

THE NATURE AND STATUS OF VOCATIONAL HORTICULTURE
AS PERCEIVED BY VOCATIONAL AGRICULTURE
TEACHERS IN THE STATE OF OKLAHOMA

By

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CHAPTER I

INTRODUCTION

Horticulture industries in Oklahoma represent a significant economic segment of the total agricultural industry within the state. In 1980, (1) data indicated that Oklahoma's nurseries and garden centers contributed sales in excess of 17,797,000.00 dollars. When you consider just this small portion of the horticultural industry you can see that a large number of employees are needed to provide the necessary skills to support a growing industry of this size. When you begin to expand this industry into many of the other occupational areas which need skill support such as, landscape architecture, nursery production, floriculture production, woody ornamentals, turf production, vegetable crops, retail florist, golf course superintendents, and many other opportunities in management, the magnitude of the possible labor force is staggering.

This amazing industry will need without question more and more skilled employees to keep up with the expected growth rate of the industry. Where will these people come from and more importantly, who will train and educate these people to become a part of this developing industry?

These questions are not easily answered; however, studies indicate the importance of proper training in horticulture. After researching numerous nurseries, Hoover (2) found employees prefer workers who have a farm background or have worked in a nursery and/or greenhouse. He further explained that experience gained while being enrolled in horticulture programs increase the opportunity for employment.

Other research has found similar results. Griffith (3) reveals that vocational horticulture departments are needed to improve the quality of employees in horticultural fields. For example, employees in ornamental production must carry an individual until he gains experience to become a productive worker. There are few individuals who have well-rounded experience in ornamental horticulture. This on the job training takes time and results in initial low wages for the employees. Steps are needed to improve the training of individuals before they take a job in horticulture. Vocational training is one of the better ways to improve employees' initial productivity. This type of research indicates the importance of knowledge and training that future employees of horticulture will need in order to be productive.

With the expansion of horticulture, the increase needed for educated people in horticulture will become more apparent. Training in horticulture is generally done by vocational programs and universities. The more advanced

training is for the most part done by universities and colleges, while the more general and hands-on skills are taught by vocational horticulture programs.

Vocational horticulture programs are being supported by groups like the Future Farmers of America, 4-H clubs, and horticulture clubs. These organizations help in attracting students to vocational horticulture programs and aid in the training of the many skills needed in horticulture.

Statement of the Problem

With the increased demand for skilled workers in horticultural fields, vocational programs will have to make the attempt to develop courses that will train individuals who are interested in horticulture careers. There are vocational agriculture programs in Oklahoma that have horticulture as part of their curriculum. The following schools offer horticulture as credit courses:

Tupelo	Agra	Roland
Roff	Bethel	Central High (Marlow)
Hugo	Stratford	Madill
Hartshorne	Westville	Keota
Byng	Stilwell	Harrah
Canton	Collinsville	Checotah
Helena-Goltry	Laverne	Apache
Navajo	Verden	

These following schools have full credit horticulture programs:

Chisholm
Guthrie
Broken Arrow
John Marshall
Lawton High
Lawton Eisenhower
Chickasha
Comanche

These programs are training students to be able to pursue careers in the wide range fields of horticulture. These 31 programs are training students in some aspect of horticulture. Due to the immense differences which are possible in vocational horticulture programs, it would not be feasible to try to determine the effectiveness of all the different types of horticulture programs. However, elements specific to most vocational horticulture programs need to be explained and the current status of training in vocational horticulture identified.

The horticulture industry is becoming a major influence on Oklahoma economy. Greenhouse space in Oklahoma has increased eleven percent from 1978 to 1981 (4). This alone indicates that many more skilled employees will be needed. The type of training for these horticulture employees will for the most part, come from vocational programs.

The elements used in defining vocational horticulture and the current status of vocational horticulture needs to be examined to increase awareness of horticulture programs in the state.

Purpose of the Study

The primary purpose of this study was to identify specific elements common to programs of horticulture found in vocational agriculture within the state of Oklahoma. A secondary purpose was to determine the level of importance

of identified horticulture curriculum as perceived by teachers of vocational agriculture.

Objectives of the Study

1. Identify specific elements in vocational horticulture which are common in a horticulture program in vocational agriculture.

2. Identify the nature, status, what is offered, and level of importance of curriculum components in vocational horticulture programs as perceived by vocational agriculture teachers.

Assumptions Basic to the Study

In order to make this study possible, the following assumptions were made:

1. All horticulture teachers in this study gave honest and sincere responses to the questionnaire.

2. All horticulture teachers are qualified in teaching the same basic skills in horticulture.

3. All students graduating from their programs are properly trained to work in a horticultural field.

4. It was assumed that the instrument used for collection of the data would adequately determine the objectives of this study. The questionnaire was mailed to the respective vocational horticulture teachers.

Scope of the Study

The study attempted to survey the nature and status of vocational horticulture in a vocational agriculture setting. All existing horticulture programs in vocational agriculture within the state of Oklahoma were included in this study. No attempt was made to differentiate between the vocational horticulture teachers with different educational levels, years teaching experience, or professional success.

Definition of Terms

Vocational Horticulture--Refers to the training of an individual to enter a career in the many fields of growing flowers, fruit, vegetables, wood plants, landscaping, sale and management that are related to the horticulture industry.

Programs--A sequence of pre-determined, pre-planned activities designed to train individuals for a specific purpose.

Vocational Agriculture Instructor--Certified person employed by high schools to direct programs designed to meet the needs in Agriculture of high school youth and adults/young farmers.

Agricultural Mechanics--Refers to the instructional areas of agricultural power and machinery, agricultural construction and structures, agricultural electrification, and soil and water management, and agriculture mechanic skills.

Agricultural mechanics develops skills and abilities in these areas for both on-the-farm and off-the-farm activities.

Vocational Agriculture--Training program to teach young people about the science of agriculture and/or agricultural related occupations and to prepare them for furthering their education or entry into the world of work.

Vocational Horticulture Program--In this study, refers to a vocational horticulture program in a vocational agriculture setting.

CHAPTER II

REVIEW OF LITERATURE

The Review of Literature is used as a tool in determining the current research in horticulture as it relates to vocational programs, specifically in Oklahoma. It is also the intent of this review to determine what the current status of vocational horticulture is and further define its scope. With this in mind, this chapter was to present a collection of information which would be relevant to the development of this study. Much of the information and research that was obtained came from other states' publications concerning their vocational horticulture programs. (The studies selected were made in relationship to vocational horticulture nature and status. Few studies were found that were directly related to Oklahoma's horticulture program. However, there were a few studies that do show the scope of the horticulture industry in Oklahoma.

In order to gather information for this study, periodicals, personal interviews, professional magazines, and The Oklahoma Agriculture Status Book, were used as sources. To give organization to this review, the material was broken down into the following topics:

1. Specific elements that make-up vocational horticulture programs.
2. The nature and status of vocational horticulture programs.
3. Unrelated studies in agriculture mechanics.

Vocational horticulture is defined as the training of an individual to enter a career in the many fields of growing flowers, fruit, vegetables, and woody plants. In Oklahoma the curriculum used for vocational horticulture programs was developed by the State Department of Vocational and Technical Training, located in Stillwater. There was a committee that set the guidelines of the material to be taught. This group consisted of vocational agriculture teachers, horticulture instructors, businessmen from the floral and nursery industry, and curriculum specialists from the State Department of Vocational and Technical Training. The reasoning used for the development of a horticultural teaching curriculum comes from the increased demands of Oklahoma's horticulture industry (5).

Oklahoma's horticulture industry has steadily increased according to the Agriculture - 2000 publication (4). Many of the horticultural crops are a significant boost to the Oklahoma economy.

Nursery production, which is in primarily the eastern half of Oklahoma, ranks thirteenth in the nation. Midwestern Nursery, Inc., headquarters in Tahlequah, is currently the largest nursery in the United States.

Floriculture production has increased eleven percent from 1978 to 1981. Researchers believe that the projected outlook for the number of greenhouses in Oklahoma will continue to increase due to the amount of sunlight in this state as opposed to the Northern states. Turf grass production has had a steady increase from 1978 to 1981. There was an additional 1,044 acres of turf grass. Pecan production has also increased. It currently ranks fourth nationally (4).

According to Mitchell (5), the nursery industry has stabilized since the early 1980's. He suggested that the decline in construction of new homes during this time caused owners to purchase less landscaping material. He goes on to cite; however, that home owners are now buying landscaping shrubs and trees to increase the beauty and value of their present homes. Consequently, this market to home owners has allowed large and small nurseries to stay in production. Mitchell also gives an example of the marketing possibilities for nursery stock in Stillwater, Oklahoma. He cites that there are four nursery stores in Stillwater, a small city of 35,000 population; and he believes the present homeowners there are buying enough nursery stock to keep these four stores in business.

Vegetable production is one horticultural area where there has been a slight increase. From 1984 to 1986, the value of commercial vegetable crops in Oklahoma increased

from \$30,855,000.00 to \$35,415,000.00 (7). This indicates there is a market for vegetables grown in Oklahoma.

Jim Gallotte (8) revealed there has been little research done in the past two years to indicate the present status of fruit production; however, he believes that fruit and pecan production has increased slightly. He also gave an example on peach production - eight percent of the peaches produced in Oklahoma were grown in Garvin and Muskogee counties. Gallotte believes both counties' peach production increased during the past two years, and feels this fruit production is increasing state wide.

All of this research indicates that the horticulture industry will continue to grow in Oklahoma as well as many parts of the United States. Since the late seventies and through the eighties, vocational horticulture programs have been started in many schools to help train students for a career in horticulture. Many vocational programs in Oklahoma are offering horticulture as an added career opportunity to their existing vocational agriculture classes. Thompson (9) states that a strong SOEP is possible through the use of horticulture. In his programs, horticulture is organized into three sections:

1. Vegetable Crop Production
2. Ornamental Horticulture
3. Agriculture Mechanics

Thompson states that a successful horticulture program includes activities, projects, and agriculture mechanics.

He further states that the teaching of horticulture and the use of Agriculture Mechanics is typical. Many professionals in vocational horticulture agree with his theory.

The status of size of vocational horticulture can change the size of a vocational program. Craft (10) found vocational horticulture helpful to his enrollment in vocational agriculture. In this instance a small rural community in Bluffs, Illinois offers students horticulture that range from lawn care, to landscaping plants, gardening, pesticides use, and small fruit production. He later noted that some of his students use their horticulture as a profitable SOE program.

An article by Vanada (11) further confirms that horticulture can add to a vocational agriculture program. Vanada believes a vocational horticulture program will attract many students who may not otherwise enroll in vocational agriculture. Related subjects such as fertilizers, soil types, plant growth, and plant reproduction are already being taught in production agriculture. Horticulture would aid in the applied use of these units.

Tannenberg (12) believes that vocational student organizations, such as the FFA, make a big difference in our schools for teachers, communities, businesses, and most of all for students. Motivated, well-educated productive workers are what vocational student organizations help vocational education provide.

The growth of technology in the horticulture industry will result in employees that are better trained.

Richardson (13) states that seventy-one percent of nursery employers believe that four years of vocational training is important in receiving qualified employees.

Many students in urban area are enrolling in vocational horticulture classes. The urban students use horticulture as an SOE program. Parrish (14) believes that vocational horticulture is better for urban students than traditional production agriculture. In his program seventy-five percent of his students are female. He finds that many of his students see horticulture training as a back-up job or a possible extra job after they become adults.

In Pietrolungo's (15) judgement, the biggest aspect of agriculture in the urban setting is ornamental horticulture. He finds many of his students attracted to the program by livestock, but change their career goals to horticulture. His students SOEP consist of nursery container plants, house and foliage plants, and floral crop; plus jobs with the local nurseries. His teaching of horticulture centers around these projects.

According to Craft (16) students in an urban setting can be trained in horticulture programs for their four years by taking the following sequence of classes:

1. Ninth grade--Ornamental Horticulture
2. Tenth grade--Crop Production
3. Eleventh grade--Small Engine/Agriculture Management
4. Twelfth grade--Agriculture Construction

These units of instruction will allow a student to enroll in vocational horticulture and vocational agriculture.

Related Literature

Agriculture mechanics, like vocational horticulture, is a part of many vocational agriculture programs. Many rural communities believe that agriculture mechanics is a necessary art of vocational agriculture. Agriculture mechanics allows students to improve their present SOEP and allows students to have an SOEP. Dr. Key (17) considers Agriculture Mechanics as a major tool for motivating students in Vocational Agriculture. This statement agrees with Crafts (16) on the use of horticulture as a motivating tool to attract students.

Agriculture Mechanics promotes the teaching of skills. Hoerner (18) found effective projects or activities includes the skills desired for the student to learn. Vocational horticulture teaches students skills by projects and activities that center around horticultural projects, nursery production floral crops (15).

Summary

Because of the rapid expanding horticultivie industry in Oklahoma, training will continue to be an important aspect of vocational horticulture programs. The elements of Oklahoma horticulture programs need to be identified in

order that vocational horticulture teachers can train students properly in the fields of horticulture in Oklahoma. The proper training of students in horticulture fields will be a challenge to vocational horticulture teachers.

CHAPTER III

DESIGN AND CONDUCT OF THE STUDY

The goal of this study was to determine the nature and status of vocational horticulture as a part of the vocational agriculture program in Oklahoma. The purpose and specific objectives of the study determined to some extent what methodology would be used in obtaining the appropriate data.

In order for the information to be meaningful and usable, Hoppe's and Passon's (19) guidelines for collecting and analyzing the data required the following specific tasks to be formulated:

1. Determination of the population from which the most appropriate data was to be collected.
2. Development of an appropriate vehicle for the collection of data pertinent to the study.
3. To develop the most effective, yet short and concise procedure for collecting the data.
4. Determination of proper procedures for analyzing collected data.

The Study Population

The population of this study included thirty-one certified teachers of vocational horticulture and vocational agriculture who are teaching horticulture in their programs. (All teachers currently teach in Oklahoma high schools). A list of horticulture programs was compiled by records from the State Department of Vocational and Technical Education. This consisted of teachers who taught horticulture full-time (4 courses or more) and part-time (one hour credit).

Development of the Instrument

A mailed questionnaire was determined to be the most appropriate vehicle for data collection. The criteria selected for use in the questionnaire were considered appropriate to the study. The items included in the questionnaire were derived from several sources. Interviews with horticulture professors at Oklahoma State University, a State Department of Vocational Technical Curriculum specialist, vocational horticulture teachers and business personnel in the horticulture industry. These professionals provided insight to the type and content of the questions which they deemed relevant to the study. The review of literature also provided insight into topic areas of concern and importance to the questionnaire.

The questionnaire included three sections. The first section was enrollment. It was developed to define status of vocational horticulture programs. Three types of

enrollment were included; they summarized total enrollment, dual enrollment, and Future Farmers of America (FFA) enrollment.

Under the same heading enrollment, was two other areas that were designed to identify current horticulture status. These areas are credit hours taught and types of horticulture classes (Horticulture I, II or both).

The second part was designed to show the size or scope of the operation. It was arranged in a format to identify the number of greenhouses and the number of square feet currently being used. This data as expressed in square feet was recorded by the respondent in a range of possibilities. Also included in this task was number of acres of nursery production and vegetable production used for instructional purposes.

The final section of the questionnaire was developed to determine the importance of horticulture subjects taught. It was separated into two areas. Area I was the Oklahoma Horticulture Core Curriculum. Area II included other teaching areas not included in horticulture core curriculum. These areas were determined from horticulture teachers at the public schools and college level and from the business sector.

Analysis of Data

A degree of importance was used to determine the instructors perception of the teaching areas. The

importance levels were divided as follows:

- 0 No Importance
- 1 Low Importance
- 2 Medium Importance
- 3 High Importance
- 4 Extreme Importance.

The real limits established for interpretation of the instructors' perceptions of the teaching areas were as follows:

0.00 - 0.49	No Importance
.50 - 1.49	Low Importance
1.50 - 2.49	Medium Importance
2.50 - 3.49	High Importance
3.50 - 4.00	Extreme Importance

The format of the questionnaire and the design of the questions contained were developed using guidelines set forth by Hoppe and Parson (19). The questions were designed and grouped to fulfill the objectives of the study. Types of responses solicited by the questions includes 'yes' or 'no' and very short subjective fill-in-the-blank responses and ranking questions. The questionnaires were mailed to vocational horticulture teachers. After two weeks, another questionnaire was mailed to those teachers who had not responded. A phone was used to encourage those instructors who had not returned a questionnaire after the second one was mailed to them. A third and final mailing was sent two weeks after the second questionnaire was mailed. Again a phone was used to encourage participation in the study.

After questionnaires were returned, data was collected and results were tabulated. Percentages, means and rankings were calculated to demonstrate the responses received from

the respondents and place those responses in a usable form for interpretation.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this study was to identify specific elements common to programs of horticulture found in vocational agriculture within the state of Oklahoma. A second purpose was to determine the level of importance of identified curriculum components of horticulture as perceived by teachers of vocational agriculture. In order to accomplish this purpose, the following objectives were formulated:

1. Identify what specific elements in vocational horticulture which are common in a horticulture program in vocational agriculture.

2. Identify the nature, status, what is offered and level of importance of curriculum components in vocational horticulture programs as perceived by agriculture teachers.

As was noted in the preceding chapter, the questionnaire was designed to measure these objectives as they relate to vocational horticulture.

The population for this study was identified as thirty-one (vocational horticulture - vocational agriculture) programs. The questionnaires were mailed to instructors on

March 22, 1988. After two weeks, seventeen questionnaires (51%) were returned. A phone survey was used to encourage more instructors to complete the questionnaire. Four questionnaires were stamped and mailed to instructors who requested another questionnaire. As of April 15, 1988, another seven questionnaires were returned, for a total of 24 (77%). The remaining seven who had not returned a questionnaire were called and encouraged again. Seven copies of the questionnaire were mailed to each of the non-respondents. A total of 28 (90%) respondents had completed a usable questionnaire by May, 1988.

The horticulture instructors who responded to the questionnaires were asked to identify which district they taught in. Table I is a summary of respondents by district as well as a total response over all districts. Five instructors (17.86%) responded from the Northeast District, six (21.43%) from the Southeast District, four (14.28%) from the Southwest District, five (17.86%) from the Northwest District, and eight (18.57%) from the Central District. The largest percentage of horticulture programs were found in the Central (28.57%) and Southeast (21.48%) Districts of Oklahoma. Both of these districts accounted for 50% of the horticulture programs responding to the survey.

The data analyzed in Table II gives a breakdown of total enrollment, in horticulture courses taught in vocational agriculture programs by district in the state. Thirteen of the 28 programs (46.43%) responding enrollments

TABLE I
A SUMMARY OF HORTICULTURE PROGRAMS
BY DISTRICT

DISTRICT	FREQUENCY DISTRIBUTION	
	N	%
Southeast	6	21.43
Northeast	5	17.86
Northwest	5	17.86
Southwest	4	14.28
Central	8	28.57
TOTAL	28	100.00

TABLE II
TYPES OF ENROLLMENT RANGES IN
HORTICULTURE PROGRAMS BY DISTRICT

RANGES	<u>DISTRICTS</u>									
	<u>NORTHWEST</u>		<u>SOUTHWEST</u>		<u>CENTRAL</u>		<u>NORTHEAST</u>		<u>SOUTHEAST</u>	
	N	%	N	%	N	%	N	%	N	%
ENROLLMENT BY PROGRAM										
0-10	1	20.00	0	0.00	2	25.00	0	0.00	1	16.67
11-25	3	60.00	2	50.00	2	25.00	3	60.00	3	50.00
26-40	0	0.00	0	0.00	1	12.50	2	40.00	1	16.67
41-55	0	0.00	0	0.00	2	25.00	0	0.00	0	0.00
56-70	1	20.00	0	0.00	1	12.50	0	0.00	1	16.67
71-85	0	0.00	1	25.00	0	0.00	0	0.00	0	0.00
86-100	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
101-115	0	0.00	1	25.00	0	0.00	0	0.00	0	0.00
SUB-TOTALS	5	100.00	4	100.00	8	100.00	5	100.00	6	100.00

range from 11-25 students per horticulture program. No other enrollment range has the level of enrollments as illustrated in 11-25 students range. Four programs (14.29%) have 0-10 students per program with an equal number four, have 16-40 students per program. One program (3.57%) in the state had an enrollment of over 101 students.

When analyzing the districts and enrollment ranges by program the Central District had eight total programs, with two programs (25%) having an enrollment range of 0 - 10 students. One of the eight programs (12.5%), had an enrollment range of 41-55 students.

It should be noted that the Southwest District has the most students enrolled in a horticulture program by range, with one program having a range of 101-115 students. This one program is a program which is taught in three separate schools and is considered a single program. The Southwest District also had a program with a student enrollment range of 71-85 students enrolled in the horticulture classes.

There are no districts in the state which do not have programs of horticulture being taught in the vocational agriculture program. The district with the fewest programs, four, the Southwest and the highest number of programs, eight, is found in the Central District.

When analyzing Table III it was noted that dual enrollment (enrollment of students in vocational horticulture programs and vocational agriculture programs) is noticeably less than students enrolled only in

TABLE III
CONCURRENT ENROLLMENTS OF STUDENTS IN
HORTICULTURE AND VOCATIONAL
AGRICULTURE PROGRAMS

RANGES	<u>DISTRICTS</u>									
	<u>NORTHWEST</u>		<u>SOUTHWEST</u>		<u>CENTRAL</u>		<u>NORTHEAST</u>		<u>SOUTHEAST</u>	
	N	%	N	%	N	%	N	%	N	%
ENROLLMENT BY PROGRAM										
0-10	5	100.00	3	75.00	7	87.50	4	80.00	5	83.33
11-25	0	0.00	1	25.00	1	12.50	1	20.00	1	16.67
26-40	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
41-55	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
56-70	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
71-85	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
86-100	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
101-115	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
SUB-TOTALS	5	100.00	4	100.00	8	100.00	5	100.00	6	100.00

horticulture. The greatest range of concurrent enrollment fell into the 0-10 student per program. Twenty-four programs or 85.71 percent belong in this category, whereas 14.29 percent or four programs have an enrollment range of 11-25 students per program. All five programs (100%) in the Northwest District have a dual or concurrent enrollment with 10 students or less. In the other four districts 74% or more of the programs had a dual enrollment range of 0-10 students.

The data in Table IV reveals a number of students in vocational horticulture that are members of the Future Farmers of America (FFA). Of the twenty-eight horticulture programs, fourteen (50%) had an FFA enrollment range of 11-25 students. Six programs (21.44%) had an FA membership range of 0-10 students, and three programs (10.71%) had an FFA enrollment range of 26-40 students per program. The Southwest, Northeast, and Southeast had 50 percent or greater of their horticulture programs with an FFA enrollment range of 11-25 students per program. The Northwest District had 40 percent or two programs with FFA enrollment range of 11-25 students per program. The Central District had three programs (37.5%) that was in the same range of 11-25 students enrolled in FFA. As noted previously one program (3.57%) had a large FFA enrollment range of 101-115 students per program. As pointed out earlier this program stems from three different schools in the Southwest District. It should be noted that the

TABLE IV
FUTURE FARMERS OF AMERICA MEMBERSHIP IN
HORTICULTURE PROGRAMS BY DISTRICTS

RANGES	<u>DISTRICTS</u>									
	<u>NORTHWEST</u>		<u>SOUTHWEST</u>		<u>CENTRAL</u>		<u>NORTHEAST</u>		<u>SOUTHEAST</u>	
	N	%	N	%	N	%	N	%	N	%
FFA										
MEMBERSHIP										
BY PROGRAM										
0-10	2	40.00	1	25.00	2	25.00	0	00.00	1	16.67
11-25	2	40.00	2	50.00	3	37.50	4	80.00	3	50.00
26-40	0	0.00	0	0.00	1	12.50	1	20.00	1	16.67
41-55	0	0.00	0	0.00	2	25.00	0	0.00	0	0.00
56-70	1	20.00	0	0.00	0	0.00	0	0.00	1	16.67
71-85	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
86-100	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
101-115	0	0.00	1	25.00	0	0.00	0	0.00	0	0.00
SUB-TOTALS	5	100.00	4	100.00	8	100.00	5	100.00	6	100.00
	28									

relationship of FFA enrollment and total enrollment was clearly related. Table IV indicates that 50 percent of the schools have an FFA enrollment range of 11-25 students per school. As indicated earlier in Table II, 46.43 percent of the total enrollment fell into the same range (11-25 students per program). Table IV confirms this relationship with the highest percent coming from the same range, 11-25 students per school per school in all five program.

Table V gives a summary of courses offered in horticulture offered. As the data indicates, 46.43 percent or 13 programs offer Horticulture I and 46.43 percent or 13 programs offer Horticulture I and Horticulture II. Two programs or 7.14 percent (two programs offer alternatives to Horticulture I and II). Three districts, Southeast, Northeast, and Northwest, have the greatest percent, (60% or more) of their horticulture programs offering Horticulture I. The Southwest has 75 percent of their horticulture programs offering I and II. The Central District has four programs (50%) offering Horticulture I and II.

The data in Table VI provides a summary of credit taught each day by district. Of the twenty-eight programs, twelve programs (42.85%) teach one credit of horticulture. Six programs (21.43%) offer three credits of horticulture. Four schools or 14.29 percent offer two credits and four schools or 14.29 percent offer four credits in horticulture. Several districts, for example, the Northwest and the Southeast have more one hour credit programs than any other

TABLE V
SUMMARY OF HORTICULTURE COURSES OFFERED
IN OKLAHOMA VOCATIONAL-AGRICULTURE
PROGRAMS BY DISTRICT

District	Horticulture I N	Horticulture I & II N	Alternative N
Southeast	6	2	0
Northeast	5	2	0
Northwest	5	2	0
Southwest	4	3	1
Central	6	4	2
Total	26*	13	3

*Horticulture programs that offered both Horticulture I and II were also included in programs that offered Horticulture I.

TABLE VI
SUMMARY OF HORTICULTURE CREDIT TAUGHT
EACH DAY BY DISTRICT

CREDIT HOURS	SOUTHEAST		NORTHEAST		NORTHWEST		SOUTHWEST		CENTRAL		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
I	4	66.67	2	40.00	4	80.00	1	25.00	1	12.50	12	42.85
II	0	0.00	1	20.00	0	0.00	0	0.00	3	37.50	4	14.29
III	2	33.33	2	40.00	0	0.00	0	0.00	2	25.00	6	21.43
IV	0	0.00	0	0.00	0	0.00	0	0.00	1	12.50	1	3.57
V	0	0.00	0	0.00	1	20.00	2	50.00	1	12.50	4	14.29
VIII	0	0.00	0	0.00	0	0.00	*1	25.00	0	0.00	1	3.57
SUB-TOTALS	6	100.00	5	100.00	5	100.00	4	100.00	8	100.00	28	100.00

*Instructor instructs on program at three different schools with a total of eight credit hours.

type of program. The Northwest has 80 percent of their horticulture programs offering one hour credit. The Southeast has four programs (66.67%) offering one hour credit of horticulture. The Central District has 33.5 percent or three programs offering two hour credit and the Northeast has 40 percent or two programs that offer three hours credit. Furthermore, it was interesting to note that four programs or 14.29 percent offer five hour credit of horticulture. One instructor offers eight hours credit while teaching at three different schools.

The data presented in Table VII reveals the number of greenhouses per program. It was found that 19 programs (69.9%) have one greenhouse available for instruction. Six programs (21.4%) had two greenhouses available as facilities. However, three programs or 10.7 percent have no greenhouse facilities. Two of these programs (40%) are in the Northwest. They noted on the questionnaire that plans were being made to erect a greenhouse. All five districts have fifty percent or more of their programs with one greenhouse. The Northeast and the Southeast had two programs each that had two greenhouse facilities.

When the instructors were asked to give a range of the square feet of greenhouse space, sixteen programs had of 901 square feet or more of space for instructional use. The data shows, on Table VIII, 57.15 percent or 16 programs have greenhouse space of 901 square feet or more. Only one program (3.57%) has a greenhouse of 150 square feet or less.

TABLE VII
NUMBER OF GREENHOUSES UTILIZED
IN HORTICULTURE INSTRUCTION
BY DISTRICT

NUMBER OF GREENHOUSES	SOUTHEAST		NORTHEAST		NORTHWEST		SOUTHWEST		CENTRAL		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
NO GREENHOUSE	1	16.70	0		2	40.00	0		0		3	10.70
ONE GREENHOUSE	3	50.00	3	60.00	3	60.00	3	75.00	7	87.50	19	67.90
TWO GREENHOUSES	<u>2</u>	<u>33.30</u>	<u>2</u>	<u>40.00</u>	<u>0</u>		<u>1</u>	<u>25.00</u>	<u>1</u>	<u>12.50</u>	<u>6</u>	<u>21.40</u>
SUB-TOTALS	6	100.00	5	100.00	5	100.00	4	100.00	8	100.00	28	100.00

TABLE VIII
SQUARE FEET OF GREENHOUSE SPACE
BY DISTRICT

SQUARE FEET	SOUTHEAST		NORTHEAST		NORTHWEST		SOUTHWEST		CENTRAL		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
150 OR LESS	0	0.00	0	0.00	0	0.00	0	0.00	1	12.50	1	3.57
151-300	1	16.67	0	0.00	0	0.00	0	0.00	0	0.00	1	3.57
301-500	0	0.00	1	20.00	1	20.00	0	0.00	0	0.00	2	7.14
501-700	1	16.67	1	20.00	0	0.00	2	50.00	1	12.50	5	17.86
701-900	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
901 OR MORE	3	50.00	3	60.00	2	40.00	2	50.00	6	75.00	16	57.15
NO GREENHOUSES	<u>1</u>	<u>16.67</u>	<u>0</u>	<u>0.00</u>	<u>2</u>	<u>40.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>3</u>	<u>10.71</u>
SUB-TOTAL	6	100.00	5	100.00	5	100.00	4	100.00	8	100.00	28	100.00

Five programs (17.86%) greenhouses fell into the range of 501-700 square feet. Those districts that had fifty percent or more programs with 901 square feet or more include Southeast, Northeast, Southwest, and Central. The Southwest District had fifty percent or two programs that greenhouse space was in the range of 501-700 square feet. Again, the Northwest District had two programs (40%) with no greenhouse facilities.

The data summarized in Table IX gives the acres of nursery and vegetable production by district and state. The data reveals that vegetable production is used in instructing horticulture. There was a total of 18 acres in vegetable production at the 28 programs. In fact, acres of vegetable production are located in all five districts. The Southeast and the Northeast make up more than eighty percent (83.33%) vegetable production facilities in the state. The Northwest District had the smallest amount of acres for vegetable production instruction (1/2 acre).

In nursery production only two districts use acreage for instruction of nursery management. The Central had four acres (66.67%) of nursery instruction and the Southwest had the remaining 33.33 percent or two acres of nursery production. It was interesting to note that three districts had no nursery acreage in their horticulture programs.

The data from Table X includes the responses from the instructors on the utilization of the Oklahoma Horticulture Core Curriculum. Twenty-five (89.18%) of the instructors

TABLE IX
SUMMARY OF NURSERY AND VEGETABLE
PRODUCTION ACRES BY DISTRICT

TYPE OF PRODUCTION	SOUTHEAST		NORTHEAST		NORTHWEST		SOUTHWEST		CENTRAL		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
NURSERY PRODUCTION ACRES	0	0.00	0	0.00	0	0.00	2	66.67	4	72.73	6	25.00
VEGETABLE PRODUCTION ACRES	8	100.00	7	100.00	.5	100.00	1	33.33	1.5	27.27	18	75.00
	—	—	—	—	—	—	—	—	—	—	—	—
SUB-TOTAL	8	100.00	7	100.00	.5	100.00	3	100.00	5.5	100.00	24	100.00

TABLE X
UTILIZATION OF OKLAHOMA HORTICULTURE
CURRICULUM BY DISTRICT

<u>SOUTHEAST</u>				<u>NORTHEAST</u>				<u>NORTHWEST</u>				<u>SOUTHEAST</u>				<u>CENTRAL</u>				<u>TOTAL</u>			
YES	%	NO	%	YES	%	NO	%	YES	%	NO	%	YES	%	NO	%	YES	%	NO	%	YES	%	NO	%
6	100	0		4	80	1	20	4	80	1	20	4	100	0		7	87.50	1	12.5	25	89.18	3	10.72
QUESTION: DO YOU USE OTHER TEACHING MATERIALS?																							
6	100	0		5	100	0		3	60	2	40	3	75	1	25	7	87.50	1	12.50	24	85.71	4	14.29

use Oklahoma Horticulture Core Curriculum. Only three programs or 12.5 percent do not use the core curriculum. Those programs that do not use the Oklahoma Core Curriculum came from the Northeast, Northwest, and Central Districts.

From the same Table (X) is the results of the number of teachers who use other teaching material. Twenty-four (87.71%) of the twenty-eight instructors use other teaching materials. Two districts, the Northeast and Southeast District, had 100 percent of their instructors use other teaching material. The Northwest District had two (40%) instructors that did not use other teaching material.

The examples that instructors gave for other teaching material were numerous. There was a wide range given. They range from seed cantaloupes, field trips, OSU Fact Sheets, Texas Core Curriculum, Arizona Core Curriculum, Introductory to Greenhouse Production, landscaping books, gardening, and other miscellaneous materials.

The final section of the questionnaire asked instructors to respond to the importance of subject areas taught. They responded by indicating the degree of importance of each subject area taught on a five point scale. The scale was used to get the average response for each task with numerical values being assigned to each category as follows:

No Importance = 0
Low Importance = 1
Medium Importance = 2
High Importance = 3
Extreme Importance = 4

Real limits were established for interpretation of statistical data as follows:

0.00 - 0.49	No Importance
0.50 - 1.49	Low Importance
1.50 - 2.49	Medium Importance
2.50 - 3.49	High Importance
3.50 - Up	Extreme Importance

In the area of Oklahoma Horticulture Core Curriculum, it was clear that instructors rated its subject area highly. Table XI reveals their results. Five teaching areas rated 3.03 High Importance or higher. Plant propagation ranked the highest at 3.29. Three areas fell into the 2.82-2.86 range (soil, fertilizers and plant growth media). (This reveals that instructors believe that these areas are of high importance too). Only one area, pruning, had a medium importance. Pruning \bar{X} was a 2.000. It was interesting to point out that one instructor found pruning of no importance.

The data on Table XII summarizes the instructor's rating of other teaching material. Using the same real limits as on Table XI, twenty-eight other teaching areas were ranked on the level of instructors importance. Of all 28 teaching areas, safety \bar{X} was 3.00 and was ranked first. Leadership (2.89), sexual and asexual propagation (2.89), pesticides (2.71), fertilizers (2.79), soil media (2.78), and bedding plants (2.96) were all considered high importance to the horticulture instructors. It was noted that ten areas in the medium importance range had an \bar{X} of 2.00-2.46. The area that fell into this category includes,

TABLE XI
INSTRUCTOR'S RATING OF OKLAHOMA HORTICULTURE
CORE I BY TEACHING AREA

TEACHING AREA	<u>0</u> <u>NO</u>	<u>1</u> <u>LOW</u>	<u>2</u> <u>MEDIUM</u>	<u>3</u> <u>HIGH</u>	<u>4</u> <u>EXTRA</u>	<u>\bar{x}</u>	<u>RANKING</u>	<u>IMPORTANCE</u>
	IMPORTANCE							
Plant Propagation	0	0	4(8)	12(36)	12(48)	3.29	1	HIGH
Plant Production and Production	0	0	3(6)	15(45)	10(40)	3.25	2	HIGH
Plant I.D.	0	2(2)	2(4)	12(36)	12(48)	3.21	3	HIGH
Potting Procedures	0	0	5(10)	13(39)	10(40)	3.18	4	HIGH
Plant Problem and Control	0	1(1)	6(12)	12(36)	9(36)	3.03	5	HIGH
Soil	0	0	8(16)	16(48)	4(16)	2.86	6	HIGH
Fertilizer	0	0	10(20)	13(39)	5(20)	2.82	7	HIGH
Plant Growth Media	0	1(1)	8(16)	14(42)	5(20)	2.82	7	HIGH
Pruning	1	6(6)	14(28)	6(18)	1(4)	2.00	9	MEDIUM

TABLE XII
INSTRUCTOR'S RATING OF OTHER TEACHING
MATERIAL BY TEACHING AREA

TEACHING AREAS	\bar{X}	RANKING	IMPORTANCE
Safety	3.00	1	High
Bedding Plant Annual	2.96	2	High
Sexual and Asexual Propagation	2.89	3	High
Leadership	2.89	3	High
Fertilizer	2.79	5	High
Soil Media	2.78	6	High
Pesticides	2.71	7	High
Herbicides	2.46	8	Medium
Greenhouse Facilities	2.46	8	Medium
Landscape Design	2.46	8	Medium
Lighting and Photosynthesis	2.44	11	Medium
Landscape Maintenance	2.36	12	Medium
Floriculture	2.35	13	Medium
Retail and Wholesale Marketing	2.30	14	Medium
Alternative Ag. Crop	2.29	15	Medium
Problem Solving	2.19	16	Medium
Heating and Cooling	2.15	17	Medium
Horticulture and Diagnostic Training	2.00	18	Medium
Tree Identification	1.89	19	Medium
Plant Inventory	1.88	20	Medium
Nursery Production	1.86	21	Medium
Cold Frames and Hot Beds	1.81	22	Medium
Floral Design	1.75	23	Medium
Supply Ordering	1.64	24	Medium
Procurement of Equipment	1.50	25	Medium
Equipment Repair	1.43	26	Low
Advertising	1.36	27	Low
Computer Usage	1.32	28	Low

herbicides (2.46), landscape maintenance (2.35), floriculture (2.35), landscape design (2.46), greenhouse facilities (2.46), alternative crops (2.29), horticulture and diagnostic training (2.00), problem solving (2.19), retail and wholesale marketing (2.30), and heating and cooling (2.15). These ten areas were of the upper end of medium importance, and instructors in general found them important areas to teach. Eight other teaching areas classified into the \bar{X} of 1.5-1.89. These teaching areas still belong in the medium range of importance. However, they are all at the lower level of the medium range. The ranking of these eight areas of instruction is nineteen through twenty-five. The teaching areas included in this lower medium range are: tree identification (1.89), herbicides (2.46), nursery production (1.86), floral design (1.75), supply ordering (1.64), procurement of equipment (1.5), plant inventory (1.88), and cold frames and hot beds (1.81). The final three rankings, twenty-six, twenty-seven, and twenty-eight, are classified in the low level of importance. The \bar{X} of these three is 1.32-1.43. The instructors found these areas to be of low importance for instruction. These areas are equipment repair (1.43), computer usage (1.32), and advertising (1.36).

In summary, there were twenty-eight other teaching areas of horticulture. Seven of these areas were ranked of high importance, twenty-one were ranked of medium importance, and three were ranked low importance.

CHAPTER V

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present a summary of the study problem, the design and the major findings. Also presented are conclusions and recommendations which is based upon data collected and observations resulting from the design and conduct of the study.

Purpose

The primary purpose of the study is to identify specific elements common to programs of horticulture found in vocational agriculture settings within the state of Oklahoma. A second purpose was to determine the level of importance of identified curriculum components of horticulture as perceived by teachers of vocational agriculture. The objectives of the study were as followed:

1. Determine what specific elements in vocational horticulture which are common in a horticulture program in vocational agriculture.
2. Identify the nature, status, what is offered and level of importance of curriculum components in horticulture programs as perceived by vocational agriculture teachers.

Summary

Twenty-eight of 31 vocational horticulture instructors in Oklahoma completed and returned a questionnaire from which data was collected for this study.

Findings

The summary of the findings were divided into three sections. The first section consisted of enrollment. The second section was on the size and scope of the operation and the final section was devoted to teaching material.

Enrollment

A summary of the vocational horticulture programs in this study by districts reveal that eight programs are in the Central District (28.57 percent), six programs are in the Southeast District (21.43 percent), five programs from the Northwest District (17.86 percent), and four programs from the Southwest District (14.28 percent). A total of twenty-eight out of thirty-one horticulture programs provided data for the study (90 percent).

As expected there was a wide range of enrollment in the program across the state. However, there was a number of programs, thirteen or 46.43 percent, that had an enrollment range of 11-25 students per program.

In the area of dual enrollment, (dual enrollment is a student enrolled in vocational horticulture and vocational agriculture), it was obvious that a large number of students

do not dual enroll. Eighty five and seventy one hundredths percent of the horticulture programs had a dual enrollment range of 0-10 students per program, there was only four (14.29 percent) programs in the state that had an enrollment range of 11-25 students per program. Four of the five districts each had one program with dual enrollment of 11-25 students, except the Northwest District. All five programs in the Northwest District had a dual enrollment range of 0-10 students per program. As data indicated earlier, total enrollment range of students of vocational horticulture programs occurred at the 11-25 student per program, whereas dual enrollment range was lower (0-10).

In regard to FFA enrollment, most students enrolled in vocational horticulture were also members of the FFA. Fifty percent of FFA enrollment occurred in the range of 11-25 students per program. This agrees with total enrollment of 46.43 percent, and Vocational Horticulture which had an enrollment range of 11-25 students per program. It was found that most programs offer Horticulture I and Horticulture II, thirteen programs or 46.43 percent of the programs offer Horticulture I, thirteen programs or 46.43 percent of the programs offered Horticulture I and II. The two program (7.14 percent) taught horticulture as part of their vocational agriculture class.

The number of credit hours offered range from one hour credit to eight hour credits. Twelve programs (42.85 percent) of the 28 offered one hour credit. Ten programs

(36.72 percent) offered two or three credit hours. Four programs (14.29 percent) offered five credit hours. One program involved in this study offered a total of eight credit hours. It was instructed from three different schools. A majority of the programs operated with one greenhouse (67.90 percent). Six programs (21.40 percent) used two greenhouses and three programs did not use greenhouses at the time this study occurred.

Most of the programs used greenhouses that had 901 or more square feet available for program application (57.15 percent). Five programs (17.86 percent) programs used greenhouses that had between 501-700 square feet of space. Four programs (14.28 percent) had greenhouses with 500 square feet or less for instruction, and three programs (10.71 percent) did not have greenhouses.

Based upon the response of nursery and vegetable production, very few programs use nursery production acres in their program. Only six programs have acres of nursery production. These six programs are located in the Southwest and Central District. However, vegetable production acreage is used in each district. A total of eighteen acres (75 percent of the total acres in nursery and vegetable production) is used for vegetable production instruction; whereas, six acres (25 percent of the total acres in nursery and vegetable production) is used for nursery production instruction.

The response to the Oklahoma Horticulture Core Curriculum clearly showed that a large majority (89.28 percent) used the Oklahoma Horticulture Core Curriculum. The response to other horticulture material used, showed that 85.71 percent of the instructors supplement or use other horticulture instructional material in their horticultural programs.

The summary of the study, level of importance of the Oklahoma Core Curriculum and other teaching material was developed by averaging the skills as assigned by the respondents. The real limits of the data for interpretation was as follows:

0 - .49	No Importance
.50 - 1.49	Low Importance
1.50 - 2.49	Medium Importance
2.50 - 3.49	High Importance
3.50 - 4.00	Extreme Importance

Below is a summarization of the responses to the Oklahoma Horticulture Core Curriculum.

<u>RANK</u>	<u>SKILL</u>	<u>RESPONSE</u>
1.	Plant Skill Propagation	HIGH
2.	Plant Production & Reproduction	HIGH
3.	Plant Identification	HIGH
4.	Potting Procedures	HIGH
5.	Plant Problems & Control	HIGH
6.	Soil	HIGH
7.	Fertilizer	HIGH
8.	Pruning	MEDIUM

Each skill of Oklahoma Horticulture Core Curriculum was rated by the horticulture instructors. Results showed that none of the skills identified, rated in the no importance, low importance, and extreme importance. In the nine area of skills in the Oklahoma Horticulture Core Curriculum, eight were rated high importance by the instructors. Only pruning rated medium importance.

Below is the summarization of those skills of other teaching materials that were rated high importance.

<u>RANK</u>	<u>SKILL</u>	<u>IMPORTANCE</u>
1.	Safety	HIGH
2.	Bedding Plant	HIGH
3.	Sexual and Asexual Propagation	HIGH
4.	Leadership	HIGH
4.	Fertilizer	HIGH
5.	Soil Media	HIGH
6.	Pesticides	HIGH

These seven skills of other teaching material were rated as high importance by the instructors.

The other skills areas of instruction in the questionnaire was developed from opinions of professionals related to the horticulture industry.

<u>RANK</u>	<u>SKILL</u>	<u>IMPORTANCE</u>
8	Herbicides	MEDIUM
8	Landscape Design	MEDIUM
8	Greenhouse Facilities	MEDIUM
11	Lighting & Photosynthesis	MEDIUM
12	Landscape Maintenance	MEDIUM
13	Floriculture	MEDIUM
14	Retail & Wholesale Marketing	MEDIUM
15	Alternative Agriculture Crop	MEDIUM
16	Problem Solving	MEDIUM
17	Heating & Cooling	MEDIUM
18	Horticulture & Diagnostic Training	MEDIUM
19	True Identification	MEDIUM
20	Plant Inventory	MEDIUM
21	Nursery Production	MEDIUM
22	Cold Frames	MEDIUM
23	Floral Design	MEDIUM
24	Supply Ordering	MEDIUM
25	Procurement of Equipment	MEDIUM

These eighteen skill areas were classified to be medium importance in the instruction of horticulture. The following is a summarization of skills of other instructional material that were rated low by the horticulture teachers:

<u>RANK</u>	<u>SKILL</u>	<u>IMPORTANCE</u>
26	Equipment Repair	LOW
27	Advertising	LOW
28	Computer Usage	LOW

These three areas were considered low importance in the instruction of horticulture.

Conclusions

Based upon the data analyzed, the following conclusions are deemed appropriate to the study:

1. Horticulture programs are available in all districts of Oklahoma.
2. That the most common enrollment range of vocational programs falls into the range of 11-25 students per program.
3. Based upon the data, dual or concurrent enrollment (vocational agriculture and vocational horticulture); with students only enrolled in vocational horticulture.
4. Enrollment in the Future Farmers of America and horticulture are near equal and that most students enrolled in horticulture programs are Future Farmers of America members.
5. Most vocational horticulture programs in Oklahoma offer Horticulture I and/or Horticulture II.
6. A majority of the horticulture programs offer two or less credits in horticulture.
7. A majority of the vocational horticulture programs operate between one or two greenhouses for instruction.

8. Most of the vocational horticulture programs use greenhouses of 901 square feet or larger.

9. Based on the findings of the study, vegetable production acres for instruction exist in every district, (whereas nursery production acreage for instruction is limited to Southwest and Central Districts).

10. Oklahoma Horticulture Core Curriculum and other horticulture teaching material are used widely among teachers in the horticulture programs.

11. The areas taught in the Oklahoma Horticulture Core Curriculum are for the most part rated high importance to the horticulture instructors.

12. Other teaching materials had an importance range of low, medium, and high with a majority of these skill areas rated as medium importance.

Recommendations

Based upon the conclusion of this study, the author has made the following recommendations:

1. District supervisors should encourage teachers to have a vocational horticulture program as part of a vocational agriculture program.

2. It is recommended that emphasis be given to increasing enrollments in all vocational horticulture programs.

3. It is recommended that horticulture students be encouraged to be members of the Future Farmers of America.

4. It is recommended that Horticulture Core II be developed to enhance the numbers of credits offered in vocational horticulture.

5. That additional funds be provided to increase the number and size of greenhouses in horticulture programs.

6. That the areas of nursery and vegetable production be incorporated into horticulture programs as alternative crops.

7. It is recommended that the Oklahoma Core curriculum be up-dated to keep current with the horticulture industry.

8. Recommendations of the Methodology are as follows:

1. Further research on assessing competencies and importance of teachers.

2. A ranking of the teaching skills area by the instructors.

3. A replication of the study at a later date.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE COVER PAGE

Billings Public Schools

JERRY H. McKEOWN, SUPERINTENDENT

P. O. BOX 38

BILLINGS, OKLAHOMA 74630

Board of Education

President: Derris Dolezal

Vice-President: Bruce Durkee

Clerk: Linda Main

Member: Mike Thralls

Member: Kirby Reim

David Evans

High School Principal

Mary Lou Foltz

Elementary Principal

Lynda Manley

Dianne Silvey

Secretary

Dianne Silvey

Treasurer

Dear Vocational Instructor,

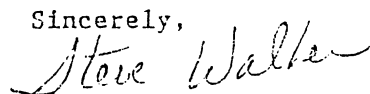
Oklahoma has long been one of the leaders in all areas of vocational agriculture. Included in these areas are that of vocational horticulture.

There has been little published on the nature and status of vocational horticulture in Oklahoma. It has become apparent that research is needed to identify horticulture programs.

The literature pertaining to horticulture programs are very limited. This study would reveal the basic kinds of horticulture programs. It will not be used to evaluate your program, but merely a review of your concept of a vocational horticulture program.

We are sure that the information you provide will be valuable in identifying vocational horticulture and will help others improve in their preparation in teaching horticulture.

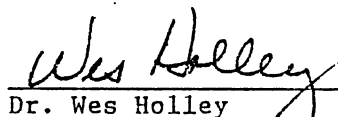
Sincerely,



Steve Walker

Vo. Ag. Instructor

Billings High School



Dr. Wes Holley

Dept. of Ag. Ed.

Oklahoma State University

P.S. Please fill out the survey and mail it in the self stamp envelope as soon as possible.

APPENDIX B

QUESTIONNAIRE

VOCATIONAL AGRICULTURE HORTICULTURE SURVEY

NAME _____

ADDRESS _____

PHONE NUMBER () _____

DISTRICT _____ (NW) _____ (SW) _____ (C) _____ (SE) _____

I. ENROLLMENT

1. Number enrolled in Horticulture _____
2. Number of dual enrollment in Vo-Ag and Horticulture _____
3. Number of Horticulture students who are members of FFA _____
4. Do you teach Horticulture I, II, or both? _____
5. How many credit hours of Horticulture are taught each day? _____

II. SIZE OR SCOPE OF OPERATION

1. How many greenhouses do you operate? _____
2. Number of square feet in greenhouse? (check one)
 _____ less than 150 sq. ft.
 _____ 151-300 sq. ft.
 _____ 301-500 sq. ft.
 _____ 501-700 sq. ft.
 _____ 701-900 sq. ft.
 _____ 901 sq. ft. or more
3. How many acres of Nursery Production? _____
4. How many acres of Vegetable Production? _____

III. TEACHING MATERIAL

1. Do you utilize the Oklahoma Horticulture Core Curriculum? (yes or no) _____
2. Do you utilize other Horticulture materials in your teaching program? (yes or no) _____
3. If yes, what are they? (Please list)

4. Which of the following horticulture areas are being conducted at your school? Please indicate the importance of each area in your program?

HORTICULTURE CORE I

AREA	No Importance	Low Importance	Medium Importance	High Importance	Extreme Importance
Plant growth and reproduction	0	1	2	3	4
Plant Propagation	0	1	2	3	4
Soil	0	1	2	3	4
Fertilizer	0	1	2	3	4
Plant growth media	0	1	2	3	4
Plant problems and control	0	1	2	3	4
Pruning	0	1	2	3	4
Plant I.D.	0	1	2	3	4
Potting Procedures	0	1	2	3	4

OTHER TEACHING MATERIALS

Tree I. D.	0	1	2	3	4
Equipment repair	0	1	2	3	4
Herbicides	0	1	2	3	4
Leadership	0	1	2	3	4
Nursery Production	0	1	2	3	4
Computer usage	0	1	2	3	4
Safety	0	1	2	3	4
Floral Design	0	1	2	3	4
Floriculture	0	1	2	3	4

Landscape Maintenance	0	1	2	3	4
Landscape Design	0	1	2	3	4
Sexual & Asexual Propagation	0	1	2	3	4
Pesticides	0	1	2	3	4
Supply Ordering	0	1	2	3	4
Procurement of Equipment	0	1	2	3	4
Greenhouse Facilities	0	1	2	3	4
Alternative Ag. Crops	0	1	2	3	4
Advertising	0	1	2	3	4
Fertilizers	0	1	2	3	4
Soil Media (mix)	0	1	2	3	4
Horticulture and Diagnostic Training	0	1	2	3	4
Problem Solving	0	1	2	3	4
Bedding Plants Annual	0	1	2	3	4
Retail and Wholesale Marketing	0	1	2	3	4
Plant Inventory	0	1	2	3	4
Cold Frames and Hot Beds	0	1	2	3	4
Heating and Cooling	0	1	2	3	4
Lighting and Photosynthesis	0	1	2	3	4
Other:					
_____	0	1	2	3	4
_____	0	1	2	3	4
_____	0	1	2	3	4
_____	0	1	2	3	4

VITA

Steven Paul Walker

Candidate for the Degree of

Master of Science

Thesis: THE NATURE AND STATUS OF VOCATIONAL HORTICULTURE AS
PERCEIVED BY VOCATIONAL AGRICULTURE TEACHERS IN THE
STATE OF OKLAHOMA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Okeene, Oklahoma, March 20,
1958, the son of Mr. and Mrs. Benford Walker.

Education: Graduated from Chisholm High School, Enid,
Oklahoma in May, 1976, attended Southwestern
Oklahoma State University at Weatherford, from
August 1976 through May 1977; received Bachelor of
Science degree in Agriculture from Oklahoma State
University in May 1981; completed requirements for
Master of Science degree at Oklahoma State
University, Stillwater, Oklahoma, in July, 1988.

Professional Experience: Vocational Agriculture
Instructor, Billings High School, Billings,
Oklahoma, July, 1983 to present.