THE DEVELOPMENT AND EVALUATION OF AN ADULT FARMER EDUCATIONAL PROGRAM IN THE TRYON, OKLAHOMA COMMUNITY

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CHAPTER I

INTRODUCTION

Today's successful farmer must be a highly trained technician a good mechanic, a scientist, well versed in the economical production of agricultural commodities and a good businessman. He needs to keep abreast of new developments in each field of agriculture in which he is engaged and put into practice those developments or changes which will help him the most. Many problems pertaining to the farming business arise on the farm and often are of such nature as to require individualized instruction if desirable solutions are readily found. Some of the needed training can be acquired to organized educational meetings where an exchange of individual experiences can prove most helpful to other individuals in attendance at the meetings.

There are several groups whose major effort is expended in making information available and in promoting the education of farmers. Magazine writers, newspaper editors, radio and television farm directors, representatives of commercial concerns, government agricultural agencies and others are all involved in supplying today's farmer with the expanding information which he needs to successfully compete in agriculture production. Educational activities on the local level have been effective in the past through the adult farmer educational program conducted by many vocational agriculture teachers in local high schools. The Oklahoma State Plan for Vocational Agriculture

requires vocational agriculture teachers to conduct adult farmer classes or young farmer classes consisting of at least ten to fifteen organized meetings on agricultural subjects each year. In conjunction with these meetings individualized instructional activities are required to help meet the needs of the farmers. These meetings and activities are in keeping with the primary aim of vocational agriculture, "To train present and prospective farmers for proficiency in farming".[1] In communities where the adult farmer educational programs have been most effective they have been based upon the needs of the local farmers. The effectiveness of the adult farmer educational activities has been apparent in many cases but few efforts have been made to evaluate the effectiveness in terms of changes made in farming operations of those receiving instruction.

The Tryon, Oklahoma, community is largely dependent upon agriculture with dairy and livestock farming providing a major proportion of farm income. Cotton and other row crops were formerly important in the area but erosion, decreased fertility, and other factors have caused a change to more livestock and dairy farming. Severe drought conditions, for a five year period and including the first sixteen months of this study, have led to many changes in the agricultural activities in the community. Farmers have found it necessary to reduce numbers of livestock, curtail their cropping operations, and some have engaged in off-the-farm employment to supplement their farm income. Some of the farmers, forced by the drought to find

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[1] Federal Board of Vocational Education, Training Objectives in Vocational Education in Agriculture, (Vocational Division Bulletin Number 153, Washington, D. C., 1931), p. 1.

other employment, will continue to work at non-agricultural jobs but several have already started to make appropriate adjustments in their farming operations. Farmers in the community were most receptive toward the adult farmer educational activities and have expressed the feeling that their participation has been rewarding.

Statement of the problem. Local vocational agriculture instructors are responsible for conducting programs of adult education in agriculture. Desirable agricultural changes are the end result of such educational activities. Programs considered effective have been based upon the needs of the farmers in the local community. To determine the effectiveness of such a program the question is asked, "What immediate desirable agricultural changes were achieved by those farmers participating in the adult farmer educational program based upon the needs of farmers in the Tryon community?"

Purpose. The purpose was (1) to develop a program of individualized instruction and organized group instruction based upon the needs of farmers in the Tryon community and (2) to evaluate the program in terms of immediate desirable agricultural changes achieved by those farmers participating in the educational activities.

Definition of Terms

Individualized Instruction, for the purpose of this study, referred to any of the activities in which the vocational agriculture instructor aided in providing instruction that led to the acceptance of improved agricultural practices or more important managerial decisions. Most of the individualized instruction did occur on the home farm of the adult farmer class members but some of it took place at the Vocational Agriculture Building, the home of the vocational

agriculture instructor, at the Local Feed and Seed store and other places.

Organized Adult Farmer Class Meetings, for the purpose of this study, referred to organized educational meetings held on agricultural subjects. Most of the meetings were held in the Vocational Agriculture Building but some were held at other places including field trips and tours.

Need for the Study. Vocational agriculture instructors are interested in the success of the local departments of vocational agriculture in the school districts where they are employed. As set forth in the United States Office of Education, Vocational Division Bulletin number 243,

> The success of a local department of vocational agriculture is dependent upon having a complete program in agricultural education that adequately meets the needs of all rural people in the community.[2]

To include all the people in the community means that the adult farmer group cannot be neglected. The need for education of this group is expressed by Glen C. Cook

> Competition in farming is becoming greater each year. Scientific information is needed much more today than it was formerly; consequently, farmers must have the necessary information which will enable them to cope with their problems more economically and intelligently.[3]

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[2]United States Office of Education, The Advisory Council For A Department of Vocational Agriculture (Vocational Division Bulletin Number 243, Washington, D. C., 1951), p. 1.

[3]Glen C. Cook, A Handbook on Teaching Vocational Agriculture (Danville, Illinois, 1947), p. 655.

Individualized instructional activities have been considered important in the development of an effective adult farmer educational program. As stated by W. T. Spanton

> . . . there is a need for some instruction of farms where the problems that are discussed in organized meetings are located . . . the necessity of instructors periodically visiting farms to help apply group instruction is basic to success. There should be at least six of the visits per individual enrolled each year.[4]

To determine the effectiveness of an adult farmer educational program some measurement must be used. "Progress and improvement are impossible without measurement".[5] A criteria for measurement has been expressed by L. B. Fidler.

> The measurement of a really good adult course in agricultural education is the extent to which it actually improves the practices on the farms, in the homes and the farm living of the members of the group.[6]

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[4]W. T. Spanton, Chief Agricultural Education Service, Conferences on the further development of the Young Farmer Program, Vocational Division Letter, Washington, D. C., 1950)

[5]Ward P. Beard, Starting to Farm, (Danville, Illinois, 1948), p. 181.

[6]L. B. Fidler, Teaching Methods Applicable to Out of School Groups, (The Ohio State University, Columbus, Ohio, November 1945), p. 1.

CHAPTER II

FACTORS AFFECTING AGRICULTURE IN THE TRYON COMMUNITY

Physical Conditions. The Tryon, Oklahoma School District comprises an area of 95 square miles in the Northwest corner of Lincoln County. There are 224 farm units in the district with a mean acreage of 271 acres per farm unit. Farm units range in size from 80 acres to 1240 acres. The largest number of farms fall into the 140 to 179 acres and the 260 to 499 acre classifications. Climatic conditions recorded at Chandler, Oklahoma, located fourteen miles Southeast of Tryon show an average precipitation over a 30 year period of 33.3 inches with 68 days per year with precipitation over 0.01 inches. The average precipitation was 2.7 inches per month over the 12 month period. June and August have more rainfall than average and April, May, and June are the months with the highest average rainfall. The average rainfall per month for the 30 year period is listed as follows:

January	1.44	July	2.56
February	1.24	August	3.04
March	2.47	September	3.30
April	3.63	October	3.04
May	4.95	November	2.20
June	3.90	December	1.54

Rainfall was subnormal during the twenty-month period of the study from September, 1955 through April, 1957.

The soil conditions within the area are somewhat variable. Most of the soils can be classified as prairie soils of the cross-timbers belt of the red beds area. These prairie soils were once partially covered with timber but were cleared and put into cultivation or used for meadow or pasture. Under virgin conditions the topsoil averaged about 15 inches deep but where the land has been in cultivation for some 40 years or more the topsoil averages about seven inches deep. The heavy loss of topsoil in the cultivated areas may be attributed to the fact that an estimated 60 percent of the land has a slope of three to five percent and to the sandy nature of the topsoil. The subsoil is a moderately permeable to slowly permeable red clay that is very subject to erosion once the topsoil is removed. Much of the land that is now in cultivation is the stream bottom areas. These soils are an alluvial type of medium textured soils and are rather high in potassium but medium to low in organic matter and phosphorus. Most of the soils are slightly acid to moderately acid.

The tall and medium prairie grasses of Big Bluestem, Little Bluestem, Switch grass, Indian grass, Canada Wildrye, Sideoats Grama, and Purpletop originally covered most of the area. They constitute most of the good native meadows and pastures now in the area. An estimated 35 percent of the land in the district was at one time in cultivation and when crop yields decreased the land was abandoned. These fields are covered with pasture plants that vary greatly in value for livestock from the very poor quality Tripple-awn and Ragweed composition to the fields that now have revegetated themselves to the point where they have considerable value with plants being present such as Little Bluestem, Indian grass, Switch grass and Sideoats Grama as well as the

native legumes of Illinois Bundleflower, Prairie Clover and Slender Lespedeza. Under natural conditions the revegetation process takes from 25 to 75 years. Some Bermuda grass is present on most farms but the acreage is small in comparison to the native grasses. Many of the abandoned fields are too shallow and unproductive to grow Bermuda grass productively. Johnson grass is present in many fields especially in the cultivated bottom areas and is used for pasture and also for hay in combination with Alfalfa and Small grains.

Small grains are well adapted to the area with an estimated 35 percent of the farm planting the maximum allotment of hard red winter wheat each year. The average acreage is 21 acres per farm. An equal estimated acreage is planted to oats and barley for feed crops with some of the oats being baled as a hay crop. Peanuts have been an important cash crop but decreased allotments and drought conditions have discouraged plantings. A few farmers raise the allocated acreage of cotton but it is not considered an important crop in the community. Corn plantings have decreased in the area until only a small acreage is now put into that crop. Grain Sorghums, largely combine varieties, have replaced corn as a feed crop. Some farmers plant the regular varieties of grain sorghums and harvest the crop for fodder. A limited amount of corn and the forage sorghums are used for ensilage.

Dairying is well suited to the conditions that exist in the Tryon community and the dairying enterprise accounts for the major portion of the farm income. The mild winters and usually good pasture conditions are favorable for dairy and livestock enterprises. Dairy cattle are present on an estimated 60 percent of the farms in the community with two-thirds of the dairy products marketed as sour cream. Those

who sell cream utilize the skim milk with calves and hogs. Unfavorable hog prices over the past few years have caused a decline in the number of swine but recently there has been an increase in numbers. About 20 percent of those producing dairy products market fluid milk, most of it going into the Oklahoma City Market. An average of eight cows per farm is found on the farms producing cream. That compares with an average of 18 cows per herd on the farms producing Grade A fluid milk. Most of the herds are mixed breeding with the Holstein breed predominant in the fluid milk herds and Milking Shorthorn breed predominant in the cream producing herds.

Beef production is also well adapted to the area and accounts for a large share of the farm income in the community. A herd average of 18 cows is found per farm producing beef, with 35 percent of the farms in the area having beef animals. A small number of purebred and registered herds are in the community but most herds consist of grade animals of Hereford or Angus breeding.

Economic Conditions. The value of farm products sold annually on the majority of the farms in the area is within the $1,200 to $2,499 range. The income from farm products is greater than that amount on some farms while a lower income from farm products sales is received on other farms. Severe drought conditions have persisted over the area for five year period with the exception of four months before the study ended. These conditions have had a marked change in the farming operations in the Tryon area. Many of the farmers have found it necessary to secure off-the-farm employment and decrease the scope of farming operations during this period. Many other farmers have found it necessary to discontinue their farming operations entirely. A large

amount of roughage as well as concentrates have been purchased that would have been produced on the home farm if weather conditions had not been so unfavorable. Pastures have been severely damaged by the drought conditions, due to overgrazing as well as lack of moisture. Several farmers were forced to sell their cattle and other livestock at depressed prices because they did not have sufficient pasture or other roughage to continue normal operations until the end of the drought. Several of the farmers that curtailed their farming operations during the drought have increased their operations now that they have received some moisture. An infestation of the Spotted Alfalfa Aphid did considerable damage to the alfalfa plantings in the area. Some of the fields were destroyed due to the aphids and the drought combined.

The town community includes a population of 350 people, as well as twelve places of business including a bank, lumber yard, hardware, feed and seed store and other establishments. The community is largely dependent upon agriculture for its livelihood. There are some producing oil wells in the community and one oil field flood project in the area. In the past the business section of Tryon has been larger than it is at present. Two Cotton gins were operated at one time but neither has been operative for the last eight years. One railroad goes through the town and a gravel highway connects the town with paved highways on the East and West sides of the town, one highway is three miles and the other five miles from Tryon.

Social and Other Conditions. The Farmers Union organization is one of the most active farm organizations for adults in the Tryon community. The Home Demonstration Clubs have been very active and have

accomplished several worthwhile undertakings. The Tryon Schools are the center of the social activities in the community. The Tryon Chapter of the Future Farmers of America has been active in the eight years it has been organized. Several honors on the State and district level have been bestowed upon the chapter. The Tryon High School Girls and the Grade 4-H clubs have received many awards for their outstanding work on the state and district levels. The Tryon Community Free Fair has been supported by the school administration, merchants and farmers in the community. The cooperative attitude toward community undertakings has been outstanding. The community has supported the school as is evidenced by the construction of a new brick High School building during the period of this study and the new Vocational Agriculture building including a farm shop, laboratory, classroom and office. Local cooperation on these projects enabled the school district to obtain excellent buildings with a minimum of expense. Farmers and others in the community have made tractors, machinery and equipment available for use of the FFA chapter in developing demonstration plots.

The superintendent of schools, the local board of education and the school faculty have been very cooperative toward the adult farmer educational activities and have provided all the needed facilities for the conducting of such a program. Farmers in the community are extremely interested in the adult farmer educational activities and are proud of their participation in the activities. Local businessmen have furnished refreshments at all organized class meetings and have assisted in supplying resource personnel for some of the meetings.

CHAPTER III

PROCEDURE

To resolve the thesis question, studies were conducted at the beginning and close of the twenty month period from September, 1955 through April, 1957. Also, an effort was made to develop an adult educational program based on the needs of the farmers participating in the study. The project involved the collecting and analyzing of data and the development of certain findings and conclusions. A record of all educational activities was kept and summarized.

Selection of population. The eighteen farmers participating in the study were selected on the basis of their interest and former participation in adult farmer educational activities. All had attended at least eight of the organized meetings the year before the study started.

Interview Forms. Interview forms, which are shown in appendix A, were developed from existing forms that had been used in similar studies to determine the practices in use and conditions existing on farms. Several revisions were made in the forms with assistance from staff members of the agricultural education department of the Oklahoma Agricultural and Mechanical College and suggestions from farmers who participated in the study.

Selection of course content. A preliminary survey was made twelve months prior to the start of the study with farmers in the community indicating interest and preference of subjects to be used in organized

adult farmer class meetings. Suggestions on the future educational program were obtained from the adult farmer class members at the last meeting of each series of meetings and a course schedule was drafted, based upon those suggestions and the indications given in the preliminary survey. The program was approved by the members of the class. Some changes in plans were necessitated because of limitations in the availability of resource personnel but the initial schedule was rather closely followed.

Selection of content for individual instruction. The studies of the conditions existing on the farms at the beginning of the period were helpful in determining some of the needed individual instructional activities. Other problems became apparent after several visits were made to the farms of those participating in the dairy production testing program, and the problems encountered were made a part of the instructional activities. The need for pasture improvement and soil conservation activities was brought out in organized meetings and additional instruction incorporated on the individual basis. Management practices, disease and parasite control, and other subjects often received major consideration as problems presented themselves, and the need for finding solutions became more acute.

Development of farm plans. Plans for pasture improvement and proper land usage, shown in appendix B, were worked out with the farmers after some assistance was given by members of the FFA Chapter. Aerial photographs were obtained through the cooperation of the Lincoln County Soil Conservation District and used in helping plan the programs. Soil tests were made in the local Vocational Agriculture Laboratory. Goals in the overall farming program and management practices were discussed

at various times with those participating.

Evaluation of outcomes. The improvements in farming operations were determined largely through a comparison the surveys made at the start and the close of the period; the progress made by individual farmers over a twenty month period was evaluated; ratings were determined with regard to proficiency attained in certain areas; while in other areas the extent of change was given major consideration.

In considering the proficiency ratings on practices the X^2 method was used to determine if the changes were (a) significant, (b) very significant or, (c) of no significance. An example using the X^2 method is shown in appendix C.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Data presented in this chapter were obtained in individual interviews with, and observations on the farms of, eighteen adult farmer class members. Interviews were conducted at the beginning and again at the close of the twenty-month period. Records were kept of organized adult farmer class meeting attendance and individualized instructional activities. Opinions on the conducting of the organized adult farmer class meetings were collected by group interview. While most of the findings could be measured objectively, it was desirable that proficiency ratings of various practices be determined by the author.

Tables in this chapter are arranged to show: (1) general conditions existing on the farms of 18 adult farmer class members at the beginning of the study (2) participation in organized adult farmer meetings (3) individualized instructional activities and (4) changes in farming operations and practices during the twenty month period. An analysis of each table is given and certain observations noted.

General Conditions Existing on the Farms of 18 Adult Farmer Class Members at the Beginning of the Twenty Month Period

Age. The age of the eighteen adult farmer class members ranged from 33 to 62 years. The distribution of the members according to certain age groups is given in Table I. It will be noted that a large proportion are in the middle-age classification.

TABLE I

DISTRIBUTION OF ADULT FARMER CLASS MEMBERS BY AGE GROUPS

Age Group Years	Class Members Number	Per cent
Under 31	0	00.00
31-40	8	44.45
41-50	6	33.33
51-60	2	11.11
61 and over	2	11.11
Totals	18	100.00

Their interest in adult farmer educational activities may be, in part, because of sufficient maturity to recognize a need for, and a receptive attitude toward, activities of this nature.

Income from Farming. Non-farm income received by farmers, often influences the farming operations. Table II shows that 50 percent of the adult farmer class members had non-farm income that provided more

TABLE II

DISTRIBUTION OF ADULT FARMER CLASS MEMBERS BY SHARE OF INCOME FROM FARMING

Share of total income from farming	Class Members Number	Per cent
80% and over	9	50.00

TABLE II
(Continued)

60% - 80%	7	38.89
Under 60%	2	11.11
Totals	18	100.00

than twenty percent of the total income. Severe drought conditions and unfavorable farm prices were major factors involved in members seeking non-farm sources of income. In one case, income from oil royalties was a factor. The duration of such income will probably be limited to four years.

The extent of farming operations varied considerable within the adult farmer class. In some cases operations had been curtailed because of drought conditions. Table III shows that the farming

TABLE III

EXTENT OF FARMING OPERATIONS BY EIGHTEEN ADULT FARMER CLASS MEMBERS

Extent of Operations	Range	Mean
Farm Size	160 - 720 a.	277 a.
Crop Acreage	0 - 175 a.	43 a.
Animal Units on Farm	2 - 69 AU	24 AU
Pasture Carrying Capacity	8 - 50 AU	19 AU

operations were near normal in size for this area. Some of the units were considered too small for a desirable income especially during unfavorable conditions. Some of the farms with smaller acreages were

capable of producing more income in products than the larger acreages, which condition also applied to the number of animal units per farm. Each individual farm unit had problems that were peculiar to that unit and not to the group as a whole.

All types of farming common to the area were represented on the farms of the adult farmer class members. Table IV shows that the dairy production is the most important enterprise on the farms of the

TABLE IV

DISTRIBUTION OF ADULT FARMER CLASS MEMBERS BY TYPE OF FARMING

Major source or sources of farm income	Class members	
	Number	Per cent
Dairy	8	44.47
Dairy and Crops	2	11.11
Dairy and Swine	2	11.11
Dairy and Beef	2	11.11
Beef and Crops	1	5.55
Beef and Swine	1	5.55
Beef	1	5.55
Crops	1	5.55
Total	18	100.00

adult farmer class members. Beef production is the next most important enterprise with crops and swine being less important as a source of farm income. In the Educational activities, the emphasis was placed on the major needs of the enterprises that proved most important as sources of farm income. The preferences indicated by the class members for the course outline was closely followed by the importance of such

enterprises as sources of income.

Organized Adult Farmer Meetings

The underlying principle of the Educational program was to conduct organized adult farmer meetings based upon the needs of the farmers in the Tryon community. Twelve months prior to the start of the study, interviews were had with the prospective adult farmer class members to determine the preference of subjects to be included in an adult farmer educational program. Based upon these findings, organized adult farmer class meetings were comprised of the following:

Disease and parasite control	3
Livestock and dairy feeding	5
Pasture improvement	1
Soil Conservation	2
Soils and fertilizers	5
Farm buildings and equipment	1
Livestock marketing	1
Total	18

The possibility of a need for including legal problems of farmers in the educational program was discussed in an adult farmer course offered by the Agricultural Education Department of Oklahoma A. & M. College. When the idea was presented to the adult farmer class, the response was favorable so the subject was included in the adult farmer educational program. The distribution by problem areas is shown in Table V. Major emphasis was placed on pasture improvement. Three meetings were devoted to the study of native pasture improvement in the Tryon area. Plant specimens were used in the meetings to aid in identification. Management practices such as deferred grazing,

rotational grazing, and proper stocking rates were discussed and the results of experimental station research on these subjects were presented and discussed. The class members stressed the influence of following recommended practices for profitable livestock and dairy production in the area. One class meeting was devoted to the study of the values of tame pastures to the area and the management of permanent

TABLE V

DISTRIBUTION OF ORGANIZED ADULT FARMER CLASS MEETINGS HELD DURING A TWENTY-MONTH PERIOD BY PROBLEM AREA

Problem Area Considered	Meetings Held	
	Number	Per cent
Pasture Improvement	7	20.59
Farm Management	6	17.65
Farm Legal Problems	6	17.65
Machinery and Equipment	5	14.71
Breeding and Herd Improvement	3	8.82
Crop Production	3	8.82
Soil Conservation	2	5.88
Marketing	1	2.94
Farm Buildings	1	2.94
Total	34	100.00

and temporary tame pastures. New varieties of Bermuda grass and Sudan grass were discussed and the results of grazing trials with these plants presented. Several class members indicated they would like to start propagation plots with some of the improved varieties of grasses. A discussion was held concerning plants adapted for use on the less productive soils in the area. Specimen plants were used to aid in plant

identifcation. One meeting was conducted on the subject of brush and weed control measures for the Tryon area. Several methods of controlling brush and weeds were presented. Slides showing the results of methods of treatment were used in demonstrating the methods deemed practical for local conditions. Several class members presented their own experiences in trying to solve the problem of undesirable plant growth on their home farms. Revegetation methods, estimates of costs, and assistance from the Agricultural Stabilization and Conservation program were the subject for two meetings of the class. Methods of carrying out pasture improvement practices required for assistance under the Agricultural Stabilization and Conservation program were discussed in detail. Estimates of costs were made on several pasture improvement practices that were suggested by those in attendance. Total cost estimates were made and governmental payments estimated; thereby, giving those present an estimate of the cost to the farmer in getting the practices established. The location, availability, and rental cost of special machinery to assist in pasture building practices were discussed in these meetings.

Farm management problems being important to persons engaged in the farming business, one meeting was devoted to general farm management problems. The size of business, the use of labor, and other production facilities to obtain the maximum profit from operations in this area were discussed. The possibility of using off-the-farm employment to supplement the farm income during periods of unfavorable prices and drought conditions received consideration. Two meetings were devoted to the management of dairy farming operations. In one of these meetings major emphasis was placed upon the analysis of production

records and feed costs records, kept by the Tryon FFA Chapter, on the herds owned by the adult farmer class members. Feeding methods and other management practices were discussed in detail. In the other meetings held on dairy farm management major consideration was given to local records of total dairy costs and income. Suggestions for improvements were made by the class members. Two farm management meetings were concerned with the Land Bank program of the United States Department of Agriculture. The Acreage Reserve and the Conservation Reserve phases of the program were discussed in detail so that adult farmer class members present might be better able to determine the degree of participation in the programs that would fit their own needs. As one phase of farm management is the use of credit, one meeting was devoted to loans made by local banks. Certain adult farmers who attended this meeting reported that this discussion was enlightening. The class members expressed the thought that the information developed at the six meetings on the problem area of farm management were well suited to their needs.

As stated above, farm legal problems was included as a problem area in the adult farmer class meetings. Changes in the Social Security and Farm Income Tax laws presented problems for the farmers and two meetings were held concerning these subjects. Some examples were cited to explain some of the important changes in the laws. A small number of farmers had unique situations concerning Farm Income Tax. It was found necessary to refer them to other sources for the correct solutions to their problems. Four meetings were held on the general legal problems as pertaining to the farming business. No specific problems were solved at these meetings but legal opinions were given

by qualified attorneys on the subjects of ownership rights, farm contracts, liability of farmers, and wills and deeds. The need for consulting with the family attorney on many of the legal problems was stressed at all the meetings on legal problems. The six meetings in the problem area of farm legal problems were considered worthwhile by the class members.

The farm shop section of the new vocational agriculture building was helpful in the conducting of classes in the problem area of machinery and equipment. One meeting was held on the subject of servicing electrical equipment. Electric motors were discussed and some of the servicing necessary for efficient operation was discussed and demonstrated. Wiring needs for various types of equipment were considered. Two meetings were spent discussing the need for equipment and methods used in constructing such equipment. Some of the equipment was brought into the farm shop and detailed accounts of construction methods and costs presented. Blueprints were distributed to those present at these meetings so that they might refer to them at a later date. Two meetings were devoted to maintenance and adjustment of the farm tractor and baler. At these meetings demonstrations of proper maintenance methods and adjustments to prolong the life and efficiency of the machinery were given. Part of each meeting was used to answer specific questions which the class members asked about their own machinery. Having the machinery present in the farm shop aided materially in the conduct of the meetings. Additional meetings on the maintenance and repair of farm machinery and equipment were requested by the class members for future meetings.

Three meetings were conducted in the problem area of herd improve-

ment and breeding. The use of artificial insemination as a means of herd improvement was discussed at one meeting. Comparisons were made of daughter and dam groups when the daughters had been sired by bulls used in the artificial breeding stud. Problems presented in using artificial breeding methods were discussed and partial solutions found to some of such problems. Selection of breeding animals was the subject for two meetings. A breed type demonstration was given at one meeting with class members participating in the judging of animals. A discussion was held on the official placings with class members expressing their opinions as to how the animals should have been placed. One meeting was held on the selection of dairy animals which included a discussion of udder troubles liable to be encountered in purchasing animals and methods of detecting such udder troubles.

Three meetings were conducted in the problem area of crop production. One of the meetings was in the form of a tour of the Tryon FFA Small Grain and Fertilizer Demonstration Plot. Variety characteristics of the small grains adapted to the area were pointed out during the tour. Fertilizer usage was discussed, class members made estimates on the yields of plots receiving different fertilizer applications. One meeting was held after the FFA demonstration plot was harvested to give the complete results of the findings on the plot. The returns expressed in dollars per acre over fertilizer costs were presented and discussed. At this meeting the Tryon FFA Chapter was presented an award for their work on the demonstration plot by a representative of the State Plant Food Association. One meeting was concerned primarily with the characteristics of certain varieties of crops adapted to the area. Characteristics of certain recommended

varieties were discussed and printed material related the characteristics of these varieties was distributed to the class members.

Soil conservation was the problem considered at two meetings of the adult farmer class. One meeting held in Chandler, Oklahoma, was concerned with the development of a proposed Upstream Flood Control project, in which thirteen squares miles of the Tryon school district would be included. This meeting was held on a regular adult farmer class meeting night, and one of the class members was elected to the board of directors for the proposed project. Land classification according to capability was the problem considered at one meeting. Soil samples taken from the farms of the class members were used to demonstrate the various types of topsoil and subsoil considered in determining the use of the land for soil conservation farming. Fields known to class members were discussed and the land usage needed on such fields prescribed with assistance from the class members.

Market grades of livestock and seasonal trends in supply and prices were discussed at one meeting. Slides showing examples of the various grades and classes of livestock were used as teaching aids. The experiences of the class members were described and several of the marketing problems confronting the class members were discussed.

One meeting was held on the problem area of farm buildings. The use of concrete in farm construction was the subject under consideration. A demonstration of concrete mixing methods was given and a discussion was held on important practices to follow in concrete construction.

Attendance. Attendance at the organized adult farmer class meetings varied over the twenty-month period because of many factors. Of

the eighteen adult farmer class members participating in this study the smallest number that attended any one meeting was five and the largest number present at any one meeting was fifteen. The individual attendance of the eighteen class members participating in the study is shown in Table VI by the problem areas considered.

TABLE VI

INDIVIDUAL ATTENDANCE OF EIGHTEEN ADULT FARMER CLASS MEMBERS AT ORGANIZED MEETINGS HELD OVER A TWENTY-MONTH PERIOD BY PROBLEM AREAS CONSIDERED

Problem Area Considered	Individuals attending per meeting		
	Range	Mean Number	Mean Per cent
Pasture Improvement	7 - 13	10.57	58.72
Farm Management	6 - 13	8.17	45.39
Farm Legal Problems	8 - 11	9.67	53.72
Soil Conservation	7	7.00	38.89
Crop Production	8 - 15	11.33	64.06
Marketing	11	11.00	61.11
Farm Buildings	11	11.00	61.11
Herd Improvement and Breeding	6 - 15	9.67	53.72
Machinery and Equipment	5 - 10	7.40	41.11
Actual mean attendance per meeting		9.32	51.67

It will be noted that no great differences were observed in attendance based upon the problem areas considered. Weather conditions, prior obligations and many other factors were considered more influential on attendance than the problem area considered. There was a notable difference in the number of meetings attended by individual adult farm class members included in the study. Interest appeared to be

greater with some members of the group than others. Other activities, transportation problems, family activities and other factors were influential in determining the number of meetings attended by the several class members. Table VII shows that the mean number of meetings attended per member was 17.61 and that the actual range of meetings attended per individual was from 7 to 27. It might be assumed that some members considered the meetings of greater importance than other members. The table also shows that five members were present at 26 or more meetings during the twenty-month period which was considered in view of other activities in which adults engage, to be a good attendance record.

TABLE VII

DISTRIBUTION OF EIGHTEEN ADULT FARMER CLASS MEMBERS
BY NUMBER OF ORGANIZED MEETINGS ATTENDED
OVER A TWENTY-MONTH PERIOD

Class Interval Number of Meetings	Class Members	
	Number	Per cent
Over 30	0	00.00
26 - 30	5	27.78
21 - 25	3	16.67
16 - 20	3	16.67
11 - 15	3	16.67
5 - 10	4	22.22
Under 5	0	00.00
Total	18	100.00

TABLE VII
(Continued)

Actual Range of Meetings attended	7 - 27
Actual mean number of meetings attended per member	17.61

Price[1] found that resource persons were used in 32 per cent of the young farmer meetings by those groups that used resource persons. Resource persons were used to some extent in providing the programs at the organized farmer meetings held during the twenty month period. The degree of participation by the local vocational agriculture instructor is shown in Table VIII. Limited assistance from resource persons was interpreted to mean that the vocational agriculture instructor carried on most of the instructional activities during the meeting and the resource persons were called upon to express their opinions on various questions that arose during the meetings. When the resource persons were used as speakers and then answered questions during the meetings they were classed as giving major assistance in the instructional activities. In one case of limited instructional activities by the vocational agriculture instructor a combined meeting with other groups of adult farmers was attended with the instructor's activities being limited to discussion of important points during the meeting and further discussion with the farm class members on the problem. Resource persons assisting with certain of the organized

[1]Robert R. Price, Factors Associated with the Occurrence of Local Young Adult Farmer Instructional Programs in Vocational Agriculture In the States of Pennsylvania and Oklahoma, Unpublished Dissertation Ph. D., Pennsylvania State University, 1956. p. 107.

TABLE VIII

DEGREE OF PARTICIPATION BY THE LOCAL VOCATIONAL AGRICULTURE INSTRUCTOR IN THE INSTRUCTIONAL ACTIVITIES AT THE ORGANIZED ADULT FARMER CLASS MEETINGS HELD DURING A TWENTY-MONTH PERIOD

Degree of Participation By Local Vocational Agriculture Instructor	Meetings Conducted	
	Number	Per cent
Unassisted instruction	15	44.12
Instruction with limited assistance from resource persons	11	32.35
Instruction with major assistance from resource persons	7	20.59
Limited instruction	1	2.94
Totals	34	100.00

meetings were as follows: professors from Oklahoma A. & M. College, members of the Lincoln County Bar Association, a local banker, secretary of the Oklahoma City Livestock Exchange, representatives of commercial concerns supplying farmers, and students enrolled in the department of agricultural education at Oklahoma A. & M. College. There was no cost involved in obtaining the services of resource persons. It was necessary for the vocational agriculture instructor to meet with the Lincoln County Bar Association to obtain the aid of the representatives of that organization, after the intent and purposes of the adult farmer class meetings were explained, the Bar Association obliging sent representatives to aid in the meetings. The resource persons expressed an appreciation of the interest shown in the meetings by the class members. There were no attempts by the resource persons

to commercialize for the organizations they represented. Resource persons were utilized more in meetings on the problem areas of farm legal problems, machinery and equipment, and farm buildings than in other problem areas. The vocational agriculture instructor felt that the talks of these outside experts at the meetings carried more weight because of their specialized technical knowledge.

Individualized Instructional Activities

The individualized instructional activities carried out with the 18 adult farmer class members participating in the study were based on the needs of the individual farmers. The activities could be considered in varying degrees to be of an educational nature. Some of the activities were in the nature of a personal service rendered by the vocational agriculture instructor. An effort was made in rendering personal services, to enlarge the scope of the activity to include enterprise management features. Often the primary accompliahment of the activity was not the initial cause of the activity. It was found desirable at many times to make personal service visits to become acquainted with the farmer's individual problems, so that effective solutions might be found to such problems. Such contacts were of aid in fitting the practices suggested in organized adult farmer meetings to the class members farming operations. It was found that many of the farm problems mentioned in connection with individual intructional activities did not come to light in organized meetings. In several cases the individualized instructional activities served the purpose of encouraging class members to put into practice some of the approved practices that had recognized value even though they

were not using such practices. This individual encouragement to farm to the best of their knowledge was felt to be effective in promoting desirable changes in farming operations. Some of the individual instructional activities were carried out in making certain services available, or arranging for the class members to obtain some services by scheduling them to secure services as a group. These activities were based on the assumption that more approved practices would be carried out if the means to accomplish such activities were more convenient to the farmers. Table IX shows the distribution of the individualized instructional activities according to problem areas. The greatest number of individualized instructional activities was carried out in the problem area of production records and livestock culling. A need for keeping production records was recognized by several of the adult farmer class members, so a dairy herd production testing program was initiated by the vocational agriculture department with the Tryon FFA Chapter assisting in the operation of the program. Milk weights and samples were taken monthly from each cow in production in the herds of the adult farmer class members participating together with feed records. The milk samples were tested by FFA members, some of the adult farmers and the vocational agriculture instructor. Records were kept on official Dairy Herd Improvement Association barn sheets. Milk weights and samples were taken by the participating farmers, FFA members and the vocational agriculture instructor. The vocational agriculture instructor made at least one visit per month to aid in the taking of samples and weights as well as giving individual instruction on other phases of the farming operations of class members. Numerous visits were made in connection with the dairy herd testing program

TABLE IX

DISTRIBUTION OF INDIVIDUALIZED INSTRUCTIONAL ACTIVITIES IN CERTAIN PROBLEM AREAS AS CARRIED OUT WITH EIGHTEEN ADULT FARMER CLASS MEMBERS DURING A TWENTY MONTH PERIOD.

Problem Area	Individualized Instructional Activities		
	Individuals Served Number	Activities with all individuals Number	Mean Activities per individual Number
Production records and culling	13	91	7.0
Feeding	18	89	4.9
Permanent Pastures	18	81	4.5
Farm Management	18	59	3.2
Herd Improvement	16	58	3.6
Crop Production and Soil Conservation	18	57	3.2
Disease and Parasite Control	18	48	2.7
Buildings, Machinery and Equipment	9	42	4.7
Temporary Pastures	18	39	2.1
Roughage Production	13	37	2.8
Livestock Care	17	32	1.9
Marketing and Quality Products	15	31	2.1
Water Supply	5	6	1.2
Total		669	
Actual range in number of activities per individual		12 - 72	
Actual mean number of activities per individual		37.2	

where the major instructional activities were concerned with other problem areas. Culling of unprofitable animals was carried out much more effectively after production records were available on the individual cows. Factors influencing culling such as diseases, age of animals, and breeding efficiency were discussed with adult farmer class members in individualized instructional activities.

Activities were carried out with all the class members participating in connection with the feeding of livestock and dairy animals. Feeding in proportion to amount and quality of milk produced with dairy cattle was considered on several occasions. Methods of feeding cows the desired quantity of grain where milking parlors were being used were considered on several occasions. Economical rations to supplement the roughages fed were considered at various times during the 20-month period. A comparison of feeding values of roughages was considered with several farmers because of the large amounts of roughages purchased. Some of the farmers were not familiar with roughage brought into the area as drought feeds. The economical use of by-products was considered on the farms selling cream.

Individualized instructional activities in the problem area of permanent pasture improvement were based upon the individual needs of the adult farmer class members. Pasture plans were developed with all of the members participating. A Bermuda grass sprigger was made available to all the farmers in the Tryon area by the Tryon FFA Chapter. The FFA Chapter planted some Bermuda grass for adult farmer class members on a custom basis and rented the sprigger to others in the group. Several propagation plots were established by adult farmer class members with assistance from the vocational agriculture instructor.

Pasture management practices were discussed with adult farmer class members on many occasions. Native and tame grasses and legumes were overseeded on some pastures.

Problems in farm management were present throughout the 20-month period. The close association of the adult farmer class members and the vocational agriculture instructor aided in solving many of the problems. Some of the management problems were not solved because of varying factors, such as marketing agreements that prevented one of the class members who was planning on producing Grade "A" fluid milk, from doing so until a later date. Decisions on installing bulk tanks for the production of a premium quality fluid milk were made in two cases. The expansion or contraction of the size of farming operations were considered in several cases.

Herd improvement individualized instructional activities included the securing of herd replacements and livestock breeding methods. The acquisition of herd replacements necessitated several trips by the vocational agriculture instructor and the adult farmer class members to secure some of the animals offered for sale. The selection of heifers and gilts raised on the farm was a problem considered in some cases. The use of artificial insemination in four cases involved a discussion of successfully using that method. The proper care of breeding animals was considered in several cases.

Soil conservation and crop production activities included the taking of soil samples, the classification and recommendations for the proper utilization of land operated by adult farmer class members. The recommended crop varieties best suited to the individual farmer's

conditions were considered. Recommended land use practices were planned for each farm operated by the class members. Soil samples were taken from the farms, tested, and fertilizers were recommended. Part of the soil testing was carried on by FFA members. The fertilizer spreader owned by the FFA Chapter was used to put some of the fertilizers on the farms.

Disease and parasite control problems occurred on many of the farms during the 20-month period. Advice on treatments was given by the vocational agriculture instructor in some cases, while other problems were referred to a graduate veterinarian. Arrangements for Bang's disease vaccinations by a graduate veterinarian were made through the vocational agriculture instructor. Farmers who wanted their heifers calfhood-vaccinated were informed one week prior to the proposed date, that the service would be rendered if they would let the vocational agriculture instructor know the number of animals they wanted vaccinated and would assist in the handling of animals. The schedule was then arranged by the vocational agriculture instructor and FFA members assisted in handling the livestock. The veterinarian was thereby able to come into the area and vaccinate the heifers for all the group, when the cost of doing so individually would have prevented some of the members from having the job done. Other animal disease and parasite control problems existing on the farms of the adult farmer class members were discussed with the veterinarian at the time he was present on the farm.

Individualized instructional activities in the problem areas of buildings, machinery and equipment were in the form of planning and aiding in constructing new buildings; making changes in old buildings;

securing needed machinery and equipment; and the installation of such equipment. In some cases the class members were not thoroughly familiar with the installation and operation of the new machinery or equipment and the vocational agriculture instructor was called upon to give instruction in the selection, installation and operation of such equipment. Repairs and improvements to machinery were made to a limited extent in the farm shop of the vocational agriculture building.

Planning of the temporary pastures needed by each of the adult farmer class members using such pastures was done in conjunction with the overall pasture planning. Cultural methods, planting dates, improved varieties, the use of fertilizers, management practices, and other items were discussed at various times with the class members. Interest in this area was high because of poor roughage conditions.

Roughage production activities included discussions on the feeding values of various roughages; times to harvest to obtain maximum feed values; the use of ensilage; and planning to meet the estimated needs. In one case, ensilage was being stored for the first time by an adult class member to whom assistance was given by the vocational agriculture instructor.

Minor skill jobs such as castrating, vaccinating and dehorning were included in activities in the area of livestock management. Assistance was given in some cases by actually doing the job while in others FFA members assisted as part of their training. The proper care of young animals was considered and demonstrations of some of the proven practices were carried out. The timing of some of the skill operations in livestock care was discussed at various times, skills

were developed on the part of some of the class members.

Practices to improve quality of products considered at various times during the 20-month period. In some cases it was found desirable for the vocational agriculture instructor to demonstrate some of the practices that had not been in use on the farms of the adult farmer class members. Discussion of market demands was a part of the marketing and improvement of quality problem area activities. Encouragement to produce products that would bring a higher price on the market was given to members in the 20-month period.

Planning for an improved water system was considered in few cases. Collection of samples and sending them for purity analysis was done in two cases. Water heating systems were considered in two cases with advantages for increased milk production discussed with members.

A total of 669 individualized instructional activities was carried out with the 18 adult farmer class members during a 20-month period. The range in number of activities per individual was from 12 to 72 with an actual mean number of activities per individual of 37.2. The number of activities depended to a large extent upon the interest and need of the individuals in the group. More activities were carried out with those adult farmer class members who had dairying operations than with those whose primary enterprises were livestock.

CHANGES IN FARMING OPERATIONS AND PRACTICES DURING A TWENTY-MONTH PERIOD

An expansion in the size of farm was shown by 9 of the 18 adult farmer class members participating in the study while only two class members showed a decrease in farm size. Table X shows that the range in increased farm size was from 70 to 160 acres. In only one case was

TABLE X

CHANGES IN THE EXTENT OF FARMING OPERATIONS BY EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Extent of Operations	Increase in scope			Decrease in scope		
	Number Members Having	Range	Mean	Number Members Having	Range	Mean
Farm Size	9	70-160a.	108a.	2	5-280a.	143a.
Crop Acreage	11	10- 65a.	26a.	0	00a.	00a.
Animal Units on Farm	11	2- 13AU	5.5AU	7	4.41AU	16AU
Pasture Carrying Capacity	15	1- 15AU	6.5AU	2	2-17AU	9.5AU

the increase in farm size due to purchased acreage. Drought conditions caused a decrease in the yield per acre of pasture land so that farm operators found it desirable to rent additional pasture to maintain herd size. An effort to raise more feed crops by increasing the acreage was one factor that caused the increase in crop acreage. A large part of the cropland increase was planted to feed crops and temporary pastures. The increase in number of animal units per farm was somewhat smaller than the decrease per farm. In the farms having decreases in numbers of animal units, a severe culling program was instated to make the herd size conform to the feed supply. Two of the farmers felt it would be to their interest to sell the feed they had on hand and their livestock during the period. They bought breeding animals after weather conditions became more favorable. The carrying capacity of the pastures at the close of the study was higher than at the beginning of the 20-month period because of the improved moisture conditions during the last four months of the period. The improvements

made in pasture management and the increased acreage in pastures. Also increased the carrying capacity of the pastures. The changes made pertaining to pastures during the twenty month period are shown in Table XI. The greatest change was in the area of temporary pastures where 10 of the adult farmer class members increased their acreage.

TABLE XI

CHANGES IN PASTURES BY EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Type of pasture	Increase			Decrease		
	Number Members Having	Range (acres)	Mean (acres)	Number Members Having	Range (acres)	Mean (acres)
Native open	8	15-100	52	4	5-170	54
Native wooded	5	5- 70	36	2	8- 55	31
Tame	5	5- 20	10	1	5	5
Temporary	10	2- 36	16	1	20	20

Some of the decreased acreage of native open pasture was accounted for by an increase of tame pastures that were planted on what was formerly native open pasture. Most of the tame pasture increase was in the form of Bermuda grass plantings made by the adult farmer class members. Some of the decrease in native open pasture occurred when adult farmer class member sold his farm during the period and bought a smaller farm. Acreage is not considered a good measurement for pastures because it indicates very little about the productivity of the pasture. The increase in temporary pastures was an attempt to decrease the amount of hay and other stored roughages to be purchased when the supply was short.

Changes in Dairy Cattle Numbers. Six of the adult farmer class members experienced an increase and six of the class members experienced a decrease in numbers of dairy cows on their farms during a 20-month period. Table XII shows that the number of heifers decreased

TABLE XII

CHANGES IN THE NUMBER OF DAIRY CATTLE ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Type of Dairy Animals	Increase			Decrease		
	Numbers Members Having	Range (animals)	Mean (animals)	Number Members Having	Range (animals)	Mean (animals)
Cows	6	1 - 7	3.6	6	2 - 29	10.7
Heifers	8	2 - 8	3.8	6	1 - 19	7.0
Calves	4	1 - 8	3.5	11	1 - 10	3.8

on six farms and increased on eight farms. The mean number of animals was greater on the farms showing a decrease in numbers. One adult farmer class member sold his entire herd during the 20-month period. Three other farmers decreased their herds materially to fit the herd size to the feed supply. Two farmers changed from dairy to beef production. The increases shown in the numbers of dairy cows and heifers were smaller per farm than the decreases but were in line with increasing the herd size to better utilize production facilities. It might be implied that the decrease in the number of calves indicated that class members were keeping only the heifers from their best cows to use as herd replacements. From observations made, a decrease or increase in the number of cows in the herd did not seem to indicate a corresponding increase or decrease in net income. It was observed

that one class member maintained his net income after reducing his herd size by 50 per cent.

Changes in Beef Cattle Numbers. Seven of the adult farmer class members had increases in the number of beef cows on their farms. The increases were small in numbers of animals. There were decreases on the farms of three of the class members with a mean of 10 cows decreased per farm as shown in Table XIII. The decreases in numbers

TABLE XIII

CHANGES IN THE NUMBER OF BEEF CATTLE ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Type of Beef Animals	Increase			Decrease		
	Number Members Having	Range (animals)	Mean (animals)	Number Members Having	Range (animals)	Mean (animals)
Cows	7	1 - 4	2.7	3	3 - 19	10.0
Heifers	5	1 - 9	3.4	3	1 - 4	3.8
Calves	7	3 - 9	5.1	3	1 - 19	7.7

were made by class members who decided to sell all or part of their livestock and feed because of the drought conditions. Near the end of the 20-month period those farmers bought some beef cattle but the numbers had not reached the former herd size. These changes were obviously made in an endeavor to meet the needs of the individual farmers included in the group. The small increase by several members seemed to indicate that some members had placed more emphasis on the beef production enterprise and decreased emphasis on dairy production.

Changes in Swine Numbers. More adult farmer class members had a decrease in swine numbers than were found to have an increase in swine numbers. Table XIV shows that the greatest decrease was in

TABLE XIV

CHANGES IN THE NUMBER OF SWINE ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Type of Swine	Increase			Decrease		
	Number Members Having	Range (animals)	Mean (animals)	Number Members Having	Range (animals)	Mean (animals)
Sows and Years	2	1 - 3	2.0	4	1 - 6	3.0
Fattening Hogs	1	20	20.0	7	1 -29	7.4
Pigs	2	2 - 9	5.5	4	1 -40	17.2

numbers of fattening hogs. Depressed hog prices during the period was thought to have been one cause of this decrease in fattening hogs. One class member changed from selling cream to selling fluid milk and quit the swine enterprise when he had no by-products that could be utilized by swine.

Changes in Farm Machinery and Equipment. Changes indicated in Table XV show that while two class members obtained milking machines and other dairy equipment during the period, two other members sold

TABLE XV

CHANGES IN FARM MACHINERY AND EQUIPMENT ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Item	Per cent Showing Improvement		Per cent Showing Decline	
	Major	Minor	Major	Minor
Milking Machines	11.11	0.00	11.11	0.00
Bulk Milk Tank	11.11	0.00	0.00	0.00

TABLE XV
(Continued)

Other Dairy Equipment	22.22	5.55	11.11	0.00
Farm Tractor	16.67	11.11	0.00	0.00
Farm Machinery	22.22	5.55	0.00	0.00
Loading Chutes	5.55	11.11	0.00	0.00

their milking machines and other dairy equipment. Improved machinery and equipment enabled class members to produce farm products more efficiently. The two farmers who sold their milking and other equipment believed they could utilize their production facilities with beef cattle.

Changes in Farm Buildings. The extent of changes made in farm buildings is shown in Table XVI. Dwelling improvements were quite noticeable. The one milking parlor that was constructed was built in order to produce Grade "A" fluid milk. Improvements in the loafing barns were made to provide additional storage space and shelter for dairy cows.

TABLE XVI

EXTENT OF CHANGES IN FARM BUILDINGS ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Item	Per cent Showing Improvement		Per cent showing Decline	
	Major	Minor	Major	Minor
Dwelling	22.22	11.11	0.00	0.00
Milking Parlor	5.55	0.00	0.00	0.00
Loafing Barn	27.78	5.55	0.00	0.00
Outbuildings	5.55	0.00	0.00	0.00

Changes in Other Production Facilities. Several changes were made in lot fencing that made it easier to handle livestock. Table XVII shows that a decline in the labor supply was experienced on four farms during the 20-month period. This decrease was because of boys

TABLE XVII

EXTENT OF CHANGES IN OTHER PRODUCTION FACILITIES ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Item	Per cent Showing Improvement		Per cent Showing Decline	
	Major	Minor	Major	Minor
Water Facilities	11.11	11.11	0.00	0.00
Lot Fencing	27.78	16.67	0.00	0.00
Pasture Fencing	11.11	16.67	0.00	0.00
Labor Supply	5.55	0.00	5.55	16.67

graduating from high school and attending college or going into the armed services. Two high school age boys became a part of a farm family and increased that family's labor supply. Improved water facilities included the installation of heating systems in two cases and provision for a more abundant water supply on two farms. The improved pasture fencing enabled better usage of available pasture. Some changes are normally expected in these production facilities.

Changes in the Production of Quality Dairy Products. The changes shown in Table XVIII affected the quality of the products marketed by the adult members. The buildings improved that influenced the production of an improved quality product were milking barns, milk rooms and the improvement of the conditions in some existing buildings. Bulk milk tanks, milking machines, in place cleaners, and coolers aided in producing higher quality products. A decline in the equipment affecting

TABLE XVIII

EXTENT OF CHANGES IN THE PRODUCTION OF QUALITY DAIRY PRODUCTS ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Item	Per cent Showing Improvement		Per cent Showing Decline	
	Major	Minor	Major	Minor
Buildings affecting quality	16.67	5.5	0.00	0.00
Equipment affecting quality	22.22	5.5	11.11	0.00
Quality Production Practices	5.5	27.78	0.00	0.00

quality was noted when two fluid milk producers sold their equipment and started selling cream and raising beef animals. The quality production practices included washing the udder of cows before milking, using a strip cup, cooling milk and cream rapidly and greater care given to utensil care. Only minor changes in quality production practices were needed in several cases to produce high quality products.

Changes in Marketing Activities. Some changes were noted in meeting market demands by the type of animals marketed in the beef and swine enterprises. Market demands for dairy products were met by producing Grade "A" fluid milk and a premium Grade "A" fluid milk by using bulk milk tanks. Table XIX shows that little change was made in the participation in marketing organization although one adult farmer class member was elected to the board of directors of a dairy marketing organization and another class member selected to the house of delegates of that organization. There was little change in the use of by-products. Utilizing the skim milk to a greater degree by having more calves to utilize skim milk was considered a minor improvement.

TABLE XIX

EXTENT OF CHANGES IN THE MARKETING ACTIVITIES ON THE FARMS OF EIGHTEEN ADULT FARMER CLASS MEMBERS OCCURRING DURING A TWENTY-MONTH PERIOD

Item	Per cent Showing Improvement		Per cent Showing Decline	
	Major	Minor	Major	Minor
Meeting Market Demands	27.78	0.00	11.11	0.00
Marketing Organization Activities	5.55	11.11	0.00	0.00
By-Products Usage	0.00	11.11	0.00	5.5

A minor decline in the use of by-products was made when one class member failed to utilize the skim milk as well as he had formerly used skim milk. The extent of change was not considered as showing much change except in meeting market demands.

Changes in Livestock and Dairy Cattle Management Practices. A very significant change was noted in the practice of breeding livestock to more nearly meet market demands. Table XX shows the changes in proficiency ratings on livestock and dairy cattle management practices. The breeding of heifers to freshen in the late summer was done in several instances. Cows were bred to calve in the late summer and early fall to increase the amounts of base milk for those class members selling fluid milk. Adult farmer class members who sold cream bred their cows to receive the maximum benefits from pastures. Sows were bred to allow their litters to reach market in July and January. Beef cows and heifers were bred to calve early in the Spring. A significant change was made in the care of young animals. Improved feeding of young stock and improved care at the time of birth was done in several

TABLE XX

PROFICIENCY RATINGS IN LIVESTOCK AND DAIRY CATTLE MANAGEMENT PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Breeding for** Best Market	11.11	83.33	5.55	0.00	55.56	44.44
Proper Care of Young *	5.55	88.89	5.55	0.00	61.11	38.89
Breeding Records *	16.67	66.67	16.67	11.11	33.33	55.56
Proper Care of Breeding Animals	11.11	83.33	5.55	0.00	72.22	27.78
Providing Shelter	27.78	66.67	5.55	11.11	66.67	22.22

* Significant at the five per cent level
** Significant at the one per cent level

cases.

A significant change was also noted in the keeping of breeding records. Some improvement was noted in proper care of breeding animals but was not considered significant.

Changes in Herd Improvement Practices. Improvements were made by several of the adult farmer class members in herd improvement practices. These changes are given in Table XXI according to the proficiency ratings given at the beginning and the close of the twenty-month period. In the practice of securing herd replacements the most change was noticed between the fair and the good ratings. A higher percentage of the members were rated good at the close of the period than at the beginning.

TABLE XXI

PROFICIENCY RATINGS IN HERD IMPROVEMENT PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Securing Replacements	16.67	72.22	11.11	11.11	44.44	44.44
Breeding for Livestock Improvement	11.11	66.67	22.22	5.55	44.44	50.00

A higher percentage of the class members were rated as good in the problems of breeding for livestock improvement at the close of the period. In both practices fewer poor ratings were given at the close of the period. Although the changes were not considered significant it is apparent that more of the members were rated good at the close of the period than received that rating at the beginning of the period.

Changes in Production Records and Culling Practices. Changes in the ratings on the practices of production records and culling were considered very significant. As shown in Table XXII few of the adult farmer class members were rated good in either of the practices at the beginning of the period but over two-thirds of the group were rated as good at the close of the period. Over one-half of the adult farmer class members were rated as poor on the practice of production records at the beginning of the period and none received that rating at the close of the period. The improvements shown might be attributed in part, to the dairy herd testing program operated by the vocational agriculture department of the Tryon High School. The production records made the practice of culling easier to accomplish for the adult farmer class

members.

TABLE XXII

PROFICIENCY RATINGS IN LIVESTOCK AND DAIRY PRODUCTION RECORDS AND CULLING PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Production Records **	55.56	33.33	11.11	0.00	27.78	72.22
Culling **	22.22	66.67	11.11	0.00	27.78	72.22

** Significant at the one per cent level

Changes in Disease and Parasite Control Practices. Table XXIII shows that none of the adult farmer class members were rated as good on disease control practices at the beginning of the period, but over three-fourths were rated as good at the close of the period, while none were classed as poor in that practice at the close of the period.

TABLE XXIII

PROFICIENCY RATINGS ON DISEASE AND PARASITE CONTROL PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Disease Control **	11.11	88.89	0.00	0.00	27.78	72.22
Parasite Control **	11.11	77.78	11.11	0.00	44.44	55.56

** Significant at the one per cent level

It is also evident that over one-half of the members received the rating of good on parasite control practices at the close of the period and none received the poor rating. The numerous individualized instructional activities carried out by the vocational agriculture instructor may have aided in detecting disease and parasite problems at the time when they could be easily controlled. Changes made in the disease control practices and the parasite control practices were found to be very significant.

Changes in Feed Production Practices. Table XXIV shows that the

TABLE XXIV

PROFICIENCY RATINGS ON FEED PRODUCTION PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Dry Roughage Production	33.33	55.56	11.11	38.89	50.00	11.11
Silage Production	94.44	0.00	5.55	88.89	11.11	0.00
Feed Grain Production	50.00	50.00	0.00	83.33	16.67	0.00

proficiency ratings were slightly lower at the close of the period than at the beginning on the dry roughage production practices. A slight change in ratings was noted in the silage production practices. A higher percentage of the class members were rated poor in feed grain production practices at the close of the period than received that rating in the beginning of the period. Weather conditions were unfavorable and the feed crops were almost a complete failure, which accounts

for the lower ratings. None of the changes were found to be significant.

Changes in Feed Purchasing Practices. As shown in Table XXV a higher percentage of the ratings of good were noted at the close of the period in commercial feed purchasing practices. None of the class members were rated as poor at the beginning or close of the period on commercial feeds purchasing. Very little difference was noted in the ratings on roughage purchasing practices. Two more

TABLE XXV

PROFICIENCY RATINGS ON FEED PURCHASING PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Commercial Feed Purchased	0.00	83.33	16.67	0.00	61.11	38.89
Roughages Purchased (not applicable to 22.22% of members)	11.11	55.56	11.11	11.11	44.44	22.22

ratings of good and two ratings of less fair were found in the ratings at the close of the period. A 22.22 percentage of the members were not rated on roughages purchased because it was not applicable to those members. The changes noted were not found to be significant.

Changes in Feeding Practices. Table XXVI shows ratings on grain feeding practices changed significantly. While over one-fifth of the members were rated poor in grain feeding practices at the beginning of the period none received that rating at the close of the period. One-half of the members received a rating of good on grain feeding practices

at the close of the period, while only 22.22 per cent received that rating at the beginning of the period. Some change was noted in the ratings on mineral feeding practices. Less than one-half as many poor ratings were shown on mineral feeding practices at the close of the period than were shown at the beginning of the period. Ratings shown on roughage feeding practices indicate that one more member received the poor rating at the close of the period than received such ratings

TABLE XXVI

PROFICIENCY RATINGS ON FEEDING PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Grain Feeding *	22.22	66.67	22.22	0.00	50.00	50.00
Mineral Feeding	38.89	16.67	44.44	16.67	33.33	50.00
Roughage Feeding	16.67	50.00	33.33	22.22	33.33	44.44

* Significant at the five per cent level

at the start of the period. Two more members received the good rating at the close of the period. The changes in grain feeding practices were found to be significant, but changes in mineral feeding and roughage feeding practices were not considered significant.

Changes in Soil Conservation and Management. Table XXVII shows that one-half of the class members were rated poor on soil testing practices at the beginning and none received that rating at the close of the period. Two-thirds of the farmers received the good ratings at the close of the period in soil testing practices. Over one-half

of the farmers were rated poor on land classification and recommendation practices at the start and none received that classification at the close of the period. Over four-fifths of the farmers were rated good in land classification and recommendations at the close of the period. Changes in both soil testing and land classification and recommendation practices were found to be very significant. Little change was noted in the land usage practices but none of the farmers

TABLE XXVII

PROFICIENCY RATINGS ON SOIL CONSERVATION AND MANAGEMENT PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Soil Testing**	50.00	50.00	0.00	0.00	33.33	66.67
Land Classification and Recommendations **	61.11	16.67	22.22	0.00	11.11	88.89
Land Usage	11.11	55.56	22.22	0.00	61.11	27.78
Crop Culture	0.00	27.78	61.11	0.00	22.22	66.67
Fertilizer Usage	44.44	33.33	11.11	27.78	38.89	22.22

** Significant at the one per cent level

were rated poor at the close of the period and two received that rating at the beginning of the period. Ratings on crop culture practices changed little from the beginning to the close of the period. One more farmer was rated good at the close of the period than received that rating at the beginning. In ratings on fertilizer usage practices

fewer farmers were rated poor and more rated good at the close of the period. Changes in land usage crop culture, and fertilizer usage practices were not considered significant.

Changes in Pastures. Changes in pasture practices were more apparent than in other areas of farming operations. Table XXVIII shows that the most change in pasture practices occurred in pasture planning where none of the farmers received the good rating at the beginning but over three-fourths received that rating at the close of the period. None received a poor rating at the close of the period on pasture planning. Over four-fifths of the farmers received a rating of poor on deferred grazing at the beginning of the period and none received that rating at the close of the period. Over one-half were rated as good at the close compared to none receiving that rating at the beginning of the period. On rotational grazing practices none of the farmers received the good rating at the beginning and over one-third received that rating at the close of the period. Poor ratings were decreased by 50 per cent on providing adequate pasture practices during the period with over three-fifths of the farmers receiving the rating of good at the close of the period. Changes in pasture planning, deferred grazing, rotational grazing, and providing adequate pasture practices were found to be very significant. Fewer poor ratings were found on temporary pasture practices at the close than at the beginning of the period. One-half of the farmers received the good rating at the close while only 11.11 per cent received that rating at the beginning of the period on temporary pasture practices. Temporary pasture practice changes were found to be significant. Changes were found in the stocking rate, pasture fertilizer, and brush and weed control practices with

TABLE XXVIII

PROFICIENCY RATINGS ON PASTURE PRACTICES OF EIGHTEEN ADULT FARMER CLASS MEMBERS AS RATED AT THE BEGINNING AND AT THE CLOSE OF A TWENTY-MONTH PERIOD

	Beginning of Period			Close of Period		
Practice	Per cent Poor	Per cent Fair	Per cent Good	Per cent Poor	Per cent Fair	Per cent Good
Pasture Planning**	94.44	5.55	0.00	0.00	22.22	77.78
Deferred Grazing**	83.33	16.67	0.00	0.00	44.44	55.56
Rotational Grazing**	50.00	50.00	0.00	5.55	55.56	38.89
Providing Adequate Pasture**	55.56	16.67	27.78	5.55	33.33	61.11
Temporary Pasture*	33.33	55.56	11.11	11.11	38.89	50.00
Stocking Rate	50.00	27.78	22.22	16.67	27.78	55.56
Pasture Fertilizer	44.44	55.56	0.00	33.33	44.44	22.22
Brush and Weed Control	77.78	16.67	5.55	55.56	22.22	22.22

** Significant at the one per cent level
* Significant at the five per cent level

fewer poor ratings and more good ratings at the close than at the beginning of the period. These changes were not found to be significant. Improved ratings in the area of pasture practices were felt to be the result of low stored roughage supplies and the increased emphasis placed by the farmers on pasture improvement practices.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

In this chapter is presented a summary of the method used in carrying out the study and of the findings of the study. Certain conclusions based upon the findings are presented. Recommendations for further action are also made.

Summary of Methods Used

Eighteen adult farmers who operated farms in the Tryon, Oklahoma, community and who had previously taken an active part in organized adult education activities sponsored by the Tryon vocational agriculture department were selected to constitute the population included in the research problem. A detailed survey was made of the farming operations of these selected adult farmers. An educational program was formulated that was based upon the problems which these farmers were having in carrying out their prospective farming operations. This educational program provided for learning experiences on a group basis in organized classes. Provision was also made for individual instruction on the home farm of each of the selected adult farmers. The organized classes were conducted by the Tryon vocational agriculture instructor with the occasional assistance of resource specialists. The individual instruction for each farmer was given by the vocational agriculture teacher who visited on the home farm of each adult farmer

enrolled. At the end of a twenty-month period the farming operations of each of the eighteen selected adult farmers was surveyed again. Comparisons were made of the farming operations being carried out by each of the adult farmers at the beginning and at the end of the twenty-month period. Certain changes which had occurred were checked statistically by use of the chi-square method to ascertain whether there were statistically significant differences in the farming operations at the beginning and end of the period of study. A summary of the educational activities carried out and of the changes which occurred during this twenty month period are given in the next part of this chapter.

Summary of Organized Educational Activities and of Changes In Farming Operations

Organized Adult Farmer Meetings. Organized adult farmer meetings were based upon the needs of the adult farmer class members as determined by personal interview and opinions expressed in class meetings. During the twenty-month period the following problem areas were considered: (1) pasture improvement, seven meetings; (2) farm management, six meetings; (3) farm legal problems, six meetings; (4) machinery and equipment, five meetings; (5) breeding and herd improvement, three meetings; (6) crop production, three meetings; (7) soil conservation, two meetings; (8) marketing, one meeting; (9) farm buildings, one meeting. Several factors were influential in causing a variation in attendance at the organized adult farmer class meetings.

Individualized Instructional Activities. The vocational agriculture instructor carried out individualized activities with all of the

eighteen adult farmer class members participating in the study. Such activities were designed to meet the needs of the individual farmers. Pasture plans and land use plans were developed with each of the 18 adult farmers. Consideration was made of the following problem areas in individualized instructional activities: (1) production records and culling; (2) livestock and dairy feeding: (3) permanent pastures; (4) farm management; (5) herd improvement; (6) crop production; (7) farm buildings; (8) soil conservation; (9) disease and parasite control; (10) machinery and equipment; (11) temporary pastures; (12) roughage production; (13) livestock care; (14) marketing and quality products; and (15) water supply. The number and extent of such activities in which each adult farmer engaged was dependent upon the individual needs of the adult farmer concerned. These varied from 12 to 72 with a mean of 37.2 individualized instructional activities per adult farmer class member participating in the study.

Changes in Farming Operations. An increase in the size of farms, crops acreage, animal units per farm and pasture carrying capacity was found during a twenty-month period on most of the farms operated by the 18 adult farmer class members participating in the study. Decreases in some of the above items on the farms of certain adult farmer class members were made to adjust the farming operations on their particular farms to the weather conditions. Changes in the numbers of dairy cattle, beef cattle, and swine were found as certain farmers made appropriate changes in their respective farming operations to meet changing conditions on their particular farms. Changes in the farm machinery and equipment, buildings, and other production facilities were made by certain farmers to accomplish that same purpose. Most

of the adult farmers who produced dairy products made recognizable improvement in the production of quality dairy products. Improvement in the marketing activities of certain farmers was also noted. Improvements were made in livestock management practices during the twenty-month period. Some of the changes were found to be significant and some of no significance. Improvements were made in herd improvement practice but were not considered significant. Very significant improvements were made in production records, culling, and disease and parasite control practices. A small decline in the proficiency ratings of farmers on feed production practices was noted during the twenty-month period. This decline was attributed to unfavorable weather conditions. Minor changes were found in feed purchasing practices but were not considered significant improvements. Improvements in feeding practices and some in soil conservation and management practices were considered significant. Improvements in pasture practices during the twenty-month period were found to be extensive. Four of the pasture practices were changed to a very significant degree and others showed some change. More improvements were noted in practices carried out by the adult farmer class members than declined in such practices during the twenty-month period.

Conclusions

An evaluation of the results of this study indicate that the selected adult farmers who made up the population used for this research problem were interested in attending adult farmer meetings. The farmers were also interested in receiving the assistance of the vocational agriculture teacher whenever he could help them solve problems on their farms individually. Between the beginning and end of the twenty-month period of the study there were significant changes made in the farming operations being carried on by each of these adult farmers. Since the greatest number and extent of these changes occurred in the areas which were emphasized to the greatest degree in organized classes and individualized instruction one may conclude that the educational program carried out by the vocational agriculture instructor was a factor in bringing about these changes.

Recommendations

Since only 18 adult farmers were included in the study it is recommended that intensive educational activities be carried out with a greater number of farmers. It is further recommended that efforts be made to meet the needs of a greater number of adult farmers through the exploration of additional methods of instruction to provide educational experiences for more adult farmers. The changing needs and desires of the adult farmers in the community should be the basis for such instructional activities.

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APPENDIX A

SURVEY FORMS

Date _____

Survey of Farming Operations on farm of _____

A. General information: size of farm, Acres owned _____,
Acres rented _____, Acres suitable for crops _____,
Pastures: Native open, acres _____, Native woodland acres
_____, Temporary Pastures, acres _____, Estimated
carrying capacity (all pastures) _____, Livestock on
farm: No. cows (dairy) _____, No. cows (beef) _____,
No. heifers _____, No. heifers (beef) _____, No. calves
(dairy) _____, (beef) _____, Swine: No. sows _____,
No. boars _____, fattening hogs _____, No. pigs _____.
Other livestock (No. and kind) _____.
Poultry _____. Building & Equipment: dwelling
size _____, State of repair _____, Barn Size _____,
State of Repair _____.
Other buildings, size & kind _____ State of repair
_____

Equipment, size & kind _____, State of repair _____,
_____, _____,
_____, _____,

Labor available; size family, ages & sex _____

Other labor _____

B. Management Practices:

Breeding _____

Shelter _____

Parasite control _____

Care of young _____

Care of breeding animals _____

Disease prevention and control _____

C. Breeding and Herd Improvement

Breeding _____

Securing replacements _____

Culling animals _____

Records _____

D. Feeding List of weak and strong points on the following:

Home grown hays _____

Home grown silage _____

Other home grown roughage _____

Home grown grains for feed: Kind _____ Acres _____

Roughage feeding practices _____

Roughages purchased _____

Grain feeding practices _____

Commercial feeds purchased _____

Protein concentrates purchased _____

Feeds mixed at home _____

Minerals fed _____

Date feeds purchased _____

E. Cropping & Soil Management:

Preparation of land _____

Weed control measures _____

Land suitable for crops and tested _____

Fertilizers applied according to test _____

Seed: Quality _____ Variety _____

F. Pasture Management:

Pasture Available _____

Temporary pasture _____

Use of fertilizers _____

Brush and weed control _____

Deferred grazing _____

Water supply _____

Rotational grazing _____

Stocking rate _____

Pasture plan _____

G. Quality Products:

Condition of buildings _____

Condition of equipment _____

Quality Practices _____

Market demand for products _____

Care in handling on way to market _____

H. Marketing and Purchasing:

Member of marketing organization _____

Market available _____

Use made of by-products _____

Can market be improved through producing different grade product? _____

I. Other information important in farming operations.

APPENDIX D

EXAMPLE OF COMPLETED

PASTURE AND LAND USE PLANS

PASTURE AND LAND USE PLAN

FIELD I. Land Characteristics; medium textured topsoil; moderately permeable subsoil, moderately deep, 12" topsoil, 14" subsoil. Moderately sloping, moderate erosion, excessive drainage.

Class III Land. Soil tests show Nitrogen, high; phosphorus, medium high; Potash, high; Not acid.

Recommended treatments: Seed to Sericea Lespedeza and utilize for hay. Plant on a clean tilled seedbed. Apply 200# of 0-20-0 every 2 years in band.

FIELD II. Land Characteristics: Fine textured topsoil; slowly permeable subsoil, moderately deep, 5" topsoil, 16" subsoil, strongly sloping severe erosion, excessive drainage.

Class VII Land. Soil tests show. Nitrogen, high; Phosphorus, low; Potash, medium; and moderately acid.

Recommended treatments: Plant to Bermuda grass, Greenfield Variety, overseed with Hairy Vetch. Apply 150# of 10-20-10 when bermuda is planted. Apply 2 tons of lime per acre. Disc and drill in Vetch seed each year in late summer. Defer grazing until Bermuda gets established during growing season. Protect from burning with disc width fireguard. Control grazing of vetch.

FIELD III. Land Characteristics: Medium textured topsoil; moderately permeable subsoil, moderately deep, 10" topsoil, 16" subsoil, moderately sloping, moderate erosion, excessive drainage.

Class III Land. Soil tests show; Nitrogen, medium high; Phosphorus medium, Potash, high; slightly acid.

FIELD III. Cont'd

Recommended Treatments; Use for feed and ensilage crops; and temporary pasture. Plant to Atlas Sorgo or Sugar Drip. Contour and Maintain terraces. After silage is harvested plant to rye and vetch for pasture. Apply 100# of 10-20-10 per acre at planting time on ensilage crops.

FIELD IV. Land Characteristics: Medium textured topsoil. Moderately permeable subsoil, moderately deep 12" topsoil; 16" subsoil, moderately sloping, none to slight erosion, excessive drainage. Now fair range condition native pasture.

Class III Land. Soil tests show: Nitrogen, high; Phosphorus, medium; Potash, high; slightly acid.

Recommended treatments: Overseed some of area to Switchgrass, or sand lovegrass. Defer grazing in spring when plants first come up. Rotate grazing with other pastures. Protect from burning with fire guard around field and through pasture. Overseed rye and vetch over one-fourth of field each year for winter pasture. Apply 100#, 10-20-10 with rye and vetch.

FIELD V. Land Characteristics. Medium textured topsoil, moderately permeable subsoil, moderately deep, 14" topsoil, 14" subsoil, gently sloping, none to slight erosion, good drainage.

Class II Land. Soil tests show: Nitrogen, high; Phosphorus, medium high; Potash, medium high; slightly acid.

Recommended use for small grain crops. Plant to wheat each year with peas used for green manure crop every two years, fallow alternate years; pasture until 15 March. Apply 100# of 10-20-10

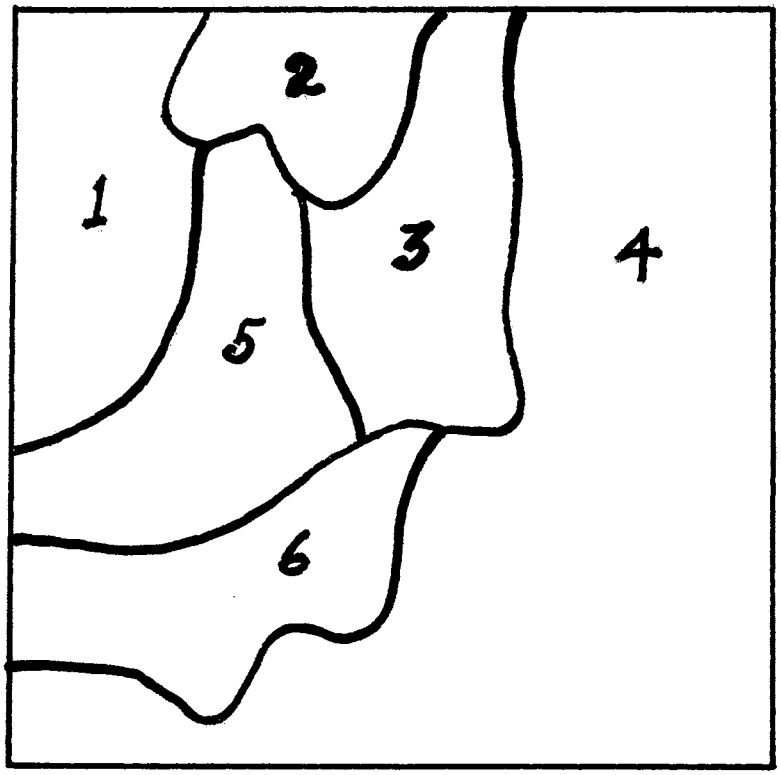
FIELD V. Cont'd

with wheat each year. Topdress in February with 50# of Ammonium Nitrate per acre.

FIELD VI. Land Characteristics; medium textured topsoil, moderately sloping, moderate erosion, excessive drainage.

Class III Land. Soil tests show; Nitrogen, medium high; Phosphorus, medium high; Potash, high; moderately acid. Recommended treatments; Use for temporary pastures. Plant to Hairy Vetch and Balboa Rye for Winter and Spring and Lahoma Sudan for Summer. Use 100# per acre of 10-20-10 at planting time with Vetch and Rye. The same application with Sudan. Apply barnyard manure when available. Control grazing. Maintain terraces.

MAPS FOR PASTURE AND LAND USE



APPENDIX C

EXPLANATION OF STATISTICAL PROCEDURE

Explanation of Statistical Procedure

The chi-square test of significance was applied to proficiency ratings to determine significant differences. In reporting the results throughout the study one or more asterisks were used to denote levels of significance, as follows:

* significant at the five per cent level

** significant at the one per cent level

The Chi-Square Test

Formula for the chi-square tests was from Garrett, Statistics in Psychology and Education, pages 254 and 263. The table of values was found on page 428.

Formula: $X^2 = \frac{(f_o f_e)^2}{f_e}$

in which: f_o = frequency of occurrence of observed responses

f_e = expected frequency of "independence values"

In a table of two rows and three columns "independence values" (f_e) were calculated by the formula:

$$(f_e) = \frac{\text{cell row total x cell column total}}{\text{Grand total}}$$

An example of commutation is given as follows:

Reference to item four, Table XXVIII will show the following changes in proficiency ratings on providing adequate pasture.

Number of farmers in Rating groups	Poor	Fair	Good	Total
Beginning of study	10	3	5	18
Close of study	1	6	11	18
	11	9	16	36

Calculation of the (f_e) or "independence values:"

$\frac{11 \times 18}{36} = 5.5$ $\quad$ $\frac{9 \times 18}{36} = 4.5$ $\quad$ $\frac{16 \times 18}{36} = 8.0$

$\frac{11 \times 18}{36} = 5.5$ $\quad$ $\frac{9 \times 18}{36} = 4.5$ $\quad$ $\frac{16 \times 18}{36} = 8.0$

Calculation of X^2

Cell Number	(1) f_o	(2) f_e	(3) f_o-f_e	(4) $(f_o-f_e)^2$	(5) $\frac{(f_o-f_e)^2}{f_e}$
1	10	5.5	4.5	20.25	3.682
2	3	4.5	-1.5	2.25	.500
3	5	8.0	-3.0	9.00	1.125
4	1	5.5	-4.5	20.25	3.682
5	6	4.5	1.5	2.25	.500
6	11	8.0	3.0	9.00	1.125
				X^2 =	10.614

Entering the chi-square tables with two degrees of freedom a value of 5.99 is found to be required for significance at the five per cent level and a value of 9.21 is required for significance at the one per cent level.

VITA

Harry Elmer Frank, Jr.

Candidate for the Degree of

Master of Science

Thesis: THE DEVELOPMENT AND EVALUATION OF AN ADULT FARMER EDUCATIONAL PROGRAM IN THE TRYON, OKLAHOMA COMMUNITY

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