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Statement of Problem: The writer was interested in securing information from farmers of the Spiro area concerning their major farm problems. It was felt that improvement should be made in the adult education program and that the best way to make this improvement was to make a survey of the farming practices and determine the major farm problems as the farmer sees them.

Method of Procedure: A questionnaire was formulated by the writer and approved by the Department of Agricultural Education. The writer interviewed twenty beef cattlemen, ten dairymen, twenty producers of truck crops, and twenty producers of field crops. Major problems and profitable practices in each enterprise were determined from the survey. This information was tabulated, conclusions were drawn, and an adult education program was planned.

Findings and Conclusions: There is a continuous change in the importance of certain field crops and truck crops in the Spiro area. Of the twenty field crop producers, seventeen grow soybeans with an average of 96.2 acres per farm. Wheat - 11 growers, average acres 96.2; alfalfa - 11 growers, average acres 85.4; barley - 7 growers, 48.0 acres; cotton - 4 growers, 46.2 acres; corn - 5 growers, 32.0 acres; oats - 4 growers, 28.8 acres. A large increase has been made in acreage of soybeans and small grain with a decrease in corn and cotton acreage. Of the twenty truck crop producers seventeen grow green beans with an average of 31.5 acres per farm. Spinach - 15 growers, 93.3 acres; cowpeas - 11 growers, 73.6 acres; sweet corn - 7 growers, 50.0 acres; mustard greens - 4 growers, 45.0 acres; turnip greens - 4 growers, 37.5 acres; Irish potatoes - 4 growers, 5.5 acres. The major problems with truck crops are control of diseases and insects and getting a higher quality product to market earlier. On the beef cattle survey, 17 percent have Hereford cattle, but only 4 percent are purebred. Fifty percent have cows calving in the spring, while 35 percent prefer winter calving. The trend is toward winter calving. In the dairy survey a fairly high degree of efficient management was observed. Milk production per cow is increasing. Feed costs and diseases seem to be the major problems.

ADVISER'S APPROVAL

Robert R Price

DEVELOPING AN ADULT EDUCATION  
PROGRAM IN AGRICULTURE FOR  
THE SPIRO COMMUNITY

By

LILLARD BILLY BROWN  
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Bachelor of Science

Oklahoma Agricultural and Mechanical College

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1942

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DEVELOPING AN ADULT EDUCATION  
PROGRAM IN AGRICULTURE FOR  
THE SPIRO COMMUNITY

Report Approved:

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## PREFACE

The writer began teaching Vocational Agriculture in the Spiro High School in September 1945. Since that time a large amount of work has been done with adult farmers in livestock disease and parasite control and in pasture improvement.

It was felt that the adult education phase of the Vocational Agriculture program should be improved. In order to make plans for putting emphasis in the areas that would produce the most valuable results, it was decided that a study should be made of farms in the service area in an effort to find out what the major farm problems are as the farmer sees them, and to help farmers make plans for solving these problems.

The writer wishes to express his appreciation to the staff of the Agricultural Education Department of Oklahoma A. and M. College for their advice and constructive criticisms in the writing of this paper.

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## CHAPTER I

### INTRODUCTION

Evening schools for adult farmers are recognized as forming an intergral part of each local program of vocational agriculture in Oklahoma. Farmers need assistance in solving the many problems which are of immediate concern to them. Most all farmers are vitally interested in improving their status.

An "evening class" is generally considered in vocational agriculture as providing systematic instruction in agriculture with adult farmers. This instruction is carried on in regular organized classes held at reasonably frequent intervals. The instruction is based upon some farm enterprise or some specific aspect of farming and is accompanied by supervised practice related to the instruction. Vocational training to be effective must reach both those preparing for an occupation and those already engaged in it. The objective of vocational agriculture is: "To train present and prospective farmers for proficiency in farming."<sup>1</sup>

A good community program in vocational agriculture serves all the people engaged in farming in the community who need, and can profit by, effective vocational training in agriculture.

In the Spiro School System, plans are being made to place greater emphasis on adult education in all departments where there is a need for training. The writer plans to put forth a greater effort to help

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<sup>1</sup>Smith Hughes Act, Section 10.

farmers of the Spiro area to find the solution to their major farm problems.

It is recognized that this study will help the writer decide more definitely what problems need more thorough analysis. These problems will then be discussed in the regular adult education program and plans will be made for their solution.

#### Advantages of Evening Class Work in Vocational Agriculture

1. Offers teacher best opportunity to get acquainted with farmers in the community.
2. Acquaints teacher with real practical farm problems of the community.
3. Enables school to render a greater educational service to the community.
4. Makes all-day class work more practicable.
5. Creates a more favorable attitude in the farmers toward the vocational agriculture department in the school.
6. Creates better cooperative spirit among farmers in the community.
7. Brings about better cooperation of parents and boys in project work.
8. The work should be a factor in increasing the farm income.
9. The work should be a factor in the improvement of agriculture in the community.
10. Brings tax payers into the school and renders them a service which in turn causes less criticism of school taxes.
11. Lowers the per capita cost of instruction.
12. The work creates more pride in teaching.
13. The work strengthens the department of vocational agriculture.<sup>2</sup>

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<sup>2</sup>G. A. Schmidt, Problems Connected with Evening Class Work in Vocational Agriculture with Adult Farmers. p. 3.

## CHAPTER II

### SERVICE AREA OF THE SPIRO SCHOOL

The Spiro school service area contains approximately 126 square miles. It covers some 25 miles from east to west and an average of six miles from north to south.

The total enrollment last year in the Spiro schools was 810. Of these, 370 were in grade school grades one through six, while in Junior High School there were 190 enrolled in grades seven through nine, and also 190 in Senior High School grades ten through twelve. There were 65 boys enrolled in vocational agriculture.

The Vocational Agriculture plant includes a classroom 22 ft. by 40 ft., an office 9 ft. by 20 ft., and a small laboratory for milk testing and Bangs disease testing. No farm shop is available at the present time.

The major field crops grown in the Spiro area are alfalfa, soybeans, wheat, spinach and other greens, barley, corn, and cotton. Wheat production has greatly increased during the last three to four years.

Approximately 20,000 acres of Arkansas and Poteau River bottom land are in the Spiro area and these crops produce very good yields when weather conditions are favorable.

Truck farmers usually find a good market for their crops at the canneries located at Spiro, Stigler, Stillwell, Muskogee, Ft. Smith, Alma, and Springdale, Arkansas. Dairymen from eastern Arkansas and

western Mississippi come into the community each summer to buy alfalfa hay. The increase in wheat acreage has caused a wheat buyer from McKinney, Texas to move in and build a wheat loading elevator at Spiro for use in wheat buying seasons. Grade A dairymen sell their milk to two plants in Ft. Smith, Arkansas.

The major livestock enterprises are beef, dairy, hogs, and poultry. The number of hogs in the Spiro area has been greatly reduced during the last ten years because corn acreage has given way to alfalfa, wheat, and truck crops.

Spiro is located on the Kansas City Southern Railroad. This offers some advantage in marketing certain crops. Spiro is also located on U. S. Highway 270. A new concrete highway to Ft. Smith gives an advantage in marketing milk, truck crops, and other farm products.

There are two first class blacksmith shops in Spiro and one repair shop that provides for service both in shop and field.

At the present time a large river bank stabilization project is underway. This work is being done under the supervision of the U. S. Army Engineers and will result in saving a large amount of valuable farm land in the Arkansas River bottom.

TABLE I  
 CHANGES IN IMPORTANCE OF CROP ENTERPRISES  
 IN LEFLORE COUNTY 1945 TO 1950\*

Crops Which Have Decreased in Acres	Acres 1950	Acres 1945	Estimate 1953
Corn	18,715	35,900	14,000
Cotton	7,467	10,677	5,000
Green beans	1,999	2,042	2,000
Peanuts	919	1,295	800
Irish potatoes	586	1,548	400
<u>Crops Which Have Increased in Acres</u>			
Soybeans	1,276	404	2,500
Cowpeas	2,426	1,015	3,000
Alfalfa	1,778	1,436	2,000
Sweet corn	789	372	900
Wheat	1,142	549	2,500
Barley	593	52	1,000
Spinach	2,896	no report	3,000

\*Agricultural Census, Oklahoma 1950.

TABLE II  
 CHANGES IN IMPORTANCE OF LIVESTOCK ENTERPRISES  
 IN LEFLORE COUNTY 1945 TO 1950\*

Livestock Enterprise	Number on Farms 1950	Number on Farms 1945
Dairy cattle and calves	38,386	43,816
Hogs	12,076	13,725
Poultry	102,265	143,217
Pounds of whole milk sold	3,576,172	1,251,154

\*Agricultural Census, Oklahoma 1950.

The reason for an increase in pounds of milk sold when there was a decrease in dairy cattle numbers can be accounted for by the number of Grade A dairy farms established in the past five years.

TABLE III  
 CHANGES IN NUMBER OF AND SIZE OF FARMS  
 IN LEFLORE COUNTY 1945 TO 1950\*

Total Farms	1950	1945	Number Increase	Number Decrease
In county	3085	3554		469
Under 10 acres	179	279		100
Under 3 acres	23	74		51
3 to 9	156	205		49
10 to 29	446	475		29
30 to 49	498	641		143
50 to 69	281	339		58
70 to 99	541	667		126
100 to 139	330	375		45
140 to 179	310	337		27
180 to 219	134	128	6	
220 to 259	91	91	0	
260 to 499	176	155	21	
500 to 999	67	46	21	
1000 acres and up	32	21	11	

\*Agricultural Census, Oklahoma 1950.

The average size of farms in LeFlore County has been gradually increasing. With improved farm machinery and a shift from cotton and corn to soybeans and wheat, the larger farms are more profitable. It is noted that the farms which have increased in size are to be found more often in the smaller acreage group under 100 acres.

TABLE IV

FARM MACHINERY AND CONVENIENCES ON FARMS IN LEFLORE COUNTY\*  
 (3085 Total Number of Farms)

Kind of Machinery or Conveniences	Number Farms Having	Percent Farms Having
Tractors	513	16.0
Electricity	1707	54.4
Telephones	361	11.5
Electric water pumps	261	8.3
Electric hot water heaters	91	3.1
Home freezers	145	4.8
Electric washing machines	972	31.1
Electric chick brooders	110	3.5
Grain combines	51	1.6
Corn pickers	15	.5
Pickup hay balers	56	1.7

\*Agricultural Census, Oklahoma 1950.

Only 11.5 percent of the farmers in LeFlore County have telephones. A larger percent of farmers in the Spiro school area have telephones. While some of the conveniences seem to be rather low in number, it is significant that in some items such as home freezers and grain combines, all have been purchased quite recently. It seems safe to predict that there will be a rapid increase in the numbers of these items found on farms within the next few years.



TABLE V  
LAND USE IN LEFORE COUNTY\*

Land Usage	Acres	1950		1945	
		Acres	Percent	Acres	Percent
Total land area	1,008,000				
Total farm land	387,261				
In cropland		61,440	16.2	87,734	22.1
In pasture		54,794	14.3	38,719	9.5
In corn		18,715	30.4	35,900	40.9
In cotton		7,467	12.1	10,677	12.2
In cowpeas		2,426	3.9	1,015	1.2
In alfalfa		1,778	2.9	1,436	1.6
In soybeans		1,276	2.1	404	.5

\*Agricultural Census, Oklahoma 1950.

Land in cropland has declined from 22.1 percent of total farm land in 1945 to only 16.2 in 1950. Land usage in pasture has seen a corresponding increase during this same period indicating a definite trend toward reseeding of cultivated land to pasture crops. With the acreage of other crops remaining relatively stable, corn shows a percentage decrease of approximately one-fourth, indicating a sizeable shift of corn land to pasture and forage crops. Soybeans, while still accounting for only a minor portion of total acreage in crops, have increased three-fold during the period 1945 to 1950.

## CHAPTER III

### MATERIALS AND PROCEDURE OF SURVEY

#### Materials Used

For the purpose of this study a questionnaire was made up for the following farm enterprises: (1) beef production, (2) dairy production, (3) truck crop production, and (4) field crop production. This questionnaire was submitted to and approved by the staff of the Department of Agricultural Education at Oklahoma A. and M. College.

#### Procedure

The writer interviewed twenty beef cattlemen, ten dairymen, twenty producers of truck crops, and twenty producers of field crops. These farmers were asked to give the major problems which had confronted them, and the practices which had helped to make that particular enterprise more profitable for them. It was also determined by the survey which production practices were most common in each of the enterprises. This information was tabulated, conclusions were drawn, and an adult education program was planned.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

TABLE VI

ACRES OF FIELD CROPS PER FARM

Crop	Number Farmers Growing	Total Acres Grown	Average Acres Per Farm
Soybeans	17	1635	96.2
Wheat	11	1335	121.4
Alfalfa	11	940	85.4
Barley	7	335	48.0
Cotton	4	185	46.2
Corn	5	160	32.0
Oats	4	115	28.8

There has been a large increase in soybeans and wheat in the Spiro area and a decrease in corn and cotton acreage. The production of wheat as a cash crop in the Spiro area has been a very recent development, since in 1948 no wheat was sold in the area.

TABLE VII  
ACRES OF ALFALFA PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	0	0
11 to 30	1	9.09
31 to 60	2	18.18
61 to 100	4	36.36
101 to 150	3	27.27
150 to 200	1	9.09
Over 200	0	0

It seems significant that nine of the eleven farms growing alfalfa had acreages of 60 or more. Evidently farmers feel that if alfalfa is to be grown as a part of the farming operations they must have sufficient acreage to justify larger investments in machinery.

TABLE VIII  
KIND OF COMMERCIAL FERTILIZER USED ON ALFALFA

Kind of Fertilizer	Number of Farmers Using	Percent of Farmers Using
Muriate of potash (150 lb. per a.)	2	18.18
Superphosphate (200 lb. per a.)	2	18.18
(100 lb. per a.)	1	9.09
Ammonia nitrate (150 lb. per a.)	2	18.18
(100 lb. per a.)	1	9.09
Ground limestone (1.5 ton per a.)	1	9.09
(1 ton per a.)	2	18.18
No fertilizer used	5	45.45

It is significant that such a wide variety of fertilizer materials was used on alfalfa. This is probably the result of soil tests and recommendations.

TABLE IX  
METHOD OF CONTROLLING INSECTS OF ALFALFA

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Alfalfa Caterpillar	DDT	2	18.18
Web worm	Cut hay early	5	45.45
Grasshoppers	Toxaphene	3	27.27

Insects have not been a problem in alfalfa production in the Spiro area. It is significant that 75 percent of the growers use no insecticide.

TABLE X  
ACRES OF SOYBEANS PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	1	5.88
11 to 30	3	17.64
31 to 60	3	17.64
61 to 100	3	17.64
101 to 150	3	17.64
150 to 200	2	11.76
Over 200	2	11.76

There is a wide range in acreage of soybeans on farms in the Spiro area. This is probably a result of their use in crop rotations.

TABLE XI  
KIND OF COMMERCIAL FERTILIZER USED ON SOYBEANS

Kind of Fertilizer	Number of Farms	Percent of Farms
Muriate of potash (100 lb. per a.)	1	5.88
5-10-5 (200 lb. per a.)	1	5.88
None	15	88.20

Many soybean growers depend upon the residual effect of fertilizer from a previous crop to produce high yields. Soybeans following spring spinach is an example of this practice.



TABLE XII  
METHODS OF CONTROLLING INSECTS OF SOYBEANS

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Grasshoppers	Toxaphene	2	11.76
	None	15	88.20
Corn ear worm	Parathion	3	17.64
	None	14	82.32

Insects have not been an important problem in growing soybeans in the Spiro area. It is significant that 88.2 percent of the growers have never had to use any control measures on grasshoppers and 82.3 percent have had no problem with the corn ear worm.

TABLE XIII  
ACRES OF WHEAT PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	0	0
11 to 30	0	0
31 to 60	2	18.18
61 to 100	2	18.18
101 to 150	3	27.27
150 to 200	2	18.18
Over 200	2	18.18

It is evident from Table XIII that those farmers growing wheat have a large acreage. The eleven farmers growing wheat in the Spiro area had an average of 121.4 acres each.

TABLE XIV

## KIND OF COMMERCIAL FERTILIZER USED ON WHEAT

Kind of Fertilizer	Number of Farms	Percent of Farms
Ammonia nitrate top dress		
(100 lb. per a.)	2	18.18
(150 lb. per a.)	3	27.27
(200 lb. per a.)	2	18.18
(250 lb. per a.)	1	9.09
Nitrate of soda top dress		
(100 lb. per a.)	1	9.09
None	2	18.18

It is significant that nine of the eleven farmers growing wheat in the Spiro area used a nitrogen top dress, and eight of the nine used nitrogen in the form of ammonia nitrate.

TABLE XV  
METHODS OF CONTROLLING INSECTS OF WHEAT

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Greenbugs	Parathion (airplane)	2	18.18
	None	9	81.81

Insects have not been an important problem in growing wheat in the Spiro area. The two growers who reported trouble with greenbugs only had a small percent of their acreage affected.

TABLE XVI  
ACRES OF BARLEY PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	0	0
11 to 30	1	14.28
31 to 60	4	57.14
61 to 100	2	28.57
101 to 150	0	0
Over 150	0	0

Table XVI shows that 57.1 percent of the barley producers have acreages of 31 to 60 acres. Barley is not as important as it was about five years ago, but it continues to be grown on farms where wheat is the major crop. This is probably because these farms have some land better adapted to barley than to wheat.

TABLE XVII  
KIND OF COMMERCIAL FERTILIZER USED ON BARLEY

Kind of Fertilizer	Number of Farms	Percent of Farms
Nitrate of soda top dress (100 lb. per a.)	1	14.28
Ammonia nitrate top dress (100 lb. per a.)	1	14.28
None	5	71.43

It is significant that only 28.5 percent of the barley growers use a nitrogen top dress while 81.8 percent of the wheat growers top dress their wheat. This is probably due to the fact that wheat is more important as a cash crop.

## FIELD CROPS ENTERPRISE IN THE SPIRO COMMUNITY

Farmers in the Spiro area have tried several different crops during the last ten to fifteen years in an effort to find the crops that would give the highest and most dependable returns per acre.

Fifteen years ago there were five cotton gins in Spiro. At present there is only one gin which only runs two days each week during the cotton ginning season.

Table I on page 5 shows that the acreage of corn and cotton in LeFlore County has decreased since 1945, and the acreage of soybeans, alfalfa and wheat has increased. In the Spiro area this shift in crop acreage has been more pronounced than for the county as a whole.

Some of the causes for decreased acreage of cotton and corn with increased acreage of soybeans, wheat, and alfalfa are: more dependable yields, less hired labor required, fewer insects, and better markets.

Seventeen of the twenty farmers surveyed produced soybeans last year with an average of 96.2 acres per farm. Only three of the soybean growers reported damage from insects. The insect problem seems to be greater during years of heavy rainfall.

Two of the seventeen soybean growers used commercial fertilizer at planting time. Several mentioned that soybeans following truck crops received value from fertilizer applied to these crops.

Eleven of the twenty farmers surveyed produced alfalfa hay last year with an average of 85.4 acres per farm. Six of them applied fertilizer such as potash, phosphate, nitrate, and limestone.

Insects nor diseases are a problem to alfalfa growers in the Spiro area. Only three of the eleven alfalfa growers used insecticides during the last three years. Five growers reported some damage from web worms,

but early cutting of the crop usually brought this insect under control.

A good market for alfalfa hay has resulted in several new meadows being planted the last three years. Dairymen from eastern Arkansas and Mississippi buy alfalfa hay in the Spiro area each summer.

Wheat is a crop relatively new in this area. The last two years have been very good years for wheat in the Spiro area as far as rainfall is concerned. Dry weather during the season of usual heavy rainfall has allowed wheat growers to harvest their crop with a very little damage.

When the writer asked for important factors for success in growing wheat, all answers included "proper seedbed preparation" and "top dress with nitrate."

Eleven of the twenty farmers surveyed produced wheat this year with an average of 121.4 acres per farm. Nine of them used nitrate fertilizer as a top dress. Only two reported damage from insects, and this insect was greenbugs which infested a few fields last year.

Barley was grown on seven of the farms surveyed with an average of 48.0 acres per farm. There are no major problems in barley production in the Spiro area, but farmers report that greater profits can be realized from wheat because of a higher price.

Barley was grown on a larger scale in the Spiro area five years ago than it is now. Barley first began to take the place of corn, but now wheat is taking the place of both barley and corn on farms in the Spiro area.

Corn was grown on five of the twenty farms surveyed with an average of 32.0 acres per farm. Dry weather, corn ear worms, and corn stalk borers have greatly reduced with corn acreage in the Spiro area. All of the five corn growers use from 100 to 300 pounds of 5-10-5 or 4-12-4



fertilizer per acre. Only one grower has tried to reduce the damage of insects by dusting with DDT.

Cotton was grown on four of the twenty farms surveyed with an average of 46.2 acres per farm. The cotton acreage has been reduced by a much larger percent in the Apiro area than for the county as a whole. Insects and competition by other crops have brought about this change.

The four cotton growers interviewed by the writer are very good farmers. Three of them use 5-10-5 or 4-12-4 fertilizer at the rate of 100 to 300 pounds per acre. All of them apply cotton dust for boll weevil control from seven to twelve times each season.

Oats were grown on four of the twenty farms surveyed with an average of 28.8 acres per farm. These oats were grown on upland and used by the grower as livestock feed. No fertilizer was used on oats except 100 pounds of superphosphate per acre by two growers. No insect or disease problems were reported.

TABLE XVIII  
ACRES OF TRUCK CROPS PER FARM

Crop	Number Farmers Growing	Total Acres Grown	Average Acres Per Farm
Green Beans	17	535	31.5
Spinach	15	1400	93.3
Cowpeas	11	810	73.6
Sweet corn	7	350	50.0
Turnip greens	4	150	37.5
Mustard greens	4	180	45.0
Irish potatoes	4	22	5.5

Table XVIII shows that more farmers grow green beans than any other vegetable, but the acreage of spinach is nearly three times as much as the green bean acreage. This is explained by the fact that small upland farmers grow green beans, while spinach is grown by larger bottom land farmers. Irish potatoes was the major truck crop in this community ten years ago.

TABLE XIX  
ACRES OF GREEN BEANS PER FARM

Acreage Range	Number of Farms	Percent of Farms
Under 10	4	23.5
11 to 30	7	41.1
31 to 60	3	17.6
61 to 100	2	11.7
101 to 150	1	5.9
Over 150	0	0

It is significant that a larger percent of truck farmers grow green beans than any other crop, while the acreage of beans per farm is the smallest of the six major truck crops. This is explained by the fact that green bean production is adapted to small farms as well as large farms, because no special equipment is needed.

TABLE XX  
KIND OF COMMERCIAL FERTILIZER USED ON GREEN BEANS

Kind of Fertilizer	Number of Farmers	Percent of Farmers
5-10-5 (200 lb. per a.)	2	11.7
(300 lb. per a.)	2	11.7
(400 lb. per a.)	1	5.9
With nitrate of soda side dress 200 lb.		
5-10-5 (500 lb. per a.)	4	23.5
With nitrate of soda side dress 150 lb.		
Ammonia Nitrate (200 lb. per a.)	4	23.5
With nitrate of soda side dress 200 lb.		
8-8-8 (300 lb. per a.)	2	11.7
With nitrate of soda side dress 150 lb.		
8-8-8 (400 lb. per a.)	1	5.9
With no side dress		
9-9-18 (700 lb. per a.)	1	5.9
With no side dress		

It is significant that 88 percent of the green bean growers use a side dress of nitrogen fertilizer, and all of them apply some commercial fertilizer at planting time.

TABLE XXI  
METHODS OF CONTROLLING INSECTS OF GREEN BEANS

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Bean leaf beetle	DDT	5	29.3
	Rotenone	2	11.7
Aphids	Parathion	4	23.5
	Nicotine	2	11.7

Insects of green beans are not a major problem. Table XXI shows that one-third of the growers reported some damage from aphids and bean leaf beetles, but this is usually on the fall crop only.

TABLE XXII  
METHODS OF CONTROLLING DISEASES OF GREEN BEANS

Disease		Number Farmers Using	Percent Farmers Using
Rust	Do not plow wet	17	100
	Use resistant varieties	17	100
Anthracnose	Treat seed	1	5.9
	Buy seed from reliable dealer	14	82.6
	Do not plow when wet	17	100

It is significant that all green bean growers recognize the damage resulting from rust, and all growers try to prevent this disease by not plowing the beans while wet.

TABLE XXIII  
ACRES OF SPINACH PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	0	0
11 to 30	2	13.2
31 to 60	3	19.8
61 to 100	3	19.8
101 to 150	4	26.4
Over 150	3	19.8

Table XXIII shows that the number of farms having large acreages of spinach, average acreages and small acreages of spinach is about the same. This range in spinach acres conforms to the range in size of farms represented in the survey.

TABLE XXIV  
KIND OF COMMERCIAL FERTILIZER USED ON SPINACH

Kind of Fertilizer	Number of Farms	Percent of Farms
Ammonia nitrate at planting	11	72.6
5-10-5 at planting	2	13.2
8-8-8 at planting	1	6.6
12-24-12 at planting	1	6.6
Nitrate of soda top dress	12	79.2
Ammonia nitrate top dress	2	13.2
No top dress	1	6.6

It is significant that 93.4 percent of spinach growers use a nitrogen top dress and that 100 percent applied some fertilizer at planting time.

TABLE XXV  
METHODS OF CONTROLLING INSECTS OF SPINACH

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Aphids	Parathion	6	39.6
	Lindane	4	26.4
Diamond back moth maggots (stem worms)	Parathion	5	33.0
	Early planting and rapid growth	5	33.0
	Toxaphene	3	19.8
	DDT	2	13.2

Table XXV shows that 66 percent of the spinach growers apply insecticides to control aphids and that the same number apply insecticides to control stem worms.

TABLE XXVI  
METHODS OF CONTROLLING SPINACH DISEASES

Disease	Control Method	Number Farmers Using	Percent Farmers Using
Blue mold	Pure seed	2	13.2
	Plant in rows	2	13.2
	Resistant varieties	1	6.6
	Crop rotation	1	6.6
White rust	Pure seed	2	13.2
	Plant in rows	2	13.2
	Resistant varieties	1	6.6
	Crop rotation	1	6.6

Table XXVI shows that only management practices are used to control blue mold and white rust. It is significant that no fungicides are used. This is due to the fact that no satisfactory fungicide has been introduced in this community.

TABLE XXVII  
ACRES OF SWEET CORN PER FARM

Acreage Range	Number of Farms	Percent of Farms
Less than 10	1	14.3
11 to 30	2	28.6
31 to 60	2	28.6
61 to 100	1	14.3
101 to 150	1	14.3
Over 150	0	0

Table XXVII shows that 57.2 percent of the sweet corn growers have from eleven to sixty acres per farm. This is probably because this number of acres better fits into the crop rotation of farms in this survey.



TABLE XXVIII  
KIND OF COMMERCIAL FERTILIZER USED ON SWEET CORN

Kind of Fertilizer	Number of Farms	Percent of Farms
8-8-8 (400 lb. per a.)		
With no side dress	3	42.9
5-10-5 (500 lb. per a.)		
With nitrate of soda side dress 150 lb.	2	28.6
4-12-4 (300 lb. per a.)		
With nitrate of soda side dress 150 lb.	2	28.6

It is significant that all growers of sweet corn applied commercial fertilizer at planting time and that 57.2 percent applied a side dress of nitrate of soda.

TABLE XXIX  
METHODS OF CONTROLLING INSECTS OF SWEET CORN

Insect	Control Method	Number Farmers Using	Percent Farmers Using
Corn ear worm	DDT Dust	3	42.9

Table XXIX shows that the corn ear worm is the major insect of sweet corn. All growers had some damage from this insect, while 42.9 percent applied DDT as a control measure.

## TRUCK CROPS ENTERPRISE IN THE SPIRO COMMUNITY

During World War II, the demand for certain vegetables caused farmers in the Spiro area to try new vegetable crops. Until that time, Irish potatoes had been the main truck crop grown in the Spiro area. It was found that the Arkansas River bottom near Spiro would produce profitable yields of top quality spinach, turnip greens, mustard greens, sweet corn, and green beans.

Canneries were built to process large amounts of vegetable crops. A large percent of the canned vegetables were sold to the Government. Prices were high. The weather was suitable for truck crop production most of the time. Truck growers were making a profit.

Many who were not farmers began to see that truck farming was a good enterprise and entered this field. Soon more truck crops were produced than canneries could use. Prices dropped. Dry weather made truck farming more uncertain.

While taking this survey, the writer was interested in learning what attitude truck growers were taking toward lower prices and more uncertain yields. Most of the large producers plan to continue growing those truck crops which have been most profitable for them, but they plan to reduce their acreage in line with what their cannery manager tells them to plant.

A very small percent of the total truck crop production is grown under written contract with the canneries. Most canneries, however, have certain growers from whom they buy truck crops. Before planting time, the cannery manager will tell the grower how many acres he can expect to sell to that particular cannery.

Earliness and quality of product are also important factors in

marketing these crops.

The major problems found by the writer in truck crop production in the Spiro area are: markets, weather, and diseases and insects.

A closer relationship between the canner and the grower, producing a higher quality product, and getting the product to market early or when prices are high seem to be the best methods of correcting the marketing problem.

Very little can be done about the weather in truck crop production. Irrigation has been tried by a few growers. Most of them prefer to raise those crops which are harvested before dry weather usually comes.

More emphasis will be placed on disease and insect control in the evening class program. Field men from chemical companies will be invited to these meetings to discuss the latest methods of controlling truck crop diseases and insects. Commercial crop spraying and dusting companies will also be asked to explain the service they have to offer truck growers.

Seventeen of the twenty truck growers surveyed planted green beans last year with an average of 31.5 acres per farm. All of them used some commercial fertilizer, and fifteen applied a side dress of nitrate fertilizer.

Bean leaf beetles and aphids were the only insects reported, and damage from them was limited to seven farms. Rust is the major disease, and it is controlled by not plowing when the plants are wet.

The main problem with green bean production seems to be getting them ready for market while the price is high. Green bean prices usually drop from nine to ten cents per pound down to four cents during a period of a week or ten days.

Fifteen growers reported spinach the past season with an average of 93.3 acres per farm. All of them used some commercial fertilizer, and fourteen applied a top dress of nitrate fertilizer.

Aphids and Diamond Back Moth Maggots (stem worms) have caused heavy losses in spinach production. Ten of the fifteen growers have used parathion or lindane in the control of aphids. The stem worms have been controlled on some farms with parathion, toxaphene, DDT, and by early planting and rapid growth of the spinach. The latter method seems to be more practical, because the use of insecticides is limited to a period of two or three days. The stem worm usually infests the spinach field about a week before it is ready to harvest. By the time the insecticides can be applied and the toxic effect has left the plants, they are usually too large and poor in quality to harvest.

Two spinach diseases, blue mold and white rust, have caused complete losses in spinach fields near harvest time. No satisfactory control of these two diseases was reported. One grower stated that these two diseases are less apt to damage spinach planted in rows because of better drainage and air movement. All reported that both diseases appear first in low, damp spots.

Sweet corn was grown on seven of the twenty farms surveyed with an average of fifty acres per farm. All growers used some commercial fertilizer. Four of the seven growers side dressed with nitrate fertilizer.

The corn ear worm is the major insect found in fields of sweet corn. Three of the growers have used DDT dust for controlling this insect.

Cowpeas (Blackeye and Purple Hull) were grown on eleven of the

twenty farms surveyed with an average of 73.6 acres per farm. This crop is usually planted after green beans, spinach or wheat. Harvest begins in August or September. Cowpeas have been a very profitable crop for most growers because of less cost in growing. No commercial fertilizer is used on cowpeas. They will stand dry weather better than most truck crops. No disease nor insect problems have been reported.

Truck farmers plan to continue planting cowpeas for the cannery, and if they can not be sold for canning they will make good hay or a good green manure crop.

Four of the twenty truck growers reported mustard greens and turnip greens last season. The fertilizer program on these crops is similar to that for spinach. The cost of harvesting is much less because most of the mustard and turnip greens are harvested with machines while the spinach is harvested by hand labor.

Irish potatoes were produced on four of these truck farms with an average of 5.5 acres per farm. All of the potato growers use a complete commercial fertilizer, and all of them dust the crop with DDT to control the Colorado Potato Beetle. The yield was low this year because of the late frost and dry weather. Fifteen years ago several carloads of Irish potatoes were shipped from Spiro.

Returns from truck farming are very uncertain. One grower reported that he made a net profit of eighty dollars per acre on spinach the past season and lost forty dollars per acre on green beans. Next year he may lose on spinach and make a good profit on green beans.

TABLE XXX  
BREEDS OF BEEF CATTLE

Breed	Number Farms Having	Percent Farms Having
Hereford	14	70
Angus	2	10
Red Polled	1	5
Shorthorn	1	5
Mixed	2	10

It is significant that 70 percent of the farms in this survey have Hereford cattle. This is probably because a large percent of herds in this part of the State with foundation stock for sale are of this breed.

TABLE XXXI  
PERCENT OF BEEF CATTLE THAT ARE PUREBRED

Breed	Purebreds Total Head Reported	Grades Total Head Reported	Percent That Are Purebred
Hereford	22	540	4
Angus	6	72	8
Red Polled	1	30	3
Shorthorn	2	45	4
Mixed	2	110	2

It is significant that such a small percent of beef cattle are purebred. This can be explained by the fact that there are no purebred beef cattle breeders in the Spiro area. One merchant owns four registered Herefords. Most herd bulls are purebreds.

TABLE XXXII  
SEASONS THAT BEEF COWS CALVE

Seasons	Number Farms	Percent of Total Interviewed
Spring (March, April, May)	10	50
Summer (June, July, August)	1	5
Fall (September, October, November)	1	5
Winter (December, January, February)	7	35
Year round	1	5

Table XXXII shows that 50 percent of the beef cattle producers have their cows calving during the spring while 35 percent prefer winter calving. If the trend toward winter calving continues to increase, more than one-half of beef producers will have their cows calving during the winter months within two or three years.

TABLE XXXIII  
AGE BEEF CALVES ARE CASTRATED

Age Range	Number Farms	Percent of Farms
Under 2 months	10	50
2 to 4 months	7	35
5 to 6 months	1	5
Over 6 months	2	10

It is significant that 50 percent of the beef cattle producers castrate their bull calves at less than two months of age while another 35 percent castrate at two to four months of age. This is a great improvement that has been made during the last ten years due chiefly to a greater premium price for good calves castrated at an early age.

TABLE XXXIV  
AGE HEIFERS ARE BRED

Age Range	Number Farms	Percent of Farms
Under 1 year	2	10
12 to 15 months	6	30
16 to 18 months	9	45
Over 18 months	3	15

Table XXXIV shows that 60 percent of the beef producers have most of their heifers bred after sixteen months of age. This practice helps make possible the high percent calf crop on these beef farms.



TABLE XXXV  
USUAL MARKET WEIGHT OF BEEF CALVES

Weight Range	Number Farms	Percent of Farms
Under 300 lbs.	3	15
300 to 500 lbs.	10	50
Over 500 lbs.	7	35

Table XXXV shows that 50 percent of the beef producers sell calves at weaning age when they weigh between 300 and 500 pounds. There is a trend toward keeping steers until two or three years of age and thereby receiving a greater return for the increased amount of hay and other roughage on most farms of the area.

TABLE XXXVI  
USUAL METHOD OF MARKETING BEEF CATTLE

Marketing Method	Number Farmers	Percent of Farmers
Community sales	2	10
Ft. Smith Stock Yards	16	80
Local buyers	2	10

It is significant that 80 percent of the beef producers market their cattle at the Ft. Smith stock yards. This market is considered the best in this area.

TABLE XXXVII  
BEEF HERD MANAGEMENT

Management Practices	Number Farmers	Percent of Farmers
Bull runs with herd all year	12	60
Calves are creep fed	6	30
Heifers are vaccinated for bangs	12	60
Calves are vaccinated for blackleg	16	80
Have shelter for bull	10	50
Have shelter for cows	10	50
Have shelter for calves	10	50

Table XXXVII shows that only 30 percent of beef producers creep feed their calves. This is a practice that should be used on at least 80 percent of farms in the area.

TABLE XXXVIII  
PERCENT OF CALF CROP RAISED

Percent Range	Number Farmers	Percent of Farmers
98 to 100	12	60
90 to 97	6	30
80 to 89	1	5
Less than 80	1	5

It is significant that 90 percent of beef producers report that over 90 percent of their cows raise a calf each year. This is an improvement in beef producing efficiency which has been a result of higher cattle prices.

TABLE XXXIX  
METHOD OF DEHORNING BEEF CATTLE

Dehorning Method	Number Farmers	Percent of Farmers
Clippers	13	65
Saw	1	5
Caustic paste	2	10
Electric	1	5
Polled bull	3	15

It is significant that 70 percent of beef producers fail to dehorn calves at an early age. The use of electric dehorner will probably increase since less time is required for this method of dehorning than is required for the caustic paste method.

TABLE XL  
AGE OF DEHORNING BEEF CATTLE

Age Range	Number of Farmers	Percent of Farmers
Less than 2 months	6	30
2 to 6 months	3	15
7 to 18 months	10	50
Over 18 months	1	5

Table XL shows that 55 percent of beef producers fail to dehorn until after the animals are over seven months old. This is probably due to the fact that this job is postponed until other farm work has been done.

TABLE XLI  
LOSSES BECAUSE OF BEEF CATTLE DISEASES

Disease Causing Loss	Number Farmers Reporting	Percent of Farmers	Number Animals Involved
Bangs	8	40	52
Blackleg	4	20	5
Shipping fever	4	20	6
Difficult calving	6	30	8
Malignant edema	2	10	2
Lumpy jaw	2	10	3
Hardware disease	2	10	2
Pink eye	5	25	50
Bloat	2	10	2
Foot rot	4	20	10
Pneumonia	3	15	4

It is significant that Bangs is the major disease of beef cattle in the Spiro area both in number of farms reporting and number of animals involved. There is an increase in the number of producers vaccinating against Bangs disease.

## BEEF CATTLE ENTERPRISE IN THE SPIRO COMMUNITY

Table V, Land Use in LeFlore County, shows that the percent of farm land in pasture increased from 9.5 percent in 1945 to 14.3 percent in 1950. This increase in pasture land continues, because many farmers find that they can produce more dollars worth of beef per acre than any other farm product on worn out upland farms.

Pastures have been improved on a large percent of farms in the Spiro area by planting lespedeza and clover, applying limestone and phosphate, mowing, brush control, and sodding bermuda grass. This improvement has greatly increased the carrying capacity of these pastures.

In the survey, it was found that seventy percent of beef cattle growers have Hereford cattle, but only four percent of these are purebred. Most beef producers keep good purebred bulls.

Fifty percent of the beef producers have their cows calving during the spring (March, April, and May) while thirty-five percent prefer the winter months (December, January, and February). The trend seems to be toward winter calves.

Another improvement that should be made by beef producers in the Spiro area is the method of dehorning. Sixty-five percent fail to dehorn until the animals are large enough to use the large clipper type dehorner. One reason that so few producers use the electric dehorners or the caustic paste or stick when the calves are small is the extra time required. More than one-half of the beef producers raise crops which require attention at the same time that calves should be dehorned.

Beef cattle producers have been greatly affected by low prices and

dry weather, but most of them plan to continue in the beef cattle business on about the same scale. Three of them mentioned that they might increase the size of their herds now while prices are low.

Fifty percent of the beef producers castrate bull calves before they are two months old, while 35 percent castrate at two to four months of age. This early age of castration is one of the improved practices that beef producers adopted in order to get higher prices for beef calves.

One mistake that many beef producers of the Spiro area make is running the bull with the herd the year round. Twelve of the twenty beef producers surveyed allow the bull to run with the herd all year. Six reported trouble with heifers at calving time which is a result of early breeding.

The usual market weight of beef calves is 300 to 500 pounds for 50 percent of the beef farms. Four producers reported plans to keep steers until two or three years of age in order to take advantage of improved pasture and increased hay production.

Eighty percent of the beef producers market their cattle at the Ft. Smith Stock Yards. Two sell to local buyers, and two sell at community sales.

Eighty percent reported that calves had been vaccinated for black-leg, and sixty percent reported that heifers were vaccinated for Bangs. Pinkeye and foot rot were reported by 25 percent of the beef producers, but these diseases have not been very serious the last two years.

TABLE XLII  
BREEDS OF DAIRY CATTLE

Breed	Number of Farms Having	Percent of Farms Having
Jersey	3	30
Holstein	2	20
Brown Swiss	2	20
Mixed	3	30

The above table shows that 30 percent of the dairy farms have Jerseys. Cattle on farms listed as mixed breeds were mostly Jerseys.

TABLE XLIII  
PERCENT OF DAIRY CATTLE THAT ARE PUREBRED

Breed	Purebreds	Grades	Percent That Are Purebred
	Total Head Reported	Total Head Reported	
Jersey	20	140	14
Holstein	8	45	18
Brown Swiss	10	62	16
Mixed	0	65	0

Table XLIII shows that about the same percent of each breed is purebred. There is only one purebred breeder in the area, and he has Jerseys. Purebred Holsteins and Brown Swiss have been brought into the Spiro area during the last three years.

TABLE XLIV  
SEASONS THAT DAIRY COWS CALVE

Season	Number of Farms	Percent of Farms
Spring - over 50 percent of cows calving	2	20
Fall - over 50 percent of cows calving	4	40
Year round calving	4	40

It is significant that 40 percent of the dairymen have over 50 percent of their cows calving during the fall and that another 40 percent have cows calving the year round. The small percentage of spring and summer calving is probably due to the fact that all dairymen sell Grade A milk on a base-surplus basis and have found that it is more profitable to produce about the same amount of milk each month.

TABLE XLV  
AGE DAIRY CALVES ARE WEANED

Age Range	Number of Farms Having	Percent of Farms Having
Under 10 days	6	60
10 to 30 days	3	30
31 to 60 days	1	10
Over 60 days	0	0

It is significant that 60 percent of the dairymen wean their calves when they are less than ten days old. The dairyman who weans his calves at 31 to 60 days of age is just getting started in the dairy business and is trying to grow out some good heifer calves.



TABLE XLVI  
DISTANCE TO MARKET

Range in Miles	Number of Farms	Percent of Farms
Under 8	1	10
8 to 12	3	30
13 to 18	5	50
Over 18	1	10

Table XLVI shows that 50 percent of the dairymen in the survey live thirteen to eighteen miles from the plant to which they haul milk. The town of Spiro is fifteen miles from Ft. Smith where the milk plants are located.

TABLE XLVII  
DAIRY HERD MANAGEMENT

Management Practices	Number Farmers Reporting	Percent of Farmers Reporting
Milk from each cow is tested	2	20
Milk from each cow is weighed	2	20
Cows are fed according to production	8	80
Cows have been tested for Bangs	10	100
Grade A milk is produced on this farm	10	100
Heifers are vaccinated against Bangs	8	80

It is significant that 80 percent of the dairymen vaccinate their heifers against Bangs disease. This indicates that they recognize the danger of this disease.

TABLE XLVIII  
MAJOR PROBLEMS REPORTED WITH DAIRY ENTERPRISE

Problem	Number of Farmers Having	Percent of Farmers Having
Feed costs	8	80
Hired labor	4	40
Disease	4	40
Financing improvements	3	30
Butter fat test	2	20

Table XLVIII shows that 80 percent of the dairymen feel that cost of feed is their major production problem. This can be partly accounted for by the fact that two dry years in succession have caused hay prices to be abnormally high.

TABLE XLIX  
LOSSES REPORTED DUE TO DAIRY CATTLE DISEASES

Disease Causing Loss	Number Farms Reporting	Percent of Farms Reporting	Number Animals Involved
Milk Fever	5	50	6
Mastitis	7	70	15
Bangs	3	30	10
Pneumonia	3	30	5
Scours	4	40	12
Foot Rot	3	30	5
Difficult Calving	5	50	8
Shipping Fever	3	30	4

It is significant that Mastitis is the most important disease of dairy cows in the Spiro community both in number of farms reporting and number of animals involved.

## DAIRY ENTERPRISE IN THE SPIRO COMMUNITY

As shown by the census data in Table II, production of grade A milk in LeFlore County more than doubled from 1945 to 1950. This increase has continued since 1950, and it has occurred in the Spiro area at about the same rate as in the county as a whole.

Dairymen have been increasing production per cow by improving pastures and the winter feeding program. They have also bought high producing cows in other areas. Two Holstein herds consists mainly of cows bought in Wisconsin.

In making the survey of ten dairy farms in the Spiro area, it was found that cost of feed was the problem that most dairymen are concerned about. Only three of the ten dairymen are producing any feed for dairy cattle except pasture and hay.

The control of diseases and parasites of dairy cattle is also an important problem for dairymen in the Spiro area. Mastitis has been a problem for seven dairymen, but all seem to have a good control program which has reduced losses from this disease during the past two or three years.

Three dairymen have had heavy losses from Bangs disease, and all of them are on guard against this profit taker by having their herds tested regularly. Eight dairymen vaccinate their heifers against Bangs disease.

Most of the dairymen surveyed should give more attention to the problem of growing young dairy stock. Improved shelter, sanitation, and feeding are jobs which need more consideration.

## CHAPTER V

### COURSE OF STUDY FOR ADULT FARMER MEETINGS IN THE SPIRO SCHOOL AREA

#### Field Crops

1. Selecting the best cultural practices.
2. Building and maintaining organic matter in the soil.
3. Controlling insects and diseases of field crops.
4. Selecting, buying, and using commercial fertilizer.

#### Truck Crops

1. Controlling insects and diseases of truck crops.
2. Improving the quality and market value of truck crops.
3. Selecting, buying, and using commercial fertilizer.
4. Value of crop rotations in truck crop production.

#### Dairy Production

1. Feeding cows for milk production.
2. Growing young dairy stock.
3. Control of diseases of dairy cattle.
4. Making and feeding silage.

#### Beef Production

1. Selecting feeder animals.
2. Marketing beef cattle.
3. Controlling cattle grubs.
4. Making hay crop silage.
5. Control of diseases of beef cattle.
6. Adjusting beef cattle program to farm outlook.

## CHAPTER VI

### LESSON PLANS

JOB: Feeding dairy cows for milk production.

#### OBJECTIVES:

1. To recognize the importance of good feeding in economical milk production.
2. To understand the nutrient requirement of producing dairy cows.
3. To develop the ability to select and mix feeds for making a good dairy ration.

#### SITUATION:

The most successful dairymen of the Spiro community try to get their cows to eat as much good feeds, especially roughages, as they can. Silage, beet pulp, molasses and other feeds are used to increase feed consumption. On other farms good dairy cows that have the ability to produce a large amount of milk fail to get the required amount of good roughages and concentrates.

Much improvement can be made on dairy cattle feeding, especially during the late fall and winter. Silage and winter pasture would help correct the feeding problem.

PROBLEM I. Why is good feeding so important in economical milk production?

1. To produce a large flow of milk over a long period.
2. To maintain the cows body.
3. To develop the fetus.
4. To prevent nutritional ailments.

PROBLEM II. What are the nutrient requirements of producing dairy cows?

#### A. Nutrients

1. Carbohydrates
2. Fats
3. Proteins

4. Minerals
  5. Vitamins
- B. What is meant by a balanced ration?
1. One that supplies all of the nutrients in the proportion that the animals body requires them.
- C. What are the characteristics of a good dairy ration?
1. Be a balanced ration.
  2. Be palatable so that cows will eat enough for profitable milk production.
  3. Have enough bulk.
  4. Not too laxative or constipating.
  5. Not too expensive.
  6. Gives no bad flavor to the milk.
  7. Have no bad effects upon the cow.

PROBLEM III. Using home grown feeds, what supplements should be purchased to balance the ration?

- A. Home grown feeds, alfalfa hay, prairie hay, corn, barley, and wheat.
- B. Feeds to buy: cottonseed meal or soybean meal, ground oats, wheat bran.
- C. What variations should be made in the ration when roughages such as alfalfa and prairie hay are fed?
  1. Alfalfa - concentrate ration will not be as rich in protein as it is when prairie hay is fed as the only roughage.
- D. Of what value is grinding feeds?
  1. All grains should be ground for dairy cows.
  2. High quality roughages are usually not ground for dairy cows but grinding does prevent waste of low quality, stemmy roughages.

REFERENCES: Dairy Science by W. E. Peterson  
 Feeds and Feeding by Henry Morrison

JOB: Selecting the best cultural practices with wheat.

OBJECTIVES:

1. To understand the things influencing wheat yields that show up because of methods and dates of plowing and preparing seedbed for wheat.
2. To decide on the best methods and dates of plowing and preparing seedbed for wheat in the Spiro community.

SITUATION:

Experiments show that wheat yields can be increased materially by proper methods and dates of tillage.

PROBLEM I. What factors influence wheat yields that can be altered by methods and dates of plowing and preparing seedbed?

A. Moisture.

1. Catching and conserving.

- a. Show chart on monthly variation of rainfall in LeFlore County.
- b. Tillage - too compact to absorb water readily, plow deep. (Moldboard best implement)
- c. Compacting - plowing leaves soil too loose to protect from water loss by percolation or evaporation - certain amount of compacting is necessary by spring tooth or disk harrow.
- d. Increase organic matter - acts as a sponge, capillary movement is retarded, thus decreasing surface evaporation.
- e. Deep rooted crops - leaves openings to act as a reservoir for catching and holding water.

2. Decreasing losses.

- a. Evaporation - lessened by mulches, good tilth and organic matter.
- b. Percolation - compacting in sandy soils, use organic matter.
- c. Transpiration from plants - reduced by cultivation, rotation.
- d. Soil mulches decrease moisture loss, loose layer of dry soil, use light spike tooth harrow.



PROBLEM II. What are the best methods and dates of plowing and preparing seedbed?

A. Methods.

1. One way.
2. Moldboard.

B. Time of plowing.

Show and discuss chart on page 7 of Wheat Production in Oklahoma and compare with farmers experiences. Check this against rainfall chart. July plowing absorbs more rainfall, compacts soil, provides dust mulch, and keeps down weeds.

C. Seedbed preparation.

Keep dry soil mulch, keep weeds down and keep compacted to right degree.

D. Seeding.

Date: Show chart on page 4 of Wheat Production in Oklahoma and check against rainfall chart. Depends on soil fertility, moisture conditions, preparation of seedbed. Too late lacks vitality to stand cold weather; too early causes wheat to be too rank and succulent and is injured by freezing.

Rate: Present table on page 4 of Wheat Production in Oklahoma and compare with farmers experiences.

Methods: Common seven or eight inch drill is best.

Depth: Deeper in sandy soils and dry soils than in tight and wet soils.

REFERENCES: Wheat Production in Oklahoma, p. 4.  
A Soil Improvement Program for Oklahoma, p. 11-14.

JOB: Marketing beef cattle.

OBJECTIVES:

1. To understand the different methods of marketing.
2. To decide on the best method for a farmer in this community to use.
3. To understand purchasing power cycle and seasonal fluctuations in beef prices.

SITUATION:

Seldom does a farmer with cattle to sell experience any difficulty in disposing of them at a price near their actual cash value. If their number is such as to make a carload, they may be shipped to a large central market, where, on every day of the year except Sundays and holidays, every animal received is ordinarily sold before the day is over at a price determined by the supply and demand of the market. Should the number be less than a carload, they may be marketed as part of a cooperative shipment through a local shipping association; or sold to a local livestock buyer; or sold to a local butcher for slaughter; or sold at a community sale. Occasionally, one encounters a feeder who prefers to sell at home even though he has a carload, foregoing his chance to obtain more profit in order to avoid the risks involved in shipping on his own account. Such men, however, are becoming fewer and fewer with the increased attention paid by the market to the small shipper.

PROBLEM I. What methods of marketing have you used, and what are the advantages and disadvantages of each.

1. Methods.

a. Shipping to Kansas City or Oklahoma City markets.

(1) Advantages:

- (a) Price.
- (b) Contacting feeders and order buyers.
- (c) Learn marketing procedures.
- (d) Small selling cost.

(2) Disadvantages.

- (a) Risk.
- (b) Shrink.
- (c) Selling on day taken even if market drops.

(d) Increased transportation costs.

b. Stigler or Wister Community Sale.

(1) Advantages.

(a) Close to home - if cattle do not sell to suit you, you can take them back home.

(b) Money made by sales company spend at home.

(c) Price usually good.

(d) Does away with some risk, especially shipping fever.

(e) Very small shrink.

(f) Lower transportation costs.

(2) Disadvantages.

(a) Difficulty of unloading on sale day.

(b) High commission charge.

c. Contract order buyers.

(1) Advantages.

(a) Usually a better price when the over-all trend is down.

(b) Small amount of shrinkage.

(c) No transportation charge.

(d) No selling costs.

(2) Disadvantages.

(a) Poor price when selling on a rising market.

(b) May not get cattle as soon as you would like for them to.

PROBLEM II. What method is best for a farmer in this community to use?

1. Each method suggested and the reasons given by the farmers will be considered. The group will decide upon the best method.

PROBLEM III. What is purchasing power cycle and what are the seasonal fluctuations in beef prices?

1. Purchasing power of the price of beef cattle is secured by dividing the index of beef cattle prices by the index of the price of things that farmers buy.
  - a. Show chart on beef cattle purchasing power. Explain peaks and troughs, that they occur about every fourteen to sixteen years and the influence of war, and why they occur as they do. (Time required to build up and decrease herds.) Show where we are now and what is likely to happen.
2. Seasonal fluctuations in beef prices occur because of seasonal production, and varies according to grade. Much less seasonal variation in common grades.

Grass cattle demand and marketing period.

Feed lot cattle demand and marketing period.

REFERENCES: Beef Cattle by Snapp, pp. 465-475.  
Livestock Enterprises by K. C. Davis, pp. 155-158.  
Farm Business Management by Robertson and Woods, pp. 252-255.

JOB: Selecting feeder animals.

OBJECTIVES:

1. Choose between grades and sexes of feeder cattle.
2. Decide on age of feeders to be purchased.
3. Know what to look for in feeder steers.
4. Choose a place to purchase feeders.

SITUATION:

Most farmers in the Spiro community produce more roughages in a normal year than they need. Feeder steers can be bought and fed through the winter with home grown roughages and a small amount of cake or meal. Also with the increase in wheat acreage more farmers should probably pasture the wheat for the increased gain in cattle as well as increased yield of wheat.

PROBLEM I. What grade and sex of feeder animal should you buy?

1. Cost of gain - well selected, common grade or medium grade feeder cattle will make fully as rapid and cheap gain as will good to choice feeders because lower grade feeders are usually thinner in flesh.
2. Difference between initial cost per hundred weight and probable selling price.
3. In comparison with scrubs, well-bred beef cattle have the following advantages:
  - a. More rapid gains.
  - b. Gains are usually cheaper.
  - c. Animals mature earlier.
  - d. They furnish a higher percentage of dressed carcass.
  - e. Produce a greater proportion of the more valuable cuts.
  - f. Carcasses have less internal fat.
  - g. Beef is superior in quality.
4. Market demand.
5. Heifers vs. steers.
  - a. Heifers usually sell for lower price of same quality and condition.

- b. Less rapid gains.
- c. Become fat sooner.
- d. Discount in price due to pregnancy which causes lower dressing percentage.
- e. Cost of gain is same if heifers sold before becoming too fat.
- f. Breeding is all right if only three to four months along when sold for slaughter.

PROBLEM II. What age feeder animals should be purchased.

- 1. If cost of yearling or two year old steers is enough below that of calves to offset cheapness of gains, then profit may be greater.
- 2. More care is necessary in feeding calves. Not suited to use of poor quality roughage. Calves must have a liberal amount of grain to fatten properly.
- 3. Calves make cheaper gains, have a higher average selling price.

PROBLEM III. What do you look for in feeder steers?

- 1. Beef breeding.
- 2. Healthy steers but in a thin condition.
- 3. Good conformation - deep, broad, compact, roomy digestive tracts, evidence of strong constitution. Calm, quiet animal. High rainfall area cattle make better gains than low rainfall area cattle.

PROBLEM IV. Where should you buy your feeder steers?

- 1. Direct from producer.
  - a. Experience of producer and buyer.
- 2. Community sales. (Stigler and Wister)
- 3. Stockyards. (Ft. Smith)
- 4. Order buyers.
- 5. Contribution from farmers on which of these are best places to buy steers.

REFERENCES: Feeds and Feeding by Morrison, pp. 795-796, 804.

JOB: Controlling livestock diseases.

OBJECTIVES:

1. To recognize the cause of various livestock diseases.
2. To understand the symptoms of these diseases.
3. To understand how these diseases can be prevented.
4. To develop the ability to select the proper treatment for these diseases.

SITUATION:

A large number of livestock in this community is lost each year from various livestock diseases. These losses can be reduced by recognizing these disturbances and giving quick treatment. Too many times the wrong treatment is given and the animal dies. It is important that we know how to recognize various livestock diseases from the symptoms that are present when we examine the animal. It is also important that we know the cause of various livestock diseases so a program of disease prevention can be carried out on the farm.

PROBLEM I. What are the causes, symptoms, prevention, and treatment for Mastitis?

1. Causes.
  - a. Bacteria infection.
  - b. Injury.
  - c. Poor milking practices.
  - d. It is contagious.
2. Symptoms.
  - a. Affected quarter has fever.
  - b. Caked udder.
  - c. Sore and swollen udder.
  - d. Bloody, lumpy, stringy milk.
3. Prevention.
  - a. Good herd management.
  - b. Proper treatment of infected cows.

4. Treatment.
  - a. Aureomycine - 1 tube 1/4 ounce.
  - b. Venicillin ointment - tube 75,000 units.
  - c. Sulmet or Aureomycine - intravenous.
  - d. Hot or cold packs.

REFERENCES: Cattle Husbandry - Lederle Laboratory Division, p. 37.  
Common Diseases of Livestock - Lederle Laboratory  
Division, pp. 18-19.

PROBLEM II. What are the causes, symptoms, prevention, and treatment for Bangs disease.

1. Cause.
  - a. Bacteria.
2. Symptoms.
  - a. Usually appear healthy.
  - b. Reactor to Bangs test.
  - c. Premature birth of dead calf five to eight months.
  - d. Retained afterbirth.
  - e. Vaginal discharge.
  - f. Sterility.
  - g. Decreased milk production.
  - h. Weak calves.
3. Prevention.
  - a. Vaccinating calves (four to eight months).  
Brucella Abortus 6 cc strain 19.
  - b. Good herd management and sanitation.
4. Treatment - none.

PROBLEM III. What are the causes, symptoms, prevention, and treatment for Milk Fever.

1. Cause.



- a. Lowering of calcium in blood.
  - b. High producers more apt to have it.
2. Symptoms.
- a. General depression.
  - b. Nervousness.
  - c. Staggering gait.
  - d. Spasms.
  - e. Unconsciousness.
  - f. Body temperature below normal.
3. Prevention.
- a. Good feeding (minerals).
  - b. Injecting calcium salts.
  - c. Delayed and incomplete milking.
4. Treatment.
- a. Calcium salts (intravenous).
  - b. Pumping air into udder.

PROBLEM IV. What are the causes, symptoms, prevention, and treatment for Blackleg and Malignant Edema.

1. Cause.
  - a. Spore carried in soil - gas forming.
  - b. Blackleg affects cattle six months to two years old.
  - c. Malignant Edema - affects cattle of any age.
  - d. Most common in spring and fall.
2. Symptoms.
  - a. Lameness.
  - b. Listless.
  - c. Loss of appetite.

- d. Swelling - cracking sound to touch.
  - e. High temperature.
  - f. Death occurs in a few hours.
3. Prevention.
    - a. Vaccination - use the double bacterin.
    - b. Burn or bury dead animals.
    - c. Disinfect contaminated soil - cresol four ounces to one gallon of water - lime.
  4. Treatment.
    - a. None to date.
    - b. May use penicillin in early stages.

REFERENCES: Cattle Husbandry - Lederle Laboratory Division, pp. 54-60.  
Common Diseases of Livestock - Lederle Laboratory  
Division, pp. 8, 11, 18.

PROBLEM V. What are the causes, symptoms, prevention, and treatment for foot rot.

1. Cause.
  - a. Organism - lives in the soil.
  - b. Wet seasons.
  - c. Filthy lots.
  - d. Foot injuries.
2. Symptoms.
  - a. Lameness.
  - b. Swelling and soreness between and above claws.
  - c. Grayish-yellow sores.
  - d. Foul odor from sores.
3. Prevention.
  - a. Sanitation.
    - (1) Clean and disinfect quarters (lime or lye).

(2) Clean and disinfect yards.

(3) Rotation of pastures.

4. Treatment.

a. Place in dry isolated quarters.

b. Aureomycine or sulfa drug.

c. Sulmet.

d. Blue stone - copper sulfate.

e. Clean foot - smear pine tar.

PROBLEM VI. What are the causes, symptoms, prevention, and treatment for pink eye (Keratitis)?

1. Cause.

a. Several types of organisms (contagious).

(1) Factors that make cattle more apt to take it.

(a) Injury.

(b) Faulty nutrition (Vitamin A deficiency).

(c) Dust.

(d) Strong sunlight.

2. Symptoms.

a. Eyes swollen and protrude slightly.

b. Eyes become inflamed.

c. Watery discharge.

d. Eyes later become cloudy.

e. Discharge pus.

f. Eyelids may close.

g. Continued neglect may result in:

(1) Fever.

(2) Loss of appetite.

- (3) Loss of weight.
- (4) Decreased milk production.

3. Prevention.

- a. Take infected cows out of herd and isolate.

4. Treatment.

- a. Put animal in dark stall.
- b. Bathe daily with boric acid solution - 1/2 teaspoonful boric acid to quart of warm water.
- c. Oil emulsion of sulfamethazine - spray into eye one or two applications.
- d. A drop or two twice each day of ten percent solution of argyrol.

REFERENCES: Cattle Husbandry by Lederle Laboratory Division, pp. 61-62.  
Common Diseases of Livestock by Lederle Laboratory  
Division, pp. 25-26.

PROBLEM VII. What are the causes, symptoms, prevention, and treatment for impaction in cattle.

1. Cause.

- a. Improper feeding.
- b. Feeding coarse, dry or indigestible material.
- c. Over feeding.

2. Symptoms.

- a. Fever.
- b. Constipation.
- c. Loss of appetite.

3. Prevention.

- a. Feeding bulky, laxative feeds.
- b. Feed the proper amounts.

4. Treatment.

- a. Drench with one to two quarts of raw linseed oil.

- b. Give enema.
- c. Knead the paunch.

Caution: Epsom salts dries out the intestines and aggravates impaction.

PROBLEM VIII. What are the causes, symptoms, prevention, and treatment for bloat in cattle.

1. Cause.
  - a. Formation of an excessive amount of gas in the paunch caused by eating a large quantity of easily fermentable feed, such as green clover, alfalfa, wheat or sudan.
  - b. Excess moisture in the form of rain or dew on pasture.
  - c. Consuming spoiled or moldy feeds.
2. Symptoms.
  - a. Pronounced swelling of the left flank.
  - b. Rapid breathing.
3. Prevention.
  - a. Fill with dry hay before turning on green feeds.
  - b. Keep dry hay available.
  - c. Let animals have free access to grass pasture when on legumes.
4. Treatment.
  - a. Insert a six foot piece of smooth one-half inch hose into the paunch being careful to go over the windpipe.
  - b. Exercise with a bit or stick in the animals mouth.
  - c. Knead the paunch.
  - d. Drench with two ounces of aromatic spirits of ammonia or turpentine in a pint of cold water.
  - e. Drench with one-half ounce of formalin in a quart of water.
  - f. Four ounces of kerosene given as a drench.
  - g. Drench with one pint of mineral oil or raw linseed oil.

- h. Stick with trocar and canula as a last resort.

PROBLEM IX. What are the causes, symptoms, prevention, and treatment for hemorrhagic septicemia?

1. Cause.
  - a. Exposure to bad weather.
  - b. Overeating.
  - c. Lack of rest and proper shelter.
  - d. Irregular feeding and watering.
2. Symptoms.
  - a. Dull, listless, drooping head.
  - b. Discharge from eyes and nostrils.
  - c. Loss of appetite
  - d. Temperature of  $104^{\circ}$  to  $107^{\circ}$  F.
3. Prevention.
  - a. Proper shipping with ample provision for feed, water, and rest.
  - b. Hay and water lightly.
  - c. Rest all animals shipped in.
4. Treatment.
  - a. Drench with sulfamethiazine.
  - b. Give penicillin according to directions on bottle.
  - c. Injections of anhydrous streptomycin sulfate in stubborn cases.

JOB: Making and feeding silage.

OBJECTIVES:

1. To recognize the advantages of silage.
2. To understand the value of silage.
3. To recognize the economy of silage.

SITUATION:

In most of the leading stock-farming districts of the United States, silage is a feed of great importance. Silage is almost essential for economical feeding of dairy cows when they are not on pasture. The making of silage is the one means available for taking the green forage from the field with its natural juices and preserving it in a succulent form. There are several advantages of silage. It takes a drought to make us realize the true value of silage.

PROBLEM I. What are the advantages of silage.

1. Keep more stock on certain area of land.
2. Succulent feed any season of year.
3. Can encile crops in bad weather.
4. Smaller loss of nutrients.
5. Little waste.
6. Weedy crops may produce satisfactory silage.
7. Less space for storage.
8. Crops can be removed from land early so other crops can be planted.
9. Helps control corn borer (gets crop off before it begins working in corn).

PROBLEM II. What is the value of silage?

1. Highly palatable.
2. Slightly laxative (aids digestive system).
3. Cows usually produce more milk.

PROBLEM III. What is the cost of silage in comparison to other crops?

1. More economical and efficient than dry corn or sorghum fodder.
2. Cost per ton of corn silage is 30 to 40 percent of the cost of a ton of alfalfa hay.
3. Corn silage is worth 30 to 40 percent as much as a ton of alfalfa hay.

REFERENCES: Feeds and Feeding (abridged) Eighth Edition by Henry Morrison, pp. 196-199.

9



JOB: Controlling cattle grubs.

OBJECTIVES:

1. To understand the life stages of the grub.
2. To understand the life history and habits of the cattle grub.
3. To develop the ability to control cattle grubs.

SITUATION:

Every year cattle grub damages cost Oklahoma cattlemen several million dollars. This loss comes from lowered milk production, damaged meat carcasses, damaged hides, and lowered vigor and vitality of the animals. For only a few cents a head cattle can be treated for grubs and these losses prevented. Cattle grubs cause an average loss of \$3.50 to the hide and meat alone for each animal slaughtered. Heel flies reduce milk flow and weight gains for about 45 days each spring. Parasites are expensive to feed, but fortunately they can be controlled. Cattle grubs are present in about 35 percent of the slaughtered cattle reaching market during the year. Fully 50 percent of the cattle on farms are infested with grubs. In Oklahoma on January 1, 1945 there were about 3,000,000 cattle on farms or 1,500,000 grub infested cattle. The cost of raising and keeping these grubs in Oklahoma is \$4,500,000 each year.

PROBLEM I. What are the life stages and description of the cattle grub?

1. Heel fly.
  - a. One-half inch long, gray to black band of yellow hairs around abdomen.
  - b. Cannot sting or bite - mouth parts not functional.
2. Eggs on hair.
  - a. Yellowish, shiny, elongated.
  - b. Laid one above the other on stiff hairs on legs.
3. First stage larva.
  - a. Slender white maggot. About 1/10 inch long.
4. Mature larva.
  - a. Two-thirds inch long.

5. Pupa.
  - a. Dark brown to black.
  - b. One-half to  $2/3$  inch long.

PROBLEM II. What are the life history and habits of the cattle grub?

1. March, April and May.
  - a. Heel fly lays eggs on cow.
  - b. Eggs hatch in three or four days.
  - c. Grubs cut through skin.
2. June, July and August.
  - a. Grubs migrate through tissues to chest and gullet. Feed there.
3. September, October and November.
  - a. Grubs migrate to the back.
    - (1) Cut holes in the skin.
    - (2) Form a cyst.
    - (3) Hole made so larva can breathe.
4. December, January and February.
  - a. Grubs feed in cyst in back. (35-45 days)
  - b. When mature they fall to ground and pupate. (18-77 days)

PROBLEM III. What are the methods of controlling cattle grubs?

1. Hand extraction.
2. Rotenone.
  - a. Dust.
    - (1) One percent rotenone (use 1 part 5 percent rotenone and 3 parts wettable sulfur).
  - b. Wash.
    - (1) Five percent rotenone dust  $1/2$  pound, wettable sulfur  $1/2$  pound, water 1 gallon.

## c. Spray.

- (1) Five percent rotenone dust 5 pounds, wettable sulfur 10 pounds, water 100 gallons.
- (2) Rotenone  $7\frac{1}{2}$  pounds, BHC  $2\frac{1}{2}$  pounds, water 100 gallons - apply at 400 pounds pressure.

PROBLEM IV. When is the proper time to treat cattle for grubs?

1. Treat three times at 30 day intervals.
2. First application within 30 days of first appearance.
3. In this area treatment should begin about the first week in December.
4. Cost is about five cents per head.

REFERENCES: Oklahoma A. and M. College Circular 387, External Parasites of Cattle, pp. 4-11.  
Oklahoma A. and M. College Circular 470, Controlling Cattle Grubs.

## CHAPTER VII

### SUMMARY AND CONCLUSIONS

The business of farming in the Spiro area is continuously changing from year to year. With new crops come new problems. Livestock producers are improving many of their production practices. The survey which was used in this problem has helped the writer get a closer view of the production practices and problems on farms in the Spiro area.

Truck crop producers report that controlling insects and diseases is their major problem along with low prices for their products. Of the twenty truck crop producers, seventeen grow green beans with an average of 31.5 acres per farm. Fifteen grow spinach with an average of 93.3 acres per farm. Eleven grow cowpeas with an average of 73.6 acres per farm. Seven grow sweet corn with an average of 50.0 acres per farm. Four grow turnip greens with an average of 37.5 acres per farm. Four grow mustard greens with an average of 45.0 acres per farm. Four grow Irish potatoes with an average of 5.5 acres per farm.

The major problems reported in production of field crops were: dry weather and low prices. When a production problem of one crop gets too large, another crop is grown in its place. Soybeans and truck crops took the place of cotton in the Spiro area when the boll weevil became a big problem, while a few years later wheat and barley took the place of corn as a result of increased damage to corn by the corn ear worm and root worm. Of the twenty field crop producers, seventeen grow soybeans with an average of 96.2 acres per farm. Eleven grow wheat with an

average of 121.4 acres per farm. Eleven grow alfalfa with an average of 85.4 acres per farm. Seven grow barley with an average of 48.0 acres per farm. Four grow cotton with an average of 46.2 acres per farm. Five grow corn with an average of 32.0 acres per farm. Four grow oats with an average of 28.8 acres per farm.

The major problem that beef cattle producers are concerned about at present is the low market. The survey made by the writer indicates that most beef cattle producers are using good production practices. The practices which should be improved are: dehorning calves at an earlier age, allowing the bull to run with the herd only during the breeding season, and creep feeding calves.

The ten dairymen interviewed by the writer were making plans to reduce feed costs by feeding more hay, silage, and providing winter pasture. In addition to high feed costs, they are concerned about how to control certain dairy cattle diseases and parasites. Mastitis was the most important disease reported both in the number of farms and number of animals involved. Forty percent have their cows calving in the fall, and another 40 percent prefer year round calving. One hundred percent produce Grade A milk and have their cows tested for Bangs disease.

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## APPENDIX

## LIST OF FARMERS SURVEYED

Beef

E. F. Gee  
 Herbert Sharp  
 Raymond Whitehead  
 Ben Harrison  
 Spencer Littlefield  
 Newt Lester  
 A. W. Gist  
 Willard Hull  
 Neil Wilson  
 George Brown  
 S. W. Cox  
 L. S. Moore  
 Carol Babb  
 R. L. Redwine, Jr.  
 Ray Southern  
 Barney Watkins  
 Tom Frank Tibbitts  
 B. H. Hubbard  
 M. M. Ward  
 Albert Smith

Truck Crops

E. F. Gee  
 Herbert Sharp  
 Loyd Maxwell  
 D. C. Ainsworth  
 Harold Hamilton  
 Ralph Gamble  
 Other Gamble  
 Jay Maxwell  
 Roy Kelly  
 Raymond Whitehead  
 Amos Carter  
 Clayton Inge  
 Blue Perdue  
 Bo Perdue  
 Arthur Moore  
 Bill Rogers  
 George Goff  
 Billy H. Hudson  
 D. W. Dickerson  
 DeWitt Bunch

Field Crops

E. F. Gee  
 Herbert Sharp  
 Loyd Maxwell  
 Harold Hamilton  
 Ralph Gamble  
 Other Gamble  
 Jay Maxwell  
 Frank Deshazo  
 Roy Kelly  
 Harvey Cox  
 Blue Perdue  
 Bo Perdue  
 Glynn Hickman  
 Arthur Moore  
 George Gist  
 Bill Rogers  
 Claud Hicks  
 J. W. Mixon  
 John Warren  
 Clint Reed

Dairymen

Gerald Gist  
 Billy King  
 Doyal Rhodes  
 Harold Hammons  
 Pete Hassell  
 Claud Smith  
 Raford Martindale  
 E. G. Kilgore  
 A. J. Mosby  
 Ray Mitchell



SURVEY OF THE BEEF ENTERPRISE ON THE FARM OF

---

Cows: Breed \_\_\_\_\_ No. Purebred \_\_\_\_\_ No. Grade \_\_\_\_\_

Bulls: Breed \_\_\_\_\_ No. Purebred \_\_\_\_\_ No. Grade \_\_\_\_\_

Months cows calve \_\_\_\_\_ Age calves are castrated \_\_\_\_\_

Age heifers are bred \_\_\_\_\_ Are calves creep fed \_\_\_\_\_

Usual market weight of calves \_\_\_\_\_ Method of marketing \_\_\_\_\_

Are concentrates fed to the bull \_\_\_\_\_

Does bull run with the herd \_\_\_\_\_ Shelter for bulls \_\_\_\_\_

Shelter for cows \_\_\_\_\_ Shelter for calves \_\_\_\_\_

Percent of calf crop raised \_\_\_\_\_

Are heifers vaccinated for Bangs \_\_\_\_\_

Are calves vaccinated for blackleg \_\_\_\_\_ Method of dehorning \_\_\_\_\_

Age cattle are dehorned \_\_\_\_\_

What special problems have you had with beef cattle which tended to decrease the income from this enterprise.

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What practices have you used which helped to increase the profit from the beef cattle enterprise on this farm.

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Diseases (Past 2 Years)	Number of Animals Affected	Deaths

SURVEY OF THE DAIRY ENTERPRISE ON THE FARM OF

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Cows: Breed \_\_\_\_\_ No. Purebred \_\_\_\_\_ No. Grade \_\_\_\_\_

Bulls: Breed \_\_\_\_\_ No. Purebred \_\_\_\_\_ No. Grade \_\_\_\_\_

Number of cows calving in the fall \_\_\_\_\_ In the spring \_\_\_\_\_

Age calves are weaned \_\_\_\_\_ Disposal of bull calves \_\_\_\_\_

Kind of cooling facilities for milk and cream \_\_\_\_\_

Distance to market \_\_\_\_\_ Frequency of marketing \_\_\_\_\_

Is milk from each cow tested? \_\_\_\_\_ How often? \_\_\_\_\_

Is milk from each cow weighed? \_\_\_\_\_ How often? \_\_\_\_\_

Are cows fed according to production? \_\_\_\_\_

Have cows been tested for Bangs? \_\_\_\_\_ No. reactors \_\_\_\_\_

Is Grade A milk produced on this farm \_\_\_\_\_

What special problems have you had with the dairy herd during the past 12 months?

\_\_\_\_\_  
\_\_\_\_\_

List the conditions favorable to dairying on this farm? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

List the conditions unfavorable for dairying on this farm? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Diseases (Past 2 Years)	Number of Animals Affected	Deaths
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

FIELD OR TRUCK CROP SURVEY ON THE \_\_\_\_\_ FARM

Crop	Acres	Source of Seed	Kind of Comm. Fert.	Rate of Application	Disease	Method of Control	Insects	Method of Control

1. Which truck crop produced the greatest net profit per acre this year \_\_\_\_\_
2. List the conditions and practices that tended to decrease the yield of truck crops on this farm.  
\_\_\_\_\_
3. List the conditions and practices that tended toward the production of normal or above normal yields of crops on this farm.  
\_\_\_\_\_
4. Are adequate markets available for truck crops grown on this farm? \_\_\_\_\_ If not which crops need better markets? \_\_\_\_\_ How can these markets be obtained? \_\_\_\_\_
5. What other problems have you experienced in growing these crops? \_\_\_\_\_  
\_\_\_\_\_

## VITA

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candidate for the degree of  
Master of Science

Report: DEVELOPING AN ADULT EDUCATION PROGRAM IN AGRICULTURE FOR THE  
SPIRO COMMUNITY

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Minor: Agricultural Economics

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REPORT TITLE: DEVELOPING AN ADULT EDUCATION  
PROGRAM IN AGRICULTURE FOR THE  
SPIRO COMMUNITY

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