

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

O F

J O H N L . S E A R S

C O U N T Y A G R I C U L T U R A L A G E N T

G R E E N L E E C O U N T Y

A R I Z O N A

From December 1, 1948, to November 30, 1949

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I. HIGHLIGHTS

Problems Deter- mining Extension Program

The program of Extension work in Greenlee County in 1949 was largely determined by the needs and problems of its farmers and ranchers. Ranchers had plenty of feed for the cattle on hand but were worried over the problem of predatory animals and poisonous weeds. Cotton farmers had an ample supply of river water for irrigation throughout the year but they were looking for a cotton that might yield heavier than WR 1517 Acala and would be easier to pick. Farm labor was a problem during the cotton picking season. Insects gave the cotton farmer considerable trouble and every farmer wanted some way to control the great growth of weeds. Poultrymen were plagued with diseases of all types. Hog cholera menaced the county's hog production on three different occasions. Orchardmen wanted instruction on pruning and the care of their orchards. These problems and needs were met by the Extension Service through a program of education accomplished by result and method demonstrations, newspaper articles, circular letters, bulletins, radio talks and personal visits.

Cotton Variety Test

A cotton variety test was established on the O. W. Claridge farm, Duncan, Arizona. Eight different varieties of cotton were planted including WR 1517, the variety now raised in Greenlee County. These plots were not planted on wilt infested ground so the WR 1517 had no advantage as to its wilt resistance. These plots were carefully watched throughout the year by every cotton farmer in Greenlee County. Over 50 farmers made visits to the plots at different times during the year. The plots were all picked and weighed at harvest time. The results were quite astonishing. The WR 1517 was ahead of all other varieties in yield. These results were published in the local newspaper and many farmers who might have changed to another variety of cotton were sold on WR 1517.

The Duncan Valley Pure Seed Association held its annual meeting March 3, 1949 at the Franklin School. Dr. J. N. Roney, Extension Entomologist, showed a colored movie on cotton insects. Mr. J. T. Stovall of the 1517 Cotton Association talked on the merits of the 1517 program. 38 cotton farmers attended this meeting.

Cotton Fertili- zer Test

A cotton fertilizer test plot was established on the Gene O'Dell farm on April 18, 1949. Ammonium nitrate and treble super-phosphate were the commercial fertilizers selected for trial on these plots. The owner noted that the plants treated with the nitrogen fertilizer was healthier appearing and had a higher boll count than the control or that treated with treble super-phosphate. The owner was unable to get pickers and had to harvest the plot with a mechanical picker so no accurate weight data was obtained.

I. (Cont.)

Cotton
Insects

The agent took cotton insect counts daily starting on July 15, 1949 and made a weekly report to the State Extension Entomologist. Thirty farmers were instructed by the agent on the correct method of taking insect counts and advised on the proper insecticides to use. Six farms were dusted by airplane for lygus and stink bug control. Two farms were hand dusted for boll worm control.

Tent
Cater-
pillars

The agent in cooperation with the Duncan Fire Department and City Council sprayed the cottonwood trees in Duncan, Arizona with a solution of 50% wettable DDT at the rate of 6 lbs. to 100 gals. of water for the control of tent caterpillars. This spraying was done on April 20, 1949. Very good control was obtained with one application. The City Council plans to spray each year as a regular part of an insect control program.

The Duncan Methodist Church was chosen as a yard beautification project for 1949. In cooperation with Mr. Harvey F. Tate, Extension Horticulturist, the agent landscaped and helped set out the shrubs on this project. Today this church yard is admired by all. Some 50 home owners have looked the yard over for ideas on their own landscaping problems. The Rotary Clubs annual spring tree planting drive was sponsored by the agent. Thirty shade trees were set out during the campaign.

Cattle-
mens
Meeting

The Greenlee County Cattlemen's annual meeting was one of the outstanding events of the year. Over 200 cattlemen, their wives and families met at Apache Grove on Friday, August 19, 1949. After a real feed of barbecued beef and everything that goes with it, the cattlemen settled down to business, elected officers and talked over the 1950 program. Better public relations will be the aim of all cattlemen in 1950. "Let the people know the cattlemens side of the story".

Poison
Weeds

Cattlemen on the Lower Blue River lost from 35 to 40 head of range cattle within a weeks time. The agent investigated the ranges and looked over the cattle for the cause. Every kind of weed available was gathered and analyzed. The losses were attributed to two weeds - burro weed and antelope horns. No losses occurred after the animals were removed from the area where these weeds were prevalent.

Orchard
Manage-
ment

Pruning demonstrations were held at Eagle Creek and in the Duncan and Clifton areas by the agent and Mr. Tate, Extension Horticulturist during March, 1949. 47 persons attended these tree and shrub pruning demonstrations.

I. (Cont.)

Alfalfa
Variety
Test

Safford Common alfalfa seed has been the seed planted by most Greenlee County farmers for a number of years. Many farmers wondered what the advantages of some of these other types of alfalfa might be so the agent established a test plot on the O. W. Claridge farm to make the determination. Types planted were Chilean, Reg. African, Cert. Indian, Cert. Chilean, Reg. Hairy Peruvian. These were compared with Safford Common. These plots were planted March 17, 1949 and until November 1, 1949 no significant difference in yield could be determined. Winter killing will be checked during the 1949-50 winter season.

The agent assisted the farmers of Greenlee County in procuring the following registered sires during the past year.

Better
Sires

- 4 registered boars
- 2 registered gilts
- 1 registered ram
- 2 registered dairy bulls

Good sires will improve the quality of livestock raised and the income of those who own them.

Greenlee
County
Fair

The Greenlee County Fair was held October 14-15-16, 1949 at Duncan, Arizona. There were over 2,000 exhibit entries in Domestic arts, Horticulture, Field crops, School exhibits, Livestock, Dairy and Poultry departments. It is estimated 3,500 persons visited the exhibits during the three day period. A new \$9,600 exhibit building along with many more improvements in the poultry and livestock buildings added to the fairs success. The fair was declared by many who attended every county fair in the state as the best county fair in the State of Arizona. Top exhibits went to the State Fair for more honors and blue ribbons.

Safety
and
Fire
Preven-
tion

Safety and fire prevention were emphasized during weeks set aside for that purpose by radio programs, newspaper articles and personal contacts. Throughout the year farmers were continually urged to make their farms safer by eliminating hazards. Fire Prevention was especially emphasized during the cotton harvest by getting farmers to put signs on their cotton wagons "No Smoking". Only one fire in a cotton wagon was reported this year compared with 6 last year.

Farm
Labor

Cotton farmers experienced one of the most difficult seasons to get their cotton crop harvested of any season todate. The agent called a meeting of growers and representatives of the U. S. Employment Bureau at the beginning of the harvest to work out some plan whereby pickers might be procured. A few pickers

I. (Cont.)

were recruited but most of the picking was done by local labor, school children and one mechanical picker. It is estimated 2800 bales will be ginned this year compared with 3300 in 1948. An early freeze on October 10th made low yields and the pickers avoided the Duncan Valley. Pay ranges were from \$2.50 to \$3.00 per 100 lbs.

Wine
Diseases

Hog cholera broke out among the hogs feeding on garbage at the Clifton dump. The agent had the owner immediately separate the affected animals. The owners and all other hog owners in the vicinity were taught how to vaccinate. All of the hogs were vaccinated with serum and virus, with a loss of only six pigs of the 150 infested. All hogs fed on garbage at the Clifton dump are now vaccinated for cholera when 12 weeks old.

Informa-
tion
Program

A column entitled "Greenlee County Agent's Notes" appeared every week in the county's only weekly paper the "Copper Era". This column is written by the agent on agricultural subjects and about farmers and ranchers and what they are doing in the county. The agent appeared on Station KGLU Safford, Arizona eight times during the year talking on agricultural subjects, interviewing 4-H members and getting exhibits out for the county fair. 8 columns were written in the "Cattlelog" official publication of the Arizona Cattle Growers' Association which were entitled "The County Agent Speaks".

II. AGRICULTURAL SITUATION

- Land Classification** Greenlee County is made up of irrigated and non-irrigated land. The irrigated land lies along the Gila River which takes in the communities of Franklin, Duncan, Sheldon, York and Guthrie. Irrigation is carried on to a limited extent on the Upper Blue and Eagle Creek areas when the water is available. This irrigated land totals about 5,000 acres, 2,000 of which is planted to short staple cotton, 1,500 to grains and 1,500 to hay and vegetable crops. All of the non-irrigated area is range land except the mining area of Clifton and Morenci. The ranching area below Clifton is semi-arid and requires good rainfall to make good production. The area above Clifton is brushy and can support more cattle during dry seasons. Most of this area is forest.
- Cotton** The principal farm crop is cotton of the WR 1517 New Mexico Acala variety. The Duncan Valley is a one variety valley and is a member of the New Mexico Crop Improvement Association for the production of pure seed. An early frost hit Greenlee County cotton pretty hard. This frost came on October 10th and was down to 22°. It is estimated the crop was reduced 30%. Cotton grown under average conditions in the county usually averages a bale to the acre. Many cotton growers did not make a half bale to the acre this year.
- Onions** Commercial onion growing is one of the valley's chief crops. The Lunts are the chief growers of this product. They grow the Valencia, the White Grano and Yellow Grano. The 1949 season was very good for onion production. Some difficulty was encountered in the planting in February because all of the onion ground had been flooded during the winter and was too wet to work when the normal planting season arrived.
- Some 60 acres of onions were planted and averaged 400 sacks to the acre. Most of the onions were sold to buyers from San Antonio, Texas who trucked them out. The balance was sold to Arizona produce companies. Early onions sold for \$1.65 per sack and never was below \$1.25. Onions require a great amount of water. This year the Gila River never dried up even through the summer months and with a great demand for onions on all markets the onion farmers did very well. Lunts save their own seed and have selected their seed onions for quality. Lunt onions are in demand on all onion markets.
- Alfalfa** 1500 acres of alfalfa averaged 8 tons to the acre. Farmers are turning each year to raising more alfalfa. They have seen its value in soil building and like it for feed. Alfalfa sold out of the field at an average of \$17.00 per ton for all cuttings.

II. (Cont.)

Vegetable Production The amount of vegetable production in Greenlee County is hard to estimate. Nearly every farmer on irrigated land raises some vegetables for his own use or to sell. Our vegetable exhibit at the county fair is one of the finest in the state. Commercial vegetable growing is limited to about 150 acres. Lettuce, tomatoes, chili, sweet corn and melons are the principal commercial crops. These vegetables are sold to produce companies, local buyers and buyers from Safford and nearby communities which raise very few vegetables. The mining towns of Clifton and Morenci are ready markets for vegetable crops.

Small Grain Production Small grains were planted on 1500 acres of irrigated land. Hegari and Double Dwarf Milo were the principal grain sorghums raised. Hegari is still the popular sorghum raised. Hog feeders say they like Double Dwarf Milo the best for feeding. Total hegari acreage is estimated at 1000 acres with the balance of 500 acres in barley and wheat and a small amount of oats. The hegari averaged 2000 pounds to the acre of threshed grain.

Fruit Production Fruit in the Duncan Valley was a very small crop this year. The peach crop was a complete failure. A few weeks of warm weather in the spring brought the blossoms out and one night of frost killed them. The apple crop in the Eagle Creek and Blue area was very good. One rancher sold 800 bushels of Golden and Red Delicious apples in Morenci and Clifton.

Rainfall The 1949 agricultural year was very favorable to both the rancher and farmer. It was not necessary to pump water and there was plenty of rain on the ranges to furnish sufficient feed.

Livestock Production The cattle ranches of Greenlee County play the major role in the livestock production of the county. Calves are sold as feeders at 400-500 pounds. The only feeding projects that are carried on are on a small scale in the Duncan Valley where some grain and cottonseed is available. Sheep raising is not very popular although it is a paying industry. There is one flock of sheep at York and the owner has done very well with them. Crossing Suffolk ram on the Western ewes has proved to be an excellent cross for lamb production. Swine production is becoming more popular in the farming area of the county each year. Duroc-Jerseys are the popular breed. Farmers have found that swine raised on alfalfa pasture and fed hegari and corn make excellent gains and provide a ready market for their crops. Almost every farm and ranch has one or two dairy cows for their own use and some sell their cream which is shipped to Phoenix.

II. (Cont.)

Lunts Dairy at Duncan milk 150 cows and distribute the milk in Lordsburg, New Mexico, Duncan and the nearby towns of Clifton and Morenci. One other dairy of 25 milking cows distributes milk in the Clifton area.

County Agricul- tural Problems

With the drop in general farm prices and the continued high price of irrigation water, farmers who are not operating on a large scale find it necessary to do part time work to maintain their farms and families. Cotton acreages will be cut in 1950 and it will be necessary to change a great deal of the cash crop agriculture to a livestock economy. Dairying would probably be a good livestock enterprise, combined with poultry production and swine production. Most farmers have been so used to raising cash crops which do not tie them down they resent the idea of milking cows twice a day for a living. Depending on a cotton crop as a sale means of income makes a high tension among the community and the farmers as to the outcome of the crop, whereas a balanced farm economy might eliminate this problem. The land is gradually becoming depleted and growing less cotton to the acre each year because rotation practices have been cast aside during the time of good prices in cash crops. Good sires of all types are hard to find. Although during 1949 a number of good sires were bought by farmers in the valley. The ranchers face the problem of high forest range fees with their cattle numbers cut down to the point where losses really hurt. Each year weeds become more and more expensive to get rid of. It is particularly a problem in the onion production industry. WR 1517 Acala has proven in all tests to be superior to other types of cotton for this valley but it needs to be bred up for early maturing. The frost date was October 10th this year and the 1517 cotton wasn't far enough along to escape damage. Each year it becomes harder to get cotton pickers when the crop needs picking. Farmers lose money in grade and weights by this delayed picking. Pickers go on to larger valleys where the picking is better and lasts longer.

III. ORGANIZATION

Extension Organiza- tion

The office of the Agricultural Extension Service is located in Duncan, Arizona. Duncan is the trading center of the farm population of the county and is also easily reached by the ranchers. This office is staffed by a full time county agricultural agent, a home demonstration agent who is assigned to both Graham and Greenlee Counties and a full time office secretary. This office is a meeting place for every farm organization in the county and also serves as a headquarters for the U. S. Employment Service, Social Security and Social Welfare offices. All of the Extension work of the county is carried on from this office.

4-H Club Organi- zation

4-H club work for both boys and girls is an important part of the Greenlee County Extension program. Boys and girls enter in every county, state and national event they are eligible to enter. The agent works very closely with the leaders of these clubs to see that interest does not lag and progress is made in the learning and recreational fields offered by this program. During the 1949 club year 35 boys and girls completed 64 projects in agriculture and home making. Members from this county attended the 4-H Roundup in Tucson, the 4-H camp at Mb. Lemon, the State Fair at Phoenix, and the National Congress at Chicago, Illinois.

Cattle- mens' Associa- tion

The Greenlee County Cattlemen's Association is an organization of cattle ranchers who are banded together to promote their own business as well as the cattle and meat industry as a whole. They elect officers, hold directors meetings and have a annual meeting and barbecue. During 1949 they sponsored a predatory animal control program and a public relations program. The president serves as a director of the state cattle growers' association.

Cow- belles

The Cowbelles are the wives of the cattle growers. They felt they should have an organization too. They elect officers and hold many social events during the year. They help to sponsor the Junior Cattle Growers and every time they hold a meeting there are enough cattlemen on hand to hold a meeting too.

Junior Cattle- men

The Junior Cattlemen's Association is composed of boys and girls under twenty-one who live on ranches. Their work is both educational and social. They send representatives to the state conventions and hold dances and social events throughout the year. They hold an annual meeting and elect officers. A program for the meeting is arranged and business for the past and coming year is discussed.

III. (Cont.)

Pure Seed Associ- ation

The Duncan Valley Pure Seed Association was organized to provide an organization for the handling of pure cotton seed and improving the quality of cotton produced in the valley. A storage house was purchased in 1948 and growers who participate in the pure seed program store their seed there. The organization handles the sale of seed. Each year an annual meeting is held in March and a committee is elected to head the pure seed association. This association is a great benefit to the cotton farmers of the county. Besides providing good seed each year this committee handles farm labor problems and sets up policies for the county agent to follow in his cotton Extension program. A representative of the organization is on the Board of Directors of the 1517 Association with headquarters at New Mexico A & M College, State College, New Mexico. Each year at the annual meeting some outstanding speakers on cotton problems from the University of Arizona or New Mexico A & M are procured for cotton information. During the 1949 year the association voted to drop their membership in the Arizona Crop Improvement Association and join the New Mexico association because they had always raised 1517 New Mexico cotton and sold most of the seed in New Mexico. They felt that joining the New Mexico Crop Improvement Association might be of some advantage.

Fair Com- mission

The Greenlee County Fair Commission consists of five men and one woman. They are appointed by the County Board of Supervisors to put on the fair. They meet at such times during the year as deemed necessary by the Chairman to promote the business of the fair. The agent has met with this board at each meeting in an advisory capacity.

The Extension Service cooperated with all these organizations by helping to arrange programs, sending out meeting notices and handling some of their secretarial work.

IV. INFORMATION PROGRAM

Radio

There is no radio station at the present time in Greenlee County. Plans are being made however to build a station at Clifton which is 35 miles northwest of Duncan where the Agricultural Extension Service office is located. The principal station covering Greenlee County is KGLU located in Safford which is 42 miles distant. Station KGLU has been very cooperative with the Extension service in regard to public service programs. During the year the agent appeared on a Saturday afternoon 15 minute program five times alone and three times with Mr. Steve Owens and Lois Harrison, home demonstration agent for Graham and Greenlee Counties. The subjects talked on varied with the season. The agent found when appearing alone on a 15 minute program, the question and answer type of program broke the monotony of one voice over this long period. The questions were current in the county and answered by the agent. On occasions when the agent went on with Mr. Owens the subjects varied from hog production discussion to county and state fairs. During the year ten 4-H members appeared on radio programs with the agent in regard to state events and 4-H projects. Station KGLU has very good coverage in this area and is a valuable part of the information program. The biggest drawback to a more aggressive information program by radio is the distance involved in traveling to the station 42 miles away and back just for one broadcast. The agent will endeavor however to participate in radio programs whenever possible and travel permits.

Press

The Copper Era published in Clifton weekly is the only newspaper in the county. The agent started a column in that paper in June, 1948 and this column has appeared every week since. This column is entitled "Greenlee County Agent's Notes". It contains notes of current interest concerning agriculture in the county, human interest stories and important information to farmers, ranchers and home owners on agricultural subjects. The agent wrote 8 columns during the year in the section of the "Cattlelog" the official publication of the Arizona Cattle Growers' which is entitled "The County Agent Speaks". Articles and pictures concerning 4-H members were sent to the Arizona Farmer and local papers for publication. The value of newspaper and column writing can not be over emphasized in Extension work. Every day since I started my column someone comes to me and says, "I read that in your column". Mr. Al Fenn, editor of the Copper Era, has been especially helpful in getting news items in the paper concerning Extension work. The local editor of your paper is a good man to know. During the past year some of the Extension specialists have helped the county agents with news topics by sending out timely hints that could be used as local material for column and news stories.

IV. (Cont.)

- Circular letters** Over 300 copies of circular letters were sent out to farmers and ranchers during 1949. One letter urged the cotton growers to make preparations for buying registered or certified 1517 cotton seed. Another letter was to the ranchers telling them it was time to spray their cattle. Each of these letter was "dressed up" and made more appealing with cartoon drawings.
- Colored slides** Mr. Joe McClelland took pictures at the Greenlee County Fair and during the 4-H Roundup at Tucson. All of these pictures were made into colored slides. On ten different occasions during the year the agent appeared before civic clubs, farmers organizations and 4-H clubs in the county showing these slides, and giving talks on Extension work. Colored slides certainly add to the effectiveness of an Extension program. The Greenlee County office of the Extension service does not have a camera for doing this type of work.
- Pictures** Pictures of 4-H groups and individuals winning county and state awards were used in local papers and national magazines during the year. On two occasions a picture and a story written by the agent appeared in the Duroc News. Mat service given by the information department of the Agricultural Extension Service, University of Arizona, Tucson, Arizona, has helped a great deal in getting pictures in the papers. During National 4-H Week the agent used a group picture of the 4-H delegation to the Roundup to make up a poster for a window display at the Duncan Drug Store. The poster attracted a great deal of attention because people all like to see who is in a picture.
- Posters** Posters have been used most extensively in Fire Prevention and Safety campaigns. The organizations who make up these posters do a fine job of portraying the thought they wish to get across to the Public. These posters were placed in office buildings, cotton gins and in central meeting places. The agent watched these posters after putting them up just to see how many people looked at them. The count run as high as 75% on a Fire Prevention poster which was very ghastly and sensational.
- Information program importance** As the Extension Service expands each year in its scope of work, it becomes more and more necessary to rely upon newspapers, radio, posters and pictures to put the necessary information in the hands of the Public. Farmers want information on their farming and the rest of the people want to know what we are doing to earn our money.

AGRICULTURE

Greenlee
County
AGENT'S
NOTES



JOHN L. SEARS

COMING EVENTS

March 3rd — cotton growers meeting — Franklin School, 7:30 p.m.

March 4th—pruning demonstration—Eagle Creek, 1 p.m., Gruwell Ranch.

March 5th—pruning demonstrations—Duncan.

March 8th and 9th—4-H sponsored show at the Duncan Theater—"Buy your tickets from a 4-H'er"

The Duncan Theater is behind the 4-H program in Greenlee County 100%. To help celebrate National 4-H Club Week, the shows on March 8th and 9th will be dedicated to 4-H. The clubs will receive 50% of the ticket sales made by the boys and girls. Bill Sprowles, manager of the Duncan Theater says, "I hope the kids sell every ticket to the shows."

Garden Tips

Tomatoes are the queen of crops in the home garden. Plant as many as you have room for. Improved Marglobe is still one of the best with resistance and good quality. Pearson is a heavy producer with a vigorous plant. Morses' 498 is about the best for the early crop. The plum and pear tomatoes are very hardy and good eating whole or in salads. The Pasadena or Beefsteak are large, late, and inclined to be rough.

Greens from the Spring garden are easiest to grow as chard, leaf lettuce, mustard or tendergreen. The chard will live all summer. Use the tops of turnip and beet greens, they are full of vitamins.

Prune deciduous trees and shrubs before the sap starts running. In pruning shrubs or fruit trees, be careful not to remove the limbs or branches that bear the flowers or fruit buds.

The Duncan Wildcat 4-H club judged fat steers at the Stanley Coon farm Friday, February 18th. Stanley certainly has some nice looking animals in his feed lot. They are all purebred stock and it sure made tough judging for the boys when we got four of just the average run of steers together.

Joe Moffett has a nice bunch of baby chicks on hand, all from the Tucson Hatchery which has the national reputation of being one of the best hatcheries in the United States. Poultry and poultry products are always in demand in this part of the county. If you don't care to sell eggs its always nice to have good fresh eggs of your own and a chicken to kill once in a while.

BULLETINS

Pruning Hardy Fruit Plants.

Lawns of Arizona

"Write for these bulletins now!"

AGRICULTURE

Greenlee
County

AGENT'S
NOTES



JOHN L. SEARS

Did you ever hear of a hereford hog? There really is a breed of hogs that have a registry of their own and are called herefords. They are marked just like a hereford beef animal and are very good hogs. Jim Stacy has been a breeder of hereford hogs for some time and now has some to sell including 25 weaner pigs, 10 head of 100 lb shoats already to start feeding and 4 brood sows. He'll deliver these pigs right to your door.

Jesse Stacy was in the other day and said the coyote bait that was put out this year really did a good job. He said at one station they found where 39 coyotes had ate on the poisoned carcass.

GARDEN TIPS

In selecting vegetable and flower varieties for the home garden, use the standard or proven varieties for your area. Don't be misled by pretty pictures or descriptions of plants that have not been tried out. It is a good idea to try some of these new varieties each year on a trial basis, but for the main food supply or blossoms for the home, stick to the hardy, proven varieties.

Fruit trees that have not been fertilized this spring should be given some nitrogen fertilizer right away. This is particularly true for trees that didn't make a growth or bore crops of small or undersized fruits. For mature trees use five pounds (5) of ammonium sulphate or sodium nitrate; or three pounds (3) of ammonium nitrate. The fertilizer should be spread evenly on the ground under the tree, extending eighteen inches from the trunk to two feet beyond the "drip" or ends of limbs. Irrigate thoroughly as soon as the fertilizer is applied. Barnyard manure is excellent as a mulch, but unless disked into the soil it rots or decomposes slowly.

Do not attempt to move deciduous trees, shrubs or roses after the plants have put out the leaves. Wait until the fall or winter when the plants are dormant.

Trailing jasmine is one of those early spring blooming shrubs that can be pruned, thinned out, or cut back as much as you wish. The new growth will come out im-

mediately and be green in summer. This new growth will produce the blossoms next spring.

As soon as the rose bushes begin to produce buds, watch out for aphids and thrips. Control these pests with nicotine sulphate. If the temperature is under 75° F. use an equal part of household ammonia to nicotine sulphate. Also it helps to use warm water and spray in the warm part of the day.

V. PROJECTS

A. Farm Crops

(1) Cotton

Cotton Acreage About 2,000 acres of irrigated land in the county was planted to cotton this year. With the exception of forty acres the entire crop was one variety, namely WR 1517 Acala. Forty acres of San Tan was planted by Archie O'Dell of Duncan.

Cotton Production Very few plantings were made before April 19th. That spring was very cold, followed with a cool summer with plenty of irrigation water from the river available. Some of the farmers irrigated so much their cotton turned yellow. Stalks made great growths and many of the farmers irrigated even after the 18th of September because the water was available. A hard freeze on October 10th hit the cotton crop hard. Many bolls which would have opened within a week did not open at all. On the steeper ground where the water did not penetrate so well and the cotton matured early lots of fields went a bale and a half to the acre. Some of the lower fields on the river bottom that escaped the early freeze produced from a bale to a bale and three-quarters to the acre. An early maturing cotton is an essential in this county, that is why 1517 cotton has proven to be the best all around cotton in past years.

Past History Many different types of cotton have been tested over a period of twenty years starting back in about 1926 to determine what cotton was best adapted to the climate and altitude. The New Mexico strain of WR 1517 Acala has proven to be the best. In 1946 a Pure Seed Association was formed called the "Duncan Valley Pure Seed Association" to promote the production and sale of certified and registered WR 1517 Acala seed. In 1948 the 1517 Association entered the Lint Certification program. This is a program designed to let the mills know just exactly what they were getting and put a premium on 1517 cotton. Insects have never been a major problem up to the 1949 season.

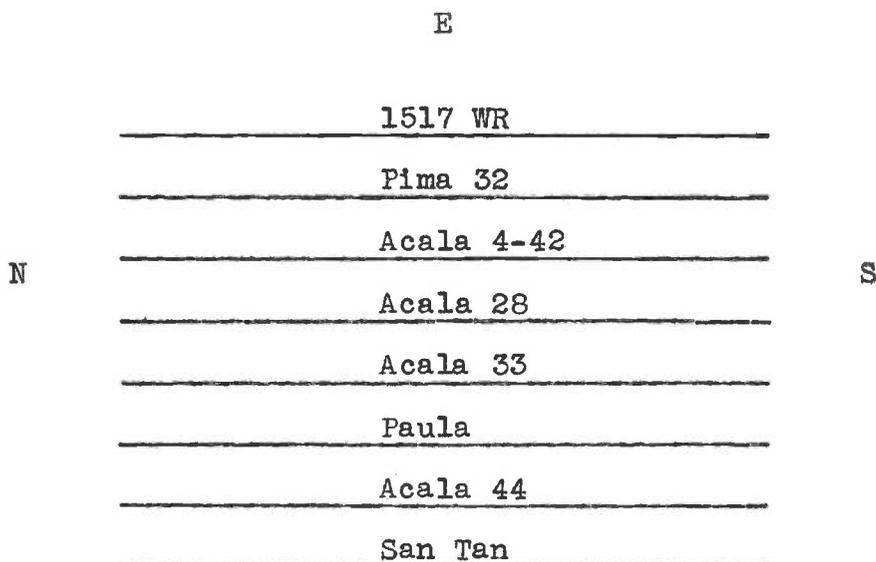
Insect Damage Lygus and Stink bugs started appearing in the cotton fields in harmful numbers about the 15th of July. The agent kept a close count on heavily infested fields. It was necessary to have an airplane come in and dust in the Franklin area. Stink bugs on the Howard Sexton farm ran as high as 10 to 100 sweeps. This farm is right on the desert and of course was hit harder because the stink bugs left their desert foliage at this time for better feeding.

V. A. (1) (Cont.)

- Annual Meeting** At the annual meeting of the Duncan Valley Pure Seed Association held March 3, 1949 at the Franklin School House, Dr. J. N. Roney, Extension Entomologist, showed a picture on "Cotton Insects" and answered questions on cotton insect control. O. W. Claridge, Kenneth Lunt and Jewell O'Dell were re-elected to head the Pure Seed Association. The cotton growers voted to drop from the Arizona Crop Improvement Association and join the New Mexico Crop Improvement Association. The Duncan Valley Pure Seed Association is now a member of the New Mexico Crop Improvement Association. The members thought this might improve the 1517 seed sales and they would be allied with the association who does the improvement work on 1517 cotton.
- Foundation Seed** 500 lbs. of WR 1517B foundation cotton seed was allotted the Duncan Valley Pure Seed Association this year. Harvey Gardner reported on November 1st that his 10 acres of foundation cotton had produced almost two bales to the acre. This seed will sell as registered seed in 1950.
- Cotton Ginning School** On March 11, 1949 the agent attended a cotton ginning school at Phoenix, Arizona. Jack Lunt of Duncan represented the Duncan Valley Gin Company at the meeting. The meeting was very instructive and the engineers from the USDA gave a complete report of the latest development in cotton ginning.
- Cotton Loan Program** Cotton seed was supported by government subsidy for the first time this year. The government supported the program at \$46.50 per ton. Seed was stored in warehouses in the Duncan Valley. Cotton was sold almost entirely outright to buyers. Only in a few cases was cotton put in government loan. This was attributed to the fact that the Duncan Valley is a one variety district and that 1517 cotton is in demand by the spinners.
- Cotton Variety Tests** In cooperation with Mr. O. W. Claridge of Duncan, Arizona a result demonstration on cotton varieties was established on his farm two miles west of Duncan on April 19, 1949. The varieties planted were San Tan, Acala 44, Paula, Acala 33, Acala 28, Acala 4-42 and Pima 32 along with control plots of Acala WR 1517. Each plot consisted of 8 rows each with the exception of the long staple Pima 32. The purpose of this variety test is to show the people of Greenlee County who might be interested in other varieties just how they compare with 1517 wilt-resistant cotton. 1517 cotton has been the popular variety here because of its resistance to Verticillium wilt and its adaptability to the altitude and season. Most of the varieties

V. A. (1) (Cont.)

planted have no resistance to wilt and generally do well at lower altitudes. A diagram of the test plot follows:



W

Cotton
Variety
Test
Results

On October 30th the test plots on the Claridge farm which were planted April 14th were picked and weighed. All these plots consisted of 8 rows of the various types of cotton which were approximately 600 ft. long. These plots were all planted on the same day and all picked on October 30th.

<u>Type</u>	<u>Weight</u>	<u>Comments</u>
WR 1517	876 lbs.	Hard to pick
San Tan	528 lbs.	Easy to pick
Acala 44	480 lbs.	Hard to pick
Paula	832 lbs.	Easy to pick
Acala 33	652 lbs.	Easy to pick
Acala 28	568 lbs.	No report
Acala 4-42	672 lbs.	Easy to pick
Pima 32 (long staple)	Did not open	

Before this cotton was picked the 4-42 looked like an outstanding cotton. The 8 rows where this was planted was a white mass as compared with the 1517. The above figures show that 1517 on equal basis will pick out the heaviest of any of these cotton types. In addition it is a wilt-resistant cotton. A heavy freeze hit most of these cotton plants on October 10th and did considerable damage. The Paula cotton was the heaviest yielder of the new varieties tested but University tests have indicated in the past it is a low grading cotton.

V. A. (1) (Cont.)

Fertilizer On April 18, 1949 a fertilizer result demonstration was established on the Gene O'Dell farm Franklin, Arizona. Fertilizer was applied on 1517 WR Acala cotton. The fertilizer used on this plot was ammonium nitrate 33-5% and 47% treble super phosphate. Both of these fertilizers were applied at the rate of 150 lbs. per acre. Fertilizer was applied after the ground had been marked, it was applied by hand and placed in the furrow of each row fertilized. Some of the fertilizer was applied as straight ammonium nitrate and straight treble super phosphate and other plots were a half and half mixture of each. Some short rows were used and some long rows. The field where the fertilizer was applied is in general quite steep and has raised less than a bale of cotton to the acre for the past four or five years. The owner was very anxious to try some fertilizer on this plot to see what improvement could be made. About half of the fertilizer which originally was intended to be used on this plot was saved to use later on the same rows fertilized as a side dressing after the cotton is about six inches tall.

Results Arrangements were made to have the fertilizer plots hand picked and weighed. When the agent checked on the plots two days later they had all been machine picked and no record made of the weights. The owner stated he could see considerable difference however in the yield on the nitrogen treated plots, but could see no difference on the plots treated with treble super phosphate. This is one of the troubles encountered on some farms when farm labor has to be depended upon to do the harvesting.



Cotton variety test plots with the
Acala 4-42 showing up as a distinct
white strip in the foreground



Prize winning 1517 Acala cotton
at Greenlee County Fair

V. PROJECTS (CONT)

A. Farm Crops

(2) Other farm crops

Farm crops other than cotton totals about 3,000 acres on irrigated land in the county. About 1500 acres of this is planted to hegari, barley, wheat, corn and other small grains. The remaining 1500 acres is planted to alfalfa, permanent pasture, and horticulture crops.

Alfalfa
Variety
Tests

Some variety tests were run on alfalfa in 1947 by Mr. Page who was county agricultural agent at that time. He found very little difference in varieties as to growth, production and winter killing. This year the agent ran another series of variety tests to substantiate Mr. Page's findings.

On March 17, 1949 an alfalfa variety test was established on the O. W. Claridge farm 3 miles west of Duncan. One border was selected for the plots which will be compared with Safford Common alfalfa which is planted on the rest of the field. Five pounds of each of the following varieties were planted: Chilean, Registered African, Certified Indian, Certified Chilean, Registered Hairy Peruvian. A diagram of the test plots follows:

N

Safford Common

W	Chilean $\frac{1}{4}$ acre	Reg.African $\frac{1}{4}$ acre	Cert.Indian $\frac{1}{4}$ acre	Cert.Chilean $\frac{1}{4}$ acre	Reg.Hairy Peruvian $\frac{1}{4}$ acre	E
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S

Results

The Registered Hairy Peruvian was a little coarser stemmed than the other varieties planted. All of the varieties grew very vigorously and had very good color and Mr. Claridge stated he could see very little difference if any in the production of the plots. These varieties will be checked for winter killing during the next season. To date these varieties do not show any advantage over the Safford Common which has been used for planting seed a long time.

V. A. (2) (Cont.)

Grain Sorghums Hegari is the principal grain sorghum grown. It makes a quick growth and has the advantage of making a ton of feed to the acre and can be planted on a field where wheat, oats or barley has just been harvested. To date little work on variety tests has been done in the county. Heaton Lunt planted a field of Double Dwarf Milo last year and he says it makes better hog feed than hegari.

Corn Production Mexican june corn and other white dents have been grown in the Duncan Valley for years because they seemed to make a good growth and mature early. Last year several farmers planted Funk G-711 hybrid corn and exhibited it at the county and state fair. This year the agent convinced 7 of the leading corn growers to plant it because of the added feeding value of yellow corn.

Rotation As the agent addressed farm groups and talked with individual farmers about their land and crop problems, the rotation of crops and the use of legumes as a green manure crop was always emphasized. The trend toward more alfalfa, less cotton and more livestock and grain has started. At least twenty farmers in Greenlee County have told the agent that is their plan for next year.

V. PROJECTS (CONT)

B. Horticulture

(1) Home Beautification

county
situation Although the agents in the past have carried on a continued home beautification campaign there is little in the county to show for their efforts. Lawns have been neglected and shrubs have had very little care. The homes in the Clifton area probably have the best cared for lawns and shrubs while the farm homes in the Duncan area have the poorest yards. Most people feel it isn't worth the effort.

land-
scape
project Through the cooperation of Mr. Harvey Tate, Extension Horticulturist of the University of Arizona, plans for the Duncan Methodist Church were made on March 4, 1949. The grounds were surveyed and plants were recommended for planting and proper placing; to accent points of the building--Arbor vitae, for its evergreenst--Euonymus, and the Pyracantha and Nandina for the red berries. Bermuda grass was recommended for the lawn which will be watered by flooding. All these plants and grasses recommended are suitable for this climate and altitude. This project became an attractive part of the city landscape and as a result Mr. Axton across the street made extensive improvements on his yard and at least 10 other persons improved their yards as a result of this demonstration.

vic
sub
distribu-
tion Through the cooperation of the Duncan Rotary Club the agent purchased shade trees from the Safford Nursery for distribution to the Rotary members with the understanding that all the trees would be planted in the city of Duncan. Trees were sold by the Rotary Club to the members at cost. The trees purchased were the fruitless mulberry and Arizona ash. These trees seem to do the best in this vicinity. The agent pruned the trees before the members received them and gave instructions on how they should be planted.



Pruning demonstration held at the Filleman Ranch, Eagle Creek, by Harvey Tate, Extension Horticulturist, assisted by the agent.



Planting of a fruitless mulberry tree
in the community beautification project
sponsored by the Duncan Rotary Club

V. PROJECTS (CONT)

B. Horticulture

(2) Vegetable Production

- Past Vegetable Production Greenlee County has long been known for its fine vegetables. Altitude and weather conditions are suited to vegetable growing. Marketing of the products grown is more of a problem than the growing of them. On a commercial basis lettuce, melons, and potatoes have been grown on a larger scale. The only remaining large scale vegetable industry is onion growing. Onions are not as perishable as other products and are more easily marketed than other vegetables.
- Marketing Better marketing of vegetables has been emphasized by the agent through radio talks, individual conferences and visual aids. Mr. Heaton Lunt and Mary Lunt and Sons now market their onions in attractive sacks with their names printed on them.
- Onions The Lunts produced 400 sacks of onions to the acre this year on some 60 acres of onions. These onions topped the market in San Antonio, Texas at all times. Onions were in good demand throughout the season and marketing was no problem. They sold at the farm for \$1.65 per sack. A good job of grading and an attractive sack has given them a ready market.
- Tomatoes Tomatoes were in general about half the usual crop this year. Some were hit with blight and others were victims of curly top virus. The agent advised owners to plant their tomatoes by placing two rows together to prevent loss and to plant the Marglobe variety which is resistant to blight. No real cure for curly top virus disease has been found yet but by planting two rows together the losses are fewer.
- Potatoes Less than 500 bushels of potatoes were raised in the county this year. Some early White Rose potatoes were raised in the Sheldon area and sold to local produce companies. Onions have taken the place of potatoes as a vegetable cash crop. Farmers in general felt their losses from grading were too high for the expense involved.
- Roadside Markets The mining towns of Clifton and Morenci afford excellent outlets for vegetable products. On pay-day week-ends the miners purchase everything the farmers have to sell. Highway stands along the road to Clifton did very well selling vegetables but could be improved and made more attractive to customers. Farmers do a good job of raising the vegetables and lose its value by poor marketing methods.

V. PROJECTS (CONT)

B. Horticulture

(3) Orchard Management

uit
dustry

Fruit raising is not one of the leading enterprises of the county. The largest orchards are at Eagle Creek and the Upper Blue where some of the finest apples and pears in the state are raised. Most of these orchards are very limited in size ranging from twenty to fifty trees. In the lower part of the county along the Gila River there are a few peach orchards of twenty to thirty trees. Early frosts in the fall and late frosts in the spring allow a fruit crop about once every three years on the average in the lower county while the Eagle and Blue usually have a pretty fair crop every year. Some pruning work has been done in the past around Duncan but very little has been done in the Eagle Creek district. Mr. C. G. Page, former county agent, did some work on Eagle Creek in 1947-48.

uning
mon-
rations

Mr. Harvey Tate, Extension Horticulturist, assisted the agent on March 4th and 5th with pruning demonstrations at Eagle Creek and in the Duncan area. Demonstrations were on pear, apple and peach trees. Yard demonstrations were also given on pruning roses and grape vineyards. Instruction was given on spraying and orchard thinning. Total attendance at these demonstrations was 47. Mr. W. D. Childress of Duncan was one of the spectators. He pruned his own pear orchard after seeing the demonstrations and reported this years crop of pears was the largest he had ever had. He is thoroughly convinced pruning did the job.

A circular letter was sent to every orchard owner in January, 1949 advising the use of dormant lime sulphur sprays to combat orchard disease and insects.

V. PROJECTS (CONT)

C. Irrigation Practices

Water Supply and Irrigation Practices 1949 was a good year for the irrigation farmer along the Gila River. The river run continuously and very little pump water was used. For several years previous to this year pumping was a necessity and an expensive one too. Many farmers with lots of water in the ditch irrigated their cotton until it turned yellow. They wanted to know what was wrong with this cotton. The agent advised only to irrigate when necessary. The best cotton in the valley was made on two irrigations. Too much water is as harmful as not enough.

Winter Irrigation Winter irrigation for water storage was advised through radio talks, news articles and personal contact. This practice is generally accepted now as a sound measure to insure water storage in the ground where the water is available during the winter months.

High Cost Irrigation is expensive at any time and farmers were advised to make the best use possible of their water by doing a good job of irrigating and leveling the land for efficient use of the water. Land leveling equipment was used on 20 farms in the county.

V. PROJECTS (CONT)

D. Livestock Production

(1) Beef Cattle

The
Beef
Produc-
tion
Picture

1949 was one of the best years ranchers in Greenlee County have had for a long time. Feed was good on all ranges with just enough moisture at the right time to keep it coming on. Calves and yearlings sold straight through in September for 18-20¢ and in October for 22¢. In past years pink-eye plagued all the cattlemen but this year there were very few cases. There were more losses this year however from poison weeds than usual because weeds came up that hadn't been seen in ten years. Cattle spraying was started at the Stacy Ranch three years ago. This year four more ranchers joined the ranks and sprayed some 2,000 head of cattle with very good results.

Range
Types
and
Cattle
Raised

North of Clifton on better range land ranchers stuck with the Hereford while on the southern marginal ranges of the county Brahma and Brahma crosses came into the picture during the year. More and more Angus and Shorthorn beef cattle are being raised on the farms in the Duncan Valley.

Preda-
tory
Animal
Control

The Greenlee County Cattlemen's Association in cooperation with the Fish and Wildlife Service poisoned all the ranges during the 1948-49 winter season for coyotes. Ranchers reported they found as many as fourteen coyotes dead around one station. The lion problem is always a tough one in Greenlee County. The cattlemen in the lion area have added fifty dollars to the state bounty of fifty for every lion killed. This action has brought in a number of outside hunters. Only three lions had be killed up to November 1, 1949 for the year.

Cattle-
mens'
Associa-
tion

The Greenlee County Cattlemen's Association, Junior Cattlemen and the Cowbells are the most active ranch or farm organizations in the county. They held their annual meeting this year at Apache Grove on August 15, 1949. More than 200 persons attended the barbecue and election of officers. Mr. Arthur Wright was elected president, William Edwards-vice-president, and Harvel Cospers-secretary. The agent met with the directors four times during the year and helped them to promote their two projects for the year - namely predatory control and public relations program.

Poison
Weeds

On October 3, 1949 Mr. Jim Stacy of the Stacy Ranch on the Lower Blue reported they had lost in the neighborhood of 12 head of calves and cows in the area covering about 10 acres. He reported that some of the cattle were alive when they found them but were staggering and when they drove them they fell over and died within a short time. The agent called Dr. Lee, EAI, Phoenix

V. D. (1) (Cont.)

for consultation and Dr. Lee confirmed the belief of the agent that it was probably weed poisoning. On October 6th the agent made a trip to the Stacy Ranch and rode out to the area where the cattle were found dead and gathered some 30 different types of weeds, took water samples from the tanks and stomach samples from the cows that had died and sent them all to the University for tests to determine which if any of the weeds were doing the damage. The University identified all the weeds and sent them back tagged with those designated as poison which were found to be poisonous. The particular weeds that seemed to be the most poisonous were burro weed and antelope horns. It was noted at the time the agent and Mr. Stacy gathered the weeds that these weeds were very numerous in the area where the cows were found dead and it was also noted that the cows had been eating on them very heavily. These weed samples were returned to Stacys for their use in identification of the weeds.

Livestock disease, feeding and management problems are constantly a part of the livestock raisers life and it has been the aim of the agent to make these problems easier through information given in circular letters, newspaper columns, radio and personal contact.

V. PROJECTS (CONT)

D. Livestock Production

(2) Other Livestock

- Dairy Production** Greenlee County has only three dairys with over twenty cows, one in Clifton and the two Lunt families in Duncan. The rest of the farmers and ranchers have from one to five milk cows. There isn't over ten farmers and ranchers in the county who do not have at least one milk cow. Most of those having only one or two milk cows have been in the habit of just burning the cows out to a range bull to be bred and consequently the numbers of good dairy cows have not increased. There is a ready market in Duncan for cream which is shipped to Phoenix.
- Dairy Herd Improvement** In an effort to improve the dairy herds of the county the agent procured a thirteen months old Guernsey bull of good breeding for a very reasonable price from Mr. Stockton of Phoenix. This bull was sold to Lunts' Dairy with the understanding they would breed Guernsey cattle brought to them at \$5.00 per service. Some 30 Guernsey cows have been bred to this bull which would have been bred to a range bull.
- Sheep Production** The only flock of sheep in the county is owned by Wilford McGrath of York. These sheep are Rambouillet ewes which have been bred to Karakul bucks for the want of anything better. This year the agent was successful in persuading Mr. McGrath to get rid of the Karakul bucks and purchase a Suffolk ram. The agent procured a very good registered Suffolk ram from Mr. Sangster of Phoenix. Mr. McGrath is very well satisfied with the ram lamb and his lamb crop should show some improvement this year. The lower valley of Greenlee County is very well adapted to small farm flocks.
- Swine Production** Swine raising is confined to one or two brood sows to a farm with the exception of the garbage feeders in the Morenci and Clifton area and a few large hog producers in the Duncan Valley. Duroc-Jerseys are the predominating breed. Some of our hog raisers have cleared as high as \$5,000 a year. With good pork prices and markets hard to find for h加里 and soft corn there is no better way to market it than by feeding. The use of alfalfa hog pasture in the hog program is one of the agents long time projects.
- Swine Diseases and Parasite Control** In May of 1949 a garbage feeder in the Clifton area called the agent for help. His hogs were sick. The agent examined the hogs and informed the owner they all had hog cholera. The agent assisted with the vaccination of these hogs using a double dose of serum and the virus. Only 3 hogs out of 100 died with the

V. D. (2) (Cont.)

disease. Since this time this owner has vaccinated all his pigs at 13 weeks and has instructed three other swine producers in that area the techniques of vaccination for cholera. Vaccination for cholera should be a routine practice on all farms. Sanitation in the hog program for the prevention of cholera, worms and other diseases has been stressed through newspapers, radio and personal contacts. 10 hog raisers used the sodium fluoride method of treating their hogs for worms. This method consists of mixing 1 lb. of sodium fluoride with 100 lbs. of ground feed and feeding it dry to the hogs for a 24 hour period at regular intervals to control Accoris or round worms. The results have been very satisfactory.



A simply constructed but efficient shade for swine. Constructed at the Heaton Lunt farm on the advise of the agent.

V. PROJECTS (CONT)

E. Poultry Production

Poultry Situation Poultry production has been an up and down business in Greenlee County for a long time, with no steady trend. No particular hatchery sold chicks in the county and as a result farmers purchased chicks all over the county with little regard for their breeding or type.

Day Old Chicks Shortly before the hatching season started in 1949 the agent met with Mr. Joe Moffett of the Interstate Farmers Inc. of Duncan and discussed some changes in the procurement of chicks. Some changes were necessary to promote the poultry business in Greenlee County. It was decided to purchase all the day old chicks from the Tucson Hatchery in Tucson, a very good hatchery; that he should purchase enough so that chicks would be on hand at all times to sell and that they would be of all ages and charge the customers so much a day for keeping them. Most of the chicks would be New Hampshire and Rhode Island Reds. During the 1949 year Interstate Farmers sold 8,000 chicks in Greenlee County and plan to sell more this year. This is compared with 2,000 sold in 1948. The poultry exhibit at the Greenlee County Fair was the largest poultry exhibit at any county fair in the state this year.

Poultry Diseases Before the sulfa drugs were discovered most books on publications on poultry disease read like this "separate all those having the disease and use sanitary methods for control of the disease on the remainder of the flock". To-day it is a different story, the sulfa drugs are used extensively in the treatment of poultry diseases and do a fine job of it. Seventy-five flocks in Greenlee County were treated during 1949 with sulfa drugs for colds, coccidiosis, pullorum disease and many other diseases with as low as a 1% mortality rate. The agent in all cases recommended a strict sanitation program which is the basis of all good poultry management. Better poultry disease control has increased the numbers of persons interested in poultry as a major inter-prise on their farms.

V. PROJECTS (CONT)

F. Rodent Control

- Rodent Situation Gophers inhabit the ditch banks, fields and yards of nearly every farm in Greenlee County. It is hard to estimate the total damage done to crops by the rodents because their activities are so scattered and varied. The damage to alfalfa seedings and established fields is the greatest single damage.
- Farm Demonstration The Harlan Price farm near Duncan was chosen as a demonstration on rodent control. One acre of a twenty acre field of alfalfa was completely killed and the holes burrowed in this acre made it impossible to work. On December 22, 1949 the agent held a demonstration on this farm with four farmers in attendance. The gophers were baited with poison barley. In April this plot was checked by Mr. Sharp of the Fish and Wildlife Service. He reported the poisoning a complete success.
- School Demonstration Mr. Sharp of the Fish and Wildlife Service with the assistance of the agent gave a demonstration to 35 high school science class students of the Duncan Union High School on the poisoning of gophers by treating carrots with strychnine. They were also taught by demonstration how to discover the gophers main runways and the correct method of placing bait in these runways. As a result of these students taking the news of this demonstration home to their parents 10 farmers baited their farms for rodent control.

V. PROJECTS (CONT)

G. Weed Control

Weed Control History

The control of weeds by the use of chemicals dates back to the early nineteen twenties when sulphuric acids and salts of various types were used on weeds in Greenlee County. All of this type of control has been limited to small operations and experimental plots. To date satisfactory control of weeds in cotton fields by the use of chemicals has not been found. Cotton is the principal crop in the county and "cotton chopping" by day labor is still the most satisfactory means of getting rid of the weeds. Johnson grass on ditch banks, weeds in onion fields and bindweed patches are the chief cause of concern for weed control.

Weed Control in Onions

On March 29, 1949 the chemical aero-cynate was sprayed on the small weeds in an onion field on the Heaton Lunt farm near Duncan. A 1% mixture was made and a power sprayer as recommended by the manufactures was used. Checks on this plot at two week intervals showed no noticeable results of this early spraying. Weeds are costly to the onion grower and a satisfactory spray would be a lifesaver to the grower.

Weed Control Demonstration Plots

Weed control demonstration plots were set up during the month of July in various parts of the county under every different kind of condition possible. People seemed to be most interested in getting rid of bindweed so the agent chose that weed as the chief objective. A plot of bindweed on the Glen Francom farm sprayed with 2-4D Esteron 44 showed no signs of life three weeks after spraying and by October 10th when the first hard freeze came had still shown no signs of life. Mr. Tom Brown of Duncan gave the same results from a field spraying demonstration held at his farm.

2-4D Esteron 245

The Esteron 245 was furnished by the Dow Chemical Company for experimental work. Mr. Ira Smith of Duncan was interested in getting rid of the bindweed in his yard and his place was chosen for a demonstration plot. The entire lot was sprayed on the 29th of August. At first it appeared as though the grass would be killed along with the weeds. The weeds died out and the grass came back. On October 1, 1949 there was a full stand of grass in the yard and not a sign of weeds.

Other Weed Control Methods

Since all of the chemical weed killers have come on the market farmers have forgotten about the old methods of weed control which include the hoe, weed burning and pasturing. Chemicals do not solve all the problems and good use of ditch bank pasturing by 20 of our leading farmers has helped them to solve their pasture problems and keep down the weeds. Weed burning in the fall after the weeds are dry was practiced on 6 farms in the county.

V. PROJECTS (CONT)

H. Farm Labor

Farm Labor Program

During World War II the farm labor program was handled by the Extension Service. Since that time farm labor has been a function of the United States Employment Commission. Even though the Extension Service has not been held responsible for the farm labor program it has helped the farm labor program in many ways.

The Extension office is used by the U. S. Employment Service with headquarters at Safford, Arizona, one-half day every two weeks on Wednesday for the purpose of interviewing employees and signing for unemployment insurance.

Scarcity

Cotton pickers were harder to procure in 1949 than any other year since cotton became a crop in Greenlee County. On October 10, 1949 the agent arranged for a meeting between the county cotton committee and Mr. Blessing of the U.S.E.S. to work out the farm labor problem. A few Mexican Nationals and some local labor were procured. The O'Dell Brothers of Franklin purchased a mechanical cotton picker which proved quite satisfactory and according to their figures picked the cotton cheaper than hand pickers. Mine workers and school children made up the balance of the labor force. Wages ran from \$2.50 to \$3.00 per hundred weight. 50 pickers were placed on farms by the Extension office.

V. PROJECTS (CONT)

I. Soils

Soil History

The high salt content of pump water which had to be used through the drought years combined with a high demand for cash crops has left the once rich bottom land along the Gila River in a run down condition. Farmers who have kept some livestock through this period and have practiced some rotation of crops have kept their soil in good condition and today their farms are paying off. Many fields in the Duncan area have been in cotton for twenty straight years with nothing done in the way of green manure crops, manure, fertilizations or crop rotation.

Soils Problem Project- Blue

Blue, Arizona is an isolated community in the northern most part of Greenlee County at 6,000 ft. elevation. Twenty families live along the upper Blue River in this community. They all have some cattle and farm along the river bottom. They raise beans, alfalfa, small grains and garden products for their own use. Each farm presents a different soil problem. The agent visited this community in May, 1949 and took 5 soil and water samples on different farms along the river in an effort to determine the needs. Most people thought they needed commercial fertilizers but the tests all showed plenty of the necessary elements available. The agent suggested a better use of barnyard manure and some green manure crops. The irrigation water in this area is of excellent quality and the soil a sandy loam type.

Soils on Frisco River

A new farming project was started in January, 1949 on the San Francisco River 8 miles above Clifton at the site of an old slaughter house on a gravel bed. \$30,000 was spent on the project in grading and putting down wells and installing pumps. Crops were planted and after the first irrigation everything died. The agent was called upon to diagnose the trouble. Soil and water samples were taken. The soil showed only a trace of any of the elements necessary for plant growth. Water was too salty to support any kind of vegetable crop growth. People in that area know now it pays to soil and water analyzed before spending money to improve land.

V. PROJECTS (CONT)

J. Insect Control

- Insects** Cotton insects have not presented too big a problem up to the 1949 season. During the 1949 season over 800 acres of cotton land was dusted for insect control. Insects other than cotton have been on the increase and during the 1949 season presented a real problem.
- Tent Caterpillars** In 1948 a project was started in Duncan to rid the cottonwood trees of the tent caterpillars. The Duncan Fire Department cooperated in doing the spraying and all of the cottonwoods in the city limits were sprayed with arsenate of lead. The results were so good the townspeople wanted it repeated. On April 2, 1949 the agent helped direct the spraying of cottonwood trees for tent caterpillar control. Six pounds of 50% wettable DDT to 100 gal. of water was used. Very good control was obtained. A few caterpillars appeared again in October on some trees that were not sprayed. They were quickly controlled with lead arsenate.
- Garden Insects** Garden insects of all types infested the shrubs, lawns and gardens of Greenlee County farmers and home owners. The agent recommended chlordane dust for the control of ants. Rotenone dust was used in the Upper Blue community for control of the bean beetle. Red spiders were present all season on beans and cotton plants. Dusting sulphur was advised for their control.
- Household Insects** Chlordane was the most effective all around insecticide used for household pests. Restaurant owners in Duncan were advised by the agent to use chlordane dust to get rid of cockroaches. The owners reported in two weeks time there were no signs of any cockroaches. Radio talks, newspaper articles and personal contacts and civic club talks by the agent with the help of Dr. J. N. Roney, Extension Entomologist, were the methods used to promote the fly control campaign. On one occasion the agent met with the City Council of Duncan, urging that the city be sprayed by airplane for fly control. The council turned down the proposal saying, "It was too expensive". No polio cases were reported.
- Live-stock Pests** On January 4, 1949 the agent sent out 68 copies of a circular letter entitled "Cattle Grub Information" to all the cattle growers in Greenlee County. Jess Stacy on the Lower Blue sprayed over 800 head of Hereford cattle during the past year with a mixture of 2 lbs. of 12% gamma isomer wettable powder benzene hexachloride to 100 gal. of water for control of lice.

V. J. (Cont.)

He reports a good killing of lice and eggs and fatter cattle on the market in the fall. Hogs at the Carl Gale farm were sprayed with benzene hexachloride as a 4-H demonstration by the agent. In May, 1949 there were 10 boys and 2 adults present at the demonstration. Mr. Gale reported later it not only got rid of the lice but cleaned up the mange also.

Cotton
Insects

The agent kept close check on all cotton fields in the county after the first lygus and stink bugs were found on July 15, 1949. Weekly insect reports were made to the Extension entomologist and farmers were taught how to make their own sweepings. Three farmers made their own nets. Lygus and stink bug counts ran as high as 10 per hundred sweeps in Franklin and the Apache Grove districts. Airplanes were used to dust. Most of the dust consisted of 10% DDT and 75% sulphur. Benzene hexachloride was used on the stink bugs. This was the worst year in history of cotton insects in Greenlee County. After the bolls set on three fields were hit hard with the bollworm. Very little damage was done to other cotton fields in the area. The fields infested with bollworms were immediately dusted with 1% DDT at the rate of 30 lbs. per acre.

VI. OUTLOOK AND RECOMMENDATIONS

- Acreage Reduction** For the first time since before World War II cotton farmers are faced with a cut in cotton acreage. This reduction will not mean too much to the farmer who raises a few head of cattle, some hogs and does a little poultry farming but to the strictly cotton farmer it will mean a change over in some of his farming operations. Cotton farmers are a little difficult to convince that a few cows might help them to bridge the gap and at the same time build up their land. Irrigation water is at a high price and a cash crop is almost a necessity to meet expenses.
- Rotation of Crops** If the cotton farmers put one-third of their former cotton land in the production of alfalfa for hay and pasture, the total crop of cotton will probably be as great as it was formerly because only the best land will be planted to cotton. In a couple of years the cotton production of the county will actually be increased because of the rotation program.
- Need for Better Sires** During 1949 great strides were taken in the up-grading of grade livestock through the importation of desirable sires of all types. This program must be continued. Farmers and ranchers should be helped and encouraged by the Extension Service to buy the best possible sires for the improvement of their livestock. The breeding of dairy cattle and range bulls should be discouraged. This can be done by getting at least one farmer in each community to keep a desirable dairy sire.
- Cotton** According to variety tests run this year by the agent on the O. W. Claridge farm, the WR 1517 Acala New Mexico strain is still the most desirable cotton for Greenlee County. Cotton farmers should be encouraged to keep a one variety county and continue with the 1517 program for best over all results.
- Vegetable Production** Vegetables can be raised in Greenlee County to an advantage. Onions from this county are the best in the state. Tomatoes and chili rank high in quality. The sale of vegetables to the mining towns of Clifton and Morenci is good. Vegetables can be raised on land that requires high priced water and still make money because the market is available and the buyers are anxious to get Greenlee County products. Large scale vegetable production might present some marketing difficulty however.
- Duncan Valley Pure Seed Association** With cotton acreages being cut down two-thirds the sale of cotton seed in 1950 will be decreased. Although 1517 has proven to be the best cotton for Greenlee County and a one variety cotton county has many advantages, long staple cotton may be raised by some during 1950 because it has not come under the cotton allotment program. If long staple cotton is raised in any large amount it may effect the Duncan Valley Pure Seed

VI. (Cont.)

District. The Pure Seed Committee will limit their acreages on registered seed fields and seed will be saved according to local and outside demands. The Safford Valley may be a market for 1517 seed in 1950. Safford cotton farmers planted at least 10 different varieties during 1949 and none of them except 1517 were resistant to wilt. Many of those farmers are returning to a wilt-resistant cotton this year.

Greenlee County Fair

Each year since the Greenlee County Fair has come back into existence in 1947 it has become increasingly larger and better. The new exhibit building constructed in 1949 increased the interest in improving the fair grounds. It is the general feeling among Greenlee County residents that they want the fair continued and improved each year. The Supervisors have voted \$13,000 for fair improvement next year. A new poultry building should be first on the building list. With over 200 entries in the poultry department it was impossible to display all of the birds in the present poultry building.

Hog and Sheep Produc- tion

Hogs are becoming more and more a part of good farming in Greenlee County. Farmers have learned to pasture hogs and feed them alfalfa as a supplement in the winter time. With cotton acreage cut down more grain and hogs should become a part of the farming program in 1950. During the past year sheep have not increased in numbers of flocks. Mr. McGrath of York has increased his flock 50% over last year. He has done very well on his sheep. Sheep have a definite place as farm flocks on irrigated and non-irrigated pastures. Several farmers have expressed an interest in sheep. Farm flocks may be on the increase in 1950.

Poultry

Poultry production has been increasing in Greenlee County since the end of World War II. The egg market has been very good and poultry raisers have experienced no trouble in marketing of fryers. Turkeys have been raised on a small scale by at least ten farmers and found to be a profitable enterprise. The Interstate Farmers, a local feed and grain sales company, have taken an active interest in increasing the quality of the birds raised in the county by procuring day old chicks from the Tucson Hatchery for the local needs. Every farm should have enough hens to furnish their own eggs and have some to sell. There is a place in Greenlee County for the commercial poultryman if a good job of management is practiced.

General Farming

Greenlee County Farmers will be forced to diversify in 1950. Cotton will still be the principal crop but alfalfa, small grains, livestock, dairy, sheep, hogs and poultry will be on the increase.

Greenlee County Fair Concludes Three Record Breaking Days

The Greenlee County Fair concluded three record breaking days, Oct. 14, 15 and 16 in all departments.

Attendance was the largest ever seen. There were a larger number of exhibits than ever before. Many of these exhibits will be sent to the State Fair November 4 to 13. The poultry building was filled to capacity. Interest is high in that department. See the article on the outstanding poultry and rabbit show elsewhere in this paper.

The department superintendents each should be congratulated upon their fine job done. They are: B. Kenneth Lunt, livestock; H. T. Clothier, poultry and rabbits; M. Easton Frazier, field crops; Mrs. Lois Campbell, horticulture; Mrs. Dessie Moffett, floriculture; Mrs. Irene Kennedy, domestic arts; Mrs. Lois E. Harrison and David Price, 4-H Club work; Garth Hanchett, school exhibits and Bill Chapman, sports.

The Fair Commission should receive congratulations for a well planned, successful fair. They are: Ira Spoon, Chairman, S. W. Coon, Treasurer; Bill Chapman, Heaton Lunt, Jack Roberts and Elizabeth Tea, members.

The sports program highlighted Saturday and Sunday afternoons. Cy Riter provided plenty of laughs with his "laugh Gas Waggon." Rodeo and race winners are announced elsewhere in this paper. T. L. Mullens of Morenci was the winner of the .270 Model 70 Winchester given at the drawing, benefit of the Duncan Chapter of the FFA.

A uranium ore exhibit by Tom Dees provided much interest.

Judges for the exhibits, who awarded cash prizes and first, second and third place ribbons were from the University of Arizona extension service. They were: Harvey Tate, horticulture; Ralph Van Zant, poultry and livestock; George Alstad, school exhibits; Reva Lincoln and Madeline Barley, judges of the women's division.

Poultry, Rabbit Show At Fair Is Outstanding

One of the prominent attractions of the Greenlee County Fair was the Poultry and Rabbit exhibit, pronounced by Mr. Van Zant, who judged the entries, to be the finest exhibit of its kind in the state of Arizona. Entered were one hundred fifty-six chickens, twenty-two turkeys, twenty-two pigeons, eighteen ducks, three guineas, and over fifty rabbits, making a total of over two hundred seventy entries. The poultry room was packed to capacity with cages. The following breeds of poultry were represented: Rhode Island Reds, New Hampshire Reds, Barred and White Rocks, White Wyandottes, Jersey Black Giants, and White and Buff Leghorns in standard sizes. In bantams, there were Golden Sebrights, Silver Pencilled and Partridge Wyandottes, White Cochins, Light Brahmas, English Games, Black Rosecombs, Brown Leghorns and Booted Whites.

The fair commission is planning a new building to house the growing poultry exhibit which has multiplied in size. Plans are being made for next fall, the 1950 Fair.