news letters, and by the farmer himself, who, after receiving the information passes it on to other farmers. We try to keep our farmers instructed on the best phases of agricultural production that they need. A typical example of this is illustrated in our method of killing grasshoppers.

A few years ago the Government furnished poison and bran which was mixed by the farmers and distributed on the grasshopper infested areas to control the grasshoppers. Now we recommend the use of Aldren which is purchased by the farmers and sprayed on the material the grasshoppers are eating for the control of grasshoppers which is a savings to both the farmer and the Government.

Weed control is one of our major problems, which problem is attacked by keeping out perennial weeds, eliminating small patches of noxious perennial weeds now in the county and the control of annual weeds.

Originally, weeds were controlled with Sodium Chlorate put on in the fall of the year at the rate of six pounds per square rod. Now we are recommending that our weeds be sprayed with 2,4-D, which is by far, a superior product to Chlorate.

Horticulture in the county is very important and we are trying to have our farmers efficiently produce from their present plantings of horticultural crops, and increase their production as much as possible. We think that our farmers can make a cash crop out of the production of tomatoes, carrots, onions, squash, etc. We do not have enough volume in our county to produce perishable crops such as lettuce and things of that nature.

Livestock in this county brings in about three million dollars annually. We have introduced modern methods to control parasites such as lice, flies and grubs. We feel that cattle can be economically fattened in this county and shipped out by truck, and we are doing everything we can to promote this phase of the livestock business.

Our county does not lend itself to large dairy production. However, we do have lots of family cows in the county plus three commercial herds and a pasteurizing plant.

Field crop work this year has consisted largely of introducing new varieties of barley, oats, alfalfa and potatoes. We experimented with some fertilizers but results were not too satisfactory due to drought.

We have made progress in our permanent pastures which are being quite generally accepted by most of our ranchers as a good practice to follow.

Irrigation work in this county this year consisted of demonstrations on how to establish and read weirs and making tests for proper irrigation. We recommended short runs rather than long ones in order to get penetration more evenly distributed throughout the fields.

County Fair activities in this county consisted of one County Fair being held at which we had twenty pens of livestock, fifteen horses, nineteen pens of poultry, five pens of rabbits, thirty eight field crops, one hundred and thirty garden products, one hundred and nineteen fruit exhibits, thirty five 4-H Club exhibits, two hundred and sixty eight domestic arts exhibits, one hundred and thirty household exhibits and other exhibits.

Our grasshopper work this year consisted, mainly, of the introduction of Aldren to take the place of our old methods of poison bran and sawdust, which was a big savings to the farmer and the Government in both money and time.

In our 4-H Club work we had twenty four members enrolled and sixteen completing. We also made a trip to the 4-H Club Round-up at the University.

Our landscaping work in the county consisted of demonstrations on home beautification by Mr. Tate our Horticulturist from the University.

Other miscellaneous activities consisted of working harmoniously with the SCS, AAA and Farmers Home Administration.

ANNUAL NARRATIVE REPORT

IV. County Program of Work

Our program of work is developed as a result of a lot of research by Experiment Stations and collecting of data locally, and by the farmers and ranchers themselves asking for information and supplying certain data that we need in order to answer questions that we need to answer.

Fundamentally our whole activity boils itself down to adult education. In other words our whole job is to collect information from any source that is available which sources are usually Experiment Stations throughout the United States and the State of Arizona, from the farmers and ranchers themselves and our Specialists. This information that we collect from these sources is given to the farmers and ranchers when they ask for information, and it also given out through newspapers, letters, demonstrations and meetings.

It goes without saying that in adult education it is different than general school education. There is nothing compulsory about our program. We mean by this that if a farmer or rancher is not interested in the information we give we cannot force him to come to our meetings. Neither can we expect reports of his work as you might in class room activities. However, our meetings are pretty well attended, lots of business calls are made on the County Agent for information, all of which bears fruit from year to year. We are aware of the fact, also, that the farmers exchange ideas among themselves and if we have given out information that is valuable it is passed on to other farmers without any direct effort on our part. However, to keep our ranchers and farmers properly informed about our program is a very challenging job and an interesting one.

We have had many examples to illustrate this, but typically is the methods of our grasshopper control. For years the Government furnished the bran and the poison supervising the mixing of the same provided the farmer would put out this poison. Our formuals were for years:

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).

We always mixed 1 part bran to 2 parts sawdust.

The mixing and distribution of this material, if put out in any quantity, became quite a job because we recommended that twenty pounds per acre be distributed just before the grasshoppers started to move, which would

be in the summer about daylight. If there was no wind and the grasshoppers began to be active before this material was dried out we generally got a fair kill, but many times our results were very discouraging. However, since it was the best known method we continued to use it until recently we have recommended the use of Aldrin, Chlordane and Toxaphene for the control of grasshoppers.

This material is sprayed on the vegetation that the grasshoppers are eating and has two methods of killing, first, the grasshopper is killed when he eats this material and second, when he walks where this material is it paralyzes his legs and kills him by this method. This material does not have to be put out early in the morning, as the other did, lasts much longer and can be bought and put out by the farmers much cheaper than the poison, sawdust, and bran can be put out if the Government furnishes it to him.

This is a typical case of the advancement made through the Extension Service for combating the problems of the farmers.

A. Project Activities and Results

1. Weeds

Our problem in weed control work has four phases, namely, keeping new perennial weeds out of the county. Second, where only a small start of noxious perennial weeds have been introduced to keep them in a limited area until they are completely eliminated. Third, the control of perennial weeds where they are in abundance in present crop lands. Fourth, the control of annual weeds in abundance in crop lands.

In the past, information in the form of letters, demonstrations, field inspection trips, office calls, has been given out to the public on control of weeds of various types and kinds.

Originally we had recommended for perennial weed control the use of Sodium Chlorate put on at the rate of six pounds per every square rod about September first. By this method we controlled about ninety-five per cent of our weeds. However, not many farmers would apply this material mainly because of two reasons. First, because it did run into a little money and second, because they were a little indifferent to the seriousness of the weeds on their farms.

However, when 2,4-D, as a weed eliminator, was introduced it opened a new field for the farmers in that it could be put on for about one dollar and fifty cents an acre and put on in the summertime for both annual and perennial weeds. We have never recommended Shell-30 in this county because we have never figured it was as good

as 2,4-D, and in some cases it had little or no effect on our perennial weeds and it costs more generally speaking.

We prefer the 2,4-D over Sodium Chlorate in our county because, especially in our dry land areas, the Sodium Chlorate will stay in the soil killing crops for as much as eight or nine years before it is washed out. At least it has done it that long and we don't know but what it may take longer so that we have practically eliminated recommending Sodium Chlorate, except on small scattered patches of perennial weeds.

Our activities for this year has been to try to eliminate some small patches of white top or hoary cress in Round Valley and Nutrioso. We have held meetings in both Eagar and Nutrioso giving demonstrations on weed control and trying to get this hoary cress eliminated before it spreads to other areas.

Some years back when the bindweed started in the county we did not know of any chemical method of killing weeds like we know today. Therefore, the farmers were helpless, more or less, in combating a weed that had started in the county. At that time we felt sure that had the people known then as we know now how to kill weeds they would have taken care of the situation. But, now that we have 2,4-D and other chemicals to fight weeds with and which makes it comparatively cheap to kill weeds, yet, the farmers themselves are a little slow in following up our recommendations.

We have some farms in the county which are, more or less, isolated farms and which have very little bindweed on them. We are trying as best we can to get these people to eliminate this weed while the area in which it is growing is limited so that it will save the rest of the farm. We do not know what success we will have, but we do know that they should not let it spread as they are doing at this time.

We have recommended that the people adjacent to the patches of hoary cress sprinkle Sodium Chlorate on all small patches of this perennial weed in September when they find it. If they will do this we feel that we will have this weed eliminated or under control very soon.

We sprayed our hoary cress at Eagar with 2,4-D only once this year which held it down and did a good job in keeping it down but did not kill all of it. The following picture (Figure No. 1) shows Mr. Wiltbank doing this job of spraying for hoary cress.

We hope that next year they will spray three times which should almost completely eliminate hoary cress in one season.



Figure No. 1

2. Horticulture

Our problem in horticulture we feel has two objects, first, the efficient production of the horticultural crops the farmers now have, and second, laying a foundation for future development of young farmers who might want to go into horticulture commercially.

In the past we have given fruit tree pruning, fruit packing and fruit tree spraying demonstrations. We have, also, done quite a bit of work, some commercially, on the production of vegetables.

About ten years ago we produced lettuce at Alpine commercially, selling a good number of truck loads in Phoenix, but seemingly this was not a paying adventure because it cost too much to market lettuce in such small quantities. Also, we tried the production, commercially of lettuce, carrots, beets and turnips in Richville, but because of isolated conditions and a small area of production it did not prove economically sound. However, we do feel that there are opportunities for our young people with limited money, who want to live in this county by farming, to go into horticulture rather than any other field. We feel that an ambitious reasonably well trained young man could start out in the production of cabbage, tomatoes, carrots, melons, onions and squash and make a success of it.

However, this year we held a meeting at Hunt at which the discussion of the possibility of producing vegetables commercially was taken up. A brief summary of the meeting is as follows:

Mr. Boden, a commercial vegetable producer from Phoenix, was one of the speakers who stated that the first thing he wanted understood was that he was not a promoter but that he came up here on the invitation of Flake Willis to give the local people some advise on commercial vegetable production. This work is based on the assumption that the local people want to go into vegetable production commercially.

He advised that they go in on an experimental basis for the first year or two, as an experiment, planting several acres of the various kinds of vegetables such as carrots, cabbage, lettuce, etc. As a result of this experiment they would know what they could produce and it would not cause a great deal of financial outlay for anybody to acquire this information. However, he expressly stated that it would take years to learn the vegetable business, and that it might take as much as three years to learn it.

As producers of produce, farmers must always have in mind that a market is not always ready for what is produced, and that sometimes they take a great loss.

Mr. Adams, Agricultural Agent for the Santa Fe Railroad, thought that we could produce as good a carrots as they did at Grants, New Mexico, and stated that the Santa Fe would help the farmers all they could to market this once it was produced.

Mr. Adams and Mr. Boden both expressed the opinion that, contrary to what we ordinarily thought, we will have strong competition from California and other states when we want to market our produce from this county. This was a little surprising to the farmers, because it was their opinion that they would not have competition of such a nature when they wanted to market their produce.

It was stated that for every acre of vegetables planted a hundred dollars would have to be spent per acre in order to produce them. It was also stated that sometimes a man can hit the market just right and can sometimes make five or six hundred dollars per acre. Yet at other times the farmer may not make anything at all and may go behind.

It was stated that if a person could not make the production of produce crops a success the second or third year he had better get out of the business.

There was one thing that was called to the people's attention and that was, that produce is very perishable and

must be harvested quickly, packed quickly, and marketed quickly in order to realize any profit out of the produce.

Mr. Boden stated that sometimes on his own farm he would build up land for as high as five years before planting it to vegetables.

He also stated that the reason that carrots were a good risk is that they would have from three to four weeks time in order to market them as they were not as perishable as a lot of other vegetables.

He also stated that it took as much labor to produce one acre of vegetables as it would for thirty acres of field crops.

All in all I feel that this was a wonderful meeting in that it gave the farmers practical information on what they would have to do before they went into vegetable production commercially.

Regardless of what has been done in the past, we feel that an ambitious young man who wants to live in this county, and who has a limited amount of money can get the best start through the production of horticultural crops such as carrots, onions, squash, beets, etc. and probably any other way that is known.

While holding our vegetable meetings at Hunt the following picture (Figure No. 2) was taken.



Figure No. 2.

This past year we were rather successful in putting on a campaign for dormant spraying. The following instructions were given at that time.

The picture (Figure No. 3) was taken of Lee Wilhelm spraying in the winter time at Hyrum Jones'.



Figure No. 3

We have followed through for a good number of years the fruit tree pruning work. We feel that our people must understand the fundamentals of fruit trees and that until they do they will not be successful with their fruit production.

Every farmer should know the fruiting habits of all the different horticultural crops and know how to prune in order to secure an abundance of this fruit wood. Even though many demonstrations have been given, yet, a lot of our farmers simply either don't know how to prune trees correctly or don't care, because they have literally killed their trees sometimes.

While we know our job is an educational one and therefore will be for a long time before the farmers know all about fruit production, yet, we do feel like that even though a man has but a few trees he must learn to prune them correctly in order to get any fruit.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona
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U. S. Department of Agriculture
Cooperating

Agricultural Extension Service
Information

DORMANT FRUIT SPRAYING
by
J. N. Roney
Extension Entomologist
September 25, 1950

In a short while apples, peaches, plums, apricots and pears will be losing their leaves and going into a winter dormant stage. Some of these trees may be infested with San Jose scale, spider mites, or a mildew.

A dormant spray of lime-sulphur will do a good job of controlling the San Jose scale and mildew. It might also kill some red spiders or spider mites as well as eggs. Arizona fruit growers used to apply these sprays every winter, but during the past few years many growers have neglected this practice. In turn, there has been an increase in San Jose scale and mildew.

Since growers have been using DDT to control codling moths, there has been an increase in red spiders and spider mites. The past two years a two-spot mite has caused the greatest injury. In some instances growers have had to apply three and four applications of a spray in order to keep the spiders under control. They have used Tetraethyl pyrophosphates as well as Parathion with only fair results. They have had to repeat the applications several times a season because there is no residue effect of these sprays.

For best control, secure some dry lime-sulphur and mix it so as to make a dormant-spray strength. The package will have directions for this dormant strength. Make the first application when the trees reach dormancy in the fall, and the second just before the buds swell in the late winter or early spring. Spray the trees thoroughly; also the foliage and ground beneath the trees.

A spraying this winter may save a spraying when you are very busy next summer.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona

St. Johns, Arizona

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

Agricultural Extension Service
Home Demonstration Work
County Agent Work

March 30, 1951

TO: The People in Round Valley

You will find enclosed herewith a circular on "Fruit Insect Control Hints."

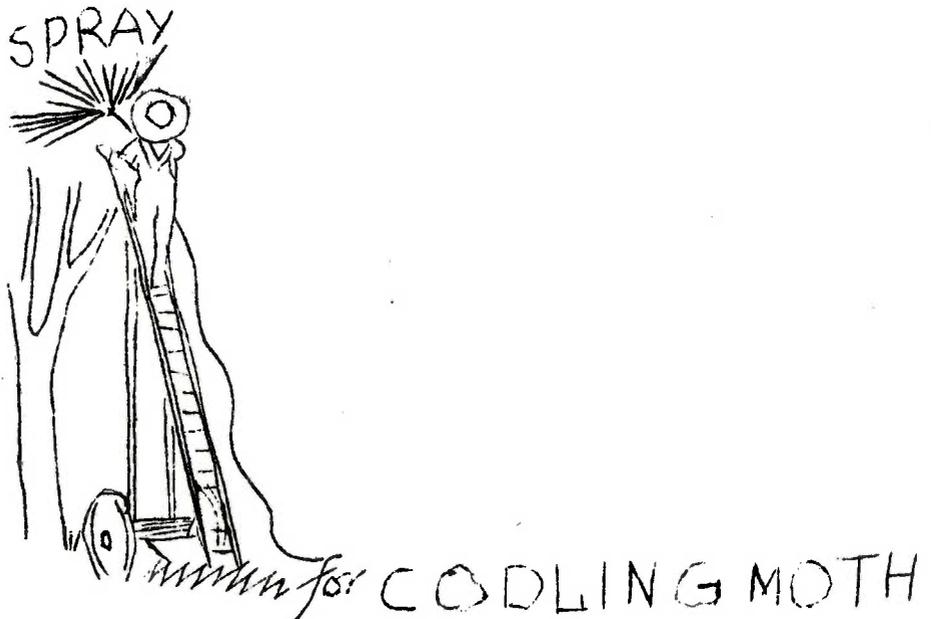
Since your fruit was frozen last year you did not have any codling moth last year and should not have any this year without you shipped in old apples with codling moth in them.

However keep on the alert and put out bait traps as recommended in this circular and spray if any codling moth are discovered.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd
Enclosure



COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona

St. Johns, Arizona

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

Agricultural Extension Service
Home Demonstration Work
County Agent Work

April 12, 1951

Dear Cooperator:

For your file you will find enclosed herewith a circular entitled "Fruit Insect Control Hints," which contains a lot of valuable information to all fruit growers in Apache County.

This circular superseded one on the same subject that you received last year so you can throw your old one away and keep this one.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd
Enclosure



COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona

St. Johns, Arizona

University of Arizona
College of Agriculture
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Agricultural Extension Service
Home Demonstration Agent Work
County Agent Work

July 23, 1951

TO: The People of Apache County.

SUBJECT: Removal of 2,4-D from Spraying Equipment Clarified.

Quite often we use spraying equipment for killing weeds with 2,4-D and then spray fruit trees with DDT and other insecticides. The following report gives some valuable information that we should follow in keeping our equipment clean when 2,4-D is used:

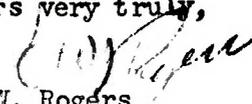
Methods for removal of 2,4-D from spray equipment have been summarized in a report submitted by the Technical Advisory Committee of the National Agricultural Chemicals Association at their Spring Meeting, Miami Beach, Florida.

From the small amount of actual experimental data available, the committee concluded that a standard one per cent ammonia solution was most commonly used and that low-volume, low pressure equipment was easier to clean than high-pressure equipment. Very few workers believe that cleaning of 2,4-D from equipment is entirely fool-proof and it was recommended that separate equipment should be used for 2,4-D application.

It was agreed that rinsing with kerosene, fuel oil or diesel oil, followed with soap suds will be generally more effective in removing ester formulations of 2,4-D. Rubber hoses are most difficult to clean and in some cases they should be replaced.

Remember 2,4-D as applied on alfalfa and other legumes, fruit trees or even when grain is not too high it is injurious.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
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Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 17, 1951

TO: The People of Apache County,

SUBJECT: Horticulture.

Mr. Harvey F. Tate, Extension Horticulturist from the University, will give lectures and demonstrations according to the following schedule:

February 26, 1951

7:00 P.M. February 26th at Alpine School House - Illustrated lecture on gardening and home beautification.

February 27, 1951

10:00 A.M. February 27th at Mrs. Alvin Becker's in Springerville - Fruit tree pruning.

2:00 P.M. February 27th at Joe Pearce's - Eagar - Fruit tree pruning.

7:30 P.M. Round Valley High School February 27th - Lecture on gardening.

February 28, 1951

Home Beautification meeting at Court House 10:00 A.M. February 28th in St. Johns.

Fruit tree pruning demonstration Emmitt Waite's February 28th at 1:00 P.M. St. Johns

Fruit tree pruning demonstration Beula Bennet's - Concho - February 28th at 4:00 P.M.

7:30 P.M. St. Johns High School February 28th - Lecture on gardening.

Yours very truly,

D. W. Rogers
D. W. Rogers
County Agent

Figure No. 4, which follows, shows Mr. Tate giving fruit tree pruning demonstrations:



Figure No. 4

3. Range Livestock

We have in Apache County one hundred and forty-two livestock farms of various sizes. Livestock, from fifteen and twenty head of cows to several thousand head. We sell annually in livestock over three million dollars worth of cattle.

We are too far away from any large cities to have the benefit of any veterinary service, therefore, we attempt to help our range livestock people in every way we can, even though they are scattered out as much as they are.

We have over the past few years been doing all we could with livestock in the control of grubs, flies and lice. In 1948, through the cooperation of Dr. J. N. Roney, Extension Entomologist from the University, and the stockmen at Big Lake, we treated cattle for the control of lice and flies with the following different solutions:

8 pounds of 50% wettable DDT

$\frac{1}{4}$ pound of Z-1 Spreader

4 pounds of 5% gamma isomer benzene
hexichloride (BHC) to

100 gallons of water

*

8 pounds of 50% wettable DDT

4 pounds of 6% gamma isomer benzene
hexichloride (BHC)

6 pounds of Kolofog to

100 gallons of water

*

8 pounds of 25% Toxaphene

6 pounds of Kolofog to

100 gallons of water

*

In 1949, as a result of our work in 1948, we recommended not to use the Toxaphene but to use the BHC, DDT, and Kolofog, as it appeared to be much better than any other solutions we had. Likewise in 1949 we recommended -

4 pounds of 6% wettable gamma isomer
benzene hexichloride (BHC)

8 pounds of 50% wettable DDT

6 pounds of Kolofog to

100 gallons of water

This solution properly applied about three times annually takes care of practically all of our lice and flies, as the BHC kills the lice and the louse eggs and the DDT has a long residual effect so that we feel that even in the summertime with plenty of pressure, if applied by a good spray rig, it will last from four to six weeks, and when applied in the fall from four to five months.

This year we have estimated that we sprayed about fifteen thousand head of cattle.

Figure number five is a typical scene of making

preparations for spraying cattle in Apache County.



Figure No. 5.

Most all of our spray rigs are hauled in pickups to the corrals where they are used to spray the cattle. We recommend that they have spray equipment that will develop three hundred or more pounds of pressure with a good mixing device in it so the material will be thoroughly mixed when sprayed on the cattle.

Supplemental feeding was a big factor this year with our cattlemen due to drought and other reasons. We have no way of knowing how much of this supplemental feed was used, but it was tremendous for our county.

Figures No. 6 and 7 shows the two methods of feeding supplemental feed, one with a big bunker feeding equipment and the other with troughs.



Figure No. 6.



Figure No. 7.

Figure No. 8 shows feed grinding equipment that was used to grind up alfalfa and other kinds of hay before feeding it to the cattle. This was not used in a great number of cases, but a great deal of feed was ground up by this method.



Figure No. 8

Figure No. 9 shows silo where supplemental feed was stored in the fall for winter use.



Figure No. 9.

Figure No. 10 is a picture of cattle being fed supplemental feed in Apache County, 1951.



Figure No. 10

We are branding and taking care of our cattle with branding chutes more than ever. Figure No. 11 shows the method used at Al Voight's, 1951.

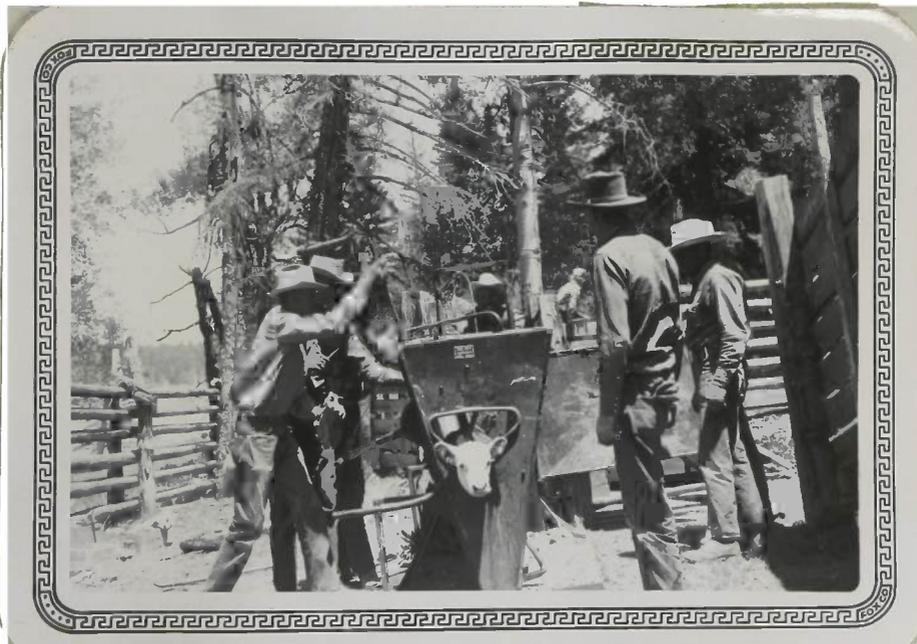


Figure No. 11

While in the control of lice and flies, progress has been made from the recommendation of rotenone and sulphur applied in two applications three weeks apart, yet, for grub control we still recommend -

5 pounds of 5% rotenone
10 pounds of wettable sulphur to
100 gallons of water

We recommended that when the grubs come in the backs in any quantity that this rotenone and sulphur be put on. Generally, this will be sometime in December and then again in January.

This material can be put on with spraying equipment where high pressure equipment is available, or it can be dusted on by hand and rubbed in the back, which many of our cattlemen prefer. However, in cold weather putting this material on by hand does not seem to shock the animals as much as the spraying does. Although, when put on by hand we recommend -

5 pounds of rotenone
mixed with
5 pounds of sulphur

In other words it is mixed fifty, fifty whereas when it is sprayed on it is recommended that-

5 pounds of rotenone
be mixed with
10 pounds of sulphur to
100 gallons of water

It should be noted here, however, that the rotenone must be mixed in a small amount of hot water first and then put in the other solution, because if otherwise attempted it will not go into solution as it should.

About ten or twelve years ago it was almost impossible to ship a fat animal out of this county and make a profit on it. Due to trucks and new roads in the county we now can ship out fat cattle with a profit most any day of the year we would want to. Because of this fact a small farmer who cannot go into the dairy business, without he has a rather large unit, and because he can fatten and sell cattle if he has his own feed, we are recommending

COOPERATIVE EXTENSION WORK
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Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 13, 1951

TO: The People of Apache County

SUBJECT: Livestock, Fruit and Field Crop Insects,

Dr. J. N. Roney, Extension Entomologist from the University, will be here according to the schedules below to discuss such subjects as dormant fruit tree spraying, cattle lice, grubs, and ticks. Also, garden, fruit, and field crop insects.

If you are interested in any of these subjects be sure and attend some of these meetings.

1. At Emmitt Waite's at 3:00 P.M. February 19th. (Dormant Fruit Spraying)
2. At the St. Johns High School at 7:30 P.M. (evening) February 19th.
3. At the Round Valley High School at 7:30 P.M. (evening) February 20th.

Yours very truly,

D. W. Rogers
D. W. Rogers
County Agent

DWR/nd

that our small ranchers cash in their surplus feed by fattening cattle and shipping them as fat cattle to markets outside the county. We feel that this is one business that has been neglected in the county, and one that the farmers can go into with a profit, so we are recommending, therefore, that our ranchers go into the fattening of cattle when they have any amount of surplus feed on hand.

It just happens that in this county we have three or four nice herds of purebred hereford cattle. It also just happens that we have a lot of comparatively small ranchers with exceptionally good herds of cattle, some of whom feed their cattle about as good as they would purebred animals, and buy bulls almost as good as if they would buy purebred cattle. We are, therefore, recommending that some of our small ranchers get purebred cattle with the view of selling purebred bulls in the future. We feel that this business is one that we have neglected in the past and one that can be very profitable to our people in the county.

4. Dairying

In Extension work we make programs that can be put over by the people. Sometimes laws and other conditions over which we have no control effect what we might recommend our farmers to do or what they can do. This particularly true in this county in the dairy business.

In past years in order to promote family life, consume local feed, and save fertilizer for our farmers, we have recommended that our farmers either make cheese for sale or ship cream out. Now, however, because the law states that all cheese must be made from pasteurized milk, and because it does not seem economically sound to put in a pasteurizer without the farmers have twenty five or more head of dairy cows, we could not at this time recommend it as we have in the past that our people go into the dairy business, especially, if they are going to make and sell cheese or whole milk.

We do consume in this county thousands of gallons of milk annually. Up until the present year we have never been able to produce and sell our locally produced milk to the people in this county. We now do have one pastuerizing plant and three dairys which are putting out high grade milk for public consumption. If we can keep these three dairys going we feel that this is about all that we can expect from the dairy business in this county at the present time.

Even with our pasteurizing plant and all we are not able to sell milk to all of the local markets because we cannot get paper cartons in which to put this milk for

public consumption. The only thing we can use in this county is bottles. As soon as we are able to get cartons we probably can double our sales in milk in this county.

U. S. Highway 60, which comes from Globe into Showlow and from Showlow into this county, has made it possible for milk to be brought in from the Salt River Valley and sold to our people practically as cheap as we can produce it here. This was not true until this road was built, but conditions have now changed so that if people here are going to start in the dairy business they have to have a rather large unit in order to compete with markets outside of the county.

5. Field Crops

Our problem in field crops is to try to get the best field crops which are adapted to our county established here.

In 1948 we experimented with barley and oats to find the best variety for our county. This recommendation was made as a result of our experiments, that grain in our higher elevations should be planted so it would come up about May twelfth to fifteenth. This would, generally, insure moisture and also time enough for the grain to ripen in the fall. It seems as though that Markton oats was the best to plant at our elevation.

In 1949 we made tests of different varieties of potatoes, but because of drought we could not get any results which we could recommend. It seemed, however, with our fertilizer tests that barnyard manure was better for our high elevations.

We in 1950 tried to get some tests with Buffalo alfalfa in our higher elevations but because of the drought we could not get any results from this test.

This year we made plans for fertilizer tests at Eagar using a 5-10-5 fertilizer in corn. Due to lack of water this experiment did not materialize.

We recommended at Alpine that they plant red clover in the wheat, sowing it and harrowing after drilling the grain in. However, if a Lister Drill was used we recommended no harrowing. Again due to drought this did not materialize, and therefore, we have no results to report.

For the Garcia Bros. in St. Johns, we recommended that they plant sweet Sudan grass on their range this year. They followed our advise and got some awfully good crops in Sudan.

Grass Mixtures to Try in Plots

No. 1. Orchard Grass and Ladino

Orchard grass to be seeded at the rate of fifteen pounds per acre and Ladino at the rate of one pound per acre. The Ladino seed is very small and is difficult to seed at the rate of one pound per acre. It will probably be much easier if it is mixed with cornmeal and run through the hand seeder that way. If difficulty is had in seeding the Orchard grass it can be mixed with the fertilizer and spread with the fertilizer.

No. 2. Tall Fescue

Tall Fescue to be put on at the rate of fifteen pounds per acre. This is a coarse growing tall grass that is not too palatable in the summertime but will grow very well when the temperature is low, and is considered a fine crop for winter grazing. Some alfalfa or Ladino should be seeded with it as a legume. Ladino at the rate of one pound per acre, and alfalfa at the rate of four to eight pounds per acre.

The best time to seed all of these crops is in August so that a fair crop can be obtained before freezing winter weather sets in.

As for the legumes they are used to furnish nitrogen for the grass and if legumes are not present, between one hundred and two hundred pounds of nitrogen will have to be added per acre per year to make a feed pasture.

Other legumes that it would be possible to irrigate are - Black Medick and Birdsfoot Trefoil. The Black Medick and Birdsfoot Trefoil are suppose to produce less bloat than any other legumes that we have for this territory.

On our irrigated plots it will probably be necessary to use a mowing machine at different times to control weeds. Since this is new ground it is very doubtful that there will be a deficiency of plant food which would require the use of fertilizers, but if any fertilizer is used it will probably be necessary to add phosphate where legumes are grown, and nitrogen will definitely pay off where legumes are not used.

6. Irrigation

Our problem in the county is to extend, if possible, the duty of water in our irrigation systems through better spreading of the water and the reduction of seepage in the ditches.

For the past few years about the only work we did in irrigation was on running farm levels, irrigating ditches, correcting slopes of ditches, and lectures on the cost of

pumping water.

If we started pumping fifty feet from the surface with a fifty foot draw down it would cost about five dollars for every acre foot of water pumped. This gave our farmers a standard by which they could tell approximately what water was costing them that they were pumping from our wells. Naturally, of course, small wells cost less, and the deep wells more than this. With these facts in mind, however, our farmers could tell if they wanted to dig wells or use the water from the reservoir. So far our reservoir water is much cheaper than our pumped water. It was recommended that we get the height of the water in our wells at the present time, and then get the draw down through the years to check on the water draw down.

Our work this year consisted of helping people in Concho, St. Johns and Round Valley with proper weirs for their irrigation systems. We also held meetings in St. Johns at which time we figured that the first six miles of the Lyman Irrigation Ditch could be cemented to stop seepage for about four thousand dollars, and that assuming that with a reasonable amount of waste in the water we should save nine hundred feet annually.

It was suggested by Mr. James E. Middleton, our Irrigation Specialist from the University, that a permanent weir could be properly installed at the head of the Lyman Irrigation Ditch, and then one six miles farther down the ditch. This would make it possible for the Commissioners to always know how much water they were losing through seepage by the reading of the weirs.

In discussing the lining of ditches in the Round Valley area Mr. Middleton thought cement would be much better than oil or bentonite, and that if cement were used vegetation on the ditch banks would all have to be eliminated.

We have suggested that a small stream is generally not as satisfactory in irrigating land as a large one, as the soil at the head of the ditch would get too much water and the soil at the tail-end of the ditch would not get enough.

Mr. Middleton suggested that water be applied in the winter as it would go into the soil better at that time than in the summer. That some soil will take water at the rate of one to two and one half inches per foot, while other soils will not, and therefore, a soil tube should be used to see if penetration was being accomplished.

Held a couple of demonstrations at Hunt on water penetration, measuring of water, and general good irrigation practices that we would recommend for that locality.

We had thirty people present at these meetings, who stayed

COOPERATIVE EXTENSION WORK
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State of Arizona

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University of Arizona
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Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 12, 1951

TO: The People of Apache County.

SUBJECT: Cost of Pumping Water and Better Irrigation Practices.

Meetings will be held according to the following schedule for the purpose of discussing cost of pumping water and better irrigation practices. Mr. James E. Middleton, Irrigation Specialist from the University, will be here to conduct these meetings.

St. Johns High School at 7:00 P.M. February 15th

Round Valley High School at 7:00 P. M. February 16th

Yours very truly,

D. W. Rogers
County Agent

DWR/nd

with us practically all day, showing they were more than interested in what we were trying to do. It has been a long time since we have had such interest shown by the public, in our irrigation work, as we had at these meetings. We expect to have this followed up another year.

The main recommendations made by both Mr. Middleton and Howard E. Ray, Extension Specialist in Soils from the University, were that irrigation runs should be reasonably short; that organic matter should be applied to all soils to develop structure in the soil; that in dry land areas, such as Alpine, Nutrioso and Vernon where there is not enough annual precipitation at times for crops, that a clean fallow should be carried out over the summer in order to have enough moisture for the following year; that our Lister's should always plant the grains on contours in order to hold the moisture better than they are doing now.

Figure No. 12 shows irrigating with a siphon system which we introduced in the county two years ago. The idea of irrigating by a siphon is gradually increasing in popularity and materially helping the people to irrigate their land.



Figure No. 12

Figure No. 13 is a picture of a flowing well that was recently developed on the Garcia Ranch some twenty miles east of St. Johns. This well will be a big help to their ranch as they should be able to irrigate from

fifty to one hundred acres from this well.



Figure No. 13

Figure No. 14 is a picture of a little sprinkler system being tried out on the hillsides at Hunt by E. I. Whiting. So far we doubt the practicability of this method, but since it is being tried out we are watching it rather closely.

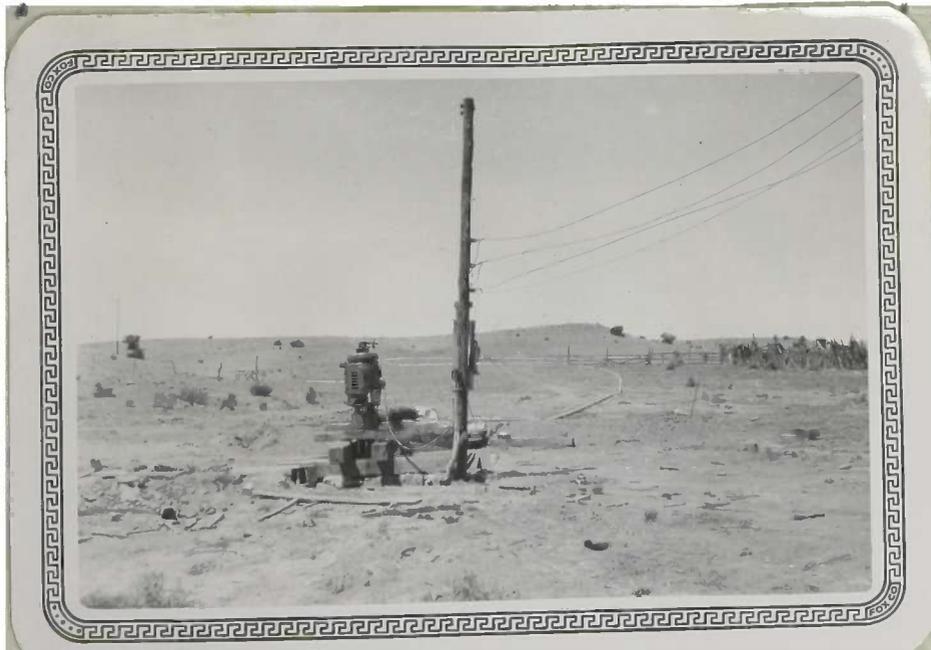


Figure No. 14

COOPERATIVE EXTENSION WORK
IN
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State of Arizona

St. Johns, Arizona

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

Agricultural Extension Service
Home Demonstration Work
County Agent Work

July 19, 1951

TO: The People of Apache County.

SUBJECT: Field Day at Hunt Valley on Cost of Pumping Water, Etc.

Mr. James E. Middleton, Irrigation Specialist and Mr. Howard Ray, ~~Soils~~ ~~Specialist~~ from the University will be with us to conduct the following program.

MORNING - July 25, 1951

1. 10:00 o'clock July 25 at Isaacson Farm the following program will be followed:
 - A. Measuring water with trajectory method and portable steel weir.
 - B. Cost of drilling wells in that area.
 - C. Cost of pump on Isaacson Farm.
 - D. Cost of pumping formulas.
 - E. Checking on penetration with soil tube and water cylinder.
 - F. Explanation of relation of different soils to water penetration.

AFTERNOON - July 25, 1951.

1. 1:00 P.M. to 2:00 P.M. - Chemical weed control at the Stubblefield Farm.
2. 2:00 - Patterson Farm
 - A. Demonstration of siphons
 - B. Demonstration on effect of slope and length of run.

NO CAFES AT HUNT
BRING YOUR LUNCH

Yours very truly,


D. W. Rogers
County Agent

7. Poultry

At the present time a lot of our farmers are looking toward a large cow outfit or going into rather lucrative jobs which are quite abundant in the county at this time, when their agricultural set-up is not going along as they had contemplated. Our problem, naturally, is to show a lot of our people that poultry as a side-line is very profitable.

In fact since dairying has, because of State laws, progressed to the point where the farmer cannot go into the dairy business without he has twenty five or thirty head of cows and a pasteurizer, poultry is about the only livestock business that a farmer can go into and make any profit on any size scale that he wants to go into it on. That is we feel that there is a profit that can be made in the poultry business in Apache County if the farmers want to go into the poultry business. However, we advise that a farmer should have from three hundred to one thousand hens to be successful.

We have not kept the records on poultry production as we should have, because changing prices and conditions seems to make this a rather hazardous job to do. However, we do have a lot of good substantial poultry flocks in the county that are making as high as four dollars per bird per year above the feeding cost.

We, also, have some of our farmers producing friers at this time. However, records will not be available until next spring to see if they have been profitable to them.

The frier business, as a business, has never been very successful in this county, and therefore we are hoping that the farmers who are now in this business will be successful, because if they do it will mean another commercial industry for our farmers to follow, which they have not had in the past.

8. County Fair

Since Apache County was organized we have held nine County Fairs. The first one being in 1926 and the last one in 1951. We have held our Fairs in school buildings and make-shift buildings and any place we could hold them, but at the present time we have three fairly good buildings, fair grounds and a little equipment so that we are better set-up than ever to hold a County Fair.

We feel that the interest in the County in the County Fair is fully a thousand per cent better than it was a year ago. This interest that the people now show in the fairs and its new improvements is very encouraging and it rather proves that the Fair idea is correct, and the people, if given time, will always see which is best in a community.

Because of drought and lack of interest in agriculture the prospects for a Fair this year was not too good. However, we

COOPERATIVE EXTENSION WORK
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AGRICULTURE AND HOME ECONOMICS
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Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 1, 1951

Dear Sir:

Baby chick season is just ahead and it's a good idea for poultry raisers to give some attention to their baby chick program.

Because of the somewhat small margin of profit last year, it is important to buy baby chicks that have been bred to lay a profitable number of eggs.

The few extra cents that it costs for well-bred chickens will more than pay for itself with the increased amounts of eggs layed by the chickens. Baby chicks selling for less, often don't have the breeding to make them high producers. It takes just as much feed to keep a poor layer as it does a good one.

Important factors for success with poultry are breeding, feeding, and management, and breeding should be considered first. Source of the chicks is most important, so pick a reliable hatchery when ordering those early chicks.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd

did hold a very good Fair, one of the best, possibly, and more people were sold on the idea of a Fair than ever before.

For the first time we had pens for poultry and rabbits and about twenty pens for livestock. We had on display twenty (20) cattle - fifteen (15) horses - nineteen (19) poultry - five (5) rabbits - thirty-eight (38) field crops - one hundred and thirty (130) garden products - one hundred and nineteen (119) fruit exhibits - three (3) dry farming products - thirty-five (35) exhibits in the girls 4-H division - two hundred and sixty-eight (268) exhibits in domestic arts - one hundred and thirty (130) exhibits in the household arts - sixty-seven (67) exhibits in the floriculture division - twenty-three (23) in the fine arts division, making a total of eight of eight hundred and seventy-eight (878) exhibits, with a total of two hundred and forty (240) people exhibiting articles in the Fair. There were two hundred and thirty-nine (239) blue ribbons awarded, one hundred and seventy-nine (179) red ribbons awarded, and ninety-eight (98) white ribbons awarded.

9. Grasshoppers

Every year the Extension Service has had quite a bit of grasshopper work to do in the County. We figured in 1948, for example, that we saved almost one thousand acres of crops due to our hopper control program. In the past we used

2 quarts of Sodium Arsenite

to

100 pounds of material (bran and sawdust)

or

6 pounds of Sodium Fluosilicates

to

100 pounds of material (bran and sawdust).

We mixed always one (1) part bran to two(2) parts sawdust.

We have also had quite a bit of work done on grasshopper control with turkeys, especially in the St. Johns community. All of these recommendations have been followed out with a great deal of success.

However, in 1950 we recommended that our farmers use Chlordane sprayed on the vegetation that the grasshoppers were eating instead of putting on the poison bran mix as in the past. However, Chlordane recommendations in the Alpine area in 1950 did not seem to be as good as BHC (gamma isomer benzene hexichloride), which the farmers used with success.

This year we have recommended that the farmers spray the

vegetation, which the grasshoppers are eating, with Aldrin. This seemed to be, by far, the best material we have ever used for grasshopper control in this County.

With these new chemicals being used for the control of grasshoppers, it completely eliminates the use of bran, sawdust and other materials that we have used in the past for the control of grasshoppers. This means that the Government does not now have to furnish bran and poison for the control of grasshoppers, as the farmers can buy this new material (Aldrin) and put it on their land cheaper than they could mix, bran, sawdust, Sodium Arsenite and Fluosilicates even where these materials were furnished them gratis by the Government.

This is just another event in agricultural progress that has changed the picture of grasshopper control completely.

Figure No. 15 shows the farmers at Alpine putting Aldrin on in 1951.



• Figure No. 15

10. 4-H Club

Our problem in the 4-H Clubs has been to give to every boy in the County the appreciation of taking 4-H Club work, providing we could find an adult club leader. The extent of our work depends almost wholly on our ability to find adult club leaders, which has not always been easy to secure.

• Our object in 4-H Club is to try to give the boys in this

County the appreciation of rural life with the hope that they will acquire some agricultural land in the County and make a commercial project out of it in later life.

For the purpose of acquainting the public with 4-H Club work, what it stood for and what it meant, and how the public could receive the benefit of club work, Kenneth L. McKee, State 4-H Club Leader from the University, spent two days here this year giving lectures at Round Valley and St. Johns to the parents and club members on requirements of 4-H Club work. Among the things mentioned, Mr. McKee gave the following information

A. What is 4-H Club work?

1. At least have five members
2. Have project
3. Club Leader
4. Club Activities
5. Pins
6. The Club should be held for five months.

B. What a Club Member needs to do.

1. Have a project
2. Keep records
3. Have record books
4. Member should attend club meetings.
5. Exhibit his project at end of year.

C. What a 4-H Club parent needs to do.

1. Help the boy get money for his project.
2. Get the boy to keep records.
3. See that he takes care of his project.
4. Help him get to meetings.

D. What 4-H Club Leaders need to do.

1. Like to work with boys.
2. Boy should like the Club Leader.
3. Have time for such work.

As a result of the above meetings a committee was appointed at Eagar consisting of Irvin Hall, David Pulsipher and Gus Gibbons to help put over club work in Round Valley.

Bill Reilly, Pat Baca and Everesto Silva were appointed for Springerville, while in St. Johns we had Ove Overson and H. T. Brawley.

We have had this year some good clubs in St. Johns, Round Valley and Alpine, but none in Concho or Springerville.

This year we took some of our club members to the Round-up at the University in Tucson. Our very best judging team failed

COOPERATIVE EXTENSION WORK
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AGRICULTURE AND HOME ECONOMICS
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Home Demonstration Work
County Agent Work

August 24, 1951

Dear 4-H Club Members:

The Annual Apache County Contest for 4-H Home Economics Clubs will be held on September 1st at the St. Johns High School from 9:00 A. M. to 4:00 P. M.

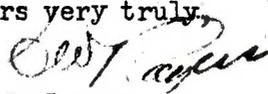
All 4-H'ers enrolled in Foods and Clothing should plan to attend. Bring your leaders and parents along, too.

Judging in both foods and clothing will begin at 9:00 A. M. Demonstrations and Dress Revue will be conducted in the afternoon.

Bring a sack lunch, or, if you live in St. Johns, you might wish to go home for lunch.

County Contest gives you an opportunity to meet all the other 4-H'ers in the County, and to show them how much you have learned in Club work this year. The winners in the County Contest go to the State 4-H Club Round-up in Tucson next June, where they will compete for State awards, and have opportunities to win scholarships and all-expense paid trips to the National 4-H Club Congress in Chicago. So you see, winning in County Contest is the key to many of the opportunities offered to 4-H'ers.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd

us at the last minute, so we only took our junior boys down.

The 4-H Club Round-up at the University was very well organized and an immense amount of judging and demonstrating was done by the club members in a very well organized manner. There was little or no confusion, and a lot of education went on during this week.

I don't know of anything that is better for our club members than such a trip as we made this year.

We had enrolled in club this year twenty-four (24) members in addition to four (4) boosters. Our total completion for the year was sixteen (16).

Among other things we had for our 4-H Club to do was home beautification. Our idea was for our club members to get native shrubbery and plant them scientifically around their homes. Figure Number 16 shows 4-H Club Members, Leaders and Forest Supervisor, Mr. McDaniels, getting ready to collect shrubbery for their home beautification projects.



Figure No. 16.

We tried awfully hard to keep our club members busy cleaning weeds out of their gardens. Figure number 17 shows club members cleaning their garden.



Figure No. 17

B. Miscellaneous Activities

1. Landscaping

We have tried to take care of all the people who desired landscaping in the County. We have held meetings and shown pictures on landscaping as well as field trips in the different communities calling the attention of the public to different points on landscaping.

This year we held a field trip in St. Johns in which Figure Number 18 shows the crowd that we had at the High School in St. Johns, at which time Mr. Tate called attention to those present on landscaping



Figure No. 18.

We also helped Smith Gibbons and Jay Patterson with the landscaping of their homes. Figure Number 19 is Mr. Tate showing Mr. Gibbons how to start out on his landscaping.



Figure No. 19.

2. SCS

We attended as many SCS monthly meetings as we could, although we are not always informed as to when they are holding them, but have helped them when we could through the years, but we do not spend a great deal of time with them except at these meetings.

We hope to put on all educational work that they require and will do so when they let us know what they want.

3. AAA

We have worked harmoniously with the Triple-A all we can and feel that this organization is going along rather smoothly and does not need too much of our help at this time.

4. Farmers Home Administration

We have harmoniously worked, as much as possible, with the Farmers Home Administration, answering calls and discussing the work with Mr. Jay Wiltbank, who has charge of this work and whose office is in Springerville.

5. Annual Conference

The Agent attended the Annual Extension Conference at Tucson, which, in every way, was a wonderful success. We had a lot of information given that was valuable to us, and it was carried out in a very well organized manner.

The Agent spent Monday the 4th on the campus contacting Specialists for the purpose of organizing work for his annual program.

In talking with Dr. Keener, Plant Pathologist, he thought that it best to plant Range or Buffalo alfalfas to control alfalfa wilt.

In talking to Professor Harry Embelton concerning poultry, he thought the Leghorn was still the best layer of any breed.

Also, in talking with Mr. Harvey F. Tate, Extension Horticulturist from the University, concerning the possible varieties of fruit for our high elevations, he thought that grapes, apples, and bush fruits would do well at Alpine and Nutrioso. Mr. Tate thought that we should take fruit wood for propagation of certain apple trees in Richville in February or March.

One Mr. Cox, in Concho, had asked me about propagation of certain fruit trees he has on his place at Concho, and Mr.

Mr. Tate thought it would be much more advisable for him to plant modern trees as they would be easier to get and much quicker to get started than to propagate the older varieties.

It was agreed that we would put on home beautification meetings this spring in the County, and that he, Mr. Tate, would talk to our 4-H Club Members at Alpine, who are going to do a lot of home beautification at that place.

Since DDT seemingly kills off certain fruit tree parasites that attack other fruit tree insects we are wondering if we should spray with DDT this coming year. We decided that we should take this up with Dr. J. N. Roney, Extension Entomologist from the University, and follow his recommendations.

Mr. Tate thinks we should continue with our club work in Round Valley in horticulture, and follow through with both the 4-H Club Members and the public, to see that they pruned the trees properly; sprayed them properly; thinned the fruit out where necessary; and market them according to modern methods.

It was agreed between Mr. Tate and the Agent that these demonstrations and various steps in horticultural work would be carried out this year.

Mr. Tate thought that we should produce a lot of beans, sweet corn, melons, and other crops such as these, and have roadside markets in this County.

In talking with Mr. James E. Middleton, Extension Irrigation Specialist, on the ditch work to be carried out in Apache County this coming year, it was agreed that we would weir all of our ditches for the purpose of finding out the amount of water we were losing so that we could make recommendations as to what should be done in order to save this water that is being lost.

Mr. Middleton wanted to know what kind of work Adelbert Nelson, Springerville, wanted done and what kind of outlets in the ditch he wanted, and would the ditch be level from the bank on the north side to the river on the south side.

Mr. Middleton felt that he could come up in February if Mr. Nelson wanted him to come at that time to help out with the work.

Dr. Wm. J. Pistor, Animal Pathologist, indicated that he would come up in June or July and give lectures on animal diseases and on supplemental feeding of cattle with salt mixed in. It was my understanding that he would bring his two Assistants with him and give our people several phases of animal problems that they are working on at the University at this time. Dr. Pistor recommended at this time BHC for ticks in horses ears.

Mr. W. R. Van Sant, Extension Poultry and Dairy Specialist,

was very much interested in our dairy and poultry program in this County and thought he could make one trip up this year to discuss the various phases of dairying and poultry with the farmers of this County. He thought that good milk, properly bottled and cooled, could pretty well be marketed with delivery twice a week.

In talking with Mr. Charley Ellwood, Extension Agronomist at the University, concerning field crops, it was thought that we should have two farmers work on a corn contest. Mr. Ellwood agreed to furnish rules and regulations in this contest if the Agent could secure the cooperators. If there is enough interest in this work he thought it worth his while to help out with it.

In talking with Dr. W. T. McGeorge and Dr. Wallace Fuller, they were very cooperative in their attitude toward our problems in the County, and they would do everything they could to find some time this spring or summer to come up here to help out with our problems. The main problem was to get mileage in order to make the trip. Dr. Fuller thought he could come up anytime after February.

At this Annual Extension Conference some of the suggestions made in 4-H Club work were that in selecting 4-H Club Leaders it was very important to make the Leaders know that it was their responsibility for the club work. It was stated that completions were low because it is hard to fill out the club report book, and the stories are sometimes hard to write.

The parents attitude toward the 4-H Club was very helpful and parents should attend club meetings. We should be sure that all club members want club work before they join up in the club. Good Leaders will help in this immensely, and we must get the parents interested in club work. The record books should be as simple as possible.

Good leadership means good completions, and the large sized clubs are not considered too good.

All rural communities should have 4-H Club work.

In the beginning when the club work is planned at least two or three parties should be planned into the program, and a committee appointed to take care of each party.

Our 4-H Club Leaders should have - First - More completions - Second - Every 4-H Club Member enrolled - Third - Best time for Leaders meetings is when you can get them out, and before they hold any club meetings. - Fourth - The Club Leaders should know the policy requirements of 4-H Club work. - Fifth - Present the leaders with plenty of club material. - Sixth -- Give them all they can take to put the work over. - Seventh - Have talks short and interesting. - Eighth - Club program planning must be done. Ninth - Letters and information should be given out each month. Tenth - Junior Leadership should be developed. - Eleventh - Junior Leaders and Leaders should be given the same information. Twelfth - Should have a judging field day.

Mr. K. F. Warner, stated that our plan of work should be useful and have local support. The plan of work should give what the County wanted and should meet the needs and wants of the people of the County.

The following outline on weed control was given by Howard Cords, Assistant Agronomist:

Sorghums:

1. Annual broad-leaf weeds

3/4 to 1 pound of 2,4-D per acre - use Sodium Salt or amine formulations - spray when weeds are young.

2. Perennial weeds such as white horse nettle or bindweed:

1 to 2 pounds 2,4-D per acre - use esters or amine formulations - esters at the lower rates, amines at the higher rates. Don't use esters if susceptible crops are within one-half mile of sprayed area.

3. General Precautions:

Spray sorghums only after they are 6 to 8 inches in height but not after booting has begun. Spraying is again safe after the grain has reached the soft dough stage. To avoid draft to susceptible crops, use relatively low pressures and high volumes. Low volume spraying if pressures are sufficiently reduced and volumes below about thirty gallons per acre are not used. Keep the spray boom low. Hoods over the spray boom will help minimize draft.

Corn:

See recommendations for Sorghums.

Small Grains:

Use 3/4ths to 1/2 pounds 2,4-D per acre (amine or sodium salt formulations) depending on severity of weed infestation and species present. Spray in the tillering stage of grain or after grain has reached soft dough stage. Spraying in the very early jointing stage is permissible if weed infestation is severe. Especially avoid seedling, boot and heading stages. 2,4-D is most effective when weeds are young. Use the higher rates when weeds have reached advanced stages of maturity. Observe the precautions previously mentioned.

Alfalfa:

The use of certain general contact herbicides during the winter dormant period has successfully controlled annual weeds and a few shallow rooted perennials. Selective dinitro

sprayed may be used in seedling alfalfa to eliminate certain broad-leaf annual seedlings.

6. Safety

For the purpose of giving the public and our 4-H Club members information on safety devices around the home, and prevention of fires both around the home and in the County as well, Mr. A. B. Ballantyne, Rural Sociologist from the University, was in the County for two days helping us with this work.

He gave illustrated lectures on safety and fire prevention. At St. Johns we had thirty-one (31) present, at Nutrioso we had twelve (12) present, and at Alpine we had sixty-one (61) present.

We sent out four circular letters on safety during the year with a total of one thousand and sixty-one copies mailed out.

Regardless of all the work that we put out on safety and prevention of fires, we still had fires in the County as the following pictures show. (Figures Number 20, 21 and 22):



Figure No. 20

Results of a Fire in St. Johns,
1951.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona

St. Johns, Arizona

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

Agricultural Extension Service
Home Demonstration Work
County Agent Work

March 10, 1951

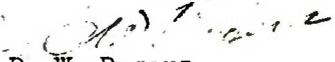
TO: The People of St. Johns

SUBJECT: Farm Safety Program

Mr. A. B. Ballantyne, Specialist in Rural Sociology from the University, will give a movie and an illustrated lecture on Farm Safety at 7:30 P.M. March 12th at the St. Johns High School.

We feel sure that this program will be worth a great deal to you and your children and something you cannot afford to miss.

Yours very truly,


D. W. Rogers
County Agent

DWR/nd



Figure No. 21
Results of a Fire at Nutrioso, 1951.



Figure No. 22.
What was left of the St. Johns Independent
News Office after a Fire in 1951.

7. War Board

We have attended four War Board meetings at which time
mainly we discussed the advisability of deferring some individual
from the War.

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April 4, 1951

IT'S EITHER CLEAN-UP OR BURN-UP.

With farm fires starting somewhere in the Nation every 15 minutes snuffing out 3,500 lives annually and causing property losses of about \$100,000,000, farmers are urged to follow the 7 Point Program as stated below:

(1) remove trash of all kinds--old magazines, newspapers and rags and turn them in for salvage; (2) clean stoves, lamps and lanterns; (3) clean and repair electrical equipment and farm machinery; (4) recover flammable roofs with a fire-resistant material such as asbestos, metal or asphalt; (5) clean heating plants and chimneys; (6) store gasoline and kerosene away from main buildings, preferably underground; (7) inspect buildings and make needed repairs promptly for fire safety and for economical production.

Chimneys should be cleaned every fall because the accumulation of soot can cause a chimney to spew sparks which may be blown long distances causing fires to start.

Unlike the city dweller with a fire department as near as the telephone, farmers often must depend on their own defenses, and there is no better time than spring clean-up week to insure against fires.

Yours very truly,

D. W. Rogers
D. W. Rogers
County Agent

DWR/nd



COOPERATIVE EXTENSION WORK
IN
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July 13, 1951

FARM SAFETY PRACTICES

The 1951 theme for agriculture is "Adopt Safety Practices", as agriculture lost 17 million man days last year due to farm accidents.

1. ON THE FARM
 - a. Handle animals with caution.
 - b. Operate tractors safely.
 - c. Use the right tools for the right job.
 - d. Keep machinery in good repair and use all safety devices.
2. IN THE HOME
 - a. Apply first aid promptly.
 - b. Be "firesighted."
 - c. Watch your step - to prevent falls.
3. OFF THE FARM
 - a. Treat guns as though they were loaded.
 - b. Know and obey all traffic safety rules.

Secretary of Agriculture Brannan stated that each year farm people suffer about 18,000 deaths and 1,500,000 disabling injuries due to accidents.

Unprecedented changes affecting man power on farms have taken place in the last ten years. During that period the number of farm workers had decreased by over 1,000,000. More than twice as many tractors and trucks are now used on farms and only half as many horses and mules. Eighty-six per cent of all farms are now provided with electrical service. Due to this increase in mechanization, together with better varieties, better methods and other factors, the output per man-hour is 50 per cent higher than it was as recently as 1937.



Yours very truly,

D. W. Rogers
D. W. Rogers
County Agent

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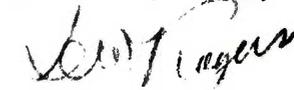
August 8, 1951

TO: The People of Apache County.

SUBJECT: Blasting Caps.

As a follow-up on Fire Prevention Week you will find enclosed herewith a little material on Blasting Caps, which I am sure the seriousness of which should be called to the attention of all of us.

Yours very truly,



D. W. Rogers
County Agent

DWR/nd
Enclosure