

1921
NARRATIVE REPORT
COUNTY AGRICULTURAL AGENT
PIMA COUNTY , ARIZONA

TABLE OF CONTENTS.

	page
Introduction.....	I
Status of Farm Bureau.....	I
Project activities	
Soil Improvement-purple patch.....	2
River Flood Control.....	3
Rodent Control.	
pocket Gophers and Ground Squirrels.....	3
House rats.....	3
Rabbits.....	4
Field crop pests.....	4
Range catch crops.....	4
Native Clover (<i>Trifolium Lacerum</i>).....	5
Horticultural crops.	
Irish potatoes (Variety test).....	6
" " fall crop.....	7
Sweet Potatoes.....	7
Fruits.....	9
Horticultural program	9
Livestock.....	9
Poultry.....	10
Culling demonstrations.....	10
Predatory Animals.....	10
poisoning Coyotes.....	10
Silos (trench).....	11
marketing (Buying and selling).....	11

INTRODUCTION.

The past year has been a difficult one to accomplish a great deal in the way of organized extension work. Though we do not by any means claim a monopoly on hard times, we have undoubtedly had our full share. Wherever possible the farmers devoted practically all of their efforts last year to the production of Pima Cotton for which there has been no market to-date. This together with the failure of one of the largest irrigation projects in the county because of lack of finances, and the inability of the farmers to secure credit for this year, have all had a depressing influence. Our main program has been to hold all forces together as much as possible by advising farmers to refrain from growing crops on which they were practically sure to make no profit. They were advised to keep two or three cows, as large a flock of poultry as possible, have a good garden, where possible put in an acreage of sweet potatoes, and to wait until next year to farm ^{on} an extensive scale. These suggestions on the part of the Pima County Farm Bureau and the Agricultural Extension workers have proven to be wise ones. The outlook for next year is much brighter, and present indications are that several thousand more acres of land will be put into crops the coming year.

STATUS OF FARM BUREAU.

The same influences which have retarded agricultural development have also hindered the growth of the farm bureau; but the organization has been held together largely by the farmers; and considering the unfavorable conditions under which it has had to work, has made considerable progress. It has a membership of seventy, most of which have ^{Paid.} The membership fee has been raised to ten dollars, and a wider circle of influence has been established.

The farm bureau has been of great material assistance in securing an adequate appropriation from the county authorities with which to carry on agricultural extension work during the coming year; and as a result we are equipping an office which will enable us to give the farmers and their wives quick, efficient service. In cooperation with the executive officers of the farm bureau and other leaders we hope that we will be able to get three or four projects of vital importance established on a somewhat county wide basis during the coming year.

PROJECT ACTIVITIES.

SOIL IMPROVEMENT-Purple Vetch.

Because of the long hot summers most of the organic matter is burnt out of our soils, which not only lowers their fertility but causes them to take water slowly and become difficult to till. We have been looking around for some crop that can be grown during the winter months and plowed under during early spring. We secured one farmer to try bitter vetch last year but the results were not satisfactory-the crop making too little growth. However, purple vetch on the University farm made an average growth of at least two feet, and gives promise of fulfilling requirements for a winter green manure crop. We have two collaborators testing out this crop for the coming winter and spring.

River flood control-

The rainy season during last July and August was a very heavy one and the Santa Cruz and Rillito Rivers overflowed their banks several times. The resulting damage to farm lands and crops was considerable, especially along the Rillito River where the loss was so severe that a committee, ^{was} appointed to make a survey of the river bed and adjacent lands, and submit recommendations for control

measures. The county agent assisted the committee with the survey, made numerous photographs, and a map of the surveyed section showing the location of the farms and the owners name. A comprehensive report was written for the committee and in turn submitted to the land owners for their consideration. The main points emphasized were the removal of all obstacles in the river bed such as trees and islands; the straightening of the river channel; and the protection of the river banks by a border of black willows. This last control measure has been proven to be a very good one, by a demonstration which was started about fifteen years ago.

RODENT CONTROL.

Pocket gophers, ground squirrels, rabbits, and rats.

This is one project for which there is a real need, and in which a great deal of good has been accomplished. The demand for this work starts in early fall and continues until the rainy season of July and August. During the past year rodent control methods were followed on 103 farms and involved 1133 acres. One hundred and twenty four quarts of poisoned barley and several ounces of strychnine were distributed.

House rats.

One farmer had a large adobe house infested with these rodents which a representative of the Biological Survey and myself had tried on several occasions to exterminate with poisoned bait without success. Last spring we prebaited with bananas mashed to a pulp for one or two nights and then followed this with the same bait to which an equal quantity of barium carbonate had been added. In one night we cleaned out the whole tribe. This farmer told me a couple of months ago that he had not seen or heard a rat since.

Rabbits.

We have had no particular trouble in poisoning cotton-tails, but this method of killing black-tail and antelope jacks has not so far proved satisfactory with us. We have been able to poison a few in each community but the results secured are too slow to save the crops upon which they are feeding. A few antelope jacks will ruin an acre or two of garden in a few nights. They are also very wary of poisoned baits, and the most effective control measure that we have yet found, is fencing. At least a half dozen farmers fenced from one to five acres of land which they were devoting to truck crops. A woven wire fence, 18" in height, with a couple of strands of barbed wire above kept them out of one garden.

FIELD CROP VARIETY TESTS.

In cooperation with the Extension Agronomist at the University collaborators were secured to make a total of 19 tests of 8 crops. Reports on these tests have not yet been received. The following crops were planted; sweet clover, velvet beans, sunflowers, broom-corn, kudzu, Rhodes Grass, Cowpeas, and corn. We have failed in the past to insist on a definite system of planting and caring for these crops with the result that we have been able to get little data of value from them. In the future it is my intention to help with the planting and harvesting of these crops.

RANGE CATCH CROPS.

This work was done in cooperation with the Agronomy ^Udepartment of the University to see if sweet clover, sudan grass, and black amber cane would grow and furnish pasture on range land subject to overflow during the rainy season. A number of such seedings were made on two ranches but so far the project seems to have been a failure. Quite a bit of the sweet clover seed germinated but in a

few weeks the plants had all disappeared.

On one inspection trip I noticed that cattle and horses were keeping the red weed, or *pareless*, weed eaten close to the ground. Judging from this and other observations that I had made I was inclined to believe that this weed has considerable food value, and immediately took up with some of the Experiment Station officials the matter of making ensilage of this weed and conducting a feeding test. Also to have an analysis made at time of putting into the silo and again when fed out. The suggestion was acted upon favorably and the Station Agronomist and myself cut a load of the weeds which were run into one of the University farm silos. There is a possibility that this plant might prove of economical importance as a feed reserve on our ranches. Some of the old-timers here tell me that Mexicans have used it as feed for their stock for a great many years. It is commonly found growing on land which has been in cultivation, and many valleys and washes subject to overflow on the ranges of the county. It grows very rapidly reaching maturity in from 40 to 50 days.

NATIVE CLOVER (TRIFOLIUM LACERUM)

The agricultural value of this clover was first called to the notice of the public by Director Wm. Cook and myself, last year. In June of this year a representative of the Forage Office, U.S. Dept., of Agriculture, visited the field and a piece of the sod was sent back to Washington D.C. for trial on muck land. Some sod was also sent County Agent Fillerup for trial in Apache and Navajo Counties. The crop has proven to be excellent for pasture on muck land at Canille, Arizona.

HORTICULTURAL CROPS.

Irish Potatoes.

We have had very little definite knowledge about potatoes for this section, so we determined last winter to make a special study of the crop for this county. While there is still much for us to learn we feel that we have determined a few fundamental facts that will make the growing of this crop less of a gamble than it has been in the past. Three variety tests for a spring crop were made in widely separated parts of the county which differed somewhat in climatic conditions due to elevation and exposure. In two of these tests the following varieties were tried out; white blossom white rose, Flagstaff ^{pede}, or peachblow ^{and} peerless. In the third test the following varieties were added; early six weeks, Irish Cobbler, and early Ohio.

At Sahuarita, the following acre yields were secured:-

Peerless-----	7732#
Irish Cobbler-----	1428#
Early Rose-----	3378#
peachblow-----	2109#
Early Six weeks-----	3081#
White Rose-----	3731#

The test at Ft. Lowell was practically destroyed by flood; while at postvale the colaborator got in such a hurry that he failed to keep a record of weights, or notify me when he was ready to dig. The white rose and peerless varieties in this test we estimated at about 7000# per acre. This figure was based on yield of ^{the} commercial crop which he harvested.

In addition to these tests there were a number of fields rang-

ing in area from one to twenty acres. Data was secured on these fields as to date of planting, variety, and monthly visits were ^{made} and notes taken on the condition of the crop. From these studies and information from those who have attempted to grow potatoes in past years with varying success, we learned that early planting (early February) was absolutely necessary to secure a good yield—most growers have been planting in March. We are inclined to believe that the best planting date is the latter part of January.

So far the peerless potato is decidedly in the lead for this county, as it produces a medium sized potato of excellent cooking quality and will stand neglect better than the white rose, hereto recommended for this section.

Some ninety sacks of certified ~~white~~ blossom white rose were ordered for growers who favored this variety but who had been having difficulty in getting pure seed. A check on these potatoes as compared with the same variety secured from local seedsmen, indicated that they were far superior in ^{quality} and yielding power.

Fall crop—

July planting of potatoes harvested in June proved unsatisfactory, as germination did not take place until in September. If a fall crop proves successful here we believe that the seed will have to be carried over from the previous year.

We expect to carry out the same variety tests and study of fields during the coming season. This work has been done in cooperation with the Department of Horticulture of the University.

SWEET POTATOES.

Information that we had secured from a few farmers who had grown this crop and from several other sources indicated rather

conclusively that it was well ^{adapted} here, especially on our lighter soils. After getting the best line up on varieties and cultural methods that was available we ~~started~~ to boost the crop early with the idea of getting it established on a commercial scale. The usual acreage in the county has been from five to fifteen acres, mostly in little patches. This year we induced farmers to put in at least 40 acres that we know of; the individual acreage running from $\frac{1}{2}$ to 5 acres. From present indications there will not be less than 100 acres devoted to this crop next year.

The yield will average about 8000# of marketable potatoes per acre, and the price so far has not been below 4¢ per pound except for some very inferior stuff. We have assisted growers in marketing their crop in a number of ways. A cooking test with California potatoes was made by the home demonstration agent and the two sampled by 18 parties who did not know that they were judging between Arizona and California grown sweet potatoes. Eleven out of the eighteen expressed a preference for the home grown product. We also contributed a number of articles to the local papers on our potatoes which enabled most of the people in Tucson and surrounding towns to become acquainted with the home product. One dealer who refused to buy home grown sweet potatoes early in the season, now handles nothing else and finds as ready a sale for them as he ~~did~~ the California product.

The varieties that we advised growers to use this year were, Nancy Hall, Porto Rico, and Bradley Yam. The two main varieties used were Bradley Yam and Nancy Hall.

Two growers were given assistance in constructing storage houses and curing most of their crop.

Most of the seed bought last spring was purchased through information furnished by us, at a cost of 3¢ f.o.b. shipping point when local seedsmen were asking 10 and 13 cents per pound for seed much of which was not adapted to our conditions and markets.

Fruits.

We have not very much definite information on this subject, especially as to varieties; but we can safely recommend the growing of peaches, apricots, plums and grapes. We have repeatedly encouraged the setting out of these fruits using the varieties recommended by the Horticultural Department of the University. Grapes do especially well here and one farmer was induced to put out 1½ acres of the following varieties: Thompson seedless, Muscat, Malaga, and Emperor.

We are accumulating all the information that we can secure from parties who have had experience in growing fruit here.

HORTICULTURAL PROGRAM.

We are getting in shape to suggest and work out a definite program for truck crops and fruits. We ought to have an acreage of these crops at least large enough to supply local demand. The expense of getting water on the land is making ordinary field crops difficult to produce at a profit.

LIVESTOCK.

It has been difficult to establish working relationships with the stockmen, but we have been gradually "breaking the ice". Two of the largest outfits in the county have given their hearty indorsement to the maintenance of a feed reserve for breeding stock and weak stuff during periods of protracted drought, and when feed on the range is scarce. Both of these outfits are doing some farming and will probably increase their operations. Several other outfits

have stated that they would do some farming to establish a feed reserve.

The death loss on the ranches of Pima County during the past year ran from 10 to 50 per cent. Most of the ranches are understocked at present, which is a good thing for the establishment of desirable grasses.

POULTRY.

Demonstrations in culling hens were put on in five communities with a total attendance of 140. A number of others were conducted by the county agent without the assistance of the poultry specialist. An average of about 25% of the hens in each flock were culled out as being unprofitable. The interest in this work was keen and necessitated a lot of follow up work.

PREDATORY ANIMALS.

Coyote.- Last year a number of the farmers in the county had a large number of fowls killed by this animal-the number in some cases being as high as a hundred. The cooperation of the Biological survey was enlisted and poisoning campaigns were put on in four communities. In all but one the results secured were highly satisfactory. Our failure in the one instance was probably due to the large number of dead cattle on the surrounding range. A total of 35 coyotes were found, and there is little doubt but that the number poisoned far exceeded this amount, as the work was done on very brushy land. The predatory Animal Inspector in Arizona estimates that only about 50% of the coyotes poisoned are found by those doing the work.

There was a question in our minds as to how long relief would last, as we thought that possibly more coyotes would soon drift into the neighborhoods treated; but not until November of this year

did depredations start in again. People in the communities affected, ^{requested} a repetition of the work and it is now being carried out.

Every precaution must be taken to protect dogs and the best way to do this is to put the responsibility on the community in which the work is being done. Before we would start a poisoning ~~campaign~~ ^{campaign} we insisted that a majority of the people living in the community be in favor of the work. We then had them agree on how long they wanted the campaign to last, and this information was written on the large red WARNING posters placed throughout the community. Even with these precautions several dogs in each community were poisoned. In most cases the owner would state, "I did not think Carlo would go so far from home". In the one community in which the work has been completed this fall, only one dog was poisoned.

SILOS.

two trench silos, one with a capacity of about 800 tons, were constructed this fall and filled. Notwithstanding the fact that the corn was put in too dry, and insufficient packing was given, the ensilage has kept in splendid condition to-date. It is possible that under our climatic conditions this type of silo will prove satisfactory. We are going to watch these silos throughout the feeding period and note the condition of the silage. It is a great deal easier to get the farmers to construct a silo of this type than the circular pit silo.

MARKETING (Buying and selling)

Last winter and spring the county agent was pretty active in marketing matters but no serious antagonism has shown itself because of this activity. While my experiences lead me to believe that it is dangerous for a county agent to take a too active part

in marketing matters, I believe that my efforts in this county have been worth while. Not because of the direct saving involved because that has been small, but in getting the farmer to handle his marketing problems in a sane way, and because of the reductions which they have been able to get on a few much needed commodities. So far we have dealt only with our home merchants.

Last spring the farm bureau organized a marketing department and placed a man in charge of it on a commission basis. Only one thing was taken up at that time, that being fuel oil. Farmers had been paying 18 to 20 cents per gallon for "tops" which made their water cost as much as \$12 per acre foot. Through the efforts of the marketing department a contract was effected with an El Paso refinery for a higher grade product at 14 cents per gallon. This contract was on a sliding scale based on the price of crude. At the present time owing to a fight between this company and the local concern that had been charging such high prices, "tops" can be purchased for 10 cents per gallon. The farm bureau marketing agent is still on the job, and I find this method a very convenient way of avoiding, without embarrassment, the actual handling of financial transactions, as I refer all such matters to him and I act only in an advisory capacity.

This agent has sold a great deal of the sweet potato crop this year, as well as, considerable livestock, etc.. The job does not pay enough however, to justify one in devoting his whole time to it. A great deal of education is necessary to get the farmers of the county to observe their obligations toward marketing problems as they should. The two greatest troubles, are that they will not keep their word; and the second is, they are very careless about grading and putting up their produce in such a way that it can compete with that shipped in.