

SANTA CRUZ COUNTY, ARIZONA

ANNUAL REPORT

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COUNTY AGRICULTURAL AGENT

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## RANGE MANAGEMENT

### EXTERNAL PARASITE CONTROL

#### CATTLE GRUBS AND LICE NEED ATTENTION

The principal agricultural enterprise in Santa Cruz County is range cattle production. There is one practice that has been worked out which materially increases efficiency in cattle production. This practice is controlling the Cattle Grub or Heel Fly, and Cattle Lice. Present methods are efficient and in most cases they are practical.

When the agent discovered rather heavy infestations of these external parasites of cattle in parts of the county, there appeared to be an opportunity for effective service to local cattlemen.

#### DEMONSTRATION ARRANGED

The proposition of conducting a cattle spraying demonstration for the control of the Cattle Grub and Cattle Lice was discussed with several ranchers. Mr. Huy Holt and Mr. Slim Mayo in the Canelo district were found to be very favorable to holding a demonstration on their respective ranches. Mr. Walter Armer, Extension Livestock Specialist of the University of Arizona, was invited to take the leading part in the conduct of the demonstration.

#### OLD FASHIONED RANCH DAY

The ranchers from all over that part of the county turned out for the meeting. The ladies came with plenty of delicious food, and a fine noon-day picnic meal was greatly enjoyed. Refreshments were served again in the evening.

#### CATTLE PARASITE CONTROL SUCCESSFUL

The demonstrations, along with follow-up pamphlets on the subject, have resulted in new interest in controlling these cattle insects. The practice is being adopted by a majority of the ranchers in the area.

Mr. O. L. Cornwall, a local rancher, furnished the spraying equipment. His cooperation was greatly appreciated.

#### HARVESTER ANT CONTROL

##### HARVESTER ANT MENACES GRASS LAND

Bare spots ranging from 4 to 24 feet or more in diameter are found scattered over some of the best grazing land in the county. These areas

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RANGE MANAGEMENT (continued)

HARVESTER ANT CONTROL (continued)

are completely devoid of grass, which means a heavy loss of cattle feed. These barren spots are caused by Harvester Ant Colonies. When the ants move on to greener pastures to establish new colonies, the areas where the old colonies were formerly located may have a new stand of grass started on the margins, but the new grass is found to be an unpalatable type of grass. It can readily be seen that the ant damage to range grass land is of a rather permanent nature.

RANCHERS RECOGNIZE ANT DAMAGE PROBLEM

Nearly every rancher contacted by the agent has this problem on their range. A great many of them express real concern over the substantial loss of grass caused by the Harvester Ant. They are, in general, looking for an economical method of eradication. All of the insecticides used in the past have proved too inefficient, and the operation too expensive.

NEW INSECTICIDES SHOW PROMISE

Chlordane is being used to some extent for Harvester Ant Control. Mr. William Hathaway used chlordane rather extensively during the past years and obtained pretty good results. He figured the practice had a lot of promise from a practical viewpoint. The agent cooperated with Mr. Hathaway in setting up the project on a practical basis.

Mr. Marshall Ashburn, Mr. James Mieggs and Mr. Marshall Hartman became interested in Harvester Ant control by new insecticides. Reports on promising control with Dieldrin were recieved, and it was decided to map out some work with this new insecticide.

The first work done with Dieldrin was on the Greene Cattle Company ranch in cooperation with Mr. Hartman. The project was necessarily considered a long-time project since complete control and possible recovery of denuded areas takes considerable time to evaluate. Methods and rates of application were also a consideration. The man hours and equipment used to effect control is another important item considered, since the practice must be economically feasible to be successful.

The first applications were made with both chlordane and Dieldrin. It was found that Dieldrin had not been released for general use, after the work on the project had been started. The material was sold for experimental purposes only. Prices for this material will probably be unknown until it has been released for general use. The chlordane treated area amounted to approximately one hundred acres, which was a

RANGE MANAGEMENT (continued)

HARVESTER ANT CONTROL (continued)

strip about one mile long and 300 yards wide. Four man hours with one Pick-Up truck was used to apply 50 pounds of chlordane to 117 Harvester Ant colonies on the 100 acre strip. Five pounds of Dieldrin was used on about 20 acres in two different pastures where 28 colonies were treated. The over all time used on these two pastures was about 30 minutes.

The results of this work is as follows in tabular form:

GREEN CATTLE CO. - RED HARVESTER ANT CONTROL  
In cooperation with Marshall Hartmen

Date Applied	Material	Ave. Rate Per Nest	Date Inspected	% Active Nests
9/25/50	Chlordane 5%	7 oz.	10/6/50*	10
			10/17/50	80
			10/27/50	80
			11/17/50	80
9/25/50	Dieldrin 2%	3 oz.	10/6/50*	0
			10/17/50	10
			10/27/50	5
			11/17/50	7

\* Report from Mr. Hartman

The active nests that were treated with Dieldrin were two nests where the ring of insecticidal material had been broken. There was plenty of evidence on each inspection trip that new hatches of ants had occurred from one inspection date to the next. The chlordane did a fine job of killing ants that were already present when baitings were made, but evidently lost its effect on succeeding hatches.

Sixteen colonies were treated with Dieldrin on the Heady and Ashburn range on October 27, and six colonies on the Mieggs ranch on November 17. The plans were to do this work when summer rains were about over, but the weather was not normal and plans were upset.

The most effective time of application will depend a lot on the life habits of the particular species of ants found in the area. It could be that fall baiting may prove even advantageous over the summer season. It is planned to make baitings during different months of the year during 1951.

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RANGE MANAGEMENT (continued)

HARVESTER ANT CONTROL (continued)

It was found that small rings were just as effective as the larger rings around the ant colonies. The smaller the diameter of the ring, the less material will be required, and then there will be less chance of breaking the smaller rings.

The ant insecticides were applied in the middle of the day, when it is believed that most of the ants are in the nest. Placing the poison directly in the nest was avoided.

RANGE MANAGEMENT (continued)

MINOR ELEMENT DEFICIENCY STUDY

Cattlemen in the Canelo area believe that some minor element deficiency may exist in their range grasses. They have had indications pointing to this condition for years. The claim is made that growth is especially sub-normal. It has been said that yearlings generally weigh about 100 pounds less in the area than in other similar areas having the same amount of feed or less. Mr. Walter Armer and the agent discussed this problem and it was decided that research workers might help. Mr. Armer contacted the Animal Pathology and Animal Husbandry departments and enlisted the cooperation of Dr. B. P. Cardon. The agent arranged for a meeting of interested cattlemen for the purpose of discussing this particular range management problem, and secure active cooperation of local cattlemen in carrying on a research project. After Dr. Cardon outlined the procedure for this work, there were plenty of volunteers. Mrs. Edna Houston and Mr. Slim Mayo had previously volunteered their cooperation, and the initial steps had been taken to start work on their part of the project. Dr. Cardon's program calls for periodic sampling of different species of grass found in the pastures selected for study. The plan calls for sampling on dates which will cover different stages of growth and maturity of the different grasses considered important in grazing. All grass samples are to be analyzed for minor element content. When and if a deficiency is found the second stage of the project will be put in action. This will entail feeding of the elements or elements found to be deficient to cattle grazing on the areas where grass samples were taken and analyzed. Blood samples are to be taken from animals on the supplemental feed and also from animals grazing on similar ranges, but not on the minor element supplemental feed. Mr. Armer and the agent are to coordinate this work between the cooperating cattlemen and Dr. Cardon of the experiment. At present, the sampling of different species of grass is the main part of the county agent's and Livestock Specialist's contribution to this project.

COTTON

ONE COTTON VARIETY COMMUNITY

Santa Cruz County cotton growers all grew one single variety of cotton this year. The variety adopted is known as Acala 44. This is a new strain of cotton developed by the University of Arizona Plant Breeding Department. Mr. E. H. Pressley, the cotton breeder who developed the new improved strain, has long realized the need for an improved variety of cotton to fit local conditions. His cotton breeding work has been progressing for many years, and his success is outstanding. He needed grower cooperation in order to carry his work to the point where it would reflect on the growers' income.

One cotton variety communities is a very effective way of taking advantage of a competent breeder's work. Pure seed production becomes simplified from the standpoint of isolation from other varieties. Ginning of pure seed cotton is made much more efficient since ginning equipment doesn't have to be cleaned up of other seed varieties to prevent mixing. The marketing of the lint is greatly improved. Cotton merchants can afford to pay more for large lots of an even running type of cotton from one district or ginning point

Santa Cruz County growers went the limit on this cotton improvement program by planting 100% Acala 44. This type of cotton has been selling from ten to fifteen dollars more per bale than the old varieties have brought throughout Arizona. Approximately 1,000 acres of cotton were grown in the county, and at this time it looks like a yield of better than  $1\frac{1}{2}$  bales per acre. This adds up to an attractive financial gain of about \$18,000. Since 490 acres of cotton in the county qualified for certified seed production, the growers should gain additional income from seed. On the basis of last year's premiums on certified cotton seed, this should amount to approximately \$12,000. The evidence of further increased income from this program from the standpoint of increased yield is not so clear. However, variety tests conducted in the vicinity of Sahuarita during the past three years indicates that the new variety should be giving an increased yield in Santa Cruz County. Variety testing of cotton has been planned for the county in 1951.



GRASSHOPPER CONTROL

LAST YEAR'S CONTROL PROGRAM EFFECTIVE THIS YEAR

Many ranchers believe that the 1949 grasshopper baiting program definitely helped to keep down a serious infestation this year. It was hoped that the program would do just that.

An organization of ranchers was formed for the purpose of carrying a grasshopper control campaign, in the event such a program became necessary. Ranchers in the Sonoita, Rain Valley, Elgin, Canelo and San Rafael Valley were included in the organized group. Mr. Marshall Hartman headed up the organization as Chairman and Mr. Ray Schock was the Secretary-Treasurer. The organization was known as the Elgin Grasshopper Control Association.

The Association had bait moved into Elgin and established a central mixing station at that point. The following distribution of bait was made:

1950 - BAIT DISTRIBUTION

<u>Rancher</u>	<u>Acreage To Be Baited</u>	<u>Sacks Received</u>
E. H. Bower	200	30
W. F. Rooth	160	40
R. S. Schock	200	30
Clay Howell	150	10
Bob Gates	500	25
Chas. Davis	1200	50
N. E. Clark	120	20
S. M. Sprung	700	10
Chas. D. Putnam	160	10
Robert Townsend	2000	77
Guy Holt	160	10
W. S. Schore	160	10
Harvey Hedgecock	50	300
Rain Valley Ranch	2000	18
John Whiteside	1500	25
C. S. Collie	1000	25
Vaca Ranch	500	40
Edna L. Houston	1200	50
Green Cattle Company	100	10

There was a comparatively small acreage baited this year. It was noteworthy that areas that were baited in late August and early September of 1949 had much lighter infestations this year than the other areas that were not baited. This was a fair indication that the previous year's

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GRASSHOPPER CONTROL (continued)

baiting program was effective in reducing this year's population, especially in lieu of the fact that it was the most heavily infested areas that were baited in 1949.

Dr. J. N. Roney, Extension Entomologist, and Mr. George Cavin of the Grasshopper Control Division of the Bureau of Entomology, attended meetings and assisted in organizing the control program. The agent was active in the program throughout the season, making periodic checks of hopper population progress, informing ranchers on the over-all situation at meetings and individually. Advice on mixing, spreading and general conduct of the central mixing station was given by the agent, acting as county leader.

MISCELLANEOUS

SILAGE CROPS

A planting of Mexican June corn and Hegari was made by Mr. Walter Kolbe for the purpose of gaining information on their comparative value as silage crops. Mr. Kolbe's experience favors the Mexican June corn as the best and most productive crop. There is a possibility of conducting a corn variety test in 1951.

SMALL GRAINS

Since Santa Cruz County has a somewhat higher altitude than other grain growing areas in the state, some attention should be given to grain varieties that might be better varieties than the ones used in lower altitudes. This year's late frost was abnormal but it is possible that a hardier strain of barley and wheat could have withstood the exceptionally late frost without damage. A substantial loss in small grains resulted from the late frost this year.

ALFALFA

Varieties of alfalfa were discussed with four growers, and some interest in new and hardy strains of alfalfa was apparent. Dr. C. S. O'Brien made a trial planting of Ranger alfalfa. The planting was lost. Further work on varieties is planned.

Phosphate trials on alfalfa were discussed but no projects were carried on. There is some interest in this type of work.

Root Rot, a fungus disease which attacks both alfalfa and cotton, was found in the county. Recommendations on practices to reduce damages from this plant disease were given.

DECIDUOUS FRUITS

Extension Horticulturist, Mr. Harvey F. Tate, looked over the fruit growing possibilities with the agent. It was Mr. Tate's opinion that there are fair possibilities of expanding such an enterprise.

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### AGRICULTURAL SITUATION

Beef Cattle production is the major enterprise in Santa Cruz County. The economic situation is favorable for cattle raising. The ranchers in the county are, in general, rather efficient range cattlemen. Since the ranchers are progressive, they are always looking for more efficiency. The Extension Service has started two projects that can well be termed long range programs. These are the Harvester Ant Control project and the Minor Element Deficiency project. These problems have been offered by ranchers who are among the successful, and it is believed that they are well worthy of the time, effort and expenditures necessary for working out solutions and putting them into practice. They appear to be feasible for successful development.

There are other problems such as water spreading, ripped, and range re-seeding which may have some merit, but perhaps the Extension program should concentrate on the above two projects for the present.

Cotton growing is the major farm crop at present. Prices for cotton products are very favorable for this enterprise. Some variety test work and fertilization demonstrations appear to be in order for next year. At least one insect control field day should be held for cotton growers.

Crop rotations should be stressed in farming circles. The tendency for one crop system farming is here, and it is a well known fact that this unbalanced type of farming most often eventually leads to disaster.

ORGANIZATION

The Chamber of Commerce has been very helpful in setting up the Agricultural Extension Service program in Pima County. Some of the leading citizens in the county have taken an active part in the organization and conduct of a 4-H club program in the county. Their efforts have been well rewarded by the response of the several communities where this youth program has been inaugurated.

The Elgin Community organization set up for grasshopper control work was a splendid example of ranchers' organized efforts.

Several Santa Cruz farmers have become affiliated with the Farm Bureau during the year. They carry their membership in the neighboring county of Pima.



Photo by G. E. Blackledge, 9/27/50

Harvester Ant control project showing ring of Chlordane around large barren space of grazing land. The wide rings proved inefficient. This is one of the pastures of the Green Cattle Co., where a control demonstration is in progress in cooperation with Mr. Marshall Hartman. The boy in the picture is Mr. Hartman's son.