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Agricultural Extension Division

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ANNUAL REPORT

FOR

ELKO COUNTY

MARK W. MENKE, County Extension Agent

1934

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UNIVERSITY OF NEVADA
AGRICULTURAL EXTENSION DIVISION

ANNUAL NARRATIVE REPORT
OF
AGRICULTURAL EXTENSION ACTIVITIES
IN
ELKO COUNTY, STATE OF NEVADA

by
Mark W. Menke
County Extension Agent

November 1, 1933

to

November 1, 1934

AC 0089/L/50

TABLE OF CONTENTS

	<u>Page</u>
I. COVER AND TITLE PAGE.....	1
II. TABLE OF CONTENTS.....	2-3
III. SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS..	4-5
IV. STATUS OF COUNTY EXTENSION ORGANIZATION....	6-7
(1) Form of Organization.....	6-7
(2) Program development.....	7
(3) General Policies.....	7
V. PROGRAM OF WORK: Results Achieved; Factors Considered; Methods Employed.....	8
(1) Factors Determining Program.....	8
(2) Project Activities and Results.....	8
Projects Stressed in 1934.....	9
Specialists Assisting.....	10
Facts Relating to Extension Work, Elko County.....	11
Chart Showing Division of Agent's Time.....	12
Projects.....	13-43
<u>Cereals</u>	
Wheat Production Control, AAA	13
Pure Seed Supply.....	14
<u>Legumes and Forage Crops</u>	
Alfalfa Variety Tests.....	15
<u>Potatoes, Irish</u>	
Certified Seed Production.....	16
Marketing Potatoes.....	17
<u>Home Gardens and Beautification</u>	
Yard Improvement.....	18
<u>Fruits</u>	
Family Orchard Improvement.....	19
<u>Rodents and Miscellaneous Insects</u>	
Gopher Control.....	20
Map Showing Insect Control Areas.....	21
Pest and Disease Control.....	22-31
Yards and gardens.....	22-23
Grasshopper Control.....	23-25
Mormon Cricket Control.....	25-26
News Story.....	26a
Individual Records, Grasshopper Control	27-30
Grasshopper Control News Story.....	31
<u>Poultry</u>	
Culling, Feeding, Sanitation.....	32
<u>Other Livestock</u>	
Hog Production Control, AAA.....	33
<u>Farm Management</u>	
Cost Account Records.....	34
<u>Community Activities</u>	
Map Showing Extension Activities.....	35
Farm Bureau Cooperation.....	36

TABLE OF CONTENTS (continued)

	<u>Page</u>
Banker-Farmer Cooperation.....	37
Agricultural 4-H Club Work.....	38
Fairs and Exhibits.....	39
<u>Miscellaneous</u>	
White Top Control.....	40
Puncture Vine Control.....	41
Vegetable Gardens.....	41
Agricultural Credit.....	41
Drought Relief.....	41
Rural Rehabilitation	41
Magpie Control.....	41
Other Miscellaneous.....	42
VI. OUTLOOK AND RECOMMENDATIONS.....	43

TABLE OF CONTENTS (continued)

	<u>Page</u>
Banker-Farmer Cooperation.....	37
Agricultural 4-H Club Work.....	38
Fairs and Exhibits.....	39
<u>Miscellaneous</u>	
White Top Control.....	40
Puncture Vine Control.....	41
Vegetable Gardens.....	41
Agricultural Credit.....	41
Drought Relief.....	41
Rural Rehabilitation	41
Magpie Control.....	41
Other Miscellaneous.....	42
VI. OUTLOOK AND RECOMMENDATIONS.....	43

III. SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS.

1. Agricultural 4-H club work was carried on in yard improvement, poultry raising, vegetable gardens, sheep and range management. One hundred percent completions were secured.
2. Control of grasshoppers and Mormon crickets was demonstrated in 25 communities; 62,700 pounds of bran were used protecting 22,000 acres with an estimated saving of \$18,000 worth of hay and grain. However, a later shortage of feed crops raised this valuation considerably.
3. Ordinary pests and diseases of ornamentals, shade trees, gardens and fruit have been given attention throughout the year. No serious outbreaks were noticed except in the case of alfalfa aphids.
4. The details of the AAA wheat production control program were taken care of by the agent and local supervisors.
5. An excellent grade of certified tuber index potato seed was produced by three growers of netted gem potatoes.
6. Cossack alfalfa has proven very satisfactory during its second year; however, there have been no severe winters since it was planted, and its hardiness in this climate remains to be demonstrated.
7. Home beautification or landscape work has been carried on in 8 communities. The greatest interest is in securing good lawns and permanent plantings in small towns.
8. The agent prepared a chart of seed requirements for subsistence gardens for this district for the FERA.
9. The planting of trees supplied by the Utah Forest nursery, for windbreaks, has been encouraged. Pruning demonstrations have been given in 11 farm orchards and shelter belts.
10. Modern poultry sanitation, disease elimination, treatment for parasites and culling for egg production, have been stressed. Also, the purchase of cheap, unpedigreed chicks has been discouraged with a noticeable decrease in losses from range paralysis.
11. Cost account records have been continued throughout the year.

III. SUMMARY OF ACTIVITIES AND ACCOMPLISHMENTS
(continued).

12. Farm Bureau cooperation has been emphasized in five communities. Sixteen meetings were held in relation to this project.
13. Assistance was rendered the Elko County Fair Board in the farm crops, vegetable and poultry departments of the Fair; the agent acted as superintendent of this division.
14. In Starr Valley, the corn-hog production reduction program was handled by the agent.
15. For the fourth year the infestation of puncture vine was cleaned up in Carlin before the seed matured. Just a few plants were found. The infestations at Halleck, Elko and Palisade have not appeared this year.
16. Drought relief, rural rehabilitation and the extension of agricultural credit have been fostered by conferences and personal contacts.
17. The marketing of local potato crops was furthered by advising growers in regard to markets and potato grading. Frost injury reduced the number of marketable potatoes.
18. Other miscellaneous work along non-project lines was done during the year such as banker-farmer cooperation, identification of weeds, purchase of concentrates, control of predatory animals, securing pure seed, control of household insects, etc.

IV. STATUS OF COUNTY EXTENSION ORGANIZATION.

(1) Form of Organization.

The County Extension agent's work in cooperation with the County Farm Bureau organization officials, covers demonstrational problems affecting agriculture, horticulture, livestock, rodent control, farm management, range improvement, home economics, boys' and girls' club work, and Administrative policies such as the Government loans, crop production control and various emergency measures.

The finances for Extension work are supplied by Congress under the Smith-Lever Act and the Capper-Ketchum Act, together with the State Farm Bureau laws which provide for the salaries of the Extension agents, while the County, by means of a one cent tax levy, provides for the traveling expenses of the agents.

The Farm Bureau and the Extension Service jointly, receive the cooperation and assistance of specialists from the University Extension Service, the College of Agriculture, and the United States Department of Agriculture.

The Extension Service and the Elko County Farm Bureau employ a County agricultural agent, a home demonstration agent and a district agent who is also the State livestock specialist, who works in northern Eureka County as well as in Elko County.

The Elko County Farm Bureau consists of six organized communities: Elko, Lamaille, Starr Valley, Lee, Halleck and Metropolis. In addition to the community organizations, we have a board of five directors and two associate directors who formulate the general policies of the organization. Work is carried on in practically all communities even though no organized community center exists.

An annual meeting is held each year where the budget is adopted, and a program of work is outlined for the coming year. New directors are also elected. Directors for 1934 were: George Ogilvie, president; George Terry, vice-president; Mrs. John Patterson, secretary-treasurer; Mrs. Eugene Drown, and L. B. Jeanney, directors; Allen McBride and Tracy Fairchild, associate directors. Each organized community elects three delegates to attend the annual meeting. Each delegate has one vote; this provision results in a balance of power between the communities.

IV. STATUS OF COUNTY EXTENSION ORGANIZATION.

(1) Form of Organization (continued).

Community center meetings are held during periods when roads are open and when ranch work is slack. During the winter and early spring months the roads are usually traveled with difficulty, and due to the great distances between ranches it is often impossible to hold community meetings during these months. In the fall the men are away from their homes riding the range, and this leaves late spring and summer as the only practical time for organized group meetings.

An annual membership fee is levied to provide for local expenses and to maintain membership in the national organization.

Publicity is taken care of by news items in the local papers and by mimeographed monthly reports written by the agents and sent to those interested throughout the County. The local papers have cooperated splendidly and have been of great assistance in putting over many of our projects. The State Extension News Service, under the direction of A. L. Higginbotham, also conducts a state-wide news service.

(2) Program Development.

Extension Service and Farm Bureau work is carried on largely in the irrigated sections of the County. Community centers are usually long distances apart. Advice, consultations, market news service and assistance by means of demonstrations are rendered to thinly settled districts.

(3) General Policies and Organization Relationships.

The County Extension organization cooperates with all civic bodies and state and local associations on projects of interest to the residents of the County, or of importance to their welfare. The College of Agriculture, the United States Department of Agriculture, the Elko Chamber of Commerce, the Elko County Fair Board, the Western Cattlemen's association, the Pacific Cooperative Wool Growers, the Nevada State Experiment Station and the State Board of Stock Commissioners, and the local press, all render valuable service and assistance.

IV. PROGRAM OF WORK: Goals, Methods Employed, Results Achieved.

(1) Factors Determining Program.

The economic and social needs of the agricultural communities are the basic factors determining the program of work in Elko County. With the livestock work being done by the district Extension agent, the agricultural agent devotes most of his time to agriculture, club work, rodent control, landscaping, control of plant and poultry diseases, control of insect pests, and work in connection with the program of the Agricultural Adjustment Administration.

The bank failures of 1933, together with other phases of the economic depression, have given rise to some special work involving relief measures which include wheat production control, assistance with government seed and livestock loans and similar activities.

The Extension Service has been the most effective set-up for the carrying on of emergency measures in this State. This work has been in addition to the regular Extension work and has not decreased the usual project achievements.

PROJECTS STRESSED IN 1934

1. Control of grasshoppers, Mormon crickets and other insect pests which attack ornamentals, gardens, fruit and shade trees.
2. Supervision of the County AAA wheat production control program.
3. Securing production reduction contracts from corn-hog producers.
4. Yard improvement by means of permanent plantings of hardy vegetation.
5. Poultry flock improvement by the selection of healthy chicks, and by culling, good breeding and sanitation.
6. Improvement of family orchards.
7. Cooperation with the Elko County Fair Board.
8. Cooperation with farmers in groups, and through personal contacts.
9. Promotion of agricultural 4-H Club work.
10. Cost accounts on ranch operation.

SPECIALISTS ASSISTING AGENT IN EXTENSION WORK

Organization.....	Thomas Buckman
Cost Accounts.....	V. E. Scott
Wheat Production Control.....	V. E. Scott
Corn-Hog Production Control.....	V. E. Scott
Poultry Diseases.....	F. E. Henderson Edward Records
Grasshopper Control.....	George G. Schweiss S. J. Snow Lee Burge
Agricultural Adjustment Administration...	Harry Petrie

FACTORS RELATING TO EXTENSION WORK IN ELKO COUNTY

Elko County is one of the largest counties in the United States, and contains large ranches, often great distances apart. Many communities are isolated in the winter. The distance across Elko County, in a straight line from north to south is 130 miles, from east to west, 155 miles.

The following information from the 1930 census which has been corrected so as to bring it up to date, gives a good picture of Elko County from an agricultural viewpoint:

Area in square miles.....	17,059
Number of acres in County	10,917,760
Number acres in ranches.....	2,004,716
Miles of County road.....	6,537
Number of ranches.....	510
Average size of ranches, acres.....	3,870
Ranches having over 5,000 acres.....	44
Average number of sheep in County.....	275,000
Average number of cattle in County.....	130,000
Average number horses & mules on farms..	15,000
Average number tons hay cut.....	156,000
Average number bushels grain threshed...	75,000

The agricultural areas follow the valleys where the hay and grain are raised, and the livestock graze in the mountains and unirrigated flats.

Because of the large number of high mountain ranges which parallel each other, the few roads crossing these ranges, and the fact that the ranches are in the valleys between, it is necessary to do considerably more traveling than would otherwise be required, to reach ranches in adjoining valleys.

Travel is often very slow on County roads. At the rate of 220 miles per day, it would take a 30 day month to make a single trip over all the County roads in Elko County, and there are several hundred miles of State and private roads in addition.

Division of Agent's Time by Projects

<u>Days</u>	<u>Projects</u>	<u>Percentage</u>
21½	AAA Wheat Production Control	7.6
4½	Pure Seed Supply	1.6
3½	Legumes and Forage Crops	1.2
4	Irish Potatoes	1.4
12½	Home Beautification	4.4
15	Home Beautification, 4-H	5.3
2	Home Gardens	.7
4	Family Orchard Improvement	1.4
3½	Forestry	1.2
3½	Gopher Control	1.2
1½	Magpie Control	.6
51½	Pest & Disease Control	18.2
18½	Poultry Culling	6.6
13	Poultry Culling, 4-H	4.6
3	Dairy	1.1
32½	AAA Corn-Hog Production Control	11.5
2	Sheep, 4-H	.7
6½	Range Management, 4-H	2.3
3½	Drought Relief	1.2
1½	Rural Rehabilitation	.6
14½	Cost Accounts	5.1
3	Cost Accounts, 4-H	1.1
3½	Marketing	1.2
4½	Agricultural Credit	1.6
2½	White Top Control	.9
1	Banker-Farmer Cooperation	.4
10½	Fairs and Exhibits	3.7
26	Farm Bureau Cooperation	9.2
9½	Other Miscellaneous	3.4
Totals 283	29	100.0%

(a) Cereals.

AAA WHEAT PRODUCTION CONTROL

Wheat production control has been continued in Elko County, by the Wheat Production Control Association, and the County Extension agent. Most of the office work has been done by the agent in order to save time because the County committee members live at such great distances from each other.

A school for training wheat compliance inspectors was held in Elko by V. E. Scott, State Extension Economist. Donald Riddell and L. B. Jeanney of Starr Valley and Max Uhlig of Metropolis, were appointed as inspectors to measure contracted and planted acres. The inspection work was done by Mr. Riddell and Mr. Uhlig, and no contract violations were found. The compliance records were turned over to the State committee in good order. The checks for the last payment of 1933 and the first payment of 1934 are expected in the near future.

The drought was so severe that but few contractors planted up to their minimum acreage. In most cases, Form W35 was filled out to secure exemption from regulations under the drought emergency clauses.

Acreages to be planted and contracted for the crop year 1935 have been figured by the County agent, and notices were mailed to all contract signers.

An election of County committee members was held, and the same committee was re-elected, which consists of Max Uhlig, Metropolis; George Kennedy, Lamille and Arthur Drown, Lee.

Most wheat growers are in favor of continued production control plans and benefit payments.

(a) Cereals.

PURE SEED SUPPLY

The agent has encouraged the planting of varieties of wheat, barley and oats best adapted to this climate. Supplies of seed of the best varieties have been grown locally and are sufficiently pure for local demand. All grain raised here is used as feed as there are no flour mills operating.

Varieties which will mature in a short season with only one or two irrigations, are necessary due to the late springs, early fall frosts and dry summers. Emphasis must also be placed on securing varieties which do not shatter readily as most grain is planted along streams where birds are numerous.

Early Baart, Federation, Marquis and Bluestem wheat; Trebi barley; Kanota, Swedish Select, Victory White oats, have all proven satisfactory here.

(b) Legumes and Forage Crops.

ALFALFA VARIETY TESTS

Cossack alfalfa has proven to make a superior grade of hay as compared to the common strains. It has not been planted long enough yet to determine how it will resist winter killing as last winter was too mild to be a sufficient test. In the future, this variety will be watched to determine its resistance.

(c) Potatoes, Irish.

CERTIFIED SEED POTATOES

Potatoes from Burt Holbrook's tuber index plot have been grown this year by Mr. Holbrook, Mr. Horton Hammond and Mr. L. B. Jeanney.

These potatoes have passed two field inspections, and are now stored in cellars for the bin inspection. The tuber index potatoes have proven themselves to be superior in quality to all other seed potatoes grown here. Grown side by side with seed of other selected potatoes they have produced a higher percentage of U. S. No. I Grade tubers, more uniform in shape and size, and with very few growth cracks and second growths.

The selection of seed by the tuber index method cannot be too highly recommended, and pays for itself in larger and more marketable crops.

(c) Potatoes, Irish.

MARKETING POTATOES

Those farmers who have used tuber index seed have produced a grade of potatoes which are far superior to those produced from any other seed.

The marketing of local potatoes was delayed because of a heavy freeze which froze many potatoes in the ground. These frozen potatoes were impossible to identify in the field, but soon turned soft when placed in a warm cellar or store.

In order to prevent the sale of this type of product, the agent advised all growers to store their potatoes in a cellar for two weeks and then sort out all tubers showing signs of frost. A dependable grade of potatoes can be marketed following this procedure.

(f) Home Gardens and Home Beautification.

HOME BEAUTIFICATION

The very mild winter of 1933-34 gave much encouragement to home owners who were trying to establish new permanent plantings. All of the main towns in Elko County are located on the railroad, and unfortunately, all are on extremely poor soil and have limited or costly water supplies. This has made extensive yard improvement expensive and discouraging because these factors together with the hard winters, prevented thrifty plant growth. Many trees, shrubs and perennials lived through the past year, and much improvement has been noted in the permanent plantings. There are now many yards in Elko which are pleasingly planted and very attractive.

The agent has given advice on yard arrangement, selection of plants, soils and fertilizers, use of water, winter protection of permanent plantings, pruning, spraying and similar subjects.

Twelve and one-half days were spent on this project, sixty-five calls were given attention, thirty-eight home visits were made and three meetings were held with an attendance of sixty-nine.

(h) Fruits.

FAMILY ORCHARD IMPROVEMENT

Through arrangement with the Logan Forest nursery, seedling trees were again supplied to Nevada ranchers for windbreaks, woodlots and shelter belt purposes. Siberian elms, Siberian pea trees and Russian olives have been favored for this locality where only the most hardy make a good growth. Many of these trees have been used as windbreaks around farm orchards and gardens.

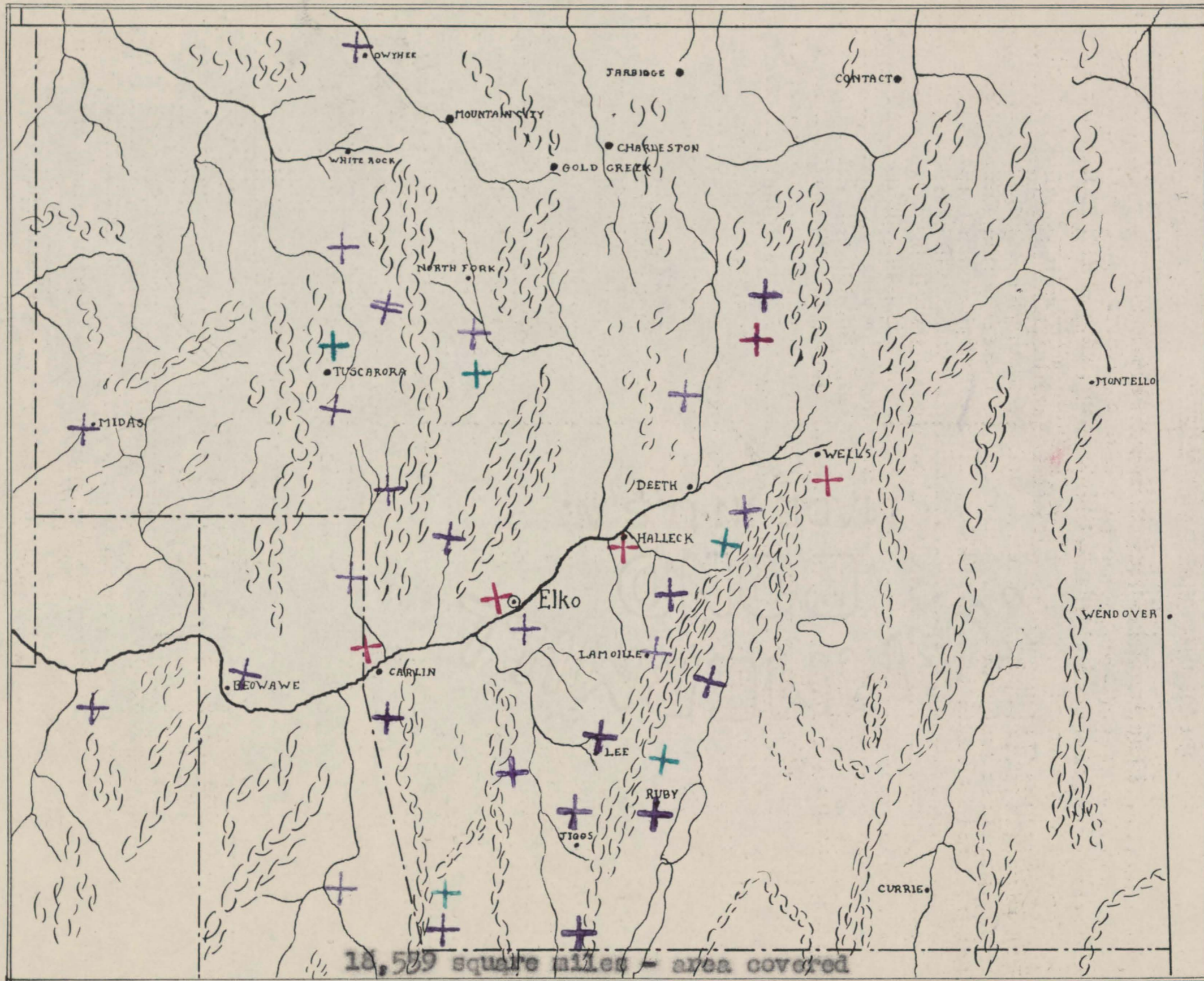
Eleven farm orchards have received attention and eleven pruning demonstrations have been conducted with an attendance of nineteen. A short fruit crop in the west, and an extra good crop locally, has created a much improved local demand for apples, pears and plums. Codling moth damage was very marked this year, and resulted in much unmarketable fruit. Four days were devoted to this project and twenty farm visits were made.

(j) Rodents and Miscellaneous Insects.

GOPHER CONTROL

Gopher control demonstrations were given on five ranches, and twelve farm visits were made in connection with this project.

Since gopher poison is no longer furnished by the Biological Survey, and since the ground has been so dry that it is difficult to penetrate, there has been little work done along this line. Gophers are rapidly increasing on irrigated ground, and are the most serious rodent pest in Elko County.



✚ grasshoppers

✚ crickets

✚ garden pests

(J) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

This is a project which is of recurring nature due to the persistence with which insect pests and diseases attack orchards, gardens, ornamental plants and shade trees. Each year a number of different insects appear to distress farmers and town people alike. Calls for identification and information on control must be given attention even though they may be limited to cases of a single shade tree, a small flower garden or potted house plants.

Aphids were more serious on alfalfa this year than at any time in the past. Considerable damage blamed to cold weather, drought, frosts or blights was really the result of aphid injury. Alfalfa weevil damage is slowly increasing, but it is not especially serious with normal winters and proper cultural control methods.

Leaf hoppers and flea beetles are more numerous than for several years past due to favorable weather for their increase. The leaf hoppers were very numerous in gardens and alfalfa fields.

Red spiders almost defoliated many ornamental shrubs, trees, apple orchards and berry patches. The agent advised the Elko City Park Commission in regard to spraying methods for the control of insect pests in yards and gardens in Elko. A tree inspector was trained to identify the most common insect pests requiring spraying.

Miscellaneous pests found damaging trees, crops and other property during the summer were: cotton scale, elm scale, San Jose scale, wireworms, cutworms, tree borers, leaf miners, mealy bugs, white flies, leaf skeletonizers, codling moths, Say's plant bugs, termites and red ants.

Among the plant diseases, the poplar canker is becoming increasingly destructive to poplars, willows and apple trees due to water shortage and unthrifty condition of the trees.

The Chinese elm, which was recommended a few years ago as being free from all pests and diseases, has been attacked by poplar borers, poplar canker, red spiders and a little known disease called slime flux. The agent is watching these trees closely because many of them have been planted for shade and windbreak purposes in Elko County,

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL (continued)

A summary of general pest and disease control work follows:

Days devoted to project.....	13½
Office and telephone calls.....	84
Letters written.....	13
Farm and home visits made.....	57
News articles published.....	7
Meetings.....	4
Attendance.....	41
Method demonstrations.....	2
Attendance.....	8

Grasshopper Control

During the month of March, the agent began a survey to determine the egg infestation of grasshoppers throughout Elko County. An unusually good hatch was indicated due to the favorable winter and the heavy egg infestation.

News articles were published and letters were sent to the ranchers warning them to be on the lookout for the eggs and young hoppers. In several cases where water was available, the young hoppers and hatching eggs were destroyed by flooding.

By the middle of April, calls for assistance in controlling grasshoppers were received from ranchers in Lamaille, Secret Valley, Starr Valley, Pine Valley, South Fork, Elko, Metropolis and Maggie Creek.

Federal aid in controlling the outbreak was promised in April, and by the middle of May, bran and sodium arsenite had been received and were being extensively used.

On June 8, one carload of bran was shipped to Deeth from the Crowthers Brothers Mill in Montana. This car contained four hundred new hundred-pound bags of good quality bran. A second car from Malad, Idaho contained five hundred eighty-pound sacks of mixed bran with considerable mill run. A third car was received on June 20, containing six hundred hundred-pound sacks of good quality bran. Three hundred eighty gallons of sodium arsenite were also received. One quart of sodium arsenite was used to a hundred pounds of dry bran in mixing the grasshopper baits; the ranchers furnished the containers for the sodium arsenite.

(J) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

The hoppers began to hatch in April and continued to hatch all summer so that some areas had to be poisoned several times. Young hoppers were still hatching in Independence Valley and in Ruby Valley as late as August eighth. This is an unusual condition and the first time the agent has observed hopper eggs hatching over such a long period of time.

Only one case is on record where any livestock was injured by hopper poison. Charles Butler of Beowawe, poisoned on new mown hay and hauled it to his barnyard where a dozen chickens and seventeen turkeys died from eating the poisoned hoppers in the hay.

In Independence Valley, dead mice were noticed frequently where hopper poison was spread. Ranchers in that vicinity were of the opinion that considerable numbers of small rodents were poisoned as a result of eating the hopper bait or the dead hoppers.

Early in September, a survey of grasshopper infestations was completed in terms of eggs laid, by Mr. S. J. Snow, Lee Burge and the agent. The Independence Valley, South Fork, Lamoyille and Starr Valley, Ruby Valley and Metropolis districts were given a close examination. Normal egg infestations were found in Lamoyille, South Fork and Starr Valley, but very serious infestations were discovered in Independence Valley, North Ruby Valley and Metropolis. As high as twelve hundred egg pods were found to the square foot in some of the egg beds. Two egg beds were found averaging some thirty-five acres in extent. The egg pods contained an average of twenty-two eggs and will average several hundred pods to the square foot over these two beds. Some smaller areas with heavy infestations were also found. As many as twenty-five thousand eggs were found to the square foot.

It is a very difficult task to discover grasshopper egg beds unless the hoppers have been observed while laying the eggs. The large beds found had been observed by Frank Oldham of Tuscarora, Earl Wright of Ruby Valley and Burt Holbrook of Metropolis.

The presence of a small white grub, parasitic on grasshopper eggs, indicates that the natural enemies of the hoppers are at work. These egg parasites were found frequently and had eaten large numbers of hopper eggs. The parasites were found in all places where hopper eggs were present.

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (Continued)

At Metropolis, it was found that large black beetles or "stink bugs" were digging the hopper eggs out of the pods and eating them. A small area was also found where the hoppers had died from disease before they were large enough to lay eggs. What the disease was, was not determined, but it was during a very hot dry spell.

A serious grasshopper infestation will occur again next year unless the natural enemies of the grasshoppers destroy the eggs.

Mormon Cricket Control

In June, reports were received from all sections of the County, concerning high swarms of crickets in the high mountains. These crickets seemed to be heading down the mountain sides, toward the cultivated valleys. The swarms varied in size from a few acres to several thousand acres. One swarm in Secret Pass was four miles long and a mile wide. These crickets ate everything in sight, but seemed to prefer the following, in the order named: June grass, knot weed, prickly poppy, crepis, perennial rye grass, mustard, snowberry, wild currant, young sagebrush, bluegrass, dandelions, balsam root, grain and various other weeds and shrubs.

Considerable apprehension was felt by ranchers lest the crickets come down into their crop land, and an extra thirty tons of bran were requested in case this happened. The crickets did come down later and several attempts were made at poisoning them without any great success. The swarms were so large and moved so rapidly, it was difficult to poison them. Their habit of eating any of the weak crickets made it impossible to determine what percentage of kill was made because the poisoned ones were eaten up before they had time to die.

The agent observed three swarms which readily ate the bait, but no appreciable decrease was made in the numbers remaining. As a general rule, the crickets did not damage field crops, but preferred weeds and brush instead. One large swarm entered William Short's alfalfa field on May 29, but they all came out and went back into the brush the next day. This same procedure occurred in several fields in Starr Valley and North Fork. As a result, the car of bran ordered to fight crickets was not used and is still on hand.

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Mormon Cricket Control (continued)

The crickets are laying eggs and if a favorable year occurs again, they will have a serious effect on the supply of range feed in the mountains.

The use of mapeline as a flavor greatly increased the palatability of the bait and increased the kill of crickets, according to Harry Webb of Pine Valley.

Six thousand acres were poisoned with 62,700 pounds bran, and it is estimated that an additional 22,000 acres were protected from hopper attacks. Value of the crops saved was estimated early in August at about \$18,000, but the rise in value of field crops has increased the value considerably since August.

A statistical summary of grasshopper and cricket control work follows:

Days devoted to project.....	38
Office and telephone calls.....	190
Letters written.....	25
Farm visits made.....	160
Bulletins distributed.....	28
News articles published.....	15
Method demonstrations.....	20
Attendance.....	52
Meetings held.....	4
Attendance.....	50

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Mormon Cricket Control (continued)

Crickets Invading Area at Base Ruby Mountains

Crickets as well as grasshoppers are threatening Elko ranches this year. The crickets, however, are traveling toward the Ruby mountains from the surrounding valleys, and while they will do great damage to the range this is better than if they were traveling toward the ranches.

Mark Menke, county agent, accompanied by Paul Jeanney, traveled over an area one half mile long today, which is infested with the crickets. They drew a line two

feet long and counted the crickets which crossed over it in five minutes. Three hundred and forty-five passed over the line in that time, showing by a conservative estimate that the crickets are traveling at the rate of 33 a minute, over a distance of one foot. This is going on for miles, Menke declared.

The crickets never stop moving. They eat a bite and jump to the next bush and eat another bite.

In addition to this comes the news that the grasshopper pest is widespread in the county and arrangements are being made to fight the hoppers. Six tons of bran were sent to Palisade, 14 tons were shipped to Elko and 20 tons to Deeth. Ranchers must put on community drives to get the benefit of this bran and it must be spread carefully and economically, Menke pointed out. Eight pounds of the bran scattered over an area of one acre will kill 450 hoppers per square yard.

Menke had a piece of sod today showing the eggs of the hoppers and the pests as they were hatching. They hop off immediately upon breaking from the eggs and immediately become destructive. Many of the hoppers are yet to hatch and the drives will not be started for about a week. Itinerant help will be used here to mix the poison and possibly to distribute it on the edges of town, Menke declared.

This is the first year that there has been an invasion of the crickets through this county. As long as they keep going toward the mountains no attempt will be made to destroy them, as it will be a hopeless task, Menke declares.

This survey was made on May 8. Later the crickets invaded several fields, but did little damage.

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

Following is a list of those using the poisoning materials, the amount used, and estimates of the results obtained:

<u>COMMUNITY AND NAME</u>	<u>NO. SACKS</u>	<u>COMMENTS WHERE INTERVIEWED</u>
<u>Carlin</u>		
James Griffin	10	very good kills
John Griffin	9	very good kills
Arthur Estate	5	
J. M. McCulloch	8	
Dunphy Estate	9	good kills -saved pasture
H. E. Levitt	5	
Kelley A. Hill	5	
O. M. Close	2	excellent kill; saved truck garden
J. W. Puett	4	
<u>Bullion</u>		
James Bett	5	
<u>Elko</u>		
Domingo Arrascada	6	good results; saved hay & grain
Indian Village	5	good; saved vegetables
A. D. Reed	2	saved vegetables and potatoes
Pete Olabarria	4	
John Crosby	2	poisoned crickets
William Bellinger	2	saved vegetable garden
Chris Sheerin	1	reduced damage to yard & garden
Milton Badt	1	" " " " " "
Mrs. K. G. Foster	1	" " " " " "
C. A. Reynolds	1	" " " " " "
M. E. Ellison	1	" " " " " "
<u>Halleck</u>		
William Wright	15	good kills in hay & pasture
<u>Jiggs</u>		
Mrs. P. Riordan	10	
Antne Zunino	2	
<u>Lamoille</u>		
Ralph Helth	2	
Domingo Orbe	4	
Mrs. Pete Trento	5	saved entire truck garden
R. A. Leberski	1	
J. M. Patterson	5	
Frank Orbe	4	very good kills; saved grain & hay
H. M. Brennen	10	fair results; hay too high for poisoning

(j) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

<u>COMMUNITY AND NAME</u>	<u>NO. SACKS</u>	<u>COMMENTS WHERE INTERVIEWED</u>
<u>Lamoille (continued)</u>		
Conrad Smith	3	poisoned crickets
Ceasar Salicchi	4	saved grain crop
Rae Eager	1	
<u>Lee</u>		
Archie Dewar	2	
George Ogilvie	6	
G.C.Drown Estate	20	saved grain & 200 acres hay; kills up to 125 hoppers per square foot.
J. L. Carter	2	
Victor Burner	1	poisoned crickets
<u>Metropolis</u>		
W. D. Hill	2	
George Terry	4	
Burt Holbrook	3	good; used around potatoes & grain
Max Uhlig	5	
<u>Midas</u>		
J. H. Jensen	10	saved 150 acres grain, hay & pasture
<u>Ruby Valley</u>		
Jim Wright	36	ranchers & relief crew co- operated in poisoning; 2000 acres hay and pasture saved by poisoning hatching grounds on 350 acres.
Earl Wright		
Eddie Murphy		
R. Krenka		
Robert Duval		
Alex Gardner	8	excellent kills; 100 young to square foot
P. A. Sexton	4	
John Sharp	2	good; 25 hoppers per sq. ft.
William Short	2	good; Mormon crickets
I. E. Wilson	1	good; saved garden & pasture
<u>Starr Valley</u>		
C. H. Black	16	poisoned cooperatively; very good result on hatching grounds; saved grain crop and some hay.
Edgar Hylton		
Sim Davis		
Frank Winchell		
H. Smiley		

(J) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

<u>COMMUNITY AND NAME</u>	<u>NO. SACKS</u>	<u>COMMENTS WHERE INTERVIEWED</u>
<u>Starr Valley (continued)</u>		
Joe Jeanney	19	cooperative drive; excellent results; kills up to 165 hoppers per sq. ft.
William Helth		
W. J. Smiley		
H. Lane		
Sam McMullen		
Lyle Beeney		
J. I. Cazier	3	saved 80 acres grain; 60 acres hay
Horace Franklin	8	
Annie Wells	4	fair results on crickets Mormon crickets, fair kill very good results on grasshoppers in hay and meadows
Morley Murphy	2	
Irwin Griswold	4	
<u>Tuscarora</u>		
T. T. Fairchild	168	Independence Valley poisoned by ranch crews and by relief crew. About 2000 acres of the worst infestation poisoned saving fall pasture on 10,000 to 15,000 acres. Some results were poor but very good averages were obtained. After one month's work, practically all swarms in the valley were killed.
George Hansen		
Ben Trembath		
Edmund Jack		
J. G. Taylor		
C. W. Williams		
Newt Phillips		
M. Urriola		
Oscar Miller		
Pio Achabal		
E. T. Jenkins		
Spanish Ranch		
Lee Reborse		
<u>Eureka County</u>		
Henry Filippini	10	good kills with banana oil added; poor without it.
E. R. Marvel	42	
Joe Saval	5	excellent results good kills; mapeline flavor used for crickets with very good results.
Grayson Hinckley	10	
Charles Butler	9	
Harry Webb	7	
<u>Pine Valley</u>		
J. W. Wilson (for Valley)	150	very good results
<u>Demonstrational Use</u>		
Mark W. Menke	12	good kills

(J) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

Explanation of terms used in the foregoing table:
 fair kill - 5 to 15 hoppers to square foot; good kill -
 15 to 50 hoppers to square foot; excellent kill - above
 50 hoppers per square foot.

Total number sacks bran used	727
Total number sacks bran now on hand.....	<u>773</u>
Grand total.....	1500

The results obtained have been very satisfactory, and as more cooperators are contacted, the favorable reports increase. There have been a few small applications which gave only poor to fair results, in each case due to failure to follow instructions or because of unfavorable changes in the weather.

The agent has personally inspected 55 ranches where poison was put out and has found that 50 of these ranches showed crops saved by the poisoning. Kills as high as 165 hoppers per square foot have been counted and kills averaging 10 to 50 hoppers per square foot, over hundreds of acres have been common. Of the ranchers using the poison bait, 90% are more than satisfied with results. No cases have been found where the bran was used for anything but hopper poisoning.

The formula used was in every case increased in effectiveness by the addition of a scent. Amyl acetate was purchased by many ranchers at their own expense because it has been commonly demonstrated that kills were increased 10% to 25% by the use of 2 ounces amyl acetate per hundred pounds bran.

Otherwise, the formula used was satisfactory provided the amount of water was adjusted to the type of bran; the amount of water used varied from eight to twelve gallons per hundred pounds of bran.

The best method of organization was that used in Starr Valley where central storage and mixing places were designated and where groups of ranchers mixed and applied the poison as needed throughout May, June and July. This method was also used in Independence Valley. Groups of ranchers were given demonstrations in mixing and applying the bait by the Extension agent. They then spread the information among their neighbors.

(J) Rodents and Miscellaneous Insects.

PEST AND DISEASE CONTROL

Grasshopper Control (continued)

HOPPER MENACE SURVEYED HERE

A survey of the grasshopper and cricket menace in Starr Valley was made yesterday by S. J. Snow, federal entomologist with headquarters at Fallon, accompanied by Mark Menke, county agent. The insect army has stayed well up on the Rubies during the past several days, but seems to be preparing for an offensive on the succulent vegetation available at lower altitudes.

Purpose of the survey was to determine whether or not more bait would be needed. If no more insects should come down, it was decided, enough poisoned bran has already been scattered. Snow called the work that has already been done in forestalling the invasion "very satisfactory." However, it appears that the insects are moving slowly down both sides of the Rubies, into Ruby and Starr valleys.

To slow up the movement of the army will be the only effect of today's rain, Menke said.

Snow expressed surprise at one of the maneuvers of the insect horde. An army of crickets a mile in width entered an alfalfa field in Ruby valley one day, but the next day withdrew into the sagebrush. The entomologist said that he had never before heard of such a phenomenon, which was observed by Menke. The crickets invaded the field May 29, vacating it on Decoration day, perhaps on account of that date being a legal holiday in Bugdom.

Grasshoppers, which have been worst in Starr valley, are now well under control, due to the spreading of poisoned bran on about twenty ranches, cooperating with County Agent Menke.

Snow is now en route back to his headquarters, making a stop at Winnemucca on business connected with insect control there.

Illustration of
cooperation received
from the local press.

(1) Poultry.

POULTRY CULLING AND FEEDING

Farm poultry flock owners are constantly in need of reliable information on all phases of poultry management. The purchase of cheap day old chicks from the Middle West has been discouraged because so much range paralysis and many other diseases were introduced into local flocks. In addition to disease, these cheap chicks are undesirable because they are of very poor laying stock.

Lists of dependable hatcheries were supplied to poultry growers and very small death losses were sustained by those ordering from these hatcheries. The only cases of range paralysis found this year were in a flock ordered as day old chicks from one of the "cheap" Middle Western hatcheries.

The chicks from the more reliable hatcheries have proven, as pullets, far superior in health and production to the cheaper chicks. A comparison of the health and production of the two groups of chicks was given to the local press and the practice of buying inferior stock at low price has been greatly decreased.

Four caponizing demonstrations were given, but this practice is not generally used except by a few poultry men.

Tuberculosis has been the greatest single cause of poultry losses this year, and seems to be steadily on the increase, although losses have been greatly reduced in many flocks by improved sanitation.

Twenty-four method demonstrations on culling for egg production, caponizing, sanitary practices for disease control, and proper housing have been made.

Summary:

Days in field.....	13½
Days in office.....	5½
Office calls.....	24
Telephone calls.....	8
Letters written.....	11
Bulletins distributed	18
Farm visits made.....	52

(n) Other Livestock.

AAA HOG PRODUCTION CONTROL

The Agricultural Adjustment Administration Corn-Hog Production Control plan was first brought to the attention of local hog growers when the processing tax was put into effect.

There was much confusion as to who should pay the tax, and the burden fell upon the hog producers as merchants deducted the amount of the tax from the price paid for hogs or dressed pork. Numerous complaints were made to the County agents, and the matter was taken up with the Internal Revenue Department. It was not until conferences were held with Mr. Bonner and Mr. R. L. Douglas of the Internal Revenue Department that the matter was cleared up.

The corn-hog plan was explained to the ranchers in February and March, and contracts were secured. The census figures on the number of hogs raised in Nevada, were extremely inaccurate and were raised several times, but still did not allow for the total number of hogs raised here.

Several hog growers who wished to sign production control agreements were prevented from doing so because their actual production would have been scaled down much more than 25% in order to come within the quota set by the AAA for Elko County. The restrictions on beef production also kept some producers from signing hog agreements.

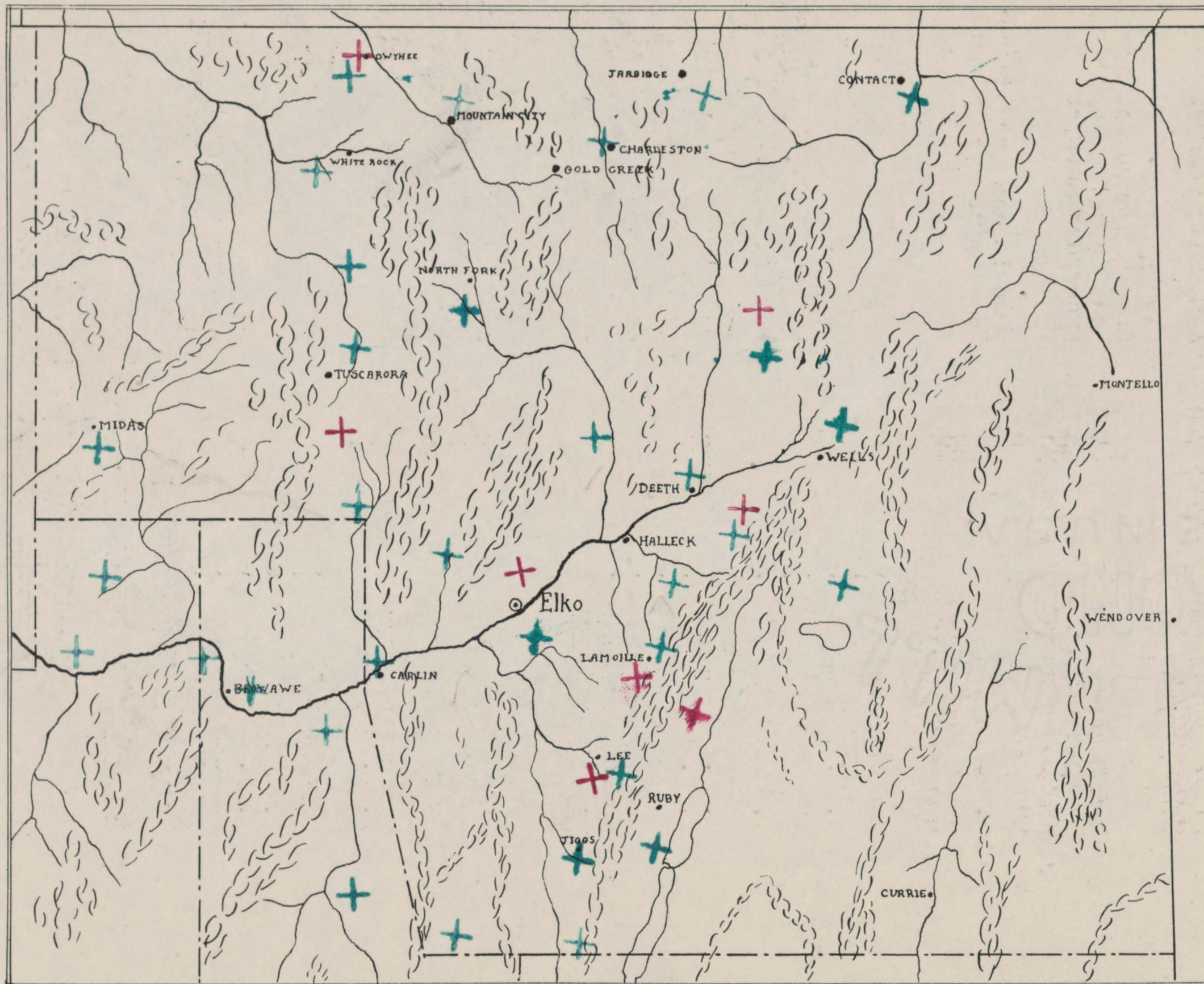
Thirty-two and a half days' time was required in the hog program; thirty-seven calls were made on the agents; eighteen individual and seven circular letters were written; three newsarticles were published; one hundred six farm visits were made, and twelve meetings were held with an attendance of one hundred thirty-nine.

(o) Farm Management.

COST ACCOUNTS

Cost account records for one year have been kept for four ranches, and a yearly summary has been made for the cooperators. A general ranch account was kept covering all phases of operation, and enterprise efficiency records were worked up on each ranch. These records have given each farmer a picture of his operations, and should be of value in planning his future activities.

These records will be continued for 1934-1935.



+

with organized groups

+

individual contacts

(w) Community Activities.

FARM BUREAU COOPERATION

The Elko County Board of Directors attended the State annual meetings in Reno, where a very interesting and instructive program was presented. Problems of great interest to ranchers were thoroughly discussed and included farm credit, use of the public domain, agricultural adjustment plans and the national monetary policy.

A regional Farm Bureau meeting was held in Elko, to discuss the Taylor Bill for the control of the public domain. Seventy-five ranchers attended, and a set of recommendations were drawn up to be presented to the Assistant Secretary of the Interior, at the hearing in Reno. A group of Elko County ranchers attended the hearing and recommendations made at the Elko meeting were presented to Assistant Secretary Chapman.

A regional directors' meeting was held in Elko in May, at which representatives of the eastern Nevada counties and the State officers discussed problems and a plan of work for the year.

The petition to amend the by-laws of the Elko County Farm Bureau was signed by a majority of the original members, and a meeting was held at which new by-laws were drawn up. The operating plan of the organization will be changed into a commodity group basis rather than a community basis as in the past. No final action has been taken on the amended by-laws at this time.

Due to so many extra gatherings such as regional meetings, annual meetings, Taylor Bill hearings, corn-hog and wheat production control association meetings, emergency drought relief meetings and community meetings, the Elko County Farm Bureau Board of directors held only three regular meetings during the year.

Nine community center meetings were held during the year in Lee, Lamoille, Starr Valley and Metropolis. These meetings were very well attended, and of much educational value to the communities as the present Farm Bureau problems were explained.

The annual Elko County Farm Bureau picnic was held in Lamoille, on June 24. Due to cold and wet weather there were only about three hundred in attendance. The Honorable James G. Scrugham spoke on the national agricultural problems and the Administrative efforts to solve them.

Twenty-six days of the agent's time were devoted to Farm Bureau cooperation. Fifty-six office and telephone calls were recorded, sixty-eight farm visits made and nineteen meetings held with an attendance of nine hundred eighteen.

(w) Community Activities.

BANKER-FARMER COOPERATION

The First National Bank of Elko, is the only bank in Elko County which has been open for business since October 30, 1932. This bank has encouraged Extension and Farm Bureau activities, but no actual banker-farmer projects have been developed.

A Banker-Farmer meeting was held during one evening at the annual Farm Bureau Conference in Reno, in February.

(w) Community Activities.

AGRICULTURAL 4-H CLUB WORK

Junior agricultural club work has been carried on in yard improvement, vegetable gardens, range management, sheep, poultry and cost accounting. Twenty-eight club members are enrolled including five Indians from Owyhee, who are under the direction of Ross Lyle.

No State club camp was held this year, but the annual County Achievement Day was held as usual in Starr Valley, with a good attendance. A dance and supper were held at the Boulder School following the Achievement Day program.

Because there was no State Camp, the agent was able to give more time to individual club members in regular project work, and a high percentage of completions was obtained with better work.

Summary:

Days devoted to project.....	39½
Office and telephone calls.....	71
Letters written.....	29
Bulletins distributed.....	42
Club members enrolled.....	28
Farm visits made.....	123
Training meetings.....	24
Attendance.....	203
Other meetings.....	3
Attendance.....	158
Percentage of completions	100%

(w) Community Activities.

FAIRS AND EXHIBITS

The fullest cooperation has always existed between the Elko County Fair Board and the Extension Service. The Elko County Fair is the largest and most anticipated event of the year, and at that time stockmen and farmers gather together to exchange ideas. It is at such meetings that improved methods of production are learned, new types of livestock are seen and people are encouraged to get out of the old rut and become more progressive.

The agent acted as Superintendent of the Farm Crops and Poultry Division. The number of exhibitors was about the same as in 1933, but the quality of the crops entered was even better than before due to the early spring and the long growing season.

Four meetings were held in rural districts in regard to the Fair, twenty-five farm visits were made, six news articles were written for the local press, twenty office and telephone calls were given attention, and ten and one-half days' time was required for this work. Over three thousand people viewed the exhibits in the farm crops division where forage crops, threshed and sheaf grain, vegetables, fruit, poultry and rabbits were on display.

In view of the depressed times, the Elko County Fair Board and the people of Elko County are to be congratulated on maintaining a County fair of this type.

(x) Miscellaneous.

NOXIOUS WEEDS

White Top Control

No White top control work was done in 1934 because of lack of funds. Most of the work was educational, and had to do with the identification of weeds and the prevention of seeding and spreading. Many different plants have been brought in for identification. In several cases the weeds were sent in by doctors who were treating hay fever cases. The most common plants brought in have been species of thistles, pigweeds, poverty weeds, mustards and salt brushes.

Information as to methods of eradicating weeds through the use of carbon bisulphide together with cost estimates were given to several ranchers, but the cost of over \$200 an acre is too great for the present time, and no work has been done.

(x) Miscellaneous.

PUNCTURE VINE CONTROL

Puncture vine was found at only one place in Elko County this year; this was at Carlin, where it was found on and around the school grounds. The town put a man to work, and all vines were removed and burned before seed was matured.

No vines were found on the Southern Pacific right of way or in the yards, and it appears that this noxious weed has been prevented from gaining a foothold in Elko County.

VEGETABLE GARDENS

The agent prepared a list of vegetable seeds needed for subsistence gardens, for the FERA.

Varieties adapted to this climate were used, and a balanced diet was kept in mind in preparing the list.

AGRICULTURAL CREDIT

Four and one-half days were devoted to supplying information to ranchers and farmers on the various credit agencies in operation. Application and budget forms for seed, feed and production credit loans were handled until these agencies were transferred to the FERA.

Practically all credit agencies, except in the case of emergency feed loans, have ceased to operate in Elko County, because of red tape and the difficulty in determining range rights under the present unsatisfactory public domain set-up.

DROUGHT RELIEF

Assistance was given to stockmen and officials of the local FERA in locating springs and wells, and in outlining projects for those needing relief in rural communities.

Those in charge of Rural Rehabilitation worked through the local Extension office in selecting local workers, and in organizing the work in Elko County. Two workers were employed to make a survey of relief cases throughout the County. To date, nothing further has developed along this line.

MAGPIE CONTROL

Since free Government magpie poison is no longer available, the magpies have increased to a great extent, and are becoming a real menace to poultry flocks, game birds and weakened or branded livestock. Several ranchers are purchasing their own strychnine with which to poison

(x) Miscellaneous.

MAGPIE CONTROL (continued)

these destructive birds.

OTHER MISCELLANEOUS

Requests for information and assistance along non-project lines have received attention as demanded. Nine and three-quarters days were devoted to such miscellaneous work, including the following: turkey management and turkey diseases, selection of cereal varieties, pasture improvement, poisonous plants, selection of poultry breeding stock, introduction of early potato varieties, Ladino clover, studies of taxation, control of field mice, identification of wood ticks, irrigation systems, commercial fertilizers, mushrooms, and others.

VI. OUTLOOK AND RECOMMENDATIONS FOR 1935.

The amount and kind of emergency work which will be required in 1935, cannot be forecast. During 1934 ninety days were required for unforeseen emergency work.

The following projects should be continued:

1. Insect pest control. Extensive grasshopper egg beds have been found, and another bad infestation of hoppers is anticipated.
2. Agricultural 4-H club work will be continued.
3. Poultry culling, feeding, sanitation and housing will continue to be of interest in 1935.
4. Rodents are a perennial problem. Those requiring attention almost every year are: squirrels, gophers, rabbits and mice.
5. Organization and Farm Bureau cooperation is another project which requires constant attention.
6. Yard improvement work is a regular project of interest to home owners at practically all times of the year. Depression years increase this interest.
7. The wheat production control program will be continued in 1935.
8. Cost account records will be continued.
9. Agricultural credit will require considerable attention, particularly in connection with the bankruptcy act.
10. Emergency work, judging from the past two years, will probably be required in connection with new agricultural adjustment administration plans.