

AN EVALUATION OF FIELD TRIPS TAKEN BY VOCATIONAL  
AGRICULTURE CLASSES TO AN AGRICULTURAL  
EXPERIMENT STATION FARM

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## CHAPTER I

### INTRODUCTION

This study began with a desire to ascertain the nature and extent to which vocational agriculture departments in Oklahoma located near agricultural experiment stations could profitably utilize these stations as a source of agricultural information in the teaching of all-day students. It is the purpose of this study to determine how facilities and personnel at one of these stations can best be utilized by vocational agriculture teachers as an aid in their teaching program. The investigator was particularly concerned as to how this might be accomplished through the media of field trips, laboratory studies, and contacts with specialists in various fields of agricultural experimentation. It was recognized that field trips and laboratory studies not only create beneficial learning situations for students of vocational agriculture, but also for the instructor, through the development of a better understanding of farm problems common to the area.

When students visit an experiment station and study the results of findings, they not only see approved practices that are applied and more or less proven for the area, but they obtain the assistance of people who are specialists in their respective fields of agriculture. Boys enrolled in vocational agriculture can see firsthand the practicality of operations and are better motivated to carry these ideas and practices home to be applied on their home farms. While at the experimental farm

the student is often challenged to use information to an advantage in developing his own supervised farm training program.

This writer also felt that such a study would also make the teacher of vocational agriculture more aware of the agricultural problems in his community, and improve his approach to the solutions of these problems.

#### Statement of the Problem

The general problem of this study was, "to determine the kinds of agricultural research information available to vocational agriculture students, and to determine the most effective way of presenting such information." An attempt at a solution of each of the following subsidiary problems was felt to be worth-while in solving the general problem:

1. What are the best techniques for arranging visits to the experiment station?
2. How can a determination be made of which of the station personnel should be given major responsibility for presenting information to the vocational agriculture students?
3. What factors determine the most effective length to be given each field trip period?
4. What factors determine the kind of supplementary printed information which should be furnished to vocational agriculture students?
5. How can the teacher most effectively assemble agricultural research information suitable for presenting to all-day classes of vocational agriculture students?



With a more complete understanding of the above factors, the investigator felt it should be easier to organize a continuous plan of operation in laboratory and field work for vocational agriculture students in the Lone Grove High School.

#### Purpose of This Study

The purpose of this study was to discover effective methods and find improved ways and means of utilizing agricultural research information from an experiment station, to create favorable learning situations, and to motivate students to apply improved practices.

A teacher of vocational agriculture is often confronted with the problem of how to most efficiently and effectively make use of field trips and laboratory situations. Such problems are indicated as follows:

1. How many and under what conditions are field trips justified for the various classes?
2. How often should students leave the classroom for field trips?
3. Where should field trips be taken?

The author desired to find some answers for the above questions in conducting this study. There had arisen certain situations in which, after a field trip, the writer would ask himself the question, "Could I have taught the student more by remaining in the classroom?" This study was designed to ascertain the extent to which field trips to nearby agricultural experiment stations might be of value in not only supplementing classroom instruction, but also in making certain teaching units more vital to the students and, consequently, make the learning more effective.

### Limitations of the Study

The author was fortunate in having access to, and assistance from, the agricultural division of the Samuel Roberts Noble Foundation, Inc., which has been conducting an extensive agricultural research program. One of the five experimental stations operated by this foundation is located three miles north of Lone Grove and is, therefore, easily accessible to classes of vocational agriculture in the Lone Grove School.

The agricultural research program of the Samuel Roberts Noble Foundation, Inc., has several objectives. One of these objectives is to obtain information that can be used to solve many of the current soil, crop, or livestock production problems in south central Oklahoma. A second objective is to anticipate future agronomic needs, and to set up experiments that will supply essential data that can be used to answer these problems.

While this study was undertaken primarily for the purpose of collecting and analyzing data in an effort to discover possible needs for field studies for all-day vocational agriculture students, it is recognized that few vocational agriculture departments in the State have such access to local experiment stations. However, it is felt that many schools may profitably develop programs in somewhat the same manner by using local farms, local demonstration plots conducted by the chapter, or by demonstration plots conducted by the Extension Service or other agricultural agencies.

Due to the wide variation and continuous changes in conditions, facilities, and methods, it is to be expected that other major interests and problems will arise. To this extent it should be recognized that

the program as presented is admittedly somewhat limited in application, but it should prove flexible enough to allow the adaptation or addition of such methods and materials as may be deemed advisable.

#### Methods of Procedure

This study involved the collecting and analyzing of data, and the development of certain findings and conclusions. The study procedure included the following steps:

1. The head of the agriculture division of the Noble Foundation Experiment Station at Ardmore, Dr. Horace J. Harper, was consulted as to the possibility of using the facilities of the experiment station for a series of field trips to be taken during the school year by the vocational agriculture classes of the Lone Grove School.
2. Subject matter to be covered, and proposed dates for the trips were selected and approved by the school administration and staff members of the experiment station who were to be involved.
3. Certain selected related studies were reviewed to discover information useful for developing and implementing the study.
4. Criteria were developed for an evaluation of the effectiveness of field trips, and plans were made to involve the students in evaluation procedures.
5. Most of the field trips were held on schedule, and an attempt was made to evaluate each of the trips taken. A test was prepared and given the students to determine the extent of the knowledge which they had acquired.

6. Data were tabulated, analysis made, and conclusions drawn.
7. Recommendations were made and a plan for the use of experiment station facilities on a continuous basis was developed.

## CHAPTER II

### REVIEW OF SELECTED LITERATURE

According to Dr. Horace J. Harper, head of the agriculture division of the Samuel Roberts Noble Foundation, Inc.:

Many agriculture experiment stations throughout the country spend millions of dollars each year on experimental work in all types of agriculture. At present these stations are not being utilized to the fullest extent by vocational agriculture teachers in their respective localities.

A partial explanation for the failure of vocational agriculture teachers to utilize these experiment stations may be the lack of understanding of the benefits to their students and themselves, but also an equally important hindering factor which may be recognized is a lack of established procedures for utilizing these stations and their studies. It is hoped that this study will point out better ways and means whereby vocational agriculture instructors can more completely and effectively utilize available agricultural research information.

Caldwell<sup>1</sup> conducted a study for the purpose of determining the effectiveness of field crop demonstration plots as a teaching aid for high school students of vocational agriculture and adult farmers in Oklahoma.

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<sup>1</sup>Ralph Caldwell, Jr., "The Use of Field Crop Demonstration Plots as a Teaching Aid for Adult Farmers and High School Students of Vocational Agriculture in Oklahoma," (unpub. Master's Report, Oklahoma Agricultural and Mechanical College, 1956).

Nine demonstration plots were selected, located in various parts of the State, in which similar types of demonstrations with field crops were conducted. One hundred and thirty-five all-day students and 90 adult farmers living in the nine communities were interviewed, using an objective-type questionnaire. In addition, the teachers of vocational agriculture supervising the nine demonstration plots also served as sources of information.

Responses of the students showed that 66 of the 90 adult farmers and 112 of the 135 high school students interviewed recognized the demonstration plots as beneficial sources of information. Caldwell recommended that (1) a wide use be made of field crop demonstration plots as a teaching aid, (2) the teacher make every effort to keep accurate records and have them available at all times, (3) the planning of demonstration plots be definitely shared by the high school and/or adult farmer classes, and (4) the teacher of vocational agriculture make every possible effort to assist both high school and adult farmer students to feel that the accomplishments are theirs, and not solely the result of individual effort on the part of the vocational agriculture teacher.

For maximum benefit, any field study should be carefully planned. The more planning, the better the field study can be carried out. This is particularly true of field studies on agriculture experiment stations, in view of the great number of different types of projects and experimentation involved. The author hopes to present several different approaches to determine how much preparation should be made before going on a field trip with a group of high school boys.

According to Phipps<sup>2</sup>, a field trip is one of the best devices to use in making the instruction effective because (1) it develops student interest, (2) it provides opportunities for gaining new experiences and information, (3) it provides opportunities for further learning by classroom instruction, and (4) it helps to develop understanding.

In additional discussion, Phipps also summarizes the following conclusions regarding field trips:

1. A field trip needs to be carefully planned and suitable arrangements made in advance. The instructor should contact the farmer, organization, or concerns where the trip will be taken and make the necessary arrangements. This may mean a personal trip by the teacher in advance of the instruction, or it may be possible to make the arrangements by phone or letter.
2. Before leaving on a trip, a discussion should be held with the students to consider the purpose of the trip, and what will be expected of them.
3. In so far as possible, field trips should be taken in seasonal sequence and in connection with problems being discussed at school.
4. When school buses are available for field trips, they usually provide the most desirable type of transportation. In this way the students are kept together.
5. It is important to conduct a trip in a businesslike manner. The class should be conducted as a group from the time of leaving the school until their return to the school.

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<sup>2</sup>Lloyd J. Phipps, Handbook on Teaching Vocational Agriculture, Sixth Edition, 1952, pp. 150-151.

6. The students who participate in field trips should discuss the trip as soon as possible after the trip is completed. In the discussion the trip should be summarized and appropriate conclusions developed.
7. Teaching on the farm during a farm visit should utilize the same general methods recommended for use in the classroom. The difference is that much of the teaching on the farm should develop out and be an extension of the teaching done in the classroom, and vice versa. Some problems encountered on the farm should be brought back to the classroom for more extensive consideration.

Detailed steps of importance in planning for effective instruction through field trips are outlined by Dale<sup>3</sup> as follows:

I. Preparation.

A. Teacher preparation.

1. Arrange through administrative department for consent to make trip, including parental consent where necessary.
2. Make preliminary survey, with listing of situations and points of interest, etc.
3. Estimate length of time involved, also round trip schedule.
4. Decide if entire class or select group should go.
5. Make arrangement with school authorities and authorities at place of destination.
6. Plan transportation route in detail and arrange financing.

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<sup>3</sup>Edgar Dale, Methods in Teaching, first printing 1946, pp. 155-156.



B. Pupil preparation.

1. Arouse pupil interest in the projected field trip (by class talks, photographs, etc.).
2. Discuss in class the problems that the trip can help solve.
3. Make clear to pupils the purpose of the trip.
4. Develop background by consulting reference material.
5. Work out for pupils the points to observe during field trips.
6. Set up with them standards for safety and behavior.
7. Give to pupils any materials that they can use during trips.

II. Actual Observation.

- A. Guide is to be given clear idea of the purpose of the trip (set of questions prepared jointly by teachers and pupils).
- B. Pupils observe and hear the guides explanation.
- C. Question period in which individual questions from pupils are presented and answered by guide or teacher.
- D. Period for note taking and sketching by pupils.

III. Follow Through.

- A. Group discussion in classroom.
  1. Critical evaluation of the place visited.
  2. Supplementing and correcting incomplete or hazy understanding.
  3. Introducing of new problems.

B. Creative projects.

1. Drawings, poems, stories, constructions, bulletin board displays, diaries, etc., based on the trip.
2. Writing a letter of thanks to the guide.

C. Tests to determine:

1. Information gained, attitudes formed, and generalizations made.

D. Reports from pupils.

1. General reports: the all-over subject.
2. Special features, reported by pupils to which these had been previously assigned.

IV. Evaluating Before and After.

A. Before.

1. Is this destination the best choice for this particular teaching purpose?
2. What plans need to be made by teacher and pupils?
3. Is there reading material on this particular location?
4. Is the time involved likely to prove worth the understanding level?
5. What relationship can this trip have with other pupil experiences?
6. What emotional effects is the trip likely to have on the pupils?

B. After.

1. Did the trip serve the purpose?
2. Were attitudes affected in the expected manner?
3. Did the trip stimulate the pupils into new activities?

4. Did it develop in them a spirit of inquiry and curiosity?
5. Has the trip had any final effect on the pupils' conduct and behavior?

Wall<sup>4</sup>, after studying the problem at some length, concludes that there are four major problems the teacher must consider if he is to succeed with field trips:

1. When and under what conditions should field trips be used in teaching?
2. What plan should be made for taking the field trips, including what is a good situation to use for the trip?
3. What teaching techniques should be used on the trip?
4. How to evaluate the effectiveness of the trip?

According to McKay, et al.<sup>5</sup>, the use of real situations as seen on field trips should not be overlooked in the teaching of vocational agriculture. While a field trip might not be considered by some as visual aid, actually it is one of the best teaching aids. Trips should be planned in advance. They are a waste of time unless definitely correlated with the course of study and the unit being studied. An effective field trip has these characteristics:

1. The instructor is familiar with the place visited, and if a guide is not available, is able to answer questions.
2. Students are told in advance what to look for and are ready to ask questions.

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<sup>4</sup>Stanley Wall, The Agricultural Education Magazine, Vol. 24 (February, 1952), p. 176.

<sup>5</sup>Gerald R. McKay, Milo J. Peterson, and R. Wendt, Vitalizing Agricultural Education with Audio-Visual Aid, Published by National Agriculture Supply Company--NASCO, pp. 21-22.

3. There are no discipline problems because the class is interested in the trip.
4. Work to be done during the trip is divided among committees, each having a definite assignment.
5. The chairman of each committee is responsible for a report to the class upon its return.

In regard to drivers on field trips, Lofley<sup>6</sup> says that he began by listing all the drivers in his class and checked the list for adequate insurance coverage. All "jologies" and low-insured cars were then scratched from his list. The revised list was presented to the principal who took up the matter with the school board. Their approval of these student drivers for small trips made him feel better as the selection was not left entirely up to him.

Hammonds<sup>7</sup> says that theory and practice should be bound together in learning if they are to contribute to each other--if they are to recur together. Agriculture properly taught is not practice without theory, neither is it theory without practice. The seeing of relationship is necessary in most learning; it makes the learning easier, and gives meaning to the thing. Attempted application of these principles gives emphasis to the fact that field trips are one of the most beneficial methods of teaching vocational agriculture.

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<sup>6</sup>Cedric A. Lofley, "Planning Transportation for Field Trips," The Agricultural Education Magazine, Vol. 22 (September, 1949), p. 94.

<sup>7</sup>Carsie Hammonds, Teaching Agriculture, 1950.

## CHAPTER III

### DESCRIPTION OF LONE GROVE COMMUNITY AND THE LONE GROVE AGRICULTURAL EXPERIMENT FARM

There has been very little history written on the Lone Grove community. In 1956, Mrs. Nina Young, a teacher in the Lone Grove School, who has taught in this school system for a great number of years, was asked to prepare a short history of the community and school which will be used in a county history that is being written at the present time. Mrs. Young began her work by contacting older people of the community and gathering data. Information was secured through personal interviews with early settlers as they recalled pertinent incidents and remembered stories as related by parents. This information was finally assimilated and a document prepared. This author wishes to thank Mrs. Young for her help and cooperation in preparing this report.

#### History of the Lone Grove Community and School

In 1883, C. C. Price brought a colony of people from Texas into the Chickasaw Nation to make a settlement. The location was made seven miles west of what is now Ardmore, Oklahoma. After the homes were built, farming and ranching was the main occupation.

In 1885, C. C. Price petitioned Congress for a post office to be called Lone Cedar, but for some reason the name was changed to Lone Grove by the Post Office Department. From this post office the village

soon added more stores, a wagon yard, drug store, cotton gin, barber shop, school and churches.

In 1887 a school building was erected in the north part of Lone Grove. This was a frame building, two stories high (the Masonic Lodge and Eastern Star Chapter used the second story). This building burned in 1909.

In 1904 another two story building was erected one block north of the present school. The top story was again used as a lodge hall.

In 1910 a new building, a two story brick, was erected in the northeast part of town. This building was occupied early in January, 1911 for the first time and was used until 1929.

In 1927 the Blue Ribbon District was consolidated with Lone Grove, and with this movement came the use of school buses. Two buses were purchased. The building was again inadequate, and in 1929 a new building was erected on the present site.

In 1938 Bunker Hill Broadtree was consolidated with Lone Grove and with this move there was a need for more buildings, which consisted of a gymnasium that was completed in 1942. Another six classrooms were added in 1948 in addition to the vocational agriculture department. The first vocational agriculture instructor in the Lone Grove High School was Carroll Darow. He taught for three years and was replaced by Paul E. Morris in 1952, who stayed five years and was replaced by the present teacher, Robert H. Harl, in 1956.

#### History of the Lone Grove Experiment Farm

This author wishes to thank Dr. Horace J. Harper, Head of the Agricultural Division of the Samuel Roberts Noble Foundation, Inc., for his

kind efforts and guidance in the compilation and preparation of certain information contained in this report. The following history of the Lone Grove Experiment Farm and was compiled from information supplied by Dr. Harper.

Experimental work was started on the Lone Grove farm in the spring of 1952 by the Agricultural Division of the Samuel Roberts Noble Foundation, Inc., in cooperation with the Oklahoma Agricultural Experiment Station. This farm is one of three Foundation experimental farms which are being used to supply information needed to solve many of the agricultural production problems on specific land types in south central Oklahoma. More than one-half of the formerly cultivated land on this farm had been abandoned because of sheet and gully erosion or low natural fertility when these experiments were started.

About one-half the land on the Lone Grove farm was covered with tall prairie grasses under virgin conditions. Soils of this type, called reddish prairie soils, are found in nine counties in south central Oklahoma. The soils on the remaining portions of this farm were formed under a vegetative cover of blackjack and post oak timber. These soils are typical of much of the sandy cross timber land occurring in 14 counties in south central Oklahoma.

Seasonal variations in south central Oklahoma are great; consequently, the value of an experimental farm increases with time. Average crop yields, or average beef gains, obtained from experiments over a period of years provide a better basis for accurate conclusions than results obtained for one or two seasons. Experimental data and observations made during the past four years are only an indication of the plant or animal response that will be obtained on similar soils and

during seasons similar to those which have prevailed from 1952 to 1955, inclusive.

Many crops and cropping systems are being studied on the different soil types of this farm to determine the crop varieties that should be planted and the soil management that should be used for the optimum production of grain, forage, fiber, or pasture. All crops, or cropping systems, cannot be observed in a one-day visit to this farm. Consequently, a fall field day will be held to study the production of sorghum, cotton, and summer forage crops and the condition of the vegetation and the steers in the different pastures at that season of the year.



## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA CONCERNING FIELD TRIPS TO THE LONE GROVE EXPERIMENT FARM

There has been much information written about field trips by various authors from the standpoint of the teachers' views, but little investigation has been made regarding evaluation from the standpoint of the student. This study points out that students do prefer field trips to other types of instruction, and also, that the students included in the study did prefer additional instruction in order to get maximum benefit out of the field trip. Students of vocational agriculture did prefer their vocational agriculture teacher over other personnel for conducting the field trip. This preference may be ascribed to several different reasons as is pointed out in this chapter. As to the number of field trips desired by students of vocational agriculture, a majority of the students preferred taking field trips once a week. The subject matter to be studied which was most desired was that most closely related to the students' farming programs. Livestock projects were preferred to crop projects, which does not necessarily mean that they were not interested in crops, but that they were more closely associated with livestock enterprises at home.

This study indicates that, to a point, as the number of visits or field trips increase the learning likewise increases. Therefore, if field trips are carefully planned and carried out, this can be one of the better instruments of learning to which a teacher may have access.

In a letter written to the author in September, 1956, Dr. Harper<sup>1</sup> enclosed a proposed agenda of suggested dates for a study of field projects on the Noble Foundation Lone Grove farm by vocational agriculture classes of the Lone Grove High School during the fall, winter, and spring of 1956-1957. Following is a portion of the letter written by Dr. Harper:

Mr. Bob Harl is teaching vocational agriculture in the Lone Grove High School. He desires to use the Noble Foundation Lone Grove Farm as a field laboratory for his agricultural classes during the fall, winter, and spring of 1956-1957. Suggested dates for a study of different experimental projects have been proposed.

Each staff member will be the instructor for the first class period which will begin about 8:30 a.m. Printed material describing the project and results obtained will be prepared for each study. Mr. Harl will teach three other classes during that day, using the material provided by the Noble Foundation staff for the first class period.

The following table contains a schedule for this field study proposed by project leaders with suggested dates and the topics to be discussed. Mr. Harl will review this material and decide what day would be preferred for each field trip and indicate any changes that he may desire to make in the proposed schedule.

<u>Date</u>	<u>Name</u>	<u>Subject</u>
Sept. 17-21*	Richard Bates	Annual summer legumes.
Sept. 17-21	Jack Alexander	Gaur-sorghum silage experiment.
Sept. 24-28*	Richard Bates	Perennial summer legumes.
Sept. 24-28	Bill Van Arsdell	Filling of upright silos.
Sept. 24-28	Roy Chessmore	Sudan breeding plots showing bagging, plant selection and observational plots.
Sept. 24-28	C. C. Schaller	Effect of green manure crops and fertilization, Series 2100, 2200, 2300 and 2600.

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<sup>1</sup>Dr. Horace J. Harper, Head of the Agricultural Division of the Samuel Roberts Noble Foundation, Inc., Ardmore, Oklahoma.

<u>Date</u>	<u>Name</u>	<u>Subject</u>
Oct. <u>1-15</u> *	Lyell Thompson	Four grasses planted in 1955 and fertilized with nitrogen and phosphorus. 1956 grass plantings.
Oct. <u>3</u> *	Bill Van Arsdell	See steers on feed at Lone Grove. Explanation of treatments, grades, and weight of steers.
Oct. <u>8-12</u>	Julius Reeves	Planting of fall grains; oats, wheat and barley.
Oct. <u>15-19</u>	Julius Reeves	Introducing winter legumes in established grasses.
Nov. <u>14</u> *	Bill Van Arsdell	Check on progress of steers on feed at Lone Grove.
Nov. <u>12-16</u> *	Julius Reeves	Check growth and measure height of Elbon and Abruzzi rye.
Dec. <u>3-7</u> *	James Gaylor	Pecan harvest.
Dec. <u>10-14</u> *	Ray Dyer	Spraying sprouts for brush control.
Dec. <u>10-14</u>	Julius Reeves	Check pastures which consist of all season grazing; rye-vetch, vetch-sudan, bermuda-vetch.
Dec. <u>10-14</u>	Bill Van Arsdell	See steer calves for wintering.
Dec. <u>17-21</u> *	Richard Bates	Fall forage production of small grain and vetch varieties.
Jan. <u>7-11</u> *	Ray Dyer	Using tree injector to kill trees.
Feb. <u>4-8</u> *	Ray Dyer	Reseeding sprayed areas with grasses and legumes.
Feb. <u>11-15</u> *	C. C. Schaller	Effect of winter grazing on rye and vetch for seed production. Small grain and vetch seed production.
Feb. <u>25-28</u>	Bill Van Arsdell	Check on progress of calves on weighing date.
March <u>3-7</u> *	Julius Reeves	Check Elbon and Abruzzi rye plots after 100 pounds of ammonium nitrate has been applied in February.

<u>Date</u>	<u>Name</u>	<u>Subject</u>
March 3-7	James Gaylor	Pastures in Luke-McCoy pecan orchard north of Ardmore.
March <u>10-14</u> *	C. C. Schaller	Effect of winter grazing on rye and vetch for seed production. Small grain and vetch for vetch seed production.
March <u>24-28</u> *	James Gaylor	Thinning and general management of pecans.
March 24-28	Bill Van Arsdell	See calves in pen before being turned to pasture.
April <u>1-5</u> *	C. C. Schaller	Green manure crops and cotton-Series 900. Vetch, green manure crops, and rye-Series 1200. Vetch, green manure crops, and rye-Series 2100, 2200, 2300 and 2600.
April 1-5	Richard Bates	Spring forage production of small grain and vetch varieties.
April <u>13-17</u> *	C. C. Schaller	Effect of winter grazing on rye and vetch for seed production. Small grain and vetch for vetch production.
April <u>21-26</u> *	Julius Reeves	Method of planting Midland bermuda grass in spring of 1956. Also, check stand of grass planted in April, 1954 and April, 1956.
May <u>1-15</u> *	Roy Chessmore	Rye selection nursery and observational nursery.
May <u>5-9</u> *	Ray Dyer	Inspection of growth in reseeded area and sprigged area.
May <u>11-15</u> *	C. C. Schaller	Oats and wheat-Series 600 and 700. Oats and clover-Series 1200. Effect of winter grazing on rye and vetch for seed production. Small grain and vetch for vetch seed production.

<u>Date</u>	<u>Name</u>	<u>Subject</u>
May <u>15-22</u> *	Richard Bates	Early growth of warm season forage crops.
May <u>26-30</u> *	James Gaylor	Spraying pecan trees.

\*Actual dates selected by the vocational agriculture instructor for field studies to the Lone Grove Experiment Farm for the year of 1956-1957.

A More Detailed Description of Two Selected Field Trips  
Presented on September 28, 1956, to Mr. Bob Harl's  
Vocational Class of the Lone Grove High School

Objectives:

1. To measure the beef producing value of silage made from various small grain-vetch mixtures.
2. To compare the beef gain of steers and the labor requirement for feeding small grain, vetch and sorghum silage from a tower silo and from a self-feeding bunker-type silo.

Reasons for the Project:

Erratic rainfall combined with low winter temperatures frequently increases the need for supplemental feed on the average livestock farm in south central Oklahoma. Most of the hay made from the area is made from Johnson grass or native grasses and is low in protein content. Many grass-legume mixtures such as rye and vetch, which provide excellent grazing during late winter and early spring cannot conveniently be made into hay without loss of legume leaves which decrease the protein content of the hay. Recent studies have shown that silage high in protein content can be made from small grain-vetch or small grain-sweet clover mixture. If a large acreage of high protein forage could be grown on farms in south central Oklahoma and made into silage, it should

greatly reduce the quantity of high protein feed which is purchased at the present time to winter beef cattle on these farms.

Small Grain and Row Crop Variety Experiments  
in South Central Oklahoma

Julius C. Reeves

Objectives:

To compare the productive capacity of adapted varieties of small grain, including hard and soft winter wheat, winter barley, both fall and spring sown oats.

Reason for Undertaking the Work:

The acreage of small grain in Carter County has been decreasing for several years. Low acre yields are brought about by declining soil fertility and the lack of resistance of commonly planted varieties to disease and insect injury has been responsible for the decrease. Winter small grain is not only an important source of grazing for livestock during the late fall and early spring, but also it provides an excellent companion crop for sweetclover and lespedeza. More small grain should be grown on many farms to aid in the control of Johnsongrass. Summer tillage following small grain will destroy a high percentage of the Johnsongrass during an average season.

By testing each variety for several years, we will be able to find the better quality of each variety such as (1) higher and more stable grain yields; (2) grain with high test weight, desirable appearance; (3) disease resistance; (4) insect resistance; (5) winter hardiness; (6) drought and heat resistance; (7) resistance to lodging; (8) resistance to shattering; and (9) value for pasture. Results from 1952-1956 are given in the following table:

A Comparison of Two Field Trips Made to the  
Lone Grove Experiment Farm by Classes  
of the Lone Grove F.F.A. Chapter

The two field trips that are being considered at this time as far as the boys' interest was concerned, were presented by Julius Reeves, Head of the Lone Grove Experiment Farm. Printed materials were given to each boy pertaining to the project being studied. One of the studies was on growing small grains, and the other was on feeding silage to livestock. As will be pointed out later in the study, boys did respond more to livestock practices; likewise in comparing these two studies, the boys responded more to the feeding of silage to livestock. There were many questions asked by the boys on this particular project. Some of them are as follows:

1. How many tons per acre did the silage make?
2. How many pounds per day will steers consume?
3. How high is this silage in protein?
4. Do cattle gain better on silage than hay and other types of roughage?
5. Does feeding silage increase the daily rate of gain?
6. Why is silage more profitable than other types of roughage?
7. Could the average farmer raise silage and store it? Would it be too expensive?
8. Which is the best, a trench or upright silo?
9. What is the advantage of insilage silos?
10. At what moisture content is silage preserved best?
11. How is silage preserved?

When questions were asked on the test pertaining to livestock the boys' retaining power was much greater in this project.





TABLE I--Cont'd

Criteria or "Approved Practices"	Maximum Points Allowed	Scores for Field Trip					
		Number					
		12	13	14	22	24	25
2. The subject matter covered was such as to provide answers to problems commonly encountered in farming and ranching in the community.	10	10	8	10	10	10	8
3. It was evident that students were oriented to the need for this trip especially in relation to supervised farm practice.	5	5	4	5	5	4	4
4. Appropriate questions to be asked and observations to be made were developed with the class.	5	5	4	5	5	5	3
5. Responsibilities to be assumed by participants were discussed and delegated.	5	5	5	5	5	5	3
6. Specific directions were developed for all phases of the trip.	5	5	5	5	5	5	5
7. Preliminary arrangements were made at the farm or other places visited.	5	5	5	5	5	5	5
8. Arrangements for transportation were carefully made.	5	5	5	5	5	5	5
9. Proper arrangements were made with the school administration and school staff.	5	5	5	5	5	5	5
<u>Conduct of the Trip</u>							
10. Student responsibility was assumed as planned	5	5	5	5	5	5	5
11. A high degree of interest was shown throughout the trip.	10	10	9	10	10	10	7

TABLE I--Cont'd

Criteria or "Approved Practices"	Maximum Points Allowed	Scores for Field Trip					
		Number					
		12	13	14	22	24	25
12. Student participation was in keeping with the nature of the trip.	5	5	5	5	5	5	5
13. The level of presentation was appropriate to the past experience and the maturity of the students.	10	10	9	10	10	10	7
14. The techniques of presentation were such as to provide for maximum appeal to the students.	15	15	15	15	15	15	15
15. Students made appropriate notations and observations.	5	4	2	5	4	4	2
16. Proper courtesies were extended to the persons at the place visited.	5	5	5	5	5	5	5
17. The time schedule was kept as planned.	5	5	5	5	5	5	5
<u>Outcomes and Results</u>							
18. The students participated in evaluating the trip.	5	5	5	5	3	4	4
19. The students participated in summarizing the trip and drawing appropriate conclusions.	5	4	4	4	5	5	4
20. This field trip contributed significantly to programs of supervised farm practice, through the development of necessary skills, understanding, approved practices, awareness of new problems, or broadened program.	15	14	14	15	15	15	15

TABLE I--Cont'd

Criteria or "Approved Practices"	Maximum Points Allowed	Scores for Field Trip Number					
		12	13	14	22	24	25
21. New interests resulting from this trip were in evidence through informational comments, extended reading, and contributions in agriculture and other classes.	10	9	9	9	9	9	9
22. The students showed growth in ability to plan <u>for</u> and participate in later field trips.	5	5	5	5	5	5	5
Totals	150	146	138	148	146	146	130

In making a comparison of these six field trips, it was discovered that there was very little variation in the score of field trips 12, 14, 22, and 24. However, the scores of field trips 13 and 25 were considerably lower; this possibly could be due to the following factors:

(1) lack of complete preparation; (2) failure to hold an adequate discussion in class before the field trip so students could consider the purpose of the trip and the subject matter to be covered; (3) lack of sufficient interest on behalf of the student with regard to the subject matter covered; (4) failure to complete sufficient background study to provide for comprehension of subject matter; (5) lack of experience on behalf of the students with regard to taking notes, and in drawing conclusions; and (6) restlessness on part of students, due to the nearness of the conclusion of school, especially in regard to field trip 25.

TABLE II  
 RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
 IN THE LONE GROVE HIGH SCHOOL WITH REGARD  
 TO TYPE OF INSTRUCTION PREFERRED

Type of Instruction Preferred	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Field trip	3	5	11	9	28	58.3
Classroom	0	0	0	0	0	0
Film strip	1	0	3	3	7	14.5
Motion picture	2	5	2	4	13	27.2
Conference	0	0	0	0	0	0
Totals	6	10	16	16	48	100.0

Data as presented in Table II indicates that the majority, 58.3 percent, of the students enrolled in vocational agriculture in the Lone Grove High School preferred field trips to other types of instruction. Thirteen students, or 27.2 percent, indicated preference for motion pictures, while four students, or 14.5 percent, preferred film strips. Combining motion pictures and film strips would indicate that 41.7 percent of the students gave first preference to audio-visual aids. This would indicate that the students prefer the type of instruction where they can see the actual practices in use.

Motivation is what every good teacher strives for. The more rapidity with which the point of highest interest can be reached in a learning situation, the more effectively will the student learn.

It is quite possible that many times while the use of charts, pictures, and visual aids are somewhat effective, the student prefers to see the actual practice applied. The use of this method whereby the students can actually see what the teacher has reference to while teaching, is effective because a higher degree of interest is maintained and the understanding is, therefore, accelerated.

TABLE III

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO THE  
NATURE AND EXTENT OF INSTRUCTIONAL REVIEW  
PREFERRED IN CONNECTION WITH FIELD TRIPS

Nature of Review Preferred	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Before field trip	4	7	11	8	30	62.5
Review before and after field trip	1	3	3	7	14	29.2
No review	1	0	2	1	4	8.3
Totals	6	10	16	16	48	100.0

It is almost a universal admonition from those who would give directions for taking field trips that reviews be used to facilitate learning. The findings shown in Table III should prove quite significant in the fact that 30 students, or 62.5 percent of those enrolled in vocational agriculture in the Lone Grove High School, preferred reviewing the material before taking the field trip. Fourteen, or 29.2 percent of the students preferred a review of literature before and after

the field trip. Only four students, or 8.3 percent of the students, preferred no instruction.

This survey points out that 91.7 percent of the students did prefer additional instruction on the subject to be studied on the field trip. Therefore, before or after a field trip to secure a maximum benefit, an organized plan would seem advisable. As with other learning activity, the event should be planned in advance and careful consideration given to every aspect of the field trip.

Only 8.3 percent of the students did not prefer any additional instruction. These students are perhaps ones that should be in some class other than agriculture, where their interest might be higher and they would get more benefit out of school.

TABLE IV

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO  
THE TYPE OF INSTRUCTOR PREFERRED

Type of Instructor Preferred	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Vocational agriculture instructor	4	7	13	11	35	72.9
Station staff specialists	2	3	3	5	13	27.1
Totals	6	10	16	16	48	100.0

It was generally the practice that one of the specialists at the experiment station would have charge of the instruction during the first

hour which the students were at the station. The regular teacher of vocational agriculture quite often would teach the same lesson to the succeeding groups which were brought to the station later in the day. Occasionally, however, the specialist would continue to teach the lesson to each group throughout the day, and so students had an opportunity to compare their teacher with other individuals who presented the lesson.

Table IV presents the fact that the majority, 35 students or 73 percent, preferred the vocational agriculture instructor to conduct the lesson as presented on the field trips. Thirteen students, or 27 percent, did indicate that they preferred another instructor to their regular teacher. The fact is shown in Table III that students preferred reviews in connection with field trips. A teacher of vocational agriculture has these boys in class and can render this additional instruction to his students. He thus has opportunity to give initial instruction regarding the problem or unit.

We cannot overlook the fact, however, that such ~~specialists are per-~~haps better qualified in their respective field of work, and can render a more thorough job of teaching if they had the time to spend, and were more acquainted with the individual needs of the students. However, they may present the subject matter at a higher level than is readily understood by high school students.

One of the biggest ways the specialist can help in teaching vocational agriculture is by providing the instructor with a better understanding of the problem being studied. Many times a specialist conducting an experiment is somewhat advanced in his thinking as compared to the level of the high school student. If he has not had experience in teaching high school students, he may experience

difficulty in simplifying subject matter to the extent necessary to maintain a high degree of interest.

Another factor which perhaps greatly contributes to the fact that the majority of students prefer the instructor, is the fact that the student is more familiar with the instructor, whereas the specialist does not have the opportunity for this close contact.

TABLE V

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO  
HOW OFTEN FIELD TRIPS SHOULD BE TAKEN

Frequency Preferred	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
One each week	4	6	9	13	32	66.6
One each two weeks	0	3	0	0	3	6.2
One each month	0	0	0	0	0	0
Two each week	2	1	7	3	13	27.2
Totals	6	10	16	16	48	100.0

Two-thirds of the students enrolled in vocational agriculture in the the Lone Grove High School indicated that they preferred taking field trips once each week. As can be seen by referring to Table V, 13 preferred taking field trips once each two weeks, while three, or 6 per cent, preferred two field trips each week. Findings as presented in this table are in agreement with those presented in Table II in that boys enrolled in vocational agriculture in the Lone Grove High School prefer well planned field trips with additional instruction.



Field trips need much more planning than just saying that today the group is going on a field trip, and sometimes too many trips may be more harmful, as far as future learning is concerned, than not having enough. By going on field trips too often the student has a tendency of wanting to go just to get away from school and study, and then again, by not having any, or often enough, the student may get bored with class routine. Therefore, each field trip should be planned not only on seasonal sequence, but also as to how often they should be taken.

The field trip is very worth-while and educational and, therefore, a value to the student, and is a supplement to your teaching program.

TABLE VI

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO INTEREST SHOWN IN THE TYPE OF ENTERPRISE OR PROJECT CONDUCTED ON THE LONE GROVE EXPERIMENT FARM

Enterprise	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Annual summer legumes	0	0	0	0	0	0
Perennial summer legumes	0	0	0	0	0	0
Silage	1	3	5	4	13	27.2
Crop breeding	0	0	0	0	0	0
Green manure fertilization	0	0	0	0	0	0
Feeding steers	1	0	3	5	9	18.4
Winter pasture	1	2	1	0	4	8.4
Winter legumes	0	0	0	0	0	0
Pecans	1	2	1	0	4	8.4
Brush control	2	3	5	5	15	31.3
Planting bermuda grass	0	0	1	2	3	6.3
Totals	6	10	16	16	48	100.0

Data as shown in Table VI presents the fact that as far as a preference for subject matter or enterprises are concerned, the majority of the students preferred those enterprises or projects that were more adaptable to their home farm and to their projects. Brush control polled 15 students, or 31.3 percent. Growing and storing silage had the interest of 13 students, or 27.2 percent. Nine students, or 18.4 percent, were interested in feeding practices, while winter pastures and pecans had four students, or 8.4 percent. Three, or 6.3 percent, were interested in planting bermuda grass, while no interest was indicated in annual summer legumes, perennial summer legumes, crop breeding, winter legumes, and green manure fertilization.

One of the admitted weaknesses of the study at this point was that in checking preferences, the students were given only one choice. This does not necessarily mean that the students have no interest in summer legumes, perennial summer legumes, crop breeding, winter legumes, and green manure fertilization. It just points out that the students are more interested in brush control, silage, and feeding livestock. The table does not intend to show that livestock enterprises are more important than crop enterprises, it just merely shows that their interest is higher in those respective enterprises. Certainly anyone knows that crops are essential to any agriculture program, and without them other enterprises would be hopeless.

As evidenced by Table VI, the majority of the students enrolled in vocational agriculture preferred livestock enterprises to crop enterprises. A part of this is contributed to the fact that the larger proportion of the farming in this area depends upon livestock production.

TABLE VII

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS IN  
THE LONE GROVE HIGH SCHOOL IN REGARD TO THEIR INTEREST  
IN CROP AND LIVESTOCK ENTERPRISES

Enterprise	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Livestock	4	8	12	16	40	83.3
Crops	2	2	4	0	8	16.7
Totals	6	10	16	16	48	100.0

Forty students, or 83.3 percent, preferred livestock to eight students, or 16.7 percent, preferring crops.

Livestock enterprises are dependent upon crop enterprises--they work hand in hand. However, students on a high school level sometimes fail to see the importance of crop production.

The average boy enrolled in vocational agriculture has had more experience in feeding livestock than they have had with crop production. Most of the parents of the students enrolled in vocational agriculture work part time along with their farming, and this could also be a contributing factor as to their choice of livestock.

Spring pastures held the highest interest to the students enrolled in vocational agriculture, as in evidence by Table VIII with 16 students, or 33.3 percent, preferring them. This spring was an exceptional year for spring pastures, due to the moisture that we had the early part of the year, and this could have been a determining factor in the students' preference. Fifteen students, or 31.3 percent, showed more interest in winter pastures. Again the interest shown here could be due

TABLE VIII

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO THE TYPE  
OF PASTURES OF MOST IMPORTANCE

Type of Pasture	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Fall pastures	2	2	2	3	9	18.7
Winter pastures	3	5	3	4	15	31.3
Spring pastures	1	3	6	6	16	33.3
Summer pastures	0	0	5	3	8	16.7
Totals	6	10	16	16	48	100.0

to the exceptionally good winter pastures in 1956. Nine students, or 18.7 percent, showed more interest in fall pastures, while eight students, or 16.7 percent, were interested in summer pastures.

As far as comparing one pasture with another, Table VIII may not be a good measure. One of the reasons would be that the students of vocational agriculture did not see all of these pastures. They saw only the ones that were growing while school was in session; therefore, the table reflects that there was more interest in winter and spring pastures, as those are the ones that they observed through the growing seasons. The fall and summer pastures received less attention by the students as they were observed less than the spring and winter pastures.

Clearing timber by airplane was the most popular method indicated by the students as shown in Table IX. Seventeen of the students, or

TABLE IX

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO INTEREST  
SHOWN IN THE METHOD OF CLEARING TIMBER

Method of Clearing Timber	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Airplane	2	2	3	10	17	35.4
Tree injec- tion	2	2	6	4	14	29.2
Bulldozer	1	4	4	2	11	22.9
Hand spray	1	2	3	0	6	12.5
Axe	0	0	0	0	0	0
Totals	6	10	16	16	48	100.0

35.4 percent, preferred this method. The tree injector method was next in interest, with 14 students, or 29.2 percent, checking this column. The bulldozer method shows 11 students, or 23 percent, interested. Six students, or 12.5 percent, checked the hand spraying method, with one checking the axe method. This survey parallels closely with the findings at the Lone Grove experiment farm as to the best, and cheapest method, with more labor saved per acre of timber cleared.

There was much interest shown by the students in this particular enterprise, possibly due to the fact that around Lone Grove the larger proportion of the land is timbered, and there is a great need for this type of farm improvement to put the land back into better production. The airplane and tree injector methods were the two of greatest interest to the students. The big difference in these methods would be the

amount of labor involved. If a farmer or boy had an access of time and were not working outside the farm, the tree injector would be the best method; otherwise, the airplane spray method would be.

TABLE X

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO INTEREST  
IN LIVESTOCK PRACTICES USED AT THE LONE GROVE FARM

Livestock Practices	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Dry lot feed- ing	1	2	2	4	9	18.7
Feeding silage	2	4	4	2	12	25.0
Pastures	1	2	6	4	13	27.1
Stilbestrol	2	2	4	6	14	29.2
Totals	6	10	16	16	48	100.0

The feed experiment of stilbestrol won over pastures by a small margin of preference by students of vocational agriculture as presented in Table X. Fourteen students, or 29.2 percent, checked stilbestrol, while 13 students, or 27.1 percent, checked pastures. Silage was next, with 12 students, or 25 percent, preferring this type of practice, and dry lot feeding was last with nine students, or 18.7 percent, checking this column.

The interest shown in feeding stilbestrol to steers could be, in part, due to the fact that in the students' feeding program at home they used antibiotics in their feed and received a good response from it. As a result, they were interested in what effect this would have upon the

steers. They also received good response from pastures in their project work. Economical gain, health sanitation, worm control, and other advantages were derived from good pastures; therefore, they were better acquainted with this practice than they were with silage and dry lot feeding.

TABLE XI

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS  
IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO  
INTEREST SHOWN IN CROP PRODUCTION

Type of Crop Production	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.:	Percent
Annual summer legumes	1	2	3	1	7	14.6
Auar-sorghum silage	3	5	9	4	21	43.8
Perennial sum- mer legumes	0	1	3	1	5	10.4
Sudan grass	0	1	0	3	4	8.3
Fall grains, oats, wheat, and barley	2	1	1	7	11	22.9
Row crops	0	0	0	0	0	0
Totals	6	10	16	16	48	100.0

Presented in Table XI is the fact that the main interest is in growing sorghum for silage, with 21 students, or 43.8 percent, preferring this type of crop production. Small grains were next with 11 students, or 22.9 percent, checking this column. The next in preference was summer legumes with seven students checking this enterprise, or 14.6

percent. Five students, or 10.4 percent, checked perennial summer legumes, while four students, or 8.3 percent, checked sudan grass. This survey showed that there was no interest in row crops.

Table XI conflicts with Table VI. Table VI shows that there was no interest in annual summer legumes or perennial summer legumes, whereas Table XI shows that there was some interest in these legumes. The reason for this difference is that the student had only one choice in Table VI. They were: feeding steers, pecan production, and planting bermuda. These were not included in Table XI.

TABLE XII

RESPONSES OF FORTY-EIGHT VOCATIONAL AGRICULTURE STUDENTS IN THE LONE GROVE HIGH SCHOOL WITH REGARD TO GRADES MADE ON FIELD TRIPS TO THE LONE GROVE EXPERIMENT FARM

Average Grade	Number Students Indicating				All Classes	
	Seniors	Juniors	Sophomores	Freshmen	No.	No. Visits
86	6				6	23
77		10			10	19
65			16		16	14
51				16	16	8
Totals					48	64

The fact that the more field trips taken to an experiment farm the higher the students grades, is presented in Table XII. There were 48 students enrolled in vocational agriculture that took the field trips. Some of the students visited the farm more often than others, therefore had a more thorough study of the farm. All of the boys were introduced



to all of the projects carried out on the farm. The Noble Foundation sponsored an all-day field trip whereby the entire farm was under observation by all of the students; therefore, they all had some instruction as to what was on the farm. A test of 50 questions was prepared and presented to the students, and the results tested and graded. The senior class had an average grade of 86 and had visited the farm 23 times. The junior class had an average grade of 77 and visited the farm 19 times. The sophomore class had an average grade of 65 and had visited the farm 14 times. The freshman class had an average grade of 51 with a total number of eight visits.

This table shows that as the visits decreased, likewise, the grade decreased. Therefore, repetition in teaching is often helpful in doing a more thorough job of teaching high school students.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

This study has aided the author to better understand the problems that arise in sponsoring field trips for all-day students of vocational agriculture. The information gathered will aid in building a better teaching plan for instructing all-day students.

#### Method

A survey was taken with 48 students of the Lone Grove vocational agriculture classes participating to obtain detailed and accurate knowledge of the needs and interests of the students pertaining to field trips.

#### Summary

#### Findings and Interpretations

It was found that 58.3 percent of the students enrolled in vocational agriculture preferred field trips to all other types of instruction, contrasted with 27.2 percent of the students who preferred motion pictures, and 14.5 percent preferring film strips. There was no indication of first preference for other methods of instruction such as conferences and classroom instruction. Therefore, this survey would seem to show that visual-aid type of instruction was preferred to all other types of instruction.

It was found that 62.5 percent of the students enrolled in vocational agriculture desired to review material before the field trip. It was found that 29.2 percent of the students desired reviewing material before and after field trips. No additional instruction was the preference of 8.3 percent of the students.

Of the 48 students enrolled in vocational agriculture, 73 percent preferred the vocational agriculture instructor to outside instructors, while 27 percent preferred the outside instructors.

It was interesting to note that 66.6 percent of the students preferred one field trip each week, while 27.2 percent preferred two field trips each week. Once each two weeks was the preference of 6.2 percent of the students, while there were no students interested in limiting field trips to once a month.

With regard to major interests, it was found that 31.3 percent of the students were interested in brush control, 27.2 percent in feeding silage, and 18.4 percent indicated major interest in feeding steers. Winter pastures were the preference of 8.4 percent of the students. Also, pecan production interested 8.4 percent of the students. Planting bermuda grass was the preference of 6.3 percent of the students, while no individual indicated major interest in winter legumes, crop breeding, perennial summer legumes, annual summer legumes, and green manure crops.

The fact that livestock is the main enterprise in the Lone Grove community may have been a contributing factor in the survey results which showed 83.3 percent of the boys preferring livestock production, as contrasted to 16.7 percent preferring crop production.

There was more interest shown in spring and winter pastures, with 33.3 percent of the students preferring spring, and 31.3 percent

preferring winter pastures as a major interest in this area. Fall pastures had the interest of 18.7 percent of the students, while 16.7 percent were interested in summer pastures.

Actual observation, and the results, of all types of methods of clearing timber by the Noble Foundation was a contributing factor in regard to the students' interest in this survey. The airplane spray method was preferred by 35.4 percent of the students, while 29.2 percent preferred the tree injector method. The bulldozer method was the preference of 22.9 percent, while 12.5 percent preferred the hand spray method. No interest was shown in regard to the axe method.

The greatest amount of interest in regard to livestock feeding practices was shown in the use of stilbestrol, with 29.2 percent preferring this practice. Pastures was a close second preference, with 27 percent interested in this enterprise, while 25 percent of the students preferred feeding silage, and 18.7 percent preferred dry lot feeding.

With regard to major interests in the field of crop production, the survey shows that 43.8 percent of the students preferred silage, while 22.9 percent of the students were interested in small grains, and 14.6 percent interested in summer legumes. Perennial summer legumes was the major interest of 10.4 percent of the students, while 8.3 percent preferred sudan grass, and no major interest shown in row crops.

The students were tested on the material covered on their field trips, and the survey shows that the seniors had an average grade of 86 after 23 visits to the experiment farm. This grade compares with that of the juniors, who had an average grade of 77 with 19 visits, while the sophomores' average grade was 65 after 14 visits to the farm. The

freshmen had an average grade of 51 after eight visits to the experiment farm.

#### Recommendations for Further Study

In preparing the questionnaire for the students in the Lone Grove vocational agriculture classes, they only had one choice as to preference to type of project or enterprise preferred. This author thinks that it would have been more satisfactory if the students could have had a first, second, and third choice, due to the fact that some of the tables conflict when some projects are compared to other projects, such as crops to livestock. But when crops are compared to crops, the tables do show the boys' interest. Therefore, if they did have more than one choice, the tables would show their secondary interests, and the findings would then be a more satisfactory indicator of broader student interest.

Where the students had a choice of instructors, there should have been a choice of the vocational agriculture instructor and the staff members combined. This author feels that the students would have preferred this choice.

A very important fact that is brought out in this report is that when scheduling field trips, the students should be prepared over a long period of time. Some subject matter that is studied in the field needs considerable preparation in order that the student can get the maximum benefit out of the field trip. This type of planning would also avoid duplication in subject matter.

Another recommendation this author feels would be of interest is to invite other agriculture departments to participate in some of the field trips, especially all-day programs.

Also, careful consideration should be given to the length of the field trip in order to avoid conflict with the school system. Also, transportation should be arranged with the school administration in advance in order to avoid any dispute with school authorities.

#### Conclusions and Recommendations

The following conclusions and recommendations are presented in summarized form:

- I. The facilities of the agriculture experiment station constitutes a very valuable source of information for teaching vocational agriculture.
- II. The interest of the students can be maintained at a very high level through the use of well planned field studies conducted on the experiment station.
- III. To make the most effective use of the station personnel, the teacher should visit with the person to be in charge previous to the time when the field trip is taken. The teacher can then share with the station specialist with the actual instruction, and the station specialist can take the role of a resource person, rather than having complete responsibility for the instruction to be given in any one period.
- IV. The teacher should make careful preparation for the trip, and should familiarize the student in every way possible with the problems which are to be considered. The teacher should also feel responsible for helping the student in recognizing the full nature and extent of the problem, or problems, which are to be

considered for each individual field trip. Only in problem solving can the most effective learning take place.

- V. The teacher should attempt to help the student in every way possible to think in terms of their own farm situation, particularly in terms of their own farming program.
- VI. It is also recommended that after each field trip each student be asked to present certain questions which he feels were the most important findings of each session. These questions could be used to make up the examination which might be given at a later date.
- VII. From two to three periods should be spent in an evaluation summary after each field trip taken.

A FOUR YEAR SCHEDULE OF FIELD TRIPS TO AGRICULTURE EXPERIMENT FARMS  
FOR VOCATIONAL AGRICULTURE STUDENTS

<u>Month</u>	<u>Freshmen</u>	<u>Sophomores</u>	<u>Juniors</u>	<u>Seniors</u>
Sept.	Guar-sorghum silage experiment. Filling upright silos.	Filling upright silos. Sudan breeding plots	Annual summer legumes.	Perennial summer legumes.
Oct.	Explanation of treatments, grades, and weights of steers.	Planting of fall grains, oats, wheat, and barley.	Introducing winter legumes in established grasses.	Four grasses planted in and fertilized with nitrogen and phosphorus. Grass planting.
Nov.	Check on progress of steers on feed at Lone Grove.	Check on progress of steers on feed at Lone Grove.	Check on progress of steers on feed at Lone Grove.	Check on progress of steers on feed at Lone Grove. Check growth and measure height of Elbon and Abruzzi rye.
Dec.	Spray sprouts for brush control.	See steer calves for wintering.	Spray sprouts for brush control. Fall forage production of small grain and vetch varieties.	Pecan harvest. Check pastures which consist of all-season grazing, rye-vetch, vetch-sudan, bermuda-vetch.
Jan.	Using tree injector to kill trees.	Using tree injector to kill trees.	Using tree injector to kill trees.	Using tree injector to kill trees.
Feb.	Reseeding sprayed areas with grasses and legumes.	Effect of winter grazing on rye and vetch for seed production. Small grain and vetch seed production.	Check on progress of calves on weighing date.	Check on progress of calves on weighing date.



A FOUR YEAR SCHEDULE--Cont'd

Month	Freshmen	Sophomores	Juniors	Seniors
March	Thinning and general management of pecans.	See calves in pens before being turned to pasture.	Effect of winter grazing on rye and vetch for seed production. Small grain and vetch for vetch seed production.	Thinning and general management of pecans. See calves in pens before being turned to pasture.
April	Method of planting bermuda grass.	Effect of winter grazing on rye and vetch for seed production.	Spring forage production of small grain and vetch varieties.	Green manure crops.
May	Spraying pecan trees.	Rye selection nursery and observational nursery.	Inspection of growth in reseeded area and sprigged area.	Effect of winter grazing on rye and vetch for seed production. Early growth of warm season forage crops.

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## APPENDIX

1. Attendance Record
2. Interview Form
3. Lone Grove Farm, West Part
4. Lone Grove Farm, East Part
5. Experimental Plots,  
    Reddish Prairie Soil
6. Experimental Plots, Cross  
    Timber Soils

ATTENDANCE REPORT OF THE VOCATIONAL AGRICULTURE STUDENTS OF THE LONE GROVE SCHOOL  
 ATTENDING FIELD TRIPS TO THE NOBLE FOUNDATION LONE GROVE AGRICULTURE  
 EXPERIMENT FARM FOR THE YEAR OF 1956-1957

Name	School Classification	Date														Total													
		9-17-56	9-24-56	10-1-56	10-3-56	10-12-56	10-19-56	11-14-56	11-16-56	12-3-56	12-10-56	12-17-56	1-7-57	2-8-57	2-15-57		2-25-57	3-3-57	3-10-57	3-24-57	4-1-57	4-13-57	4-21-57	5-1-57	5-5-57	5-11-57	5-15-57	5-16-57	
Dexter Boyd	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			23	
Don Copeland	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			23
Jim Gray	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			22
Darwin Gothard	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			22
Gary Matthews	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			23
Dale Trent	Senior	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			22
Donny Rains	Junior	x			x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		18
Kenneth Hacker	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Jerell Joy	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Wayne Lamascus	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x			x		x	x	x	x		18
Gary Miller	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Jerry Price	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Dale Turner	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Wayne Dobbs	Junior	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x		x	x	x	x		19
Kenneth Smith	Junior		x		x	x	x			x	x											x	x	x	x	x			11
Alvin Tankersley	Junior											x					x				x	x	x	x		x			7
Jackie Copeland	Sophomore	x		x		x	x		x		x	x										x	x	x		x			13
Cleburn Cook	Sophomore	x		x		x	x		x		x	x										x	x	x		x	x		14
James Cook	Sophomore	x		x		x	x		x		x	x										x	x			x	x		13
Harold Gothard	Sophomore	x		x		x	x		x		x	x											x	x			x	x	13
Bill Hatfield	Sophomore	x		x		x	x		x		x	x											x		x		x	x	13
Joe Bob Kelty	Sophomore	x		x		x	x		x		x	x											x	x	x		x	x	14
Rickey Loard	Sophomore			x		x	x		x														x	x	x		x	x	11

ATTENDANCE RECORD--Cont'd

Name	School Classification	Date														Total											
		9-17-56	9-24-56	10-1-56	10-3-56	10-12-56	10-19-56	11-14-56	11-16-56	12-3-56	12-10-56	12-17-56	1-7-57	2-8-57	2-15-57		2-25-57	3-3-57	3-10-57	3-24-57	4-1-57	4-13-57	4-21-57	5-1-57	5-5-57	5-11-57	5-15-57
Troy Morris	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x	x	x	x	14
Gray Milliken	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x	x	x	x	13
Ronnie Roach	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x		x		13
Glen Rabey	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x	x	x	x	14
Ed Yarbrough	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x	x	x	x	14
Kenneth Keith	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x				12
Ed Johnson	Sophomore										x	x				x					x	x	x	x	x		8
Glen Smith	Sophomore	x	x		x	x	x	x	x	x	x					x					x	x	x	x	x	x	14
Larry Bourns	Freshman	x				x			x	x					x					x					x	x	8
Gordon Cooper	Freshman	x				x			x	x					x					x					x	x	8
Jack Donham	Freshman	x				x			x	x					x					x					x	x	8
Harold Hammett	Freshman	x				x			x	x					x					x					x	x	8
Sidney Matthews	Freshman	x				x			x	x					x					x					x	x	8
Richard Magee	Freshman	x				x			x	x					x					x					x	x	8
David Norton	Freshman	x				x			x	x					x					x					x	x	8
Gordie Nichols	Freshman	x				x			x	x					x					x					x	x	8
Charles Taleferro	Freshman	x				x			x	x					x					x					x	x	8
Jimmy Turner	Freshman	x				x			x	x					x					x					x	x	8
Donny Word	Freshman	x				x			x	x					x					x					x	x	8
Don Young	Freshman	x				x			x	x					x					x					x	x	8
Bill Lyons	Freshman	x				x			x	x					x					x					x	x	8
Dale Sikes	Freshman	x				x			x	x					x					x					x	x	8
Tom Carlton	Freshman	x				x			x	x					x					x					x	x	8
John Riley	Freshman	x				x			x											x							4
James Sigler	Freshman	x				x			x						x												4

PROBLEM: An Evaluation of the Educational Value of Field Trips Made to an Agricultural Experiment Station

- PURPOSE:
1. To determine how effective field trips are to all-day students.
  2. To determine the need for field trips to all-day students of vocational agriculture
  3. To determine a satisfactory course of study to improve field trips.
  4. To promote more interest by utilizing outside instructors.

PROCEDURE: During the school year of 1956-1957, the vocational agriculture class visited the Lone Grove experiment farm for scheduled field studies. These classes were tested on these field studies, and at the end of the year were tested as to the type and method of field trips that were most desired.

#### SCHEDULE A

#### Interview Form

##### I. General Information

Name \_\_\_\_\_ Age \_\_\_\_\_

Classification \_\_\_\_\_ Number of years in agriculture \_\_\_\_\_

##### II. Survey of Individual Farm Interests

A. Check the problem or events that you liked best.

1. Field trips \_\_\_\_\_ 2. Classroom \_\_\_\_\_

3. Film strip \_\_\_\_\_ 4. Motion picture \_\_\_\_\_

5. Conference \_\_\_\_\_

B. Check the method that you liked best in preparing for a field trip.

1. Review of literature before field trip \_\_\_\_\_

2. Review of literature before and after field trip \_\_\_\_\_

3. No review \_\_\_\_\_

C. Check instructor you prefer for field trips.

1. Vocational agriculture instructor \_\_\_\_\_ 2. Staff \_\_\_\_\_

- D. How often should vocational agriculture classes take field trips?
1. Once each week\_\_\_\_\_
  2. Once each two weeks\_\_\_\_\_
  3. Once each month\_\_\_\_\_
  4. Twice each week\_\_\_\_\_
- E. Check the enterprise or problem that you liked best.
1. Annual summer legumes\_\_\_\_\_
  2. Silage\_\_\_\_\_
  3. Crop breeding\_\_\_\_\_
  4. Perennial summer legumes\_\_\_\_\_
  5. Green manure fertilization\_\_\_\_\_
  6. Feeding steers\_\_\_\_\_
  7. Winter pastures\_\_\_\_\_
  8. Winter legumes\_\_\_\_\_
  9. Pecans\_\_\_\_\_
  10. Brush control\_\_\_\_\_
  11. Planting bermuda\_\_\_\_\_
- F. Check the one you like best.
1. Livestock enterprise\_\_\_\_\_
  2. Crop enterprise\_\_\_\_\_
- G. Check the following pastures that you like best.
1. Fall\_\_\_\_\_
  2. Winter\_\_\_\_\_
  3. Spring\_\_\_\_\_
  - ~~4. Summer\_\_\_\_\_~~
- H. Check the following as to the type of clearing timber that you like best.
1. Airplane\_\_\_\_\_
  2. Tree injection\_\_\_\_\_
  3. Bulldozer\_\_\_\_\_
  4. Hand spray\_\_\_\_\_
  5. Axe\_\_\_\_\_
- I. Check the following practices used at the Lone Grove Experiment Farm as to importance to livestock production.
1. Dry lot feeding\_\_\_\_\_
  2. Feeding silage\_\_\_\_\_
  3. Pastures\_\_\_\_\_
  4. Stilbestrol\_\_\_\_\_
- J. Check the following practices used at the Lone Grove Experiment Farm as to importance to crop production.
1. Annual summer legumes\_\_\_\_\_
  2. Silage\_\_\_\_\_
  3. Perennial summer legumes\_\_\_\_\_
  4. Sudan grass\_\_\_\_\_
  5. Fall grass\_\_\_\_\_
  6. Row crops\_\_\_\_\_

## VITA

Robert H. Harl

Candidate for the degree of

Master of Science

Report: AN EVALUATION OF FIELD TRIPS TAKEN BY VOCATIONAL AGRICULTURE  
CLASSES TO AN AGRICULTURAL EXPERIMENT STATION FARM

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