

ANNUAL REPORT  
OF THE  
COUNTY AGRICULTURAL AGENT  
FOR  
GREENLEE COUNTY  
PERIOD  
FROM DECEMBER 1, 1940 to NOVEMBER 30, 1941

BY  
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## INDEX

	PAGE
Cover Page.....	
Index.....	1
Summary of Activities and Accomplishments.....	2-3-4
Changes in County Extension Organization..	5
Problems Determining Extension Program....	6-7-8
Influence of State and National Agricultural Agencies Operating in County Upon the Extension Program.....	9-10
Activities and Results	
(A) Soils	
Green Manure.....	11
Commercial Fertilizer.....	11
Cereals.....	12-13
(B) Farm Crops	
Cotton Production.....	13-14-15
(C) Horticulture	
Mixed Vegetables.....	16-17
Lettuce Production.....	17-18
Potato Disease Control.....	18-19-20
Rodent Control.....	20-21
Irrigation Practice.....	21-22
Poultry Production.....	22-23
Range Management.....	23-24-25 26-27-28
Boys' and Girls' 4H Club Work.....	29-30
Dairy Herd Improvement.....	31
Weed Control.....	31-32
Orchard Improvement.....	32-33
Farm Planning.....	33
Soil Conservation.....	34
Cotton Mattress Program.....	34-35
Miscellaneous.....	35-36
Outlook and Recommendations.....	37-38-39 40

### III. SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS.

Due to an unusually favorable winter growing season, grains planted for the purpose of furnishing pasture, later to be plowed under as a green manure crop, furnished an abundance of growth during the past winter. Rainfall and irrigation water were plentiful, and more grain was pastured and plowed under than on any previous winter. This practice was followed by thirty farmers, the purpose being to not only increase the humus content of the soil, but also to improve the water holding properties of the soil and reduce alkalinity. Mr. Heaton Lunt, who had treated several acres of very alkiline land with gypsum during the previous year, turned under a heavy crop of oats on this land about the first of April and there was a very noticeable reduction in alkali damage to the following crop. This practice increases every year. It is economical because of the pasture furnished and highly beneficial to the land because of the effect upon the soil.

Cotton improvement centered around an attempt to promote the planting of Las Cruces strains of Acala cotton, due to the fact that these strains have proven superior for this location. One cotton meeting was held, at which a demonstration was given on the use of Ceresan. This demonstration was followed by a circular letter and a large number of farmers treated seed with this chemical. The matter of Federal classification was discussed at this meeting and also at a meeting in August, with the result that the cotton growing farmers of the county organized as an Acala Growing District and requested Government classing of cotton. Mr. S. W. Coon continued to produce certified seed of the Las Cruces 1517 strain of Acala.

Potato variety tests were continued in a small way. Seven varieties were used in the first crop test, and five in the second crop test. Second crop test results were lost in the flood of September 29. Considerable investigation on sources of disease-free seed and the status of dangerous diseases was carried on during the season.

The Vegetable Grower's Association made a successful spring harvest and shipment of lettuce, but due to labor conditions and various other matters beyond their control, no Association shipment was made on the following crop. Test work has been continued on the

### III. (Continued)

same varieties as in the past. Test work on tomato and cantaloupe varieties was also carried out on two farms. Test work was also done on onions and some excellent advertising was obtained for onions produced in this area by the shipment of premium onions to eastern markets.

Irrigation work continued to center around the various problems arising in the proper seasonal use of pump and gravity water. The agent sent out one circular letter and made 13 farm visits to encourage winter irrigation of ground for water storage in soil.

In working with poultry men, emphasis was laid upon three things. Work toward the improvement of egg grades was expedited by the State Egg Grade Law and considerable progress was made in improving the grade of eggs within the county. A drive toward disease control resulted in three more farmers adopting sanitation lines in accordance with the poultry improvement plan. Lastly, by stressing the purchase of the best possible grade of chicks and working closely with Inter-State Farmers, Inc., a better grade of chicks was purchased by farmers in the county than in any previous year. Inter-State Farmers, Inc., cooperated in this matter, assisting farmers by putting in group orders for Arizona-hatched chicks.

Three registered dairy bull calves were purchased by Dairy men in the county during the year, and approximately 150 good heifer calves were brought in to be developed into cows by local dairy men.

Work with range cattle men centered around both artificial and natural reseeding of range and on the development of irrigated pastures. Eleven range men carried out definite natural reseeding enterprises, some of them with excellent results. Three range men continued artificial reseeding of the range, and four irrigated pasture plots of varying sizes were established.

Weed control work was confined to a careful check on the bind weed plots poisoned the year before, and to additional work tendered toward the control of bind weed spreading.

Sixty-seven farmers obtained fifty quarts of poison grain and five cans of rabbit poison to control rodents on 932 acres, and 66 home owners obtained thirty-

### III. (Continued)

six quarts of poison grain to protect dwellings, store rooms, and premises from rodents. In addition, Mr. Fish, of the Rodent Control Division, cooperated with the Agent in giving two demonstrations on Rodent Control in the County.

4H Club Work saw further improvement during the year, both in the number of boys and girls enrolled, and the quality of the work accomplished. A Greenlee County Club boy exhibited the Champion Steer of the Junior Livestock show at Tucson. Five Boy's Judging Teams were trained, two of them being Champion teams. Three leaders and twenty-six Club children were taken to the Round-up and definite promises of individual cooperation and backing were obtained from local people for the purpose of improving Club work.

Pecan and improved Black Walnut grafts were made at one ranch. The test plot, embracing various berry varieties, was completed and definite recommendations made.

The Agent furnished information and instructions for the control of an epidemic of Sleeping Sickness among horses in the county. He also organized the county and furnished preliminary information for a complete dourine test of all horses in the county, thereby obtaining a release from quarantine.

Seventy-three people were assisted in matters pertaining to farm planning and there were ninety office calls in regard to Farm Security. The Agent assisted in carrying on a Cotton Mattress and Comforter Program partly to completion and also cooperated with the Cattle Grower's of the county and the Division of Predator and Rodent Control in furnishing information, and organizing the routine for demonstrations on the control of predatory animals.

IV. CHANGES IN COUNTY EXTENSION ORGANIZATION MADE DURING THE YEAR TO IMPROVE REGULAR PROCEDURES OR TO MEET EMERGENCIES.

Unusual weather conditions through-out the year were responsible for certain changes in County Extension Organization policies. Increased rainfall, and increased water available for irrigation, made it feasible to change recommendations to farmers and to proceed along new lines. The higher price of livestock and relatively low prices of hay and pasture, made it advisable for the Agent to work very closely with groups for the purpose of increasing the use of these cheap feeds.

The occurrence of the unprecedented flood damage on September 29 and 30, made it necessary for the Agent to drop all regular work and spend considerable time, thereafter, making a check of flood damage and recommendations whereby farmers could meet the situation forced upon them. The Agent also furnished information and assistance to other Federal Agencies which were interested in making surveys of flood damage, and furnishing assistance to farmers whose crops or land had been impaired.

The Defense Program caused the latest change in organization. During the last six weeks of the year, this program has been of great importance and has made it necessary to post-pone certain other work. The Defense Program, indirectly, affects the entire Extension Program and the Extension Program has been adjusted to meet Defense needs.

## V. COUNTY EXTENSION PROGRAM

### (1). Problems Determining Extension Program

The program of work for any year must, of necessity, be based to quite an extent on the outlook at the time this program is drawn up. When the work program, which covers the year herein reported, was drawn up prices for farm products throughout the county and state were facing a bright future. For the first time in several years, farmers and ranch men of Greenlee County saw a prospect of ample moisture for their needs. There was a good reserve of feed on the range, range moisture conditions were good and there was plenty of reserve moisture in the mountains to feed the streams. Not only did the river carry sufficient water for irrigation, but the supply of water in the San Carlos Reservoir was ample and this guaranteed that the farmers of the county would have a right to divert the water of the Gila River for irrigation in so far as needed.

The Selective Draft and high wages offered in the mining camps was already beginning to affect the supply of labor available upon the farms. Taking these factors into consideration, an attempt was made to work out a program for the best interests of the agricultural area of the county and to make recommendations which would most closely meet the arising conditions throughout the year.

Fertility and soil moisture are of basic importance wherever either grass or crops are produced and the two subjects are so closely related that they can be best handled together. For that reason, plans were made to continue stressing fertility and soil humus content as in the past and also to stress the establishment of winter moisture in soils wherever possible.

The Las Cruces strains of Acala cotton had already proven their superiority during the previous year so plans were made to encourage the planting of this cotton in so far as possible. A serious problem existed in the fact that many farmers were not treating their seed and were careless in seed selection, also were careless in matters pertaining to cotton culture. This problem justified the spending of considerable time on these matters during the early part of the year.

Potato growers were faced with the problem of finding a variety which met their needs, but which was also available in sufficient quantities for planting.

V. (Continued)

(1). Problems Determining Extension Program

Several excellent varieties had appeared in the test of the previous year, but there was insufficient information on the resistance of these varieties to disease and upon the availability for seed of the proper variety.

Vegetable production had received some impetus from the formation of a Vegetable Grower's Association in the county, but as always, there was need for work on the improvement of cultural practices, on diseases and the testing of new varieties.

As in previous years, 4H Club Work in the county was badly in need of leaders and also adequate financing. There is a decided problem in the case of the boy living on a small farm which produces only part of the income necessary for the family. Invariably, this boy desires to go to work as a day laborer and rarely receives enough training to become a skilled tradesman. Club Work could be of great service to as many of these boys as have any agricultural interests.

Low feed prices, a rising local demand for dairy products and an increase in price levels, tended to increase dairying in the county, but against this stood a lack in numbers of good dairy cows and careless feeding practices. The problem appeared to be to improve feeding practices, and as rapidly as possible to increase the number of good dairy cows by growing them from heifer calves. At the beginning of the year there was also a serious lack of registered dairy sires in the county.

Inter-State Farmers, Inc. had began to sell eggs on grades, but they were meeting with poor cooperation from both farmers and merchants. Another problem in the county was the purchase of low grade and inferior chicks from outside the state. These chicks often brought in disease with them and were rarely satisfactory. And, as in previous year, the problem of improper feed and lack of sanitation remained to be a very serious factor in poultry production.

Range cattlemen in the county have been reducing numbers for several years. This has alleviated over grazing to a marked extent. However, the range man is now asking, "Is there anything more I can do to hasten recovery of my range, and control or destroy inedible,

V. (Continued)

(1). Problems Determining Extension Program

and in many cases, poisonous weeds?" Although various Federal Agencies have done some work on both natural and artificial range reseeding, range improvement will continue to be a very important problem in this county for many years. The relatively low price of feed crops and the high cost of labor has brought the owners of some of the less productive and lower valued, irrigated lands in the county to asking the question, "Could grass from irrigated pasture become a desirable crop in the county," and the Agent was faced with the matter of making recommendations for irrigated pasture and in cooperating with other Federal Agencies to obtain adequate variety tests.

The low price of alfalfa hay has been a problem for several years and farmers producing hay were faced with the necessity of feeding it to some kind of livestock or receiving a very low price for it.

Bind weed acreage has increased throughout the Gila Valley for many years. Some test work on bind weed eradication had been begun the previous year, however, bind weed control remained of major importance and there was a need for recommendations to prevent its spreading.

Increased irrigation costs and rising taxes make the matter of farm management and proper farm planning a major problem, along with labor also becoming more difficult to obtain. The matter of adopting proper systems of farming and using the proper amount of livestock for the consumption of feed on the farms of the county is of increasing importance each year. There are still areas in Greenlee County where farmers attempt to make a living by producing hay and grain for sale. The adjustment to a proper cropping system wherein livestock, poultry, or dairy products can be offered for sale in place of grain and hay on this group of farms is perhaps the largest problem facing extension work in this county.

## V. COUNTY EXTENSION PROGRAM

### (2). Influence of State and National Agricultural Agencies Operating in County upon Extension Program.

Although nearly all projects in the extension plan of work are affected to some degree by the various agricultural agencies operating in the same territory as the Extension Service, the degree to which the various agencies affects extension work varies greatly from month to month. During the past year, the Soil Conservation Service has had a very great influence upon extension work and extension policies in Greenlee County. During the early part of the year, the Soil Conservation Service furnished supplies and trained personnel, who cooperated with the Agent in establishing irrigated pasture test plots. Later in the season, work was begun on the formation of a Soil Conservation District to embrace all irrigated land in Greenlee County.

The flood damage to agricultural land within the County during September, heightened the interest of farmers in Conservation work. The Agricultural Conservation Program also greatly affected the extension work, by stabilizing the prices of cotton and offering a definite payment for certain conservation practices, both on irrigated land and on range land. The Conservation program made it possible for farmers to carry out extension service recommendations due to the fact that the Agricultural Conservation Program paid the farmers for these practices and made it possible for a farmer to estimate, definitely, the cash return for the practices.

The Division of Grazing has worked closely with the Extension Service at all times both on recommended range practices, the handling of livestock, and in matters pertaining to range improvement. Although a new agency, the Division of Grazing has a very clear-cut and definite program set up for the future, and this program follows very closely along the line of recommendation made in the County by the Extension Service.

The Farm Security Administration and the Emergency Crop and Feed Loan supervisor have continued to furnish funds to farmers to carry out practices as recommended by the Extension Service. This has been of great advantage, in that it has made the purchase of feed for livestock possible in many cases where additional feeding

V. (Continued)

(2). Influence of State and National Agricultural Agencies Operating in County upon Extension Program.

of livestock brought a very considerable profit to the farmer. Funds from these agencies have also been valuable in cooperative work which the Extension Service has recommended.

The Forest Service controls land upon which over half of the range livestock units of the county are operated. The cooperation of this agency has been of great value during the past year in formulating plans for the extension work with livestock operators of the county. The Forest Service has also cooperated closely with the Extension Service in recent Defense work.

During the year, the Division of Predator and Rodent Control, of the Fish and Wildlife Service, cooperated with the Extension Service in planning demonstrations on the control of predatory animals. Demonstration work is rather new in this line, but there are great possibilities in it, and these demonstrations are possible only through the services of the employees of this division.

## V. COUNTY EXTENSION PROGRAM

### (3). Activities and Results.

#### (A). SOILS

##### GREEN MANURE

Several of the soil types in this county are such that humus must be constantly added to them. Other soil types are close to the water level or receive damage of alkaline water from near-by hills. Both these types need to have humus added to them constantly to keep the physical condition of the soil at its best and to hold down the alkali content. The year's objective in this project was to increase the use of green manure as a soiling crop. Farm visits and one meeting were used to promote this practice. The fact that the winter growth of grain furnishes a very cheap pasture for livestock also helped to increase the acreage of ground on which grain was plowed under as green manure.

Thirty farmers plowed under green manure for the purpose of building up their soils or controlling alkali during the past year.

Two plantings of sour clover were made, but both were so damaged by unfavorable weather that they failed to come to a stand.

The use of barnyard manure continues to be an excellent practice, especially among producers of vegetables, and for the controlling of tight land. The Vegetable Growers Association members and the potato growers continue to follow this practice with excellent results.

On three different farms, manure was spread upon the soiling crop and both were then plowed under in an attempt to step up the production of tight land.

##### COMMERCIAL FERTILIZER

Commercial fertilizer was confined to one calcium nitrate test on lettuce on the Hancock farm and through the use of phosphates on ornamentals and in the control of root rot. The fertilizer test on lettuce on the Hancock farm was damaged by rain so that the lettuce was unmarketable, and no records were kept.

V. (Continued)

(3). Activities and Results

(A). SOILS (Continued)

#### CEREALS

Mr. S. W. Coon produced an excellent crop of California Red Oats from certified seed and the entire crop was retained to be sold as seed in the community. In addition, the matter of winter barley varieties was discussed with five different farmers, but to date, no farmers have planted winter varieties. At the present time, Vaughn Barley is used almost exclusively.

Insect damage has been severe for the last several years with the result that the amount of grain grown for harvest has decreased. A large percentage of the planted grain acreage is now used for pasture and soiling crops.

Circular letters and bulletins were sent to all corn growers, urging them to use care in the selection of seed and to treat the corn against seed-born diseases. Ceresan was recommended for this treatment and a careful check of corn fields this fall shows that the blue mold formerly so prevalent on the tips of the kernels, has been gotten rid of entirely. This has greatly improved the grade of corn being produced. Duncan White Dent, Duncan Yellow Dent, and Mexican June corn were the varieties treated and practically ~~all acreage is planted to these three varieties.~~ Nine people inquired concerning the use of hybrid seed corn, but the Agent explained that so far, no hybrids applicable to this area have been introduced. In a test carried on several years ago, hybrid varieties furnished by the experimental station at Tucson were the least satisfactory of all varieties in the test. The Agent also continued to discourage the importation of corn from northern states, as it is a proven fact that adapted varieties are superior in production. One farmer who imported a few pounds of Minnesota corn and planted it this year, saw this proven to his cost. One circular letter was used to promote the planting of grain sorghum and to urge farmers to use the best grade of seed obtainable. A field of Manko was planted on the Geo. Lunt farm and proven to be a heavy yielder, both of grain and fodder. However,

V. (Continued)

(3). Activities and Results

(A). SOILS (Continued)

CEREALS (Continued)

it is too slow maturing at this altitude to follow another crop and from appearances it should be planted not later than the first of June when planted in Greenlee County. No accurate data on fodder weights were kept but it would seem at the present time to be the heaviest producer of all the grain sorghum varieties in this particular location.

Work with wheat consisted mostly in answering questions regarding yields and program regulations. The agent attempted to urge people to confine their planting to the two varieties which are proving best under Duncan conditions, namely, Australian Club for bottom lands, and Turkey Red for fall planting on adobe. The acreage of wheat grown in this valley is rather negligible, and practically all wheat grown is used for feed.

(B). FARM CROPS

COTTON PRODUCTION

Test work on the Las Cruces varieties of Acala cotton carried on the year before, were so encouraging that a serious attempt was made to increase the use of this strain of cotton. At a meeting held in March, Dr. R. L. Matlock, Mr. Gottlieb, and several representatives of the Government Grading Office thoroughly explained the matter of staple length and character of cotton. At this same meeting Mr. Gottlieb gave a demonstration on the use of Ceresan to control seed-born cotton diseases. The agent followed this meeting with a circular letter and a definite program of farm visits with the result that a majority of the cotton acreage of this county was planted to the approved strains of Acala and most of this seed was treated with Ceresan. A small amount of long staple cotton was planted, but only two farmers were able to get it up to a stand. To date, although they are getting a fair yield of long staple cotton, it does not appear to be very practical for planting at this elevation. A small plot of Coker-Wiles was planted in a test plot

V. (Continued)

(3). Activities and Results

(B). FARM CROPS (Continued)

COTTON PRODUCTION (Continued)

and the yield of this variety seems to be equal to Acala, however, after obtaining information on this variety from Dr. Matlock, the agent has warned farmers to be very careful and, if possible, wait until Mr. King of the Sacatone Experimental Station, is ready to make recommendations. A small plot of 2B Stoneville, supplied by Dr. Matlock, was planted on the R. D. Williams farm. This variety seems to be earlier than Acala, but not as early as the original strains of Stoneville. To date, the agent has not received the grades from the Federal Grading Office, but apparently, the 2B Stoneville is free of trash, and is very nearly the staple length of Acala. The character of the cotton, however, does not seem to be as good. The agent has recommended further test work on this variety for the reason that it might be valuable on certain soil types where farmers have great difficulty in properly maturing Acala cotton.

The matter of irrigation of cotton was discussed by Dr. Matlock at the March meeting and the agent followed up this meeting with farm visits and with discussions whenever farmers visited the office, for the purpose of encouraging farmers to adopt a system of early irrigation. The work of Mr. Karl Harris was sighted to all these farmers with the hope that by proper irrigation, Acala cotton could be brought to maturity at an early date. Mr. S. W. Coon and Mr. T. W. Brown, both of whom grow approved strains of Acala cotton, have followed this system of irrigation for two years with excellent results and other farmers are now beginning to adopt it. [The agent spent considerable time and effort in furnishing data and information to the parties who constructed the cotton gin in Duncan, prior to the beginning of the ginning season. Hauling cotton to Safford has been very unsatisfactory and it has also been difficult to keep up the proper strains of seed without mixing them with varieties grown at Safford. A group of local farmers and business men cooperated with capital from without the county, with the result that an excellent Four-stand Murray Gin was installed. This gin is doing very good work and

V. (Continued)

(3). Activities and Results

(B). FARM CROPS (Continued)

COTTON PRODUCTION (Continued)

to date, either due to the variety of the Acala grown in Duncan, to the advantage in character and length due to elevation, or due to the work which the gin is doing, Duncan cotton has brought much better prices than cotton ginned in Graham or Maricopa Counties. While the agent did not even venture to give the reason for this, a meeting was called at the beginning of the ginning season at which Mr. Howard Baker, Extension Economist gave a talk on price futures and cotton economics, and at which the agent took occasion to warn the large group of farmers present to continue to use the best obtainable seed of the approved varieties of Acala cotton, and in that manner continue to produce cotton which can enjoy this favorable price ratio. So far this year, practically all Acala cotton grown in Greenlee County and ginned at Duncan has been classed as one and one-eighth inches or better. Dr. R. L. Matlock and Dr. Pressley inspected and certified Mr. Coon's field of Las Cruces Strain of 1517 Acala, and all of the seed from this plot is being saved and certified. Mr. Coon also is saving some of the 1464 strain which he grew previously. The 1517, however, appears to be a heavier yielder and may possibly have a better character of lint. Considerable certified cotton from New Mexico territory is also being ginned at Duncan which assures an ample supply of certified cotton seed for next year. The matter of seed-born disease was checked by Mr. Gottlieb, Extension Pathologist when he visited the county in late September, and upon his recommendations, the agent will continue to encourage rotation of cotton and treatment of seed. Mr. Gottlieb found some traces of disease in a number of fields, but nothing of a nature that could not be easily controlled by rotation and seed treatment. In accordance with Mr. Gottlieb's recommendations, the agent has continued to recommend these practices to farmers on every possible occasion.

V. (Continued)

(3). Activities and Results.

(C). HORTICULTURE

#### MIXED VEGETABLE PRODUCTION

Improved business conditions in surrounding industrial areas had so stimulated the call for vegetables that the agent took occasion to stress vegetable production during the early part of the year. Mixed vegetable production was discussed on two occasions at meetings of the Vegetable Growers Association. Test plots for new varieties were established on the J. B. Simms and E. L. Hancock farms. Although the number of persons producing mixed vegetables did not increase during the year, acreage was increased and the quality of the product was also increased. Tests on new varieties of tomatoes and cantaloupes were performed on the J. B. Simms farm. While no particular results were obtained, the test work was valuable to the extent of showing that the varieties in present use were perhaps equal to anything obtainable. In the test work on the Hancock farm the Stokesdale tomatoes showed up very well and the agent will attempt to carry further work on this variety. New strains of cantaloups did not show any improvement over those in present use. Tests on Persian mellons and Casabas did tend to show that they are not adapted to this elevation or soil type. A three-fourths acre plot of Crystal White Wax onions was planted on the Broughton Lunt place about September 30, 1940 and harvested during the last week of May, 1941. These onions yielded very well and were sold on a very good market. The plot netted upwards of \$150.00 per acre above all costs of growing, harvesting and selling. The agent visited all the larger onion producers during the harvesting season, urging strict grading of onions. Although the agent did not encourage making such long shipments, one local grower shipped a car load of Jumbo Onions to the Cincinnati market where they sold at considerable premium and created a great deal of interest in Arizona onions. During September, an attempt was made by outside interests to establish a commission business in vegetables in Duncan. Growers who contacted the agent in regard to this matter were urged to go over the matter very carefully and to study market requirements and realize that considerable risk was involved when shipping to distant commission firms. The agent is



Strawberries on S. R. Sexton farm.

May 28, 1941.

V. (Continued)

(3). Activities and Results

(C). HORTICULTURE (Continued)

#### MIXED VEGETABLE PRODUCTION (Continued)

desirous of increasing vegetable production, but at all times has cautioned producers to be very careful in dealing with promoters and people who can not furnish proper references or who can not prove their reliability beyond doubt. Carrots, cabbage, and string bean plantings were carried on by a few farmers who followed recommended desires, and recommended varieties. The agent furnished planting schedules and lists of recommended varieties to 15 farmers, for the purpose of holding down the percentage of failures in producing these vegetables. Cantaloups produced on the soils of the Duncan Valley continue to sell at a premium, and upon the agent's recommendations, Mr. E. L. Hancock increased his acreage of cantaloupe, but the supply was still inadequate. During the season, the agent discussed cantaloupe production with several other good truck growers for the purpose of stepping next year's acreage up to supply the local demand.

#### LETTUCE PRODUCTION

A moderately successful lettuce season in the fall of 1940 on the part of the Duncan Valley Vegetable producers was followed by an exceptionally heavy planting in the spring of 1941. Unusual weather conditions caused an out-break of lettuce diseases. The Agent was able to obtain the services of Mr. Gottlieb, Extension Pathologist, who identified several contagious lettuce diseases, the most serious of these being a type of stem rot. Recommendations for control of these diseases were made to all growers and this control along with rotation apparently is handling the situation very well. Unfavorable weather combined with late freezes and a series of severe hail storms greatly reduced the acreage of lettuce available for harvest. The Vegetable Growers Association met in the agent's office on several occasions in an attempt to re-write their loan with the Farm Security Service, and build a shed, however, the eventual outcome was that the organization decided to pay off their loan with money in the treasury and disband. This was due to unfavorable lettuce prices, difficulty in getting labor and difficulty in obtaining a desirable loan from the Farm Security



Harvesting Crystal White Wax Onions on  
test plot. Broughton Lunt farm, May 30,  
1941.

V. (Continued)

(3). Activities and Results

(C). HORTICULTURE (Continued)

#### LETTUCE PRODUCTION (Continued)

Administration. At the present time many of the members of this old group will continue to pack lettuce at the shed personally owned by J. B. Simms. In this way work on grading and the proper handling of lettuce will not be lost.

One fertilizer test on the use of calcium nitrate was so injured by hail that no resulting data could be obtained. No new varieties were tried out. Five operators were assisted in controlling outbreaks of loop worms and seven lettuce growers were furnished assistance in disease control.

#### POTATO DISEASE CONTROL

Goals for this project were to continue the variety test work, to carry out one result demonstration in the use of sulphur dust to control psyllids, and to continue the work on disease control.

Mr. Harvey F. Tate contacted the agent during the winter and arranged for a continuation of the variety test work on a smaller scale than on the previous year. Erlane, a certified strain of Bliss Triumph, a certified strain of Irish Cobbler, and a certified strain of White Rose, were supplied by Mr. Tate in cooperation with the Experiment Station. Plantings of Katahdin, Warba, Chippewa Number 181-14, and number 46928 were made from potatoes carried by refrigeration from the test plots of the previous year. These potatoes were so affected by low temperatures in storage that only a small percentage of germination was obtained. The plantings of Erlane and certified Bliss Triumph, Irish Cobbler, and White Rose came to a good stand. Due to an injury which the agent received, it was impossible for him to obtain yield data on these potatoes. Observation, however, showed that the certified varieties were perhaps slightly superior to the seed which the Association had obtained from Mr. C. I. Brown. The yield was no greater but the quality and texture of the potatoes seemed superior.

V. (Continued)

(3). Activities and Results

(C). HORTICULTURE (Continued)

POTATO DISEASE CONTROL (Continued)

The Erlane potato in the test plot showed up very well. The Erlane is superior to the Irish Cobbler in that it is much more regular of shape, has shallow eyes, does not feather as badly, and will germinate for the second crop much sooner than will the Irish Cobbler. However, the second crop planting of Erlane stock was destroyed in the flood of September 29, so that any further work will, of necessity, be from new stock.

Mr. C. I. Brown, of Dolores, Colorado, one of the foremost potato breeders of the South West, has been furnishing this area with much of its seed for approximately 10 years. At the time of Mr. Brown's visit to this area during June, 1941, he spent considerable time with the agent. The matter of germination of varieties and disease control were taken up at length. Upon being told that the Chippewa yielded very well under Duncan conditions, and also germinated fairly well for a second crop, Mr. Brown commented on it that in so far as his observations had extended, the Chippewa was very subject to bacterial ring rot and he advised great care in the importation of Chippewa seed. Upon this advise, the agent decided to leave the matter of obtaining Chippewa seed in the hands of the experimental Station if possible. Mr. Brown commented on the Erlane variety very highly saying that it appeared to be more or less resistant to most diseases and that as it was doing well here, there should be an attempt made to have certified Erlane seed grown in Colorado. Acting upon this information the agent proceeded to contact the Experimental Station and various Federal Agencies in an attempt to promote the production of certified Erlane seed, in order that the same would be obtainable for commercial production at Duncan. The Agent intends to continue the work in cooperation with Mr. Stevenson of the Plant Breeding Station at Beltsville, Maryland, for the purpose of continuing work with number 46928 and with the Chippewa variety.

V. (Continued)

(3). Activities and Results

(C). HORTICULTURE (Continued)

POTATO DISEASE CONTROL (Continued)

Dr. Finch made one tour of inspection of the potato fields during the season, and Mr. Gottlieb spent part of one day in a search for bacterial ring rot of potatoes in the Duncan Valley. To date, no bacterial ring rot has been found. All potato growers continued to use the liquid lime-sulphur spray for psyllid control during the season. Psyllids were controlled with excellent results. Material ordered for a sulphur dusting demonstration arrived too late to be used this year, but will be available for a test plot in another year. Sulphur dusting carried on in the adjacent area in New Mexico apparently gave very good psyllid control this year. Sulphur dusting can be applied at less expense of labor and equipment and should become popular after proven to be an adequate psyllid control.

RODENT CONTROL

Goals for this project were to carry out three field demonstrations on Rodent control and to improve the efficiency of Rodent Control Work throughout the valley. During the month of March the agent sent out a circular letter announcing a series of demonstrations whereat Mr. Fish of the Rodent Control Division would give pocket gopher control demonstrations. Two demonstrations were held and the other demonstrations scheduled were interrupted by unfavorable weather. The control of all rodents, however, was pursued by farmers and property owners throughout the season with good results. During the year, 51 office calls and 2 circular letters were used to bring this project before the farmers of the county. Sixty-seven farmers obtained seventy quarts of poison grain and five cans of rabbit poison to control rodents on 932 acres and 66 home owners obtained 36 quarts of poison grain to protect dwellings and various types of buildings. In addition, the agent worked with the Division of Predatory Animal and Rodent Control in organizing the county for a series of demonstrations on the control of coyotes. Many ranchers and farmers are interested

V. (Continued)

(3). Activities and Results

RODENT CONTROL (Continued)

in trapping coyotes and are not well posted on the proper use of scent and on making scents. By contacting the Arizona Cattle Growers Association, an arrangement was worked out whereby traps can be purchased at cost and whereby a trapper is furnished by the Rodent Control Division for demonstrations on the various farms and ranches in so far as farmers or ranchers call for this work.

IRRIGATION PRACTICE

During the entire year there has been ample water available for irrigation of farm land in the irrigated section of the county. This has made it possible to stress the use of irrigation water to obtain the most beneficial plant growth. During the past several years the problem had been to use the limited amount of water available in the most efficient manner.

In the early part of the year considerable work was done to emphasize the importance of establishing the maximum amount of water in the ground, prior to the time of planting. This especially applied to cotton, spring planted small grain crops, and corn and grain sorghums. Farm visits, office discussions and several circular letters were used for promoting this work. Result plots were carried on the farms of Robert Zumwalt and S. W. Coon where land was carefully and thoroughly irrigated in the rough, prior to any cultivation. Test holes dug in this ground in early June, over three months after irrigation, showed that the ground below the effect of surface evaporation was still carrying the maximum amount of water possible. This storing of water in land by early irrigation prior to any cultivation is an increasing practice among farmers. The agent worked as closely as possible with the various canal boards in matters regarding care and proper use of the large pumps on various canals. No special meetings were called for this purpose but occasion was taken to discuss this matter whenever possible. Following suggestions on all the canal boards, an attempt was made to operate these

V. (Continued)

(3). Activities and Results

IRRIGATION PRACTICE (Continued)

pumps periodically whether the water is needed or not. This is for the purpose of preventing corrosion in the engine and any cases of sand lock in the pumps. Work done on changing the course of irrigation water and bordering to prevent run off will be reported under Soil Conservation Work.

POULTRY PRODUCTION

The goals set up for poultry work embraced three fields. First, to improve the grade of eggs produced in the county, secondly, to increase the number of persons following proper sanitation in poultry management, and third, to influence people purchasing chicks to purchase a better grade of baby chicks. Mr. Clyde Rowe has worked with the agent on the improvement of egg grades in this county for several years, however, up to the time of the passage of the State Egg Grade law progress had been rather slow. The enforcement of this law, however, made the grading of eggs compulsory. Mr. Rowe furnished the agent with advanced information and early in the year, Mr. Stover, Deputy State Inspector, visited the county on two occasions. The agent assisted him by calling meetings and contacting all persons purchasing and handling eggs. The influence of this legislation gave a great impetus to the work already done toward improving the grade of eggs produced in the county.

This law has tended to reward Inter-State Farmers, Inc. for previous grading they had done, and for the market which they had established for a graded product. Information and assistance was furnished to all producers and handlers of eggs in the county, which resulted in a favorable reaction to the enforcement of the law. Mrs. R. D. Williams had already followed the poultry improvement plan for several years and due to the good results she had received, three additional poultry producers adopted this plan during the past year. This has greatly reduced their disease losses and increased efficiency of production.

V. (Continued)

(3). Activities and Results

POULTRY PRODUCTION (Continued)

The heavy rain fall of the late winter and spring greatly increased the danger of disease in poultry flocks, and considerable stress was placed on sanitation. Mr. Rowe was unable to visit the county as per schedule due to the press of important work but the agent made a series of farm visits stressing sanitation and warning poultry producers of the increasing danger from parasites due to the wet weather. After thoroughly discussing the matter with Inter-State Farmers, Inc, they agreed to handle Arizona-hatched chicks for the purpose of encouraging people to buy these chicks. Due to the strict regulations under which Arizona chicks are produced, they are more apt to live and be free from disease. By accepting pool orders and handling the detailed work of ordering, this cooperative organization performed a valuable service. A smaller percentage of out-of-state chicks were purchased this year than on any previous year.

RANGE MANAGEMENT

The goal for this project was to further both artificial and natural range reseeding and to establish one or more practical irrigated pasture tests. Work had been carried along on Chamiza plantings for several years. A very considerable planting of Chamiza seed was made on the Harry A. Day ranch during late December and January. Nearly all of this planting was made on eligible land whereby Conservation payments bore most of the expense of planting.

Winter weather was extremely favorable and therefore, results were considered directly produced by soil type and plant bed preparation. Check on these plantings from March on through the year disclosed the following findings: First, it seems apparent that on practically all soil types found in the range areas of Greenlee County, it is necessary to prepare a deep plant bed for the successful propagation of chamiza. Mr. Day's most successful planting was on the soft slope of a newly constructed tank dike. Another place where Chamiza grew very well was in the pulverized



Mr. H. A. Day scattering mixed grass  
seed in silt above a spreader dam,  
January 14, 1941.



Spike-tooth harrow weighted and pulled  
by pick-up to cover grass seed. H. A. Day  
New-well Pasture, January 14, 1941.

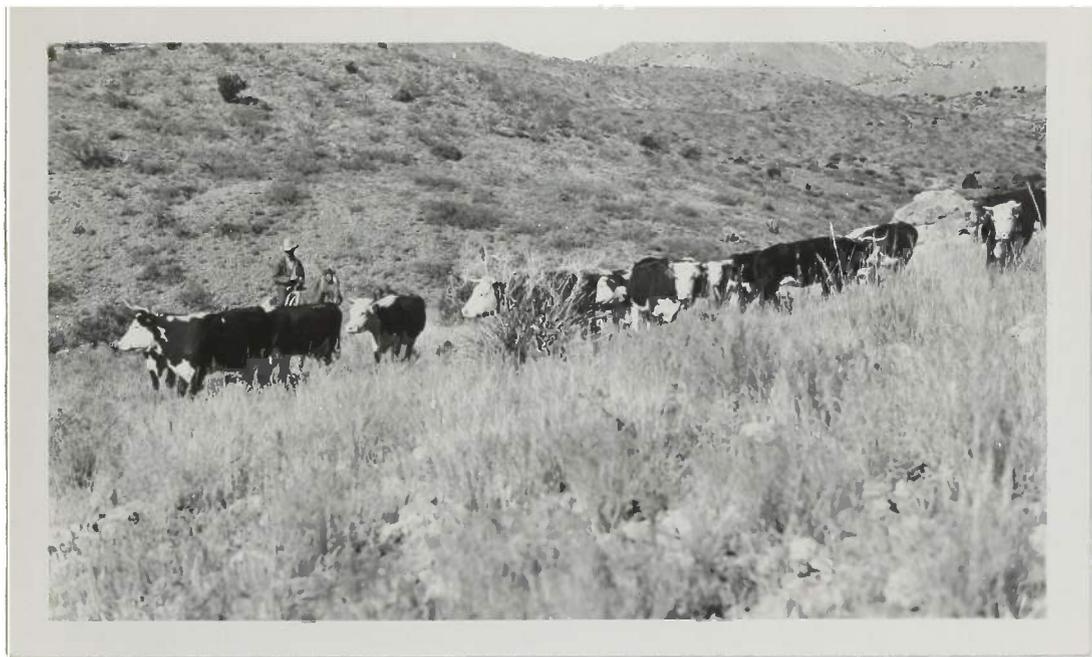
V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

earth where a pipe-line machine had crossed a section of the range. Chamiza planted on loamy soil which was stirred by a heavily-weighted spike-tooth harrow showed very poor germination and poor growth. A chamiza planting made by Mr. W. A. Thompson, bore out the same observations. Where chamiza was planted on soil pulverized for a foot in depth, it grew very well. Where the planting was made in soil pulverized only several inches deep, the growth was sparse or entirely lacking. Where chamiza was planted on pulverized soil it made an almost startling growth. On the soft tank dike on the Day range, chamiza planted in January had attained a height of from 4 to 8 inches in height. The agent had occasion to thoroughly check a planting made by Mr. Day under the Conservation Program on about 1200 acres of contour listed land in June, 1939. This area varied in soil types. On the better soil types there was a very good growth embracing a great number of grasses and also chamiza. This growth occurred both in the furrow and in the soft shoulder made by the furrow. On the poor soil types on one side of the area where there were a great number of rabbits, there was not much evidence of any results from the plantings. Occasionally the dead stubs of Lehman's love grass or of Chamiza could be found in the furrow where the plant had been killed by the continued cropping of rodents. Observations made on November 1, 1941, seemed to show that the damage of rodents on recent seeded areas is far greater than the damage from average grazing of livestock. Rodents appear to feed almost entirely on the tender seedlings before they become well established.

Two plantings of love grass were observed on the Day range at this same time. One planting made in an area protected from livestock and lying on the west side of the range showed the love grass to be well established. The sod was almost solid and there was perhaps enough love grass to make a ton of dried feed per acres on the ground. On the east side of Mr. Day's range a small area was planted to love grass and artificially watered from a large tank. This area was protected from livestock, but located where there were lots of rabbits. A thorough check showed that the



Cows moved on protected range after  
having calves cut off. Range improved by  
natural reseeding. J. L. Phillips ranch,  
November 4, 1941.

V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

planting of love grass had been almost entirely killed out. There were many dead stubs of the plants but very few live plants.

During the month of January, Mr. Day made quite an extensive planting of mixed grasses and chamiza in a protected area known as the new-well pasture. This area did not receive much rain until late in the summer, but a check showed considerable love grass and some drop seed started in the more favorable locations. Where the chamiza seed had fallen in soft, deeply pulverized ground, the chamiza had started. Mr. Day was rather optimistic on the effect of this artificial reseeding but realizes that artificial reseeding only shows favorable results on years when the seasonal moisture is adequate and when it occurs at favorable times.

Mr. Day has also done a great deal of work on natural reseeding. In an area from which he has kept stock during the growing season for three years, the agent was able to find a very remarkable amount of natural reseeding to the sage, commonly known as Winter Fat. There was also some Sacatone reseeding in this area and a marked improvement in the stands of Black Grama and Muly Grama.

Mr. J. L. Phillips has also done some work in both natural and artificial reseeding on his range. At the time that the agent visited Mr. Phillip's range in November, one wide, sandy canyon showed a remarkable amount of reseeding which was the result of seed scattered by Mr. Phillips several years ago. Around one tank there was an excellent sodding of Dallas Grass and in a protective area above a large dam there were vine mesquite, bermuda, sacatone, chamiza, and a small sprinkling of love grass.

There is a great deal of interest in both natural and artificial range reseeding at the present time. Favorable moisture conditions have been of considerable benefit to all persons attempting to improve their

V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

ranges. Controlled grazing and the high price of cattle have tended to reduce numbers and these factors have greatly aided the native grasses to come back on the ranges.

Work with irrigated pasture was carried on very closely with the Soil Conservation Service. In September, 1940 the Soil Conservation Service established an irrigated pasture plot in New Mexico. This plot was visited and closely observed by the agent and later observed by Mr. J. T. Rigden. Due to the success of this plot, the agent approached the Soil Conservation Service and requested the establishment of one or more test plots within the county. Accordingly Mr. R. E. Elledge was obtained as a cooperater and two plots were established on his farm. One plot of  $2\frac{1}{4}$  acres was planted on August 13. Another plot of about  $2\frac{1}{2}$  acres was planted on the 3rd or 4th of September but not irrigated until about a week later. Following, you will find data showing varieties and manner of planting.

Test plot embracing  $2\frac{1}{4}$  acres established on R. E. Elledge farm Wednesday, August 13, 1941. Seeds furnished by Soil Conservation Service.

Giant Pannicum	-- 10 lbs.
Lolium Perenne	-- 22 lbs.
Bromis Inerma	-- 5 lbs.
Dallas	-- 27 lbs.
Lolium Italian	-- 22 lbs.
Eragrostis Lehmania	-- 22 lbs.
Agropirum Custatum	-- 12 lbs.
Trifolium Hybridum	-- 8 lbs.
Medicago Hispida	-- 8 lbs.
Melilotus Alba	-- 22 lbs.
Dactylis Glomerata	-- 22 lbs.
Melilotus Officinalis	-- 22 lbs.
Australian Rye	-- 40 lbs.
Agropyrum Smithii	-- 22 lbs.
Strawberry Clover	-- 2 lbs.



Steers on Sweet Clover and Wheat Grass  
pasture. McKinney Ranch, Eagle Creek.  
August 6, 1941.

V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

This mixture was thoroughly stirred and applied at the rate of approximately 40 pounds per acre. Only about 80 pounds of the mixture was used on the above described plot.

At one edge of the plot small squares about 12 x 15 feet were seeded individually to each variety as a check. The entire field was sown by broadcasting the seed by hand. Following this, it was gone over with a hay rake, then furrowed a second time and watered.

Seed was furnished by the Soil Conservation Service. To date there is a better than average stand on each of these plots but, of course, a year's time is required to determine their success. These plots were established for the purpose of determining the efficiency and economy of irrigated pasture for the feeding of beef as well as dairy cattle.

Mr. Ivan McKinney, living on Eagle Creek above Clifton, obtained approximately 125 acres of land subject to partial irrigation, about four years ago. This land had previously been in grain crops and alfalfa. Mr. McKinney wished to use it for livestock production in connection with 8 or 10 sections of very good range land. He was especially interested in using it for the pasture of steers and for grazing his small head of registered herefords. Accordingly he made some experimental plantings of yellow and white sweet clover in 1938. In 1940 he made some plantings of Western Wheat grass and sweet clover. This mixture proved so productive through the spring and summer of 1941, that he decided to continue the planting.

Mr. J. T. Rigden and the agent visited his range on August 6, establishing a garden test plot and also a two acre field plot with the varieties as follows:



Rank growth of Sweet Clover in irrigated  
pasture. McKinney ranch, Eagle Creek.  
August 18, 1941.

V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

Test Plot Established on Ivan McKinney Ranch, August 7, 1941.

1. Dallas Grass	5#	9. Curuula	1 $\frac{1}{2}$ #
2. Timothy	2#	10. Lehmaniana	1 $\frac{1}{2}$ #
3. Blue Stem	1#	11. Chloramelas	1 $\frac{1}{2}$ #
4. Crested Wheat	1#	12. Mitachael	1 oz.
5. Orchard Grass	5#	13. Shuder Grama	2 oz.
6. Brome	2#		
7. Aeluropus Littoralis	4 oz.		

Garden Test Plot  
Rows 20 ft. long.

Dallas	Aleuropisis
Lehmaniana	Chloromela
Curvula	Mixture

This seed was furnished jointly by the Extension Service and Experimental Station and was confined to varieties considered adapted to an elevation of 5000 ft. and to light irrigation. At the time of this visit to the range, Mr. Rigden and the agent obtained weights and production figures giving the story of gains made by steers pastured on the wheat grass and sweet clover pasture. This pasture had shown remarkable production of forage and the cattle had also made much better than average gains per day, showing that the forage was highly nutritious.

During the year, eleven range men carried out definite natural reseeding projects and many more performed some reseeding work. There is a marked interest in the study of varieties of grasses and also in the control of poisonous and obnoxious weeds. At the annual meeting of the Association, held in Clifton, September 6, Mr. Rigden and the agent arranged an exhibit showing a large number of the native and newly introduced grasses on this area, and also the harmful weeds of this area. Mr. Rigden showed a number of slides and gave a very interesting talk on grasses and weeds at this meeting. At no time since he has



Chamiza planted in January, 1941, on loose dirt of tank fill on H. A. Day range. Picture taken last of March, 1941. Height of chamiza, 5 to 8 inches.

V. (Continued)

(3). Activities and Results

RANGE MANAGEMENT (Continued)

worked in Greenlee County has the agent been questioned by such a large number of range cattle men in regard to range improvement, the control of obnoxious weeds, and the culling and improvement of cow herds.

During the year the agent worked very closely with the Greenlee County Cattle Growers Association, assisting in the detailed work of arranging for county-wide meetings and also advisory and directory board meetings. The sales organization continued to function as in years previous, with the assistance of the Extension Service. In July, the Extension Service was called upon to furnish information and advice in the control of a sleeping sickness out-break among horses and in late July, August, and September, the Extension Service organized the County for a dourine test embracing all horses in the county.

BOYS' AND GIRLS' 4H CLUB WORK

Mr. Emil Rovey, Extension Specialist in Boys' and Girls' Club Work, made two visits to the county during the early part of the year, assisting the agent in organizing 4H Club groups and calling meetings at which slides of University activities and also of approved types of all kinds of livestock and poultry were shown. This was of great value in stressing interest in Club work.

Three Clubs, with a total attendance of 34, were enrolled. One of these clubs, however, was a Photography Club, in which no one completed the work. A Boys' Club embracing various agricultural projects in the Franklin vicinity, had 100% completion, as did the Duncan High School Boys' Club.

Five Judging Teams were trained during the year. In the process of training these teams, a field trip was made to the Hereford Show of the Southwest New Mexico Fair Association, to the Future Farmers and 4H Club Fair at Thatcher, to the McKinney Hereford ranch on Eagle Creek, as well as to the farms and dairies of the community. The boys received a great deal of



4H Club Boys and Girls on return trip  
from 4H Club Round-up at Tucson, August  
30, 1941.

V. (Continued)

(3). Activities and Results

BOYS' AND GIRLS' 4H CLUB WORK (Continued)

benefit from practice obtained on these trips. Mr. J. T. Ridden visited the county during the summer, assisting the agent in teaching the boys the importance of livestock types and showing a large number of colored slides to a group of 15 interested boys. Two steers were shown at the Tucson Livestock Show. These steers placed first and fifth in the junior division for fat steers, and were shown by Irl and Elvin Lunt. A Hereford Judging Team consisting of Elvin Lunt, Sam Sloan, and Irl Lunt placed high in the student judging contest at the show and as a result, Elvin Lunt and Sam Sloan, the two high ranking members of the team, won a free trip to the Livestock Exposition at Ft. Worth during March. Mr. Fred J. Fritz representing the Greenlee County Cattle Growers Association, worked with the agent in securing bids on these steers. The champion steer was sold to a business concern outside of the county at a very satisfactory price, and the steer which placed fifth was sold to Greenlee County interests, also at a very satisfactory price. The sale price, added to the prizes, brought the total proceeds to a point which made the feeding of these steers highly remunerative and very encouraging for the boys. The boys received a steer calf from the White Mountain herd of Dan Thornton as a prize and Mr. Jim Hunt, a hereford breeder of Apache, Arizona, presented them with a steer and a heifer calf as prizes. In this way the boys were supplied with three calves to feed for next year's show. A judging team consisting of Elvin Lunt, Wayne Hynson, and Edsil Bourgeois, placed first in the judging of hereford cattle, hogs, and sheep at the Annual 4H Club Round-up. This same team placed second in the senior division judging of dairy cattle. Only three boys were taken to the Round-up and although a bus load of 30 persons attended the Round-up from Greenlee County, the remainder of the group consisted of leaders and girls from three different clubs. By explaining the necessity of increasing interest in 4H Club work, the agent was able to obtain assistance from the County Board of Supervisors so that transportation was furnished free to all leaders and club children attending and expenses of leaders were paid. Taking this group greatly increased interest in club work locally.



Training Boy's 4H Club Judging Team.  
Class of McKinney Hereford calves,  
Eagle Creek, August 18, 1941.

V. (Continued)

(3). Activities and Results

BOYS' AND GIRLS' 4H CLUB WORK (Continued)

Two of last year's most able leaders have moved away from the county but other leaders have been obtained and the increased interest in club work is being carried on.

DAIRY HERD IMPROVEMENT

Goals for this project were to improve the status of the dairy industry in the county by working along two lines. The first of these was to encourage the introduction of better dairy stock mainly through obtaining calves of good breeding, and the second goal being to increase dairy production by encouraging better feeding methods and the use of better pastures. During the year, three dairy men purchased registered dairy bull calves. There were also approximately 150 good grade heifer calves brought in from California.

In stressing the better feeding of dairy cows, work was done to promote the use of silage and the use of hammer mills. Considerable stress was also laid on the use of grain pasture, and the matter of permanent pastures was discussed with eleven different dairy men, and the present test work explained to them. One good trench silo, containing approximately 400 tons, was constructed during the year.

WEED CONTROL

The purpose in the continuation of this project was to make farmers conscious of the danger in the rapid spread of bind weed and to continue the work on bind weed control. The control plots established by Dr. Matlock last year were carefully watched during the season. Results on horse nettle control were almost entirely negative. The plots on the J. B. Simms farm where Atlacide had been used showed very little control during the earlier part of the year, but showed a considerable weakening of the bind weed plants later in the season. The two plots on the Heaton Lunt farm showed approximately 95% control by the end of the season.

V. (Continued)

(3). Activities and Results

WEED CONTROL (Continued)

The plots on the Heaton Lunt farm were treated the same as the plots on the J. B. Simms farm. The soil type was also the same. Apparently the difference in the percentage of bind weed plants killed lay in the physiological conditions of the plants at the time of treatment. Atlicide treatment appears to be too expensive to use except on a very limited acreage. Mr. E. L. Hancock and Mr. Broughton Lunt both have bind weed patches which they have not only controlled, but almost exterminated, by cultivation. It is the belief of the agent that cultivation is the most economical and practical way to control this weed but that few farmers are willing to cultivate thoroughly and carefully enough to produce that control.

ORCHARD IMPROVEMENT

Due to the severe Chlorosis damage which had occurred during the past year, goals for orchard improvement were to establish three new result demonstrations on the control of Chlorosis and to continue to work with pecans and Black Walnuts. During the past fall and winter, an exceptionally warm season, accompanied by more than average rain-fall, apparently broke up the Chlorosis cycle, as very little Chlorosis appeared during the past growing season. Due to the fact that so little Chlorosis appeared, only two demonstrations were established on its control.

Commercial Sulphur with small amounts of phosphate fertilizers were used in these demonstrations with good results. Although Chlorosis was greatly diminished, a great amount of delayed foliation occurred among fruit trees. Farmers were told that this was rather difficult to control and that at this altitude, the normal winter weather of the following year should correct the condition. No pecan or black walnut grafts were established during the past year. Visits were made to both improved black walnut and pecan grafts established in previous years and a check made on the success of the same. In all cases, the hardy pecan

V. (Continued)

(3). Activities and Results

ORCHARCH IMPROVEMENT (Continued)

varieties and the improved black walnut grafts seemed to do well where the tree is in good condition at the time of the work and where proper care is taken to protect the work. During the year people invariably request advise on the planting of English Walnut and Pecan trees. Mr. Harvey Tate, Specialist in Horticulture, has advised the agent to tell these people that there is almost no chance of English Walnut production in Greenlee County and that pecans can be produced only at the lower altitudes.

Work was completed on the vine fruits test plot established two years previous on the R. D. Williams farm. In this plot, Boysenberries from two different sources, Young berries, Dew berries, and several species of Black berries were established to test out and adapt locally. The Boysenberries proved to be the only one of the varieties practical for conditions as existing on the Williams farm. They have proven very hardy, prolific berries and when the vines are not trellised, but allowed to run along the ground, the dense foliage protects the berries from bird damage which is a serious matter in this locality. All other varieties in the plot were uprooted and removed this year.

FARM PLANNING

Farm Planning continued to be carried out on an individual farm basis. During the year, 73 office calls were made by farmers on this subject and the agent made 30 farm visits. Farm and home financing was also discussed at the same time. The main purpose in this work has been to encourage farmers to adjust their cropping program and to select plant varieties and the proper amount of livestock and poultry to fit the best needs of the farm. The labor situation becomes of increasing importance in farm planning and is causing noticeable decrease in vegetable acreage.

V. (Continued)

(3). Activities and Results

SOIL CONSERVATION

Soil Conservation work was promoted during the early part of the year through the use of equipment owned by the Extension Service and used to assist farmers in locating dikes to control run off and to set water in such manner that less silt would be carried in the process of irrigation.

In August, work on the establishment of a Soil Conservation District embracing irrigated land of the county, was begun. One meeting of a preliminary nature was begun. One meeting of a preliminary nature was held during August and the second meeting, in the form of a regular hearing, was held during October.

During November, a meeting was held whereat the agent organized farmers, who had been the victims of serious erosion by the September flood, for assistance by the use of heavy machinery owned by the Soil Conservation Service. Although the farmer has some expense when using this machinery, it is necessary to use it in order to level the land in time for crop production the coming year.

COTTON MATTRESS PROGRAM

The Cotton Mattress Program was placed on an active basis during the month of January when members of the Extension Service and the Agricultural Conservation Committee met for the purpose of organizing and selecting the location for the work. Immediately following this, the County Agent appeared before the Board of Supervisors of Greenlee County and obtained a promise of the necessary financial aid to start the work.

The details of the mattress construction were taken care of by Miss Frances L. Brown, Home Demonstration Agent, who held two training meetings to select and train supervisors.

Centers were established in the Duncan and Franklin communities, these two centers taking care of six communities in all. The transportation of cotton and supplies was provided by Greenlee County.

V. (Continued)

(3). Activities and Results

COTTON MATTRESS PROGRAM (Continued)

The Home Demonstration Agent has made approximately twenty-four supervisory visits to these centers. One supervisor was located in each center with several people assisting each supervisor.

One-hundred-fifty-nine mattress applications were received and to date, 235 mattresses have been completed. Requests for 238 comforters have been received, and 142 made to date. All cotton shipped to the centers was used up in June. Additional ticking and comforter materials have been received, but the cotton necessary to complete the program is still lacking. Although the project has been seriously delayed by lack of cotton to finish it, it proved a very interesting and beneficial project for the low-income families of the community.

All persons connected with it worked in splendid cooperation. In many cases, neighbors made mattresses for sick or disabled friends who were eligible but unable to perform the labor. Many of the persons making the mattresses became as skilled as the supervisors in a very short time.

MISCELLANEOUS

Approximately seventeen and one half days were devoted by the agent to the Agricultural Conservation Program during the year. Five days were devoted to work with the Farm Security Administration, and various other governmental agencies such as the Forest Service, Division of Grazing, Seed and Feed Loan, N.Y.A. and W.P.A. received the cooperation of the agent and considerable of the agent's time.

An unprecedented flood, covering a large part of the tilled acreage of the valley and all of the town, occurred the 29th of September, and following this date, the agent devoted considerable time to flood relief and the various problems arising in the wake of the disaster.

V. (Continued)

(3). Activities and Results

MISCELLANEOUS (Continued)

Eleven people requested assistance on canning problems, seven on tanning, forty-six on landscaping, and an indefinite number requested information in regard to the selection and care of ornamentals for home beautification.

During the last three months of the year, the agent has devoted some time to Agricultural Defense work. Emergency work in furnishing information to farmers and stock men for the control of a sleeping sickness out-break, and organization for the dourine test, and for coyote control has been noted under previous subjects. The agent also furnished information on a great number of matters simply referred to in the files as "Miscellaneous", but which are of considerable importance to the Agricultural welfare of rural communities.

## VI. OUTLOOK AND RECOMMENDATIONS

The agricultural outlook for Greenlee County continues to be favorable. Water storage in the San Carlos Reservoir is the greatest it has ever been. This releases the flow of the Gila river for irrigation within Greenlee County. The system of large pumps established along the canals in Greenlee County for emergency irrigation are continuing to operate whenever needed.

Costs of production, however, continue to rise. Taxes, irrigation costs, and all farm overhead has increased over last year. Labor is more expensive and more difficult to obtain than any time during the past 12 years. To off-set these greater costs, however, the farmer has the promise of continuing good prices. The outlook for general farming, temporarily at least, is bright. Increased industrial activities in the county insures a premium on poultry, dairy, and vegetable production, as a local demand is practically guaranteed, giving local producers the advantage of a long freight haul which outside producers must contend with. Indications would point to an increase in poultry production during the coming year. Farmers also are moving to increase dairy production and to increase beef and pork production on a small scale.

There will be more home gardens grown than ever before due to the Agricultural Defense drive, but lack of labor will perhaps curtail commercial vegetable production.

Due to the fact that a cotton gin has been built in Duncan, and that the prices of the particular grade of cotton produced in this county is very favorable, cotton producers will perhaps plant all allotted acreage to short staple during the coming year.

Range men are also in an excellent position. Moisture conditions have been good throughout the year. Reduction in numbers and control of all range land in the county has been a large factor in promoting the prosperity of the cattle business.

Recommendations for extension work in the county during the coming year can be best made by project as in past reports. Present intentions are to carry

## VI. OUTLOOK AND RECOMMENDATIONS (Continued)

all projects now listed in extension organization, although the work done on some projects may, of necessity, be very limited.

Soil fertility and soil conservation are closely related projects and recommendations may be reported jointly. Soil conservation work may be centered around an attempt to aid farmers in repairing the damage of the recent flood and again level their land. In this work, the erection of dikes to avoid the loss of silt and the stoppage of wastes will naturally follow leveling. Soil fertility will be centered around work to increase the humus content of soil and the proper control of alkalinity where it appears. Unless need arises for the same, there will be no work carried on with chemical fertilizers except, perhaps, on a small scale with garden or truck crops.

Irrigation practices during the coming year should be centered around a drive to increase the storage of water in ground prior to the date of planting, and to arrange the direction of irrigation so as to obtain proper penetration. Cotton is the only crop which will be given special attention in the matter of irrigation. An attempt should be made to further the early irrigation of cotton in order to hasten the date of maturity. At present there is a large field of work open in cotton production in this county. The agent has made arrangements with the Extension Service specialists and Experimental Station to carry on test work with both Coker-Wiles Number 11, and B2 Stoneville. A drive should be made to encourage all commercial planting of cotton to be made to one of the approved Las Cruces strains of Acala. Cooperators have already been obtained for carrying on the certification of these strains within the county. During the past year Greenlee County cotton has sold at a premium and it is the belief of the agent that it can be sold at a premium in the future, as the proper strains of Acala are continued in production.

Potato disease control is in need of further work on the use of sulphur dust. There is special need of further variety test work. In all probability, potato acreage will be reduced in the county during the coming year. Lettuce production, in all probability,

## VI. OUTLOOK AND RECOMMENDATIONS (Continued)

will be reduced due to the difficulty of obtaining adequate labor. Although the association formed for shipping lettuce has disbanded, the agent will continue to work with this group of growers as in the past.

General vegetable production presents rather a bright future. Onion test work has interested an increased number of people in onion production. Moderate acreage of onions can be handled with little additional labor. The agent needs to continue onion variety test work and to encourage onion production on a moderate scale as well as the production of cantaloupes, string beans, carrots, and other safe crops within the acreage which can be disposed of locally and for which labor can be obtained.

Boys' and Girls' Club work will be carried along much as during the past year. This work needs a greater amount of the agent's time, provided that is possible. There will be a constant effort made to increase the number of leaders during the year and increase their efficiency.

Rodent control work needs to be carried as in the past and, if possible, control demonstrations need to be increased in number. In connection with this project, Predatory Animal Control should receive the cooperation of the agent. Plans have been arranged for some very good demonstration work on coyote control. This is important and of great immediate value.

Although considerable young dairy stock has been brought into the county during the past year, there is need for more. Work on dairy herd improvement should center on attempts to encourage farmers to continue the purchase of good dairy calves and also on improved feeding practices.

The construction of silos and the use of hammer mills should be encouraged and test plots in permanent pasture work needs to be carried on jointly with range management work. Whenever present tests merit recommendation, there is need of a drive to encourage dairy men to establish permanent irrigated pastures.

Present favorable poultry and egg prices are serving as a great encouragement to poultry producers. However, with increased interest in poultry, there is need of much stress on disease control and against

## VI. OUTLOOK AND RECOMMENDATIONS (Continued)

the purchase of low grade chicks. The agent will continue to work on these two matters as in past years. He will also continue to work to improve egg grades and to better organize the marketing of eggs in the county.

Cattle men continue to show great interest in all work which tends to improve the range, to improve reserves of feed, and to control obnoxious and poisonous weeds. Work with range men will center around these goals during the coming year.

Past work on sales organization and herd improvement needs also to be continued.

Weed control needs to be stressed now that farmers are in a better financial position. During the ensuing year, the agent hopes to establish some cultural control work. The control of bind weed is a vital matter in Greenlee County and will receive considerable attention.

Work on vine fruits, pecans, and improved black walnut varieties needs to be continued on the home orchard basis. The present drive toward the production of home vegetables and fruits should encourage planting a few of the adapted fruit trees and a few of the vines which have proven practical in the past test work.

In addition to the projects already sighted, it will be necessary at all times to give agricultural defense work first place and work closely to obtain the agricultural defense goals outlined for this county.