

Read Dec. 4-1932  
A. B. B.

17 II. ANNUAL REPORT OF THE  
COUNTY AGRICULTURAL AGENT  
FOR GRAHAM COUNTY

PERIOD FROM DECEMBER FIRST, 1931,  
TO  
NOVEMBER THIRTIETH, 1932.

BY  
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## STATUS OF COUNTY EXTENSION ORGANIZATION.

The Graham County Farm Bureau through its Board of Directors sponsors County Agent work in Graham County. This Board of Directors approves the County Extension budget and presents it to the County Board of Supervisors for its adoption. During the past several years the Graham County Farm Bureau has been rather inactive, however during the past year they have taken considerable interest in problems of taxation and legislation. Several mass meetings have been held as well as committee meetings to discuss these problems. A new set of Farm Bureau membership cards have been printed and an effort has been started to sign up new members.

The County Farm Bureau has a hay committee which meets periodically in an effort to determine the price of hay.

The Graham County Chamber of Commerce, Rotary Club and Lion's Club, all have organizations in Graham County, however, very little help has been secured from these organizations. It is believed, however, that these agencies would cooperate if they were properly approached.

## PROGRAM OF WORK

On the following pages is the program of work adopted for the year, including methods to be employed and goals established.

Month	I	5	8	11	
Month	Improved Irrigation Practices.	Alfalfa Hay Production	Home Beautification	Insect Pests and Plant Diseases.	Boys' and Girls' Club work.
Dec. 1-15 16-31	Watenpaugh Secure Cooperators to plan rotation of crops, adaptable to water supply under each canal.		List homes having variety of ornamentals that may be studied on a tour. Letters and Newspaper articles on ornamentals to plant.		Boys' and Girls' Club work. Visit schools to secure 4H club enrollment for 1932.
Jan. 1-15					Organize boys' 4H clubs.
16-31					Baker. Secure 4H club leaders. Hold Leaders' training meetings.
Feb. 1-15					
16-28	Visit cooperators further discuss plans. Meeting on crop rotation systems. Watenpaugh.	Secure cooperators try different methods getting pepper grass out of alfalfa.	Meeting at Mt. Graham Nursery study ornamental plantings. Draper.		
March 1-15 16-31		Measure off demonstration areas. Leave check plots.	Make tour of ornamental plantings in Safford & Thatcher. Draper.		
April 1-15	Visit cooperators to note plantings made.	Visit demonstration measure results of fight on pepper grass. If results are striking arrange tour or demonstration	Hold meeting at Pima discuss ornamentals. may be field meeting. Draper.	Give demonstration on control of the red harvester ant.	Visit each club to assist in planning and organizing work.
16-30					Baker. Hold Leaders' training meeting to assist in organizing subject matter and unifying work.
May 1-15		Arrange for hay grading if possible. Pima, Solomonville. Briggs or Morgan.	Write newspaper article on ornamentals. Give list of those having ornamentals not commonly grown here.	Inspect fields of Ashurst & Bryce note any outbreak break grasshoppers. Start control measures if necessary.	
16-31		Discuss with hay growers advisability morning baling to conserve leaves.	Visit homes making new ornamental plantings to instructions on care.	Visit Ashurst, Bryce note any outbreak of grasshoppers. Start control measures if necessary. Demonstrations on use and mixing garden sprays. demonstrate equipment. Saf. Thatcher, Pima and Solomonville.	Demonstrations on control of red harvester ant.
June 1-15	Watenpaugh. Note result plantings with reference to economical use of water.	Try secure cooperators to bale hay only during the morning.			Take judging teams to University Club week.
16-30		Compare quality of morning baling with afternoon baling.			
July 1-15	Note result plantings of cooperators with reference to economical use of irrigation water.	Secure more cooperators in the morning.		Make study of amount chalcids fly in alfalfa seed fields.	
16-31		Compare quality of morning baling with afternoon baling	Visit homes making new ornamental plantings give instructions on care. May be tour. Draper	Check on result red harvester ant control.	Hold meetings of Club Leaders plan work & check on results. Baker.
Sept. 1-15				Study of amount chalcids fly in alfalfa seed fields.	
16-30	Vacation period. Visit farms on rotation for fall planting. Check on water conservation. Watenpaugh	Aug. 3-Sept 3.	Make pictures of plantings check on results and use for further reference.	Newspaper article on chalcids fly control.	Make plans for annual 4H club fair.
Oct. 1-15 16-31					Hold annual 4H Club Fair. Baker
Nov. 1-15	Visit cooperators for final summary seasons results.				
16-30	Annual Report.				

Month.	12	13	18	19
Dec., 1-15	Fairs	Pocket Gopher Control	Dairy Management Assist in locating breeding stock for 2 farmers.	Poultry Management Visit cooperators. Study costs. Poultry meeting on feeding, housing & management. Rowe-9-10-11
16-31				
Jan. 1-15				
16-31				
Feb. 1-15	Secure cooperators to plant for show purposes.	Gopher poisoning demonstration at Thatcher,	Dairymen feeding & Management school Pima & Solomonville Rowe.	Poultry management meeting Eden and Solomonville. Rowe.
16-28	Securely cooperators with lists of plants not otherwise commercially grown here.			
March 1-15				
16-31				
April 1-15	Collect alfalfa sheaf exhibit for fair.	Gopher poisoning demonstration Pima.	Secure prices on young purebred dairy animals. Encourage dairymen to buy better stock.	Poultry diseases & feeding of baby chicks. Meeting at Ft. Thomas & Pima. Rowe.
16-30				
May 1-15	Collect sheaf grain exhibit for fair.	Gopher poisoning demonstration at Geronimo & Thomas.	Try to get more dairymen to treat for abortion. Dairy meeting on feeding & management Geronimo. Rowe.	Poultry meeting at Ft. Ashurst, Ft. Thomas, Pima, Central.
16-31	Collect seed grain exhibit for fair.		Dairy meeting Artesia, Yactus districts. Management Dairy Herds Rowe.	Poultry tour Thatcher & Pima. Discuss subject Poultry Management. Rowe.
June 1-15				
16-30				
July 1-15	Supply cooperators with seeds of plants not otherwise grown here to plant for show purposes.	Visit farmers to encourage them to do more work on poisoning gophers.	Secure prices on young purebred animals. Encourage dairymen to buy better stock.	
16-31				
Aug. 1-15	Visit cooperators to note extent of growth of plants.			
16-31	Vacation period			
Sept. 1-15	Collect apple and peach exhibits for fair.			
16-30				
Oct. 1-15	Collect fair exhibits.	Visit farmers on Gopher poisoning. check on results.	Dairy meetings at Eden and Ashurst on feeding and management. Rowe.	Poultry meeting on winter housing, disease control and feeding. Review records. Rowe.
16-31	Collect fair exhibits.			
Nov. 1-15	Take Graham Co. exhibit to State Fair.			
16-30	annual report			

Month	21 Animal Husbandry.	22 Vegetable & Fruit Production	23 Pecans.
Dec. 1-15	Arrange for hog feeding demonstration with tankage.		Collect samples of pecan nut varieties. List where found.
16-31			List of pecan plantings in county, varieties & types of soil
Jan. 1-15	Visit hog feeding demonstration to check on results,		Letters to all pecan growers advising winter irrigation, & early planting of trees.
16-31	Meeting of cattlemen on feeding of cattle, Safford, Pickrell.		Soil borings to study soil type in pecan groves. News articles.
Feb. 1-15.	Tour feeding pens to discuss best feeding practices. Pickrell.	Circular letters on vegetables and fruit tree planting.	News article on pecan growing emphasizing soils, varieties & planting.
16-28	Attend cattlemen's meeting at Tucson if possible.	News article on vegetable & fruit tree planting. What to plant.	
Mar. 1-15	Summarize results of hog feeding demonstration.	Organize garden growing contest, Safford, Thatcher, Pima. Secure appropriate prizes.	
16-31	Tour cattle feeding pens to discuss feeding of cattle. Bryce & Ft. Thomas. Pickrell.	Write newspaper article on planting methods.	
April 1-15	Visit cattlemen Bonita & Aravaipa district, discuss range management. Pickrell.		Hold demonstration meeting on budding & grafting. Draper.
16-30		Visit gardens of contestants & make score of each.	Demonstration meetings on budding and grafting. Draper.
May 1-15	Secure prices on purebred hogs, Duroc-Jersey, Chester Whites. Encourage hog raisers to grow better stock.	Write newspaper article on best garden.	
16-31			
June 1-15		Make final scores and award prizes.	Tour of all new pecan plantings
16-30	Visit farmers on hog raising encourage use of more pasture.		Give instructions on care.
July 1-15	Organize fall garden contest. secure appropriate prizes.		Study of soils to determine adaptability for pecan planting
16-31			
Aug. 1-15		Visit gardens of each contestant, give necessary instructions.	Visit all new pecan plantings give instructions on care. note growth. Draper.
16-31			
Sept. 1-15	Vacation period.		

PROGRAM OF WORK FOR GRAHAM COUNTY, 1932--continued

Month	21 Animal Husbandry	22 Vegetable & Fruit Production	23 Pecans
Sept. 16-30			
Oct. 1-15	Meeting on buying feeder cattle. Discussion on cattle feeding. Pickrell.	Make score of each contestant's garden. Write news article.	
16-31	Visit hog raisers to encourage better feeding and use of more hog pastures.		Visit all pecan growers to study varieties. Make this in form of a tour.
Nov. 1-15			
16-30	ANNUAL REPORT		

PROJECT   ACTIVITIES   AND   RESULTSSOILSImproved Irrigation Practices.

A system of charts showing the amount of water carried by the various canals in Graham County and the amount of water used by the different cropping systems under each canal was prepared by Mr. H. N. Watenpaugh, Extension Specialist in Agronomy and Improved Irrigation Practices. Mr. Watenpaugh used figures previously prepared by Mr. Karl Harris, former County Agent in this County.

Using these charts a number of farmers were visited under the various canals in an endeavor to assist them in a crop rotation system which would make the best and most possible use of the water available.

Plans for crop rotations system which would make the most economic use of water available were furnished to Mr. W. A. Batty of Glenbar and to Richard Layton, Jr. of Thatcher. This crop rotation system covers plans for the next twelve years. These two men have promised to follow the schedule as nearly as possible. Three newspaper articles were published showing the amount of water available under the Curtis-Kempton Canal and the Dodge-Nevada Canal, and suggesting crop rotations which would make the best use of the water available.

A meeting was held at Eden at which time Mr. Watenpaugh discussed the relationship between the amount of water available in the Curtis-Kempton Canal for an average of the past nine years and the kind and amount of crops that this water would irrigate. Figures were also given for a suggested rotation which would best suit the Eden District.

The farm of Mr. George Bigler, which is located about four miles south of Glenbar was used as a demonstration in contour bordering. The Agent assisted Mr. Bigler in staking out contour lines across his farm, but Mr. Bigler did not plow contours according to the stakes thinking that he could get just as good results by plowing borders straight across the field. The Hegari at the lower end of these borders made a good yield, while at the upper end of the borders did practically nothing. Seeing his mistake Mr. Bigler asked for a re-survey and he is now making contour borders according to the ground level. A picture of some of his borders already thrown up is shown on the next page.

Individual farm surveying work in order that water might be more easily handled was done on the farms of: V. A. Adams, Elmo Morris, Bert Hatch, T. D. Burton, Don Pace.

Land was measured for Emeret Kempton of San Jose.

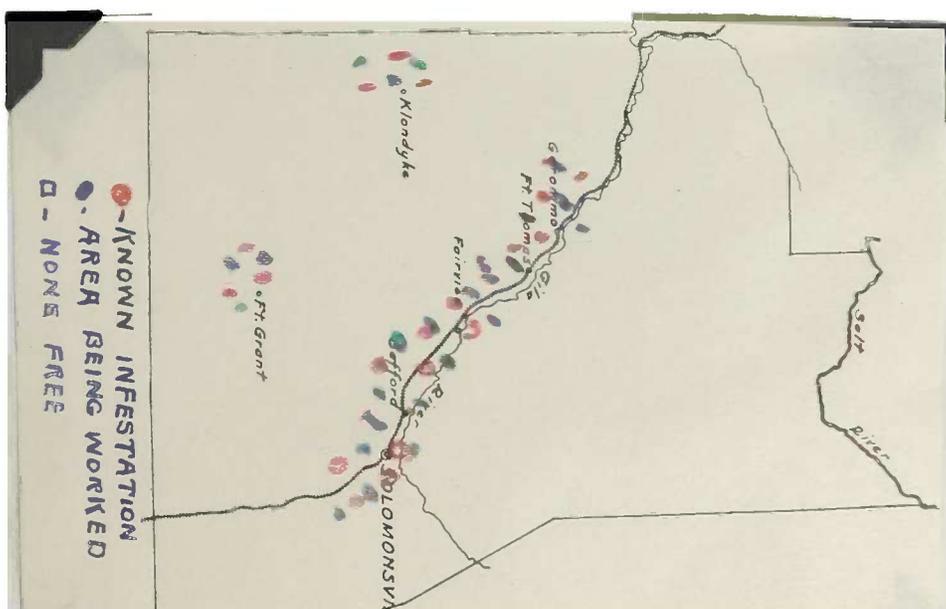
The only recommendation the Agent would have to offer in continuing the rabbit poisoning work is that some method be used to draw the farmers' attention to the printed instructions given with every can and that some method be used to encourage them to read these instructions and to follow them.

### Pocket Gopher Control.

The Agent keeps poison barley in the office for the control of pocket gophers and is for free distribution. During the past year 3,294 pounds of this grain was distributed, and there were 413 co-operators or people who used it to treat 50,510 acres of land.

Mr. Isaac Rogers, Rodent Control Specialist, with the U. S. Biological Survey, spent three weeks in Graham County giving instructions in rodent control work. Two demonstration farms were given special attention. These were the farms of Don Pace and Alma Tate at Thatcher. At each of these places the places where gophers were caught were marked with a stake with a white rag attached. On the farm of Don Pace 253 gophers were caught on twenty-five acres. A demonstration meeting was arranged for at this place with 13 farmers in attendance. These farmers were shown how to set traps for catching gophers and how to apply the poison grain. They also made an inspection of the twenty-five acres and found that practically every gopher had been caught for there was no fresh dirt after a weeks time.

Pocket gopher trapping and poisoning demonstrations were given at the farms of Amon Curtis, San Jose, Charles Luster, Pima and Joe Christensen at Eden and Gila College at Thatcher. Twenty-five Gila College boys were in attendance at the demonstration which was given at the Campus of the College. The Campus being infested with a considerable number of gophers.





Demonstrational Contour Bordering Done  
At the Farm of George Bigler at  
Glenbar.

## Alfalfa Hay Production.

Farmers in Graham County are bothered with a pepper grass weed, especially in the first crop of hay. To determine whether or not this pepper grass could be checked by the use of cultural methods, two cooperato~~rs~~s were secured to try the disk and spring tooth harrow as a means of cultivating pepper grass infested alfalfa fields. The fields were disked and harrowed when the pepper grass first started to show up. By making several counts of the number of pepper grass plants per square yard, one field was found to contain an average of 396 and the other 150. The cooperator who used the disk still had a large number of pepper grass plants in his alfalfa at the time of harvesting. The farmer who used the spring toothed harrow had very few pepper grass plants in his alfalfa at the time of harvesting. They were so few in fact, that they were pulled out by hand before cutting. A neighboring farmer had so many pepper grass plants in his alfalfa and he let his alfalfa go so long without cutting that the whole field looked white with pepper grass plants.

Most farmers who have pepper grass in their alfalfa hay believe it is more economical to cut their alfalfa very early when the pepper grass and alfalfa is not more than six or eight inches high. This practice gets rid of the pepper grass in the first cutting of hay but buyers claim there is a difference in this hay and the hay from fields that have never been mowed early to get rid of the pepper grass, also it throws the harvesting of the first crop of hay about two weeks late.

Mr. W. J. Morgan, Federal Hay Inspector in Charge of Federal Hay Grading at Los Angeles, gave assistance in conducting two hay grading demonstrations. At these demonstrations Mr. Morgan also discussed what he considers the best methods of curing hay. Samples of the different types of hay were collected at Clifford & Wilson's hay sheds in Safford. Clifford and Wilson were kind enough to collect this hay with their own truck and driver.

While Mr. Morgan was in the County visits were made to several hay barns at Central and Pima.

Mr. Morgan left the suggestion that work should be done to try and determine a better method of curing and baling our second crop of hay. The leaves on all of our second crop hay are free from the stem. Mr. Morgan classified nearly all of our second crop as No. 2 Dairy Hay. He stated that our second crop would make good horse hay but the U. S. grades on the basis of Dairy Hay.

### Home Beautification.

Mr. Fred Draper, Extension Horticulturist, of the University of Arizona, assisted the Agent in conducting a tour of homes in Safford that have the largest variety of ornamental plantings. The plants were studied with the idea in mind of making those on the tour acquainted with them, such as their habits of growth, time of planting and worth. Information was also given on landscaping. Twelve people attended this ornamental tour.

A rose budding demonstration was given before the Thatcher Relief Society with thirty in attendance. A rose budding demonstration was also given before the Thatcher Garden Club with six in attendance.

The home of Mrs. G. B. Maloy of Pima was landscaped.



Home visit studying ornamentals.

Pruning Deciduous Fruit Trees and Grape Vines.

Arrangements were made for a grape pruning demonstration and a deciduous fruit tree pruning and trimming demonstration at the farm of Mr. Heber Humphrey at Thatcher. Mr. Fred Draper, Extension Horticulturist, assisted in giving this demonstration.



Grape Pruning Demonstration at Heber Humphrey .  
Home, Thatcher.

The Agent gave individual assistance in pruning deciduous fruit trees at the farms of George Bigler, Central, A. V. Tate, Thatcher, Cleve Curtis, Thatcher, Wesley Taylor, Thatcher, Ellis Weech, Pima and Ed Black, Geronimo.

Insect Pests and Plant Diseases.

In cooperation with the District Entomologist, Mr. W. T. Mendenhall, visits were made to several cotton fields in an effort to determine whether or not insect enemies were responsible for the heavy cotton shedding. In no case were insects found numerous enough to be responsible for the damage.

One demonstration was given at the farm of Hyrum Bingham on dusting for the control of the Mexican bean beetle. However due to a change in weather conditions the bean beetle did not multiply fast enough to necessitate the dusting of the entire field.

Gave demonstrations in the control of the Red Harvester Ant at the farms of Emeret Kempton, Acil Kempton of Solomonville, and Mrs. Harris and J. J. Robertson of Cactus. Carbon Bisulphide was used for these demonstrations and was applied as directed in Farmers' Bulletin No. 1668, entitled "The Red Harvester Ant and How to Subdue It."

At the farm of Emeret Kempton, nine hills were treated, seven of which were killed completely at the first application, the other two hills being killed with the second application.



Destructive Work of the Red Harvester Ant on Emeret Kempton Farm at Solomonville, Arizona.

At the farm of Acil Kempton, three hills were treated and all three were completely killed with the first application of carbon bisulphide.

At the farm of Mars Harris, ten hills were treated and five were killed with the first application, two more hills were killed with the second application. It was impossible to apply the carbon bisulphide as directed at this farm due to the lack of water. The ground here was also very sandy and porous.

At the farm of J. J. Robertson, five hills were treated. Two hills were killed with the first application and the remainder with the second application.

Flat Headed Borers were found in the Mulberry trees of C. A. Firth of Safford, and William Saline at Eden. Mr. Fred Draper, Extension Horticulturist, treated the trees of Mr. First and the Agent treated the trees of Mr. Saline. Carbon Bisulphide was used in the holes made by the borers.

Three amateur beekeepers were given assistance in the proper method of controlling the wax moth in stored frames. Advice was also given on method of building up the strength of the colonies so that the wax moth would not enter the hives.

Dr. E. D. Ball, Economic Zoologist, of the University of Arizona, made several field trips with the Agent in an endeavor to find the breeding grounds of the grasshoppers, but was unsuccessful. The grasshoppers were thought to be breeding in the bare spots in the fields and along the borders, but the eggs were not found in these localities. Since Dr. Ball visited this County, it has been reported that he has found grasshoppers' eggs in the shady places rather than the bare places, showing that the grasshoppers in Arizona seek protection from the sun rather than seeking the sun as he does in other states.

Dr. Ball and the Agent visited the Districts of Ashurst and Bryce during the grasshopper season to determine whether or not there were sufficient hoppers to warrant a control campaign. At the time of the visit the hoppers were not sufficiently numerous to warrant the building of the balloon type of grasshopper catcher as was recommended by Dr. Ball. However, Dr. Ball left plans for the building of the catcher should they be needed.

In the neighborhood of 100 letters were sent out to farmers advising them how to mix grasshopper poison bait. Newspaper articles were also published giving this same information.

Newspaper articles were published on the control of the melon aphid which was quite prevalent during this last Spring. Nine people were also given information on how to mix the spray for the control of the melon aphid and how to dust for the control of this pest.

Four field trips were made to determine the time to spray for the control of the codling moth. A newspaper article was published giving information on the time of spraying, the method of mixing the poison spray and how to do the spraying. Four different farms were visited to give further instructions on spraying for the control of the codling moth.

Six different people were given information on the control of the caterpillar, which attacks the leaves of the cottonwood and the popular trees very extensively in the Gila Valley. In some instances it has also been found to attack the leaves on the pecan trees.

Ten people were given information on how to mix spray for the control of aphids on garden crops and on flowers.

Information was given to one farmer on the use of carbon bisulphide to control the saw toothed beetle in stored grain.

Information was given to Gila College on fumigation to control borers in stored wood.

Seven different farmers were visited on the control of the Texas Root Rot. Texas Root Rot is not generally destructive in the Gila Valley, but there are spotted outbreaks of it in different parts of the Valley.

### Marketing Farm Products.

Graham County Farm Bureau has a committee on hay marketing and the County Agent has for several years past acted as Secretary of this Committee. During the past year this Committee has held 8 meetings. At each of these meetings the Agent has furnished the Committee members with prices on hay secured from points in California, Arizona, New Mexico and Texas. This information was obtained by correspondence and telegraph.

This Committee has at various meetings placed the prices at which No. 1 hay is to sell in this Valley. The hay dealers have cooperated with the Committee in not selling under the price quoted.

In order to present the prices of hay in a more simplified manner the Agent has used the chart as shown in the picture on the next page.

Prices have been secured from the U. S. D. A. Bureau of Economics each week, and any change in prices has been charted on the blackboard, together with the freight to that point. This blackboard has been hung in the County Agent's office where anyone interested could see it at any time.

This chart has also been used at hay committee meetings in the discussion of prices.

	PLACE	U.S. NO. 1	U.S. NO. 2	ERT	BAL. U.S. NO. 1	BAL. U.S. NO. 2
NOV. 15 <sup>th</sup>	KC. MO.	10-11 <sup>00</sup>	7.50-9 <sup>00</sup>	12.00	—	—
	F. WORTH	16-17 <sup>00</sup>	11.50-15.50 <sup>00</sup>	10.40	5.40-6.60	4.10-5.10
	OMAHA	9.50	8.00	12.00	—	—
	SAN ANTONIO	16 <sup>00</sup>	14-15 <sup>00</sup>	10.40	5.60	3.60-4.60
	HOUSTON			10.40		
NOV. 15 <sup>th</sup>	ELPASO			5.60		
	LOS. A.	12.50-13.50	11.50-12 <sup>00</sup>	7.00	5.50-6.50	4.50-5.50
	TUCSON			4.40		
	PHOENIX	8 <sup>00</sup> -9 <sup>00</sup>				
	DOUGLAS			4.20		

Method used in presenting hay marketing prices.

Prices have also been secured for use of the Graham County Farm Bureau on the following commodities: barley, wheat, grain sacks and cotton seed. Prices on the cost of ginning cotton in the various districts of the state have been collected and presented to the Farm Bureau.

Through the efforts of the Agent in securing prices on grain sacks the prices on sacks sold locally were reduced 1¢ on used sacks and 2¢ on new sacks. Thus making a considerable saving to each individual farmer.

Information was secured on the methods of bonding grain warehouses and was presented to the Farm Bureau officers. No use was made of this information during 1932 but there is a possibility that this information will be used during the 1933 season.

Assistance was given the Farm Bureau officers in arranging for several meetings of all the dairymen in the County. Several circular letters were sent to the dairymen advising them of the possibility of the installation of a creamery in Graham County.

At these farmers' meetings a representative of the Copper State Creamery of Phoenix, explained the conditions under which they would install a plant at Safford. These conditions were: that the farmers sign contracts pledging themselves to deliver all their cream to the platform of the Copper State Creamery, at Safford, for a period of five years. The price to be paid for this cream by the Copper State Creamery Company as specified in the contracts is to be 1¢ under the price paid in Maricopa County during the first year and an equal price with that given in Maricopa County for the following years.

The Copper State Creamery Company now has a man stationed at the Safford Ice Plant receiving cream under the contract, weighing, testing and shipping the cream to Phoenix. As soon as 10,000 pounds of cream is being received per month at this station, machinery for the manufacturing of butter will be installed at the Safford Ice Plant by the Copper State Creamery Company.

The dairymen were very interested in this project and took a very active part in signing up dairymen to deliver their cream to the Copper State Creamery. The Agent did no canvassing whatever.

### Boys' & Girls' Club Work.

At the beginning of the year all schools in the Valley were visited to explain club work to the pupils. Tentative lists of boys and girls were secured, of those who were interested. Other visits were made after the boys had seen their parents to determine whether or not the parents would let them join.

Clubs were organized at Solomonville, Safford, Thatcher, Pima, Central, Bryce, Eden, Ft. Thomas and Kimball. Fourteen different clubs were organized which included six different kinds of clubs. The total enrollment of these clubs was 215 and 154 stayed with the club work, raising their livestock, gardens and poultry, to the end of the club year. However, all of the 154 have not yet finished their final report.

During the club year an effort was made to secure capable local leaders for each club, but only five leaders were secured whom could be depended upon, which left most of the club work to be done directly by the County Agent. During the year, ten tours were conducted among the various clubs, visiting each boys' project. Baseball teams were organized in four clubs and baseball games were often played during the club meeting period.



Eden Pig Club Studying Hog Types During Tour of Inspection.



Thatcher 4H Club Making a Study of Hog Types,  
May, 1932



Boys' 4H Pig Club Inspecting Members Pen and Hogs.

The Second Annual 4H Club Fair was held on October 15th, with fourteen different clubs making exhibits with a total of ~~103~~ 103 entries in all departments. The Graham County Board of Supervisors appropriated \$50.00 for prize money and the University of Arizona furnished the 4H Club ribbons. Judging contests were held to determine who should represent Graham County in Livestock Judging at the Annual Club Week held at the University of Arizona. Baseball games between the different clubs were held both in the morning and the afternoon.

Pictures showing some of the enteries and some of the prize winners follow:



4H Dairy Calf Exhibit at Annual Club Fair  
October 15, 1932.



Pima 4H Garden Club Made Over 70 Entries at  
The 4H Club Fair.



4H Club Dairy Calves Shown at Graham County  
Second Annual Club Fair, October 15, 1932.



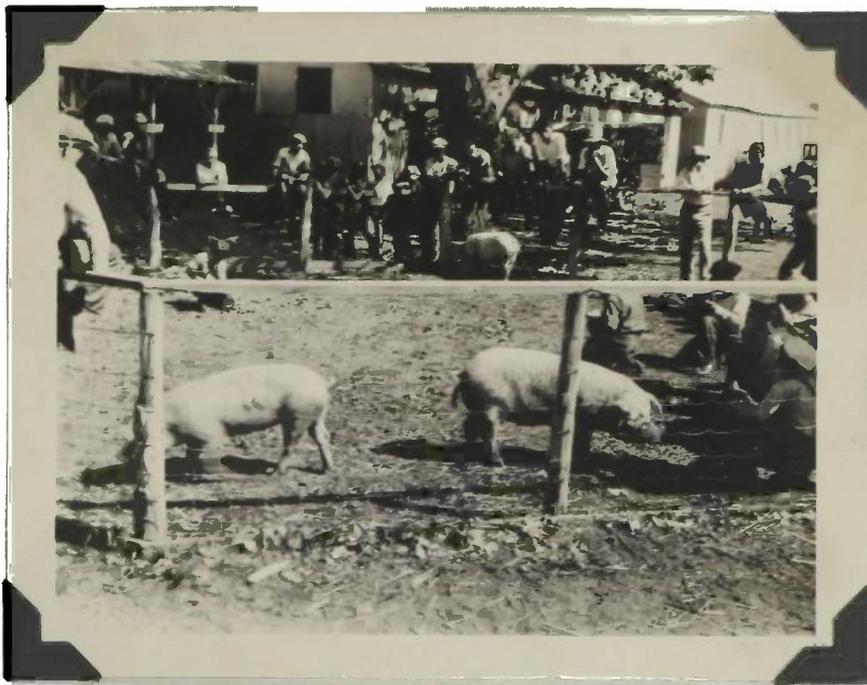
Mildred Smith, 4H Club Girl with her first place Jersey Calf.



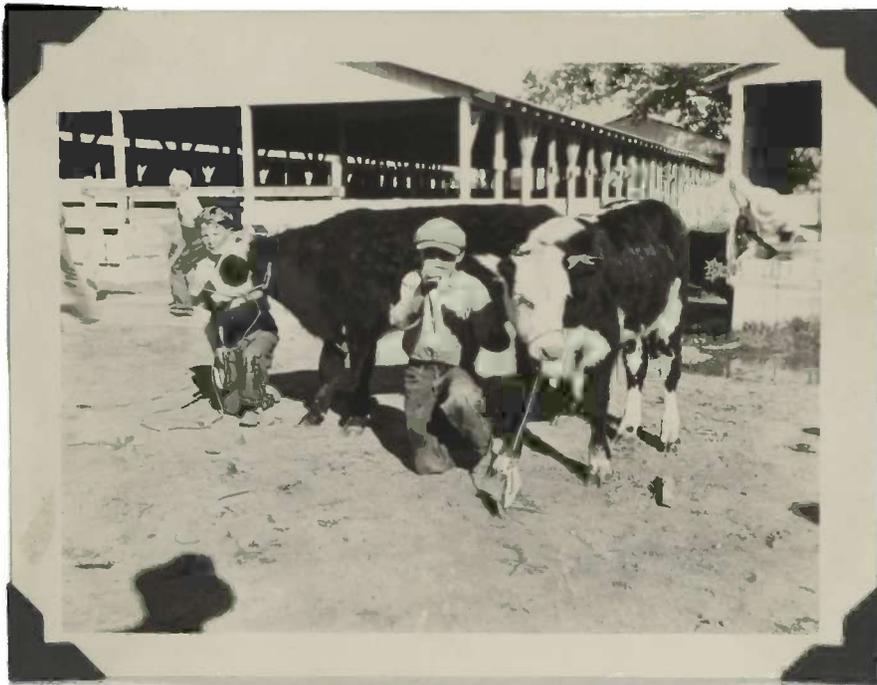
Pure-bred Bull owned by Boys' 4H Club Member and Shown at Club Fair.



Judging Dairy Cows at 4 H Club Fair.



4H Club Boys Judging Hogs at annual Club Fair.  
October 15, 1932.



4H Beef Calf Club Members Showing Their Stuff  
October 15, 1932.

### Rabbit Control.

This office keeps a supply of powdered strychnine for the poisoning of rabbits. The poison being secured from the U. S. Biological Survey. It is put up in  $\frac{1}{4}$  oz. cans and wrapped around each can is a set of printed directions for using the poison. During the past year in the neighborhood of about eighty cans of rabbit poison have been issued to thirty-five different cooperators.

In connection with Isaac Rogers, of the U. S. Biological Survey, a rabbit poisoning demonstration was given on the farm of Orville Allen of Cactus. Mr. Allen had thirteen acres of grain that was being eaten off by rabbits. This field was pre-baited for three nights straight and then poison bait of alfalfa tips was put out. Mr. Rogers and the Agent picked up forty dead rabbits and the owner of the field picked fifty more dead rabbits, he stated.

One drawback in giving out rabbit poison is that a number of the farmers think they have a better method of using it than given in the printed directions, therefore quite a bit of the poison is wasted.

The farm of E. C. Eyring at Pima was visited and rabbit poison put out by the Agent. Mr. Eyring claimed to have been getting poor results in poisoning rabbits. It was found that he had been using too much poison and he had been putting his bait around the edges of the field, rather than in the runways. As Mr. Eyring had been putting his bait around the edges of the field he suggested that the poison be put in the runways without any pre-baiting, which was done. The first morning after putting out this bait in the runways twenty rabbits were picked up and the next morning twenty-two rabbits were picked up.



E. C. Eyring of Pima, and 1 night's kill around a 20 acre field.

Dairy Management.

Sixteen different farms were visited by the Agent for the purpose of discussing abortion control. Six different herds were tested making a total of 214 cows. Blood samples were drawn by the Agent and the University of Arizona did the testing.



Taking Blood Samples for Abortion Testing.

A survey was made of all the dairy bulls used in the County and data was collected on these bulls. In many cases owners of bulls were desirous of trading. Circular letters were forwarded to local dairymen advising them what bulls were being offered for trading. As a result four different trades were consummated. Several circular letters were forwarded to local dairymen advising them of the value of using purebred bulls and data given on the economic returns in the use of good bulls over the economic returns from the use of poor bulls. The Agent had in mind the organization of bull associations but so far there is not enough interest. However, if trades of good bulls can be made and they can be kept in the County rather than going to the slaughtering pens, much valuable assistance can be given in this way.

Mr. Clyde F. Rowe, Extension Dairy Specialist, assisted in conducting a dairy management meeting at the farm of Joe Kempton at Eden. At this time feeding of dairy cattle and raising of dairy calves were the principle topics discussed. A Demonstration was also given on how to judge dairy cows.

A meeting was held at the farms of Milt Allred, Cactus, and Rulon Skinner of Kimball, at which time trench silos, their method of construction, method of filling and their value was discussed. Mr. Clyde F. Rowe, Extension Dairy Specialist, assisted at these meetings, and he demonstrated the method of digging the trench silos, by means of charts. As a result of these meetings two trench silos have been dug and filled. Several farmers have stated that they expect to dig a trench silo for this next season's crop.



Trench Silo Dug By Carl Morris--1932.

### Poultry Management.

Four meetings were held with reference to the control of white diarrhea. Mr. Clyde F. Rowe, Extension Poultry Specialist, brought a testing apparatus whereby he could determine whether or not a hen was a carrier of white diarrhea from a blood sample. Samples of blood were taken from a number of hens in every one of the flocks visited and tested for white diarrhea. While Graham County does not have commercial hatcheries and individual farmers do not hatch their own chickens extensively, the testing demonstration for white diarrhea brought to the attention of poultrymen the necessity of buying baby chicks only from hatcheries which give a guarantee that their baby chicks are free from white diarrhea. The places where these demonstrations on the testing for white diarrhea were given were, S. C. Pierce farm, at Safford, George Killian farm, Thatcher, and S. S. Marshall farm at Pima.

At each of these places Mr. Rowe also made a microscopic test for round worms, and let those present see worms through the microscope in the process of development, which they were unable to see with the naked eye.



Diagnosing Poultry Diseases--February, 1932.

The farms of H. B. Harms, Thatcher and Cecil Woolridge at Sunset, were visited. At each place range paralysis was found to be the cause of the death of a high percentage of their chickens. Information on the treating of this disease and the checking of its spread was given. However, poultry veterinarians have not been very successful in treating this disease.

Meetings were held at the farms of Ammon Curtis, San Jose, Charles Luster, Pima, and W. L. Fuller of Eden, for the discussion of feeding methods. Mr. Clyde F. Rowe, Poultry Specialist of the University of Arizona, assisted in conducting these meetings. At the farm of Mr. Fuller, a demonstration was given on the construction of a pit-brooder for the rearing of baby chicks.

Meetings were held at the homes of Robert Morris, Safford and Fred Webb at Pima, at which time Mr. Rowe discussed the mixing of home grown feeds and the control of poultry diseases. The University Conference formulae for the mixing of home grown feeds were mailed to every poultryman in the Valley.

During the Fall the Agent visited many poultry farms for the purpose of giving information on the control of poultry diseases and for the discussion of feeding formulae. It was found that in order to save expenses poultrymen have been mixing practically half their rations to barley and as a result have been getting decreased egg production. Where a half ground barley was used the poultry feeding troughs showed a high percentage of an accumulation of fiber. Showing that the barley contained more fiber than the birds could assimilate.

Caponizing work was done at the following farms by the Agent: A. V. Tate, Thatcher, Mr. Matthews, George Killian, Mason Norwood, Thad Elliot and Howard Smith, all of Thatcher, Aaron Nelson, Charles Geitz both of Safford, Robert Hundley, Ed Follett, Leo Cluff and Parley Kelly of Pima and Rulon Skinner of Kimball.

Six poultrymen were furnished record blanks by the University and enrolled as farm flock cooperators. They have kept records on all expenses and receipts. Every month they have been furnished with a summary of the poultry records from the rest of the State. They have also been furnished with the monthly letters giving timely hints on poultry management. At the end of the year it is expected that the Extension Poultrymen will meet with the poultrymen and discuss with them feeding methods and management problems which might be advisable to increase their projects.



Poultry Yard of a Farm Flock Cooperator  
Who is keeping accurate record of receipts  
and expenditures.

Animal Husbandry.

As cattle feeding in the Gila Valley is practically a new undertaking, the Extension Service has given considerable attention in assisting in acquainting the farmers with the best methods of feeding cattle and the best feeding formulaes.

The Agent attended the Cattle Feeders' Day at the Mesa Experiment Farm, and secured copies of their progress reports, a copy of which was sent to all the cattle feeders in Graham County.

Mr. Charles U. Pickrell, Extension Livestock Specialist, of the University of Arizona, assisted in conducting five livestock feeder tours at which time pens where cattle were being fattened were visited. The owner of the cattle in every case was called on to explain his method of fattening and feeding cattle and the combination of his feeding rations. After the owners explanation discussions were entered into as to the feeding values of the different materials making up the ration.



Studying price Charts at Field Meeting of Cattle Feeders.



Livestock Feeders Inspect Feed Yards on Feeder's  
Tour, January, 1932



Livestock Feeders Making a Field Study of Grain  
Mixtures for Feeding Purposes, January, 1932.

One combination of feeding ration which was found to be very satisfactory last year and which is being copied by other feeders this year as a result of the feeding tours, is the grinding of bound barley, straw and heads, together, and mixing with this, cotton seed and ground alfalfa hay.

Other things brought out in these livestock feeding tours, was the extra feeding value and palatability which the farmers seemed to note in the grinding of their poorer alfalfa hay. Numerous questions were asked the Livestock Specialist by the cattle feeders regarding such items as the difference in feeding values between whole cotton seed and cotton seed meal; the difference in feeding value in No. 1 Alfalfa hay and No. 2 Alfalfa Hay. Some of our cattlemen seemed to find no difference between No. 2 and No. 1 Alfalfa hay when fed with liberal amounts of grain.

The question of feeding ensilage to beef cattle was a subject which created much interest and as a result of the recommendations given at these tours two feeders are using ensilage this season.

The construction of feeding troughs and feeding racks and the amount of feed consumed by cattle, together with the amount of gain made by using the different rations were always among the principal subjects discussed during these feeding tours.

One cattle grading demonstration was conducted at which time the different classes of cattle were cut out from the feeding pens so that those present might have a better understanding of the terms used by butchers in designating the quality of their cattle.



Grading Cattle William Ellsworth Ranch  
January, 1932.

One visit was made to a yard of young pure-bred bulls which had been purchased by one of our cattlemen. Mr. Pickrell, Livestock Specialist, pointed out the merits and demerits of the various bulls from a breeding standpoint and discussed the value of having good bulls for the purpose of breeding up their herds.



Livestock men studying types of bulls for Range Use, February, 1932.

The Tovrea Packing Company of Phoenix, supplied the Agent with meat meal for the purpose of conducting a hog feeding demonstration at the farm of Alma Bryce. Mr. Bryce fed one lot of four hogs, barley, alfalfa hay and water, and the other lot of four hogs barley, alfalfa hay, water and tankage, sold these hogs and weighed them out. These pigs were born November 5th. The lot which were fed the meat meal in addition to the barley and alfalfa weighed the following on February 10th:

75 lbs
65 "
75 "
75 "
<u>290 "</u>

April 10th they weighed:

150 lbs
151 "
154 "
159 "
<u>614 "</u>

The lot that were not fed meal meal weighed the following:

February 10th:
79 lbs
77 "
70 "
64 "
<u>290 "</u>

April 10th.
145 lbs
158 "
153 "
145 "
<u>601 "</u>

Or an average difference of  $3\frac{1}{2}$  lbs per hog in favor of those fed meat meal. Mr. Bryce thought that the difference in the length of the hogs and the smoothness of them would pay for the feeding of tankage provided a person wanted to keep them for breeding purposes. The animals that were not fed the tankage carried a little more fat while the ones fed tankage carried more bone and had better length. Possibly better results would have been secured with a longer feeding period. Mr. Bryce was of the opinion that in the raising of brood sows the use of tankage to make more bone and larger frames would be desirable.

## Fruit and Vegetable Production.

At the beginning of the year an effort was made to start a vegetable gardening contest. It was thought that by furnishing prizes to the ones growing the best gardens more interest in growing home vegetables could be aroused. The Agent secured plans from the Clemson Agricultural College in South Carolina, on the methods they used in conducting such a contest, also gave a talk before the Graham County Chamber of Commerce at their annual meeting, on proposed plans for starting a similar contest in Graham County. Wrote newspaper articles regarding this proposed vegetable growing contest and printed entry blanks. Visited a number of homes where gardens had been grown in the past for the purpose of securing enrollment. It was found from making these visits that more gardens were being planned for 1932 than ever before, but that the farmers were not interested in entering a contest. Most of them appeared to be afraid their gardens would not show up well in comparison with other gardens and they did not care to have the public know about this.

It was found necessary to give up the contest idea, but Mr. Fred Draper, Extension Horticulturist, became interest in this garden growing project and prepared a series of monthly garden news letters, taking up the subject of preparation of the ground for planting the different vegetables. These articles were given to the Graham County Guardian and many of them were printed at the beginning of the garden planting season. As Mr. Draper changed his style of writing more toward the story form during last part of the garden planting season, the newspaper failed to print them.

During June arrangements were made for a garden tour of the Safford District. While the attendance of this garden tour was small, several very interesting gardens were visited. One garden was visited in which there were twenty-two different varieties growing. Various problems were discussed and a method demonstration was given on dusting for garden insect pest control.



Demonstration on Dusting for Control of Garden Insect Pests--Safford, June, 1932.

Many calls were made at the Agent's office regarding planting plans for making gardens and for information as to what vegetables to plant. The bulletin entitled "Vegetable Planting Outlines for Arizona", was very helpful. In the neighborhood of fifty of these bulletins were given to people who called at the office for planting information.

This office gave considerable information on insect pest control in vegetable gardens. This work is listed under the head of "Control of Plant Diseases and Insect Pests", and will not be further discussed here.

Pecans.

In order to determine the extent of our pecan plantings and the success which might be expected, a survey was made of all the pecan plantings in the Valley. The following different varieties were found in production: Schley, Stewart, Success, Burkett, Delmas, Kincaid, Frotcher, Money Maker and Van Deman. Samples of every one of these varieties were secured for an office collection. There are other varieties of pecans planted in Gila Valley which are not yet in production.

It was interesting to note that while some of these varieties did not do well in other localities they were doing well in the Gila Valley. There was very little trouble indicated with stick tights or with nuts not filling.

Several large trees were found which in the Agent's estimation are bigger than any other trees in the State. This was also the opinion of Dr. A. H. Finch, Assistant Horticulturist of the University of Arizona, who is making a study of pecans in Arizona.

Two pecan pruning demonstrations were given during the year. Mr. Fred Draper, Extension Horticulturist of the University of Arizona, assisted with these demonstrations. Demonstrational work was given both in trimming the young trees and also in pruning the older trees.



Pecan Pruning Demonstration, G. H. Wheelock Grove.

Soil borings were made on four different farms to determine their adaptability for pecan growing. Two of the farmers who had this test made planted pecans. One ten acres and the other 5 acres.

Two talks were made by the Agent before High School Agricultural classes on the adaptability of pecans to Gila Valley conditions and cultural practices in the growing of pecans.

Assistance was given two farmers in surveying and marking out their farms for pecan planting.

Six pecan budding and grafting demonstrations were given at which time Mr. Fred Draper, Extension Horticulturist, assisted in the work. A total of 111 people attended these demonstrations.



Demonstration in the top working of pecan trees.  
April, 1932, George Bigler ranch, Central.

The Agent did additional budding and grafting work on twenty-six different farms. All budding and grafting work done was revisited and additional information given on how to care for the buds and for the grafts.

Two pecan tours were conducted to study irrigation, cultural practices and disease control. There has been considerable rosette among pecan trees in Gila Valley. Dr. A. H. Finch, Assistant Horticulturist for the University of Arizona, attended one of these tours and discussed in detail the present information which he has on the control of Rosette with the different mineral compounds. Partial plans have already been made to give demonstrational work during the coming spring in the control of Rosette.



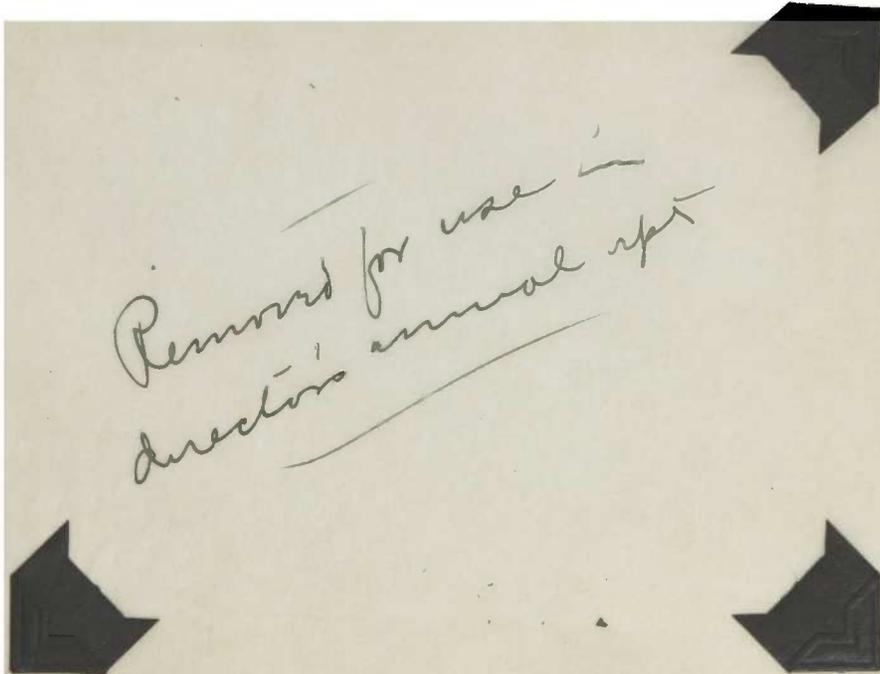
Studying Pecan Tree Growth and Culture During  
Field Tour in June, 1932.

MISCELLANEOUS WORKPure Seed.

Secured one hundred pounds of pure Hegari seed from the University Experiment Station at Mesa. Gave twenty pounds of this seed to Thad Elliot of Thatcher, ten pounds to Joe Rogers, Pima, ten pounds to Alex Layton, Safford, ten pounds to Richard Layton, Jr, Thatcher, ten pounds to Earl McEuen, Ft. Thomas, ten pounds to W. A. Pitt, Ashurst, twenty pounds to Dave Dodge, Central, ten pounds to James Smith, Central, ten pounds to Herbert Peel, Safford, five pounds to Orson Nelson, Thatcher, and five pounds to Howard Smith, Thatcher. Wherever this seed was planted early enough good yields have been obtained. The heads have been found to be more compact and on the average considerably larger than the common run of Hegari being grown here. These fields have been inspected by the Agent and the Agronomy Specialist, and those farmers whose fields are eligible for registration have been given tickets certifying that fact so that they might sell their seed as pure seed.

On account of an early fall frost several of the fields were badly damaged and no accurate estimate can be made of the average yield secured

An effort is being made to get farmers interested in planting better wheat. A sample of early Baart wheat was secured from the University and has been carried by the Agent and shown to a number of farmers. Some of them have signified their intentions of buying various amounts of this seed for planting purposes.



Field of Hegari on David Dodge Farm at Central, grown from pure seed secured from University Experiment Station at Mesa.



Hegari Field of Richard Layton, Jr., Thatcher,  
grown from pure Seed secured from University  
Experiment Station at Mesa.

### Veterinary Work.

Abortion work with dairy cattle has been discussed fully under dairy management.

Information was given to six dairymen on the control of calf scours. Seven livestock farmers were given information on the control of pink eye, which was quite prevalent here. Four livestock men were given information on blackleg control.

Garget was quite prevalent among dairy cows during the past year and nine farmers were given information on the treatment for it. information was given to three farmers for the treatment of bloat and one for treatment of cowpox.

One large hog ranch was found to be badly infested with the necrotic enteritus. Fifty young pigs died with this disease before the Agent was called.

Rheumatism was found in one group of hogs, due to cold wet unsanitary quarters. One farmer had pneumonia among his pigs which had been brought on by over-exertion.

### Predatory Animals.

Mr. Ben E. Foster, Head of the Biological Survey work in Arizona, visited the county and in company with the County Agent a trip was made to a number of the larger sheep ranches so that first hand information might be obtained as to the beneficial effects obtained from the coyote poison pills which have been given out from Mr. Foster's office in cooperation with this office. As a result of this visit Mr. Foster was made aware of the importance of more poisoning of predatory animals and one of his field men has been scheduled to spend two months in this County killing predatory animals during the coming year.

### Hay Measuring.

On account of the cost of baling and the low price of hay, more loose hay has been stacked this year than ever before. As a result of this the Agent has been called upon in several instances to give assistance in the measuring of hay in the stack and also for rules for the measuring of hay in the stack. The rules used are those furnished by the U. S. Department of Agriculture in Leaflet No. 72, entitled "Measuring Hay in the Stack". The rules are different for different shapes of stacks.

Reconstruction Finance Corporation Seed Loan.

Assistance was given in sending out circular letters and making arrangements for two general meetings of farmers in order that they might be made acquainted with the provisions governing the Reconstruction Finance Corporation Seed loans. Stenographic help was also furnished by this office in the making out of thirty applications for these seed loans.

Mr. Frank R. Stewart, Director for the state, visited the County and the Agent assisted him in visiting all the farms on which these made so that he might become acquainted with these locations.

Weeds.

A collection of forty different varieties of weeds was made and put into an office hibernium. Professor J. J. Thornber, Botanist at the University of Arizona, assisted the Agent in identifying these weeds. Most of these weeds were secured on one farm.

*herbarium*  
This hibernium will be used to acquaint farmers with the different types of weeds in this County, as well as to acquaint school children with these weeds. The school at Solomonville has already used this hiberium for two weeks and report it very helpful.

*herbarium*

TENTATIVE PROGRAM OF WORK FOR GRAHAM COUNTY FOR 1933.

- . The making of a more complete study of the relationship between water supply and adaptable crop rotations under the various canals in Graham County.
- . The securing of more cooperators to determine the best and most economical methods of keeping pepper grass out of the alfalfa fields.
- . Promote the planting of adaptable trees, shrubs and vines about farm and city homes.
- . Give pruning demonstrations to show proper method of training young trees and vines.
- . Demonstrate and give instructions on control methods for the common garden insect pests, such as cut worms, flea hoppers, grasshoppers, aphids, beetles, etc.
- . Keep up to date chart on hay market prices for use of farmers.
- . Conduct Boys' & Girls' club work. Hold 4H Club Fair.
- . Keep supply of gopher poison on hand in office--advise farmers as to its proper use.
- . Give demonstrations in the baiting of rabbits and method of poisoning.
- .0. Keep list of the better dairy bulls in Graham County and assist in the making of exchanges.
- .1. Make a study of baby chick losses and determine the relationship in mortality between chicks from blood tested flocks and those from untested flocks.
- .2. Conduct meat cutting and curing demonstrations.
- .3. Conduct livestock feeders tours.
- .4. Encourage the planting of home vegetable gardens.
- .5. Conduct annual pecan Field Day.
- .6. Give pecan budding, pruning and grafting demonstrations.

SUMMARY

Assisted six farmers with surveying work.

Conducted two hay grading schools.

Started a study of the best methods of getting rid of pepper grass in alfalfa fields.

Conducted a tour of ornamental plantings.

Held two rose budding demonstrations.

Gave two demonstrations on the pruning and training of deciduous fruit trees.

Gave instructions to six people on the control of caterpillars in ornamental trees.

Assisted seven individual farmers in the pruning of their deciduous fruit trees.

Assisted four farmers in exterminating red harvester ant hills.

Assisted two farmers in the control of flat headed borers in ornamental trees.

Assisted the Farm Bureau Hay Committee by keeping up to date material on the prices of alfalfa hay in the various markets.

Helped the Farm Bureau in organizing to promote the establishment of a branch creamery here.

Organized fourteen different boys' and girls' clubs in nine different communities. Held boys' and girls' 4H Club Fair.

Gave two demonstrations on rabbit poisoning.

Gave two demonstrations on gopher poisoning.

Drew blood samples for abortion tests from two hundred fourteen dairy cows from six different herds.

Held meetings on the method of construction and filling trench silos.

Held four demonstration meetings on the control of white diarrhea in baby chicks.

Held four meetings on discussion of better feeding methods in poultry, and two meetings in the mixing of home grown feeds.

Assisted thirteen individual poultrymen in caponizing cockerels.

Conducted five livestock feeder tours.

Gave one demonstration on the grading of livestock and one demonstration on the selection of range bulls.

Conducted one test on the feeding of meat meal to hogs.

Conducted one garden tour.

Made a number of farm visits to encourage the planting of home vegetable gardens.

In the neighborhood of fifty persons were given information on varieties of vegetables to plant and methods and time of planting.

Made a survey of the varieties of pecans already planted in Graham County.

Held two pecan pruning demonstrations.

Held six pecan budding and grafting demonstrations.

Assisted twenty-six farmers in doing budding and grafting work on their individual farms.

Conducted two pecan field tours.

Distributed one hundred twenty pounds of pure Hegari seed to twenty-one different farmers as a source of pure bred seed.

Gave information to six different dairymen on the control of calf scours and seven livestock men on the control of pink eye in cattle.

Assisted nine farmers in the control of garget in dairy cows.

Gave assistance to thirty farmers in preparing applications for seed loans.

Made a collection of forty different kinds of weeds.