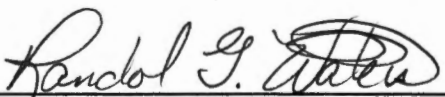


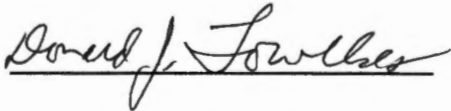
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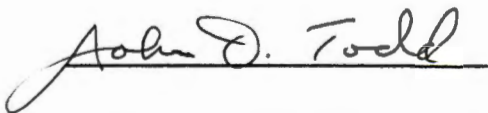
I am submitting herewith a thesis written by Christopher Wayne Ramsey entitled "Characteristics of Carter County, Tennessee Burley Tobacco Producers, the Relationship Between Producer Characteristics, Extension Contact and the Use of Selected Production Practices, the Educational Needs of The Tobacco Producer, and the Producers' Plans For Future Production in 1999." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural and Extension Education.



Dr. Randol G. Waters, Major Professor

We have read this thesis and
recommend its acceptance:





Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

CHARACTERISTICS OF CARTER COUNTY, TENNESSEE BURLEY TOBACCO
PRODUCERS, THE RELATIONSHIP BETWEEN PRODUCER CHARACTERISTICS,
EXTENSION CONTACT AND THE USE OF SELECTED PRODUCTION
PRACTICES, THE EDUCATIONAL NEEDS OF THE TOBACCO PRODUCER, AND
THE PRODUCERS' PLANS FOR FUTURE PRODUCTION IN 1999

A Thesis
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ABSTRACT

The purpose of this study was to characterize Carter County, Tennessee burley tobacco producers and their farms, the number and types of contacts the producers had with the Agricultural Extension Service, and their use of selected tobacco production practices.

The population for the study was all of the tobacco producers in Carter County during the 1999 growing season. The sample of 150 producers was drawn using a true random sample. After the study sample was drawn, a pilot study sample of 10 producers was randomly drawn from the remaining producers.

The survey instrument was compiled by combining questions from surveys used by Cynthia McCall's 1994 study (8) and Michael Barry's 1998 study (2). Dr. Donald Fowlkes, Dr. Randol Waters, and Dr. John Todd assisted by critiquing the survey. The areas covered by the survey included producer and farm characteristics; transplant production, fertility, and weed control; topping, harvesting, and curing; the number of and type of Extension contacts; and the producers' opinion of current tobacco educational programming, their future needs for tobacco educational programming, and their future production plans over the next five years.

The collection of data was completed through a direct mailing in the Spring of 2000. An initial letter was sent with a self-addressed stamped envelope and a survey. A post card reminder was sent approximately one week after the initial letter. A follow-up letter with a second survey and self-addressed envelope was sent approximately one

week after the post card reminder.

The survey data were analyzed using the SPSS 10.0.05 for Windows statistical program. Descriptive statistics including means, modes, standard deviations, and frequencies were used to describe the data. Chi Square tests were used for the nominally scaled variables, and t-tests were used for the interval scaled variables.

Major findings included the following:

1. A majority of the producers were 40 years old or older with some type of off-farm employment.
2. A majority had a high school education or less, but the educational level had increased compared to a study done in the 1960's.
3. A large percentage of the producers grew three acres or less.
4. The producers in the higher yield group were more likely to attend tobacco meetings and/or field days.
5. A surprisingly high percentage of producers did not soil test, but those who had either received one or more visits from an Extension agent, had made one or more phone calls to the Extension office, or had visited the Extension office one or more times were more likely to soil test.
6. Approximately 61 percent of the tobacco plants in Carter County were grown in a conventional plant bed, but producers who attended one or more tobacco meetings and/or field days were more likely to use float bed plants.
7. Producers who were 60 years of age or over were more likely to make visits to the Extension office, while those in the 18 to 39 age group were more likely to

make phone calls. Producers in the 40 to 59 age group were more likely to have received a tobacco related farm visit.

8. Producers were more likely to top their tobacco at an earlier stage when they had attended one or more tobacco meetings and/or field days.

9. Producers were more likely to allow a period of time closer to five weeks between topping and cutting when they had attended one or more tobacco meetings and/or field days.

10. Carter County tobacco producers responded that they were benefitting from current tobacco educational programming. Some general themes focused on pesticides and their application, new variety information, cost savings techniques, and general management. Some other themes centered around soil erosion, field curing structures, fertilizers, lime, float beds, greenhouse management, topping, and curing.

11. Producers were asked to suggest areas for future tobacco educational programs. Marketing information, labor laws, and contract buying were major topics mentioned as areas where future educational programs were needed.

12. Producers were asked about their future production plans over the next five years. Just over 49 percent did not plan to change their amount of production. Seventeen percent planned to not grow any tobacco. Twelve percent planned an increase in production of just over 51 percent. Twenty-two percent planned a decrease in production of 38 percent.

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CHAPTER I

THE PROBLEM AND ITS SETTING

Tennessee burley tobacco farmers harvested 51,000 acres in 1997. This amounted to a total of 93,330,000 pounds valued at \$176,020,000 dollars (10).

Tobacco has continued to be a crucial part of the financial structure of Tennessee agriculture and especially the small family farm. The availability of research-based information makes the production of burley tobacco more efficient and productive. The University of Tennessee Agricultural Extension Service strives to enable the agricultural producers to be as profitable as possible by making this research information available in a useful manner.

This study was proposed to categorize Tennessee burley tobacco producers according to personal and farm characteristics and to determine the effect of Extension contacts on the adoption of selected production practices.

I. Need For The Study

According to a quotation taken from the Smith Lever Act of 1914 by Brunner and Pao Yang, the Extension service's role was "to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same"(3). A survey and analysis of the current status and production practices of Tennessee burley tobacco producers, their farms and crops can aid the Agriculture Extension Service in providing

useful information to further improve production efficiency.

Periodically, studies of this nature are completed for the purpose of documenting the composition of the burley tobacco industry. The goals of this study were to define the personal and farm characteristics of the burley producer, to learn of the amount and kind of contacts the producer has had with Extension and to determine the degree to which producers were utilizing selected recommended production practices of the Agricultural Extension Service.

The results of this study serve as a program planning tool for tobacco education by county, district and state agricultural professionals. The information to be derived from this study could be compared to previous studies for the purpose of evaluating progress and mapping future goals for programming. Ultimately, the primary goal of this study was to help Extension professionals to move closer to the goal of producers utilizing University of Tennessee (UT) recommended production practices.

II. Purpose And Objectives

The purpose of this study was to characterize Carter County, Tennessee burley tobacco producers and their farms, the number and type of contacts producers had with the Agricultural Extension Service, and their use of selected production practices.

The objectives of this study were:

1. To characterize burley tobacco growers according to their age, education, employment status, acres grown, yield, number and type of Extension contact they have had and their use of selected production practices.

2. To analyze the relationship between the number and type of Extension contacts producers have had with Extension and their personal and farm characteristics.
3. To analyze the relationship between the use of selected production practices and the number and type of contacts producers have had with Extension.
4. To categorize burley tobacco producers according to their opinion of current educational tobacco programming, their needs for future tobacco educational programming, and their plans for tobacco production during the next five years.

CHAPTER II

REVIEW OF RELATED STUDIES

The following chapter reviews studies that are related to the current burley tobacco study. The studies in this review deal with the following: the personal and farm characteristics of burley tobacco producers, the educational needs of the burley tobacco producer, the impact of personal and farm characteristics on the number of Extension contacts and the effect of Extension contacts on the adoption of UT recommended tobacco production practices.

Section I presents studies that have analyzed the personal and farm characteristics of burley tobacco producers.

Section II presents studies that have looked at the relationship between personal and farm characteristics and the number of Extension contacts.

Section III presents studies that have studied the relationship between the adoption of UT recommended tobacco production practices and the number of Extension contacts.

I. Personal and Farm Operation Characteristics of Tobacco Producers

This section presents information found in nine studies related to tobacco producers' age, education, employment status, acres grown and yield. All of these studies were the result of surveys of Tennessee burley tobacco farmers with the exception of one study of a dark fired tobacco producers.

Age

Six of these studies were selected to represent the period from the sixties to the nineties. Of these six, two were from the sixties, three were from the eighties and one was from the nineties for the purpose of this literature review of age.

According to two studies conducted in the sixties, a 1962 study by Lowe indicated that 18 percent of Tennessee burley producers were under 40 years of age, 51 percent were between the age of 40 and 60, and 31 percent were over the age of 60 (7). A second study done in the sixties showed that 13 percent of Tennessee producers were under the age of 40, 57 percent were 40 to 60 years of age, and 30 percent were over the age of 60 (12).

A 1987 study completed by Fowlkes, Carter, and Rhodes found that producers under the age of 40 accounted for 33.5 percent with 44 percent being between 40 and 59 years old, and 22.8 percent were older than 60 (5). A study by McCall based on a 1987 survey showed that approximately 53 percent of Tennessee burley growers were under 50 years of age with the average age of the population surveyed being 48 years (8). Another 1980's study completed by Turner in 1985 showed that 30.6 percent of producers were 20 to 40 years old, 40.4 Percent were 41 to 59 years old, 17.7 percent were 60 to 69 years old, and five percent were 70 to 85 years old (11).

A White County study completed by Barry in 1998 found that 32.9 percent of the county's growers were under the age of 41, 38.9 percent were 41 to 59 years old, and 28.2 percent were 60 years old or older (2).

Education

Eight of these studies presented information regarding the educational level of Tennessee burley producers. Six of these studies were selected for the basis of representing the time period between the 1960's and the 1990's.

According to two studies completed in the 1960's, the 1964 study by Ivens showed that 20.4 percent of growers had less than a fifth grade education, 42.6 percent had less than a ninth grade education, 25.9 percent had completed between nine and twelve grades, and 11.1 percent had completed some college (6). A 1966 study by Cunningham found that 67 percent of growers had less than a ninth grade education and 32 percent had completed between nine and twelve years of school (4).

A 1986 study of dark fired producers completed in 1986 showed that 70.3 percent of producers had a high school education or less, 13.6 percent had completed some college, and 14.4 percent were college graduates (1). A study by Fowlkes, Carter, and Rhodes showed that college graduates made up 13 percent of burley growers with 11.5 percent having some college and 75 percent having no education past the high school level (5). Another study by Turner found that 70.1 percent of Tennessee growers had a high school education or less, 10.8 percent had some college, and 12.4 percent were college graduates with 6.8 percent of the survey population not responding (11).

A study by Barry completed in 1998 showed that 76 percent of White County burley producers had a high school or above educational level (2).

Employment status

A 1985 study by Turner found 47.3 percent Tennessee burley producers were full-

time farmers, 18.8 percent held a part-time job off the farm, 19.9 percent held a full-time job off the farm, 7.6 percent were retired with 1 percent responding otherwise and 5.5 percent not responding (11). A 1986 study of dark fired producers by Ary found that 62.7 percent were full-time farmers, 16.9 percent held part-time jobs off the farm, 13.6 percent held full-time jobs off the farm, and 5.1 percent were retired (1). A White County study showed that 37.6 percent of producers were full-time farmers (2). Another study by McCall showed that the numbers of full-time and part-time farmers were approximately the same (8).

Acres Grown

A 1985 study by Turner found that 47.8 percent of Tennessee growers grew one acre or less, 20.5 percent grew two acres, 10.6 percent grew three acres, and 20.3 percent grew four acres or more. The mean number of acres was 2.9 (11). The McCall study based on a survey completed in 1987 indicated that approximately 21 percent grew more than three acres of burley. Producers growing three acres or less accounted for 78.6 percent of the producers. The average acres grown was 2.6 (8). A study of White County burley producers found that 55 percent grew three acres or less. The average acres grown by producers surveyed in the White County study was 5.4 (2).

II. Relationships Between Personal and Farm Characteristics and the Number of Extension Contacts

This section reviews studies that show the relationship between personal and farm characteristics of producers and their number of contacts with the Agricultural

Extension Service. Personal and farm characteristics for the purpose of this review refer to age, education, employment status, acres grown and yield per acre.

Age

A 1998 study by Barry showed that of the growers that had one or more Extension contacts, 78.6 percent were under 40 years old, 64.6 percent were between 41 and 59 years old, and 79.2 percent were over the age of 60 (2). A study by McCall applied the Chi Square test and found that the relationship between producers' age and the total number of contacts with Extension was not significant (8). Ary used the Chi Square test and also found no significant relationship between the growers' age and the number of contacts with Extension (1).

Education

According to McCall's 1994 study, 67 percent of producers with educational levels beyond high school and 42.1 percent below high school reported five or more Extension contacts. McCall found this to be a significant relationship with producers being more likely to utilize the Agricultural Extension Service when they had training beyond high school (8). A study completed by Barry found the following percentages of growers had one or more total contacts with Extension: 70 percent of those with less than a high school education, 75 percent of those with a high school education and 70.6 percent of those with some college (2). Ary showed that producers with higher levels of education were more likely to utilize the Agricultural Extension Service. However, this was not a significant relationship according to the Chi Square test (1).

Employment

McCall's 1994 study based on a 1987 survey revealed that 55 percent of full-time growers utilized Extension with five total contacts compared to only 41 percent of part-time growers (8). Barry's 1998 study found that approximately 81 percent of full-time producers had one or more total contacts with Extension compared to only 67.9 percent of part-time producers (2). A study of dark fired tobacco growers indicated that full-time tobacco producers had more total contacts than part-time producers. Ary found this to be a significant relationship based on the Chi Square test (1).

Acres Grown

According to a study by McCall, approximately 54 percent of tobacco growers with an acreage above three acres had five or more different Extension contacts while roughly 39 percent of growers with three acres or less had five or more contacts (8).

Yield

McCall found that among the producers with five or more total contacts with Extension, approximately 56 percent producers had a per acre yield over 2100 pounds while 43.9 percent had a yield of 2100 pounds or less per acre (8).

According to Ary's 1986 study, the relationship between Extension contact and yield was not significant (1).

III. Influence of Extension Contacts on the Adoption of UT Recommended Practices

This section shares the results of previous studies regarding the relationship between the number of Extension contacts and the adoption of some specific UT

recommended practices. The practices examined were soil testing, lime application, nitrogen application, variety grown, weed control, topping stage and time between topping and cutting.

Soil Testing

Ary found a positive correlation between the number of contacts with Extension and the likelihood of producers to take a soil sample (1). McCall found that of the producers sampling at two year intervals or less, 62 percent had a total of five or more contacts with Extension while 37 percent had four or less Extension contacts (8). A 1998 study by Barry showed that the more Extension exposure tobacco producers attained the more likely they were to soil sample at two year intervals or less (2).

Nitrogen Application

McCall's study found that the number of contacts with Extension had no influence on the producers' decision to apply up to 200 pounds of nitrogen per acre (8). According to a 1998 study by Barry, a nitrogen rate of 201 to 300 pounds per acre was applied by the following groups: 32 percent of producers with five or more Extension contacts, 59.3 percent with one to four contacts and 47.8 percent with no Extension contact. Furthermore, 53 percent of producers who had interacted with Extension five or more times, 14.8 percent who had between one and four contacts with Extension, and 17.4 percent who had no Extension contact applied 301 pounds of nitrogen per acre (2).

Variety Grown

Ary's 1986 study showed that the relationship between the number of Extension contacts and the variety grown was not significant (1). Robinson also found that the

number of Extension contacts did not influence the variety grown at a level that was significant (9).

Weed Control

A study by Barry in 1998 found the percentages of tobacco producers based on Extension contact using both chemical control and cultivation were as follows: approximately 79 percent of producers with five or more contacts, 51.9 percent of producers with one to four contacts and 34.8 percent of producers with no Extension contacts (2). Ary's study of dark fired tobacco producers looked at Paarlan, Devrinol, Prowl, Enide and herbicide tank mixes. There was only a significant relationship between Extension contact and the use of Prowl, Devrinol and tank mix combinations (1).

Stage of Topping

Fowlkes, Carter and Rhodes found that tobacco meeting attendance did encourage producers to top at earlier flowering stages (5). Barry's study showed that 41.2 percent of producers with five or more Extension contacts, 22.2 percent with one to four contacts and 17.4 percent with no Extension contact topped tobacco in the button to early stage of flowering (2). McCall's 1998 study showed that contact with Extension did not influence tobacco growers to top tobacco at the button to stage of 50 percent flower development (8). A study of dark fired tobacco growers by Ary also found no significant relationship between Extension contact and stage of topping (1).

Number of Days Between Topping and Cutting

According to a study by Barry, 65 percent of producers with five and more

Extension contacts, 37 percent with one to four contacts and 8.7 percent with no Extension contact let their tobacco ripen 28 days before cutting (2). McCall's 1998 study indicated a significant relationship between the number of Extension contacts and the tendency of producers to wait 28 days between topping and cutting (8). Fowlkes, Carter and Rhodes showed in their 1987 study that the relationship between days allowed for tobacco to ripen and the number of meetings attended and the number of office visits was not significant at the .05 level (5). Ary's 1986 study also found that the relationship between Extension contact and days between topping and cutting was not significant (1).

IV. Summary of Review of Related Studies

In conclusion, this literature review has referenced similar studies to the current burley tobacco study. Studies have also been selected to represent an extended period of time as the demographics of the producer and the specifics of tobacco production have undergone many changes. The studies in this review have dealt with the characterization of the producer and the farm and its impact on Extension contact. Secondly, the review has cited studies that have looked at the relationship between Extension contact and the adoption of selected tobacco production practices.

CHAPTER III

PROCEDURES AND METHODOLOGY

I. Population and Sample

The sample consisted of 150 Carter County burley tobacco producers. Carter County has a total of approximately 200 burley tobacco producers. The survey population was randomly selected from a grower address list which was obtained through the Farm Service Agency in Carter County.

The survey was conducted by a direct mailing. The survey (Appendix A) was mailed to the producers selected for the sample with a cover letter (Appendix B) outlining the need for the survey and that the survey was strictly confidential. The point that the survey was voluntary was also stressed. A self-addressed stamped envelope was included for return of the survey.

The initial mailing of the pilot test occurred on February 22, 2000 followed by a post card one week later. A follow-up letter was sent on March 10, 2000. The initial mailing of the actual study occurred on March 25, 2000 followed by a post card (Appendix C) one week later. A follow-up letter (Appendix D) was sent on April 17, 2000. The response rates were 70% for the pilot study and 61% for the actual study.

II. Survey Instrument

The survey instrument was compiled by combining questions from surveys used

by Cynthia McCall's 1994 study (8) and Michael Barry's 1998 study (2). Dr. Donald Fowlkes, the University of Tennessee Tobacco Specialist, critiqued the survey instrument for subject matter content. The instrument was coded to allow a computerized analysis of the data.

The survey was reviewed by the graduate committee to critique and establish the validity of its content. The instrument was pilot tested to improve its reliability and validity. The pilot study consisted of 10 producers selected after the study sample was selected. Based on the responses from the pilot study, four minor changes were made to make the survey more reader friendly and to get more accurate responses.

The survey addressed six major areas related to burley tobacco production in Carter County. The major focus of each area was as follows: part one established demographical information for the producer and their respective farm; part two concentrated on transplant production; part three addressed fertility, weed control and transplanting; the focus of part four was topping, harvesting and curing; the use of the Agricultural Extension Service was identified in part five; and part six allowed the producer to briefly discuss their satisfaction of Extension programs and their need for new educational programming, and to indicate their future production plans over the next five years.

III. Description of the Variables in the Study

The following variables were analyzed:

1. Level of education, age, employment status, and acreage grown -

nominally scaled variables.

2. Use or non-use of selected tobacco production practices and yield - interval scaled variables.

3. Number of tobacco meetings and/or field days attended, the number of tobacco related visits to the Extension office, the number of tobacco related telephone calls to the Extension Office, and the number of tobacco related farm visits by the Extension agent - nominally scaled variables.

IV. Statistical Analysis

The data were analyzed using the SPSS version 10.0.05 for Windows.

Descriptive statistics including frequencies, percentages, means, modes, standard deviations. Chi Squares and t-tests were used to analyze the relationships in the study. Each objective was described according to the statistical analysis used. The analysis of objective one required the use of frequencies, modes, and percentages as it describes the personal and farm characteristics of the tobacco producers. The analysis of objective two, regarding the relationship between personal and farm characteristics and Extension contact, required Chi Square tests. The analysis for objective three, regarding the relationship between Extension contact and selected production practices, required the use of t-tests. The .05 probability level was used to determine whether the relationships were statistically significant. The analysis of objective four involved a thematic analysis of two questions regarding the producers' opinion of current tobacco educational programming, their future tobacco educational programming needs, and their future

production plans over the next five years.

CHAPTER IV

FINDINGS

The purpose of this chapter was to present findings related to the objectives of the study. This chapter was organized into four sections addressing each of the objectives. Section I presents findings regarding the personal and farm characteristics of Carter County, Tennessee Burley Tobacco producers, their tobacco production practices, and their contacts with the University of Tennessee Agricultural Extension Service. Section II presents findings regarding the relationship between the personal and farm characteristics of Carter County, Tennessee Burley Tobacco producers and their contacts with Extension. Section III presents findings regarding the relationship between the number of Extension contacts and selected tobacco production practices. Finally, section IV presents findings regarding the Carter County, Tennessee Burley Tobacco producers' opinion of the current tobacco educational programming, their need for future tobacco educational programming, and their plans for tobacco production over the next 5 years.

I. Personal and Farm Characteristics of Carter County, Tennessee Burley Tobacco Producers, Their Tobacco Production Practices, and Their Contacts with the University of Tennessee Agricultural Extension Service

The personal characteristics presented in this section are age, education, and employment status. The farm characteristics presented are acreage grown and yield per acre. Tobacco production practices categorized in this section are float tray size, use of soil testing, frequency of soil testing, method of weed control, use of Poast, plant spacing

in the row, plant spacing between the rows, time between topping and cutting, plants grown in conventional plant bed, plants grown in float bed, source of float bed plants, tobacco varieties grown, pounds of specific fertilizer analyses, pounds of fertilizer applied pre-plant, pounds of fertilizer applied as side dress, use of and effect of herbicides and combinations of herbicides, stage of topping, and curing method.

Extension contacts presented are tobacco meetings and field days attended, tobacco related visits to the Extension office, tobacco related phone calls to the Extension office, tobacco related farm visits by an Extension agent, and tobacco related internet contacts. Tobacco related internet contacts were not used as further variables in the study due to the low number of producers using this contact method. The findings presented in this section are detailed in the following tables. Frequencies, percentages, and standard deviations are used to summarize the findings of these tables.

Nominally Scaled Personal Characteristics

Age: According to the data reported in Table 1, Twelve percent ($n = 11$) of Carter County burley tobacco producers who responded were 18 to 39 years of age.

Approximately 48 percent ($n = 44$) of the producers participating in the survey were 40 to 59 years old. Just under 35 percent ($n = 32$) of the participating producers were 60 to 79 years old and the remaining five percent ($n = 5$) were over 80 years old and over.

Education level: Of the producers responding to this question, approximately 71 percent ($n = 65$) of Carter County tobacco producers participating in the survey had a high school diploma or less. Nearly 14 percent ($n = 13$) of the producers had completed

Table 1. Carter County Burley Tobacco Producers' Personal and Farm Characteristics, Tobacco Production Practices, and Extension Contacts

<u>Personal and Farm Characteristics, Production Practices, and Extension Contacts</u>	<u>Burley Tobacco Producers</u>	
	<u>Number</u>	<u>Valid Percent</u>
PERSONAL CHARACTERISTICS		
Age		
18 - 39 years	11	12.0
40 - 59 years	44	47.8
60 - 79 years	32	34.8
80 years and over	5	5.4
Total	92	100.0
Education Level		
High school or less	65	71.4
Some college	13	14.3
College graduate	13	14.3
Missing	1	Missing
Total	92	100.0
Employment		
Full-time farmer	17	18.7
Full-time farm - part-time off farm	10	11.0
Part-time farm - full-time off farm	36	39.6
Retired from public job currently farming	27	29.7
Other	1	1.0
Missing	1	Missing
Total	92	100.0
FARM CHARACTERISTICS		
Acreage Grown		
Less than 3 acres	62	67.4
3 to 10 acres	23	25.0
More than 10 acres	7	7.6
Total	92	100.0

Table 1. (Continued)

Personal and Farm Characteristics, Tobacco Production Practices, and Extension Contacts	<u>Burley Tobacco Producers</u>	
	Number	Valid Percent

FARM CHARACTERISTICS continued

Pounds Of Tobacco Per Acre

1500 pounds and less	16	18.8
1501 - 2000 pounds	26	30.6
2001 - 2500 pounds	18	21.2
2501 pounds and more	25	29.4
Missing	7	Missing
Total	92	100.0
Statistics:	$\bar{x}$ = 2086.8 Mode = 2500 s.d. = 699.8	

PRODUCTION PRACTICES

Float Tray Size

200 cell	5	13.5
253 cell	20	54.1
288 cell	11	29.7
Other cell	1	2.7
Missing	55	Missing
Total	92	100.0

Use of Soil Testing

Yes	37	40.7
No	54	59.3
Missing	1	Missing
Total	92	100.0

Frequency of Soil Testing

Every year	7	18.4
Every second year	15	39.5
Every 3 - 5 years	14	36.8
Other frequency	2	5.3
Missing	54	Missing
Total	92	100.0

Table 1. (Continued)

Personal and Farm Characteristics, Tobacco Production Practices, and Extension Contacts	<u>Burley Tobacco Producers</u>	
	Number	Valid Percent
PRODUCTION PRACTICES continued		
Method of Weed Control		
Chemical	5	5.7
Cultivation	29	33.4
Chemical and cultivation	53	60.9
Missing	5	Missing
Total	92	100.0
Use of Poast		
Yes	3	3.5
No	82	96.5
Missing	7	Missing
Total	92	100.0
Plant Spacing in the Row		
12 - 15 inches	25	28.4
16 - 19 inches	40	45.5
20 - 24 inches	23	26.1
Missing	4	Missing
Total	92	100.0
Time Between Topping and Cutting		
1 week or less	2	2.3
2 weeks	8	9.0
3 weeks	37	42.0
4 weeks	21	23.9
5 weeks	18	20.5
6 weeks or more	2	2.3
Missing	4	Missing
Total	92	100.0

Table 1. (Continued)

Personal and Farm Characteristics, Tobacco Production Practices, and Extension Contacts	<u>Burley Tobacco Producers</u>	
	Number	Valid Percent
EXTENSION CONTACTS		
Number of Tobacco Meetings and Field Days Attended		
None	62	69.7
One	14	15.7
2 to 4	13	14.6
Missing	3	Missing
Total	92	100.0
Number of Tobacco Related Visits to Extension Office		
None	36	40.9
One	16	18.2
2 to 4	32	36.4
5 or more	4	4.5
Missing	4	Missing
Total	92	100.0
Number of Tobacco Related Telephone Calls to the Extension Office		
None	39	42.9
1 to 5	46	50.5
6 to 10	3	3.3
11 or more	3	3.3
Missing	1	Missing
Total	92	100.0
Number of Tobacco Related Farm Visits by Extension Agent		
None	72	80.0
1 to 5	15	16.7
6 to 10	2	2.2
11 or more	1	1.1
Missing	2	Missing
Total	92	100.0
Number of Tobacco Related Internet Contacts		
None	85	94.4
1 to 5	5	5.6
Missing	2	Missing
Total	92	100.0

some college. Equally, nearly 14 percent ($n = 13$) of the producers were college graduates.

Employment: Of the producers responding, almost 19 percent ($n = 17$) of the producers were full-time farmers. Eleven percent ($n = 10$) of the producers were full-time farmers with part-time jobs off the farm. Approximately 40 percent ($n = 36$) of the producers were part-time farmers with full-time jobs off the farm. Around 29 percent ($n = 27$) of the producers were retired from a public job and farming part-time. The remaining one percent ($n = 1$) reported having other types of employment.

Farm Characteristics

Acreage grown: Of the producers responding to the survey, approximately 67 percent ($n = 62$) grew less than three acres. Exactly 25 percent ($n = 23$) grew between three and 10 acres. The remaining 7.6 percent ($n = 7$) grew more than 10 acres.

Pounds of tobacco per acre: Of the producers responding, approximately 19 percent ($n = 16$) of the producers yielded 1500 pounds per acre or less. Fifteen hundred and one to two thousand pounds per acre accounted for 30.6 percent ($n = 26$) of the producers. Roughly 21 percent ($n = 18$) of the growers produced between 2001 and 2500 pounds per acre. Just over 29 percent ($n = 25$) grew over 2500 pounds per acre.

Nominally Scaled Production Practices

Float tray size: Of the producers surveyed, 13.5 percent ($n = 5$) reported setting plants grown in a 200 cell tray. Approximately 54 percent ($n = 20$) used plants grown in a 253 cell tray and 29.7 percent ($n = 11$) a 288 cell tray. The remaining 2.7 percent ($n =$

1) used plants grown in trays with a number of cells other than those listed. Fifty-five respondents did not answer the question probably due to the fact they used all plants from a conventional plant bed.

Use of soil testing: Of the producers responding to the question, 40.7 percent (n = 37) used soil testing, while the other 59.3 percent (n = 54) did not.

Frequency of soil testing: Of those producers answering that they do use soil testing, 18.4 percent (n = 7) tested their soil every year. Just under 40 percent (n = 15) used soil testing every second year. Approximately 37 percent (n = 14) tested their soil every three to five years and 5.3 percent (n = 2) tested their soil at a frequency not listed.

Method of weed control: Of the producers responding, almost 6 percent (n = 5) of the producers used chemical weed control only. A little over 33 percent (n = 29) used cultivation weed control only. Almost 70 percent (n = 53) used both methods, chemical and cultivation, for weed control.

Use of Poast: Of the producers responding, 3.5 percent (n = 3) reported using the herbicide, Poast, while 96.5 percent (n = 82) said that they did not use the chemical.

Plant spacing in the row: Approximately 28 percent (n = 25) of producers responding used the 12 to 15 inch plant spacing. Just over 45.5 percent (n = 40) used the 16 to 19 inch plant spacing. The remaining 26.1 percent reported that they used the 20 to 24 inch plant spacing. Four producers did not answer this question.

Time between topping and cutting: Of the producers answering this question, 2.3 percent (n = 2) allowed one week or less between topping and cutting. Just over 9 percent (n = 8) waited two weeks. Forty-two percent (n = 37) waited three weeks before

cutting. Almost 24 percent ($n = 21$) waited four weeks between topping and cutting. Approximately 21 percent (18) waited five weeks and 2.3 percent ($n = 2$) waited six weeks or more.

Interval Scaled Production Practices

The interval scaled production practices are found in Table 2.

Conventional and float bed plants: Of the producers responding, an average of approximately of 61 percent per producer of the tobacco plants were grown in a conventional plant bed, while an average of 39.4 percent per producer were grown in a float bed.

Float bed plants: Of the percentage of plants that were reported grown in a float bed: a mean of almost 35 percent per producer were direct seeded; no plants were grown by plug and transfer; a mean of almost 4 percent per producer were purchased as pre-finished plants; a mean of approximately 60 percent per producer were purchased as finished plants; a mean just under 71 percent per producer were grown in a greenhouse; and a mean of almost 29 percent were grown in an outdoor float bed.

Tobacco varieties grown: Carter County tobacco producers grew an average of approximately 19 percent of the variety, TN 97. KY 14xL8 represented an average of 3.6 percent per producer. An average of just over one percent per producer was Clay 403. Almost an average of nine percent per producer of the tobacco grown was TN 86. TN 90 accounted for an average of 46.2 percent per producer of the tobacco grown. An average of 21.4 percent per producer was a combination of varieties not listed.

Pounds of fertilizer per acre: Thirty-eight producers reported applying an

Table 2. Carter County Burley Tobacco Producers' Production Practices

Production Practices	n	$\bar{x}$	s.d.
Percent Conventional Plant Bed Plants Grown per Producer	91	60.6	47.2
Percent Float Bed Plants Grown per Producer	91	39.4	47.2
Float Bed Plants			
Percent direct seeded per producer	39	34.6	47.5
Percent plug and transfer per producer	0	0.0	0.0
Percent purchased pre-finished per producer	39	3.8	17.7
Percent purchased finished per producer	39	59.6	47.9
Percent grown in greenhouse per producer	38	71.1	46.0
Percent grown in outdoor float bed per producer	38	28.9	46.0
Tobacco Varieties Grown per Producer			
Percent TN 97	78	18.9	37.5
Percent KY 14xL8	78	3.6	17.9
Percent Clay 403	78	1.3	11.3
Percent TN 86	78	8.7	27.2
Percent TN 90	78	46.2	48.2
Other variety	78	21.4	40.0
Pounds of Fertilizer per Acre per Producer			
5-10-15	38	1502.6	646.9
6-12-18	2	1600.0	565.7
34-0-0	27	577.8	330.0
15-0-14	1	300.0	0.0
46-0-0	3	266.7	57.7
9-18-27	18	1344.4	388.4
19-19-19	18	1561.1	554.3
16-0-0	5	490.0	328.6
Other fertilizer	10	1282.5	691.6
Fertilizer applied before planting	66	1551.5	542.9
Fertilizer applied as side dress	50	740.5	611.5

Table 2. (Continued) Carter County Burley Tobacco Producers' Production Practices

Production Practices	n	$\bar{x}$	s.d.
Use and Effect of Herbicides			
Prowl	32	3.6	1.1
Devrinol	16	4.0	1.1
Command	9	4.2	0.8
Spartan	7	5.0	0.0
Prowl and Devrinol	17	3.4	1.2
Spartan and Command	5	4.4	0.9
Poast	3	4.7	0.6
(1 = no control.....5 = excellent control)			
Plant Spacing between the Rows	86	43.0	5.8
Stage of Topping			
Percent button to elongated button	88	10.5	27.9
Percent elongated button to early flower	88	33.0	43.3
Percent early to mid-flower	88	25.5	38.9
Percent mid-flower to full flower	88	31.0	44.2
Curing Method			
Percent conventional barn	90	93.6	18.8
Percent high tensile wire	90	0.0	0.0
Percent field structure 2-rail	90	1.0	5.6
Percent field structure 3-rail	90	5.4	18.2

average of 1502.6 pounds of 5-10-15 per acre. Two producers reported applying an average of 1600 pounds of 6-12-18 per acre. Twenty-seven producers reported applying an average of 577.8 pounds of 34-0-0 per acre. One producer reported applying 300 pounds per acre of 15-0-14. Three producers reported applying an average of 266.7 pounds per acre of 46-0-0. Eighteen producers reported applying an average of 1344.4 pounds per acre of 9-18-27. An average of 1561.1 pounds per acre of 19-19-19 were applied by eighteen producers. Five producers reported applying an average 490 pounds per acre of 16-0-0. Ten producers reported applying 1282.5 pounds per acre of other fertilizer analyses not specified. Sixty-six producers reported applying fertilizer before planting with an average application of 1551.5 pounds per acre. Fifty producers reported applying fertilizer as a side dress with an average application of 740.5 pounds per acre.

Use and effect of herbicides: The following herbicides were ranked based on a one to five scale with one being equal to no control and five being equal to excellent control: Thirty-two producers reported using Prowl with an average effectiveness of 3.6. Sixteen producers reported using Devrinol with an average effectiveness of 4.0. Nine producers reported using Command with an average effectiveness of 4.2. Seven producers reported using Spartan with an average effectiveness of 5.0. Seventeen producers reported using a combination of Prowl and Devrinol with an average effectiveness of 3.4. Five producers reported using a combination of Spartan and Command with an average effectiveness of 4.4. Three producers reported using Poast with an average effectiveness of 4.7.

Plant spacing between the rows: The average spacing between rows was 43

inches with a standard deviation of 5.8 inches.

Stage of topping: Of the tobacco represented by the 88 producers responding, an average of 10.5 percent of the tobacco per producer was topped at the button to elongated button stage. An average of 33 percent per producer was topped at the elongated button to early flower stage. An average of almost 26 percent per producer of the tobacco was topped at the early to mid-flower stage. An average of 31 percent of the tobacco per producer was topped at the mid-flower to full flower stage.

Curing method: Of the tobacco represented by the 90 producers responding, an average of 93.6 percent per producer was cured in a conventional barn. There was no tobacco cured on high tensile wire. An average of one percent of tobacco per producer was cured on a 2-rail field structure, and an average of 5.4 percent per producer was cured on a 3-rail field structure.

Extension Contacts

Tobacco meetings and/or field days attended: Of the producers responding, approximately 70 percent (n = 62) of tobacco producers attended no meetings. One meeting was attended by 15.7 percent (n = 14) of the producers. Almost 15 percent (n = 13) of the producers attended between two and four meetings.

Tobacco related visits to Extension office: Approximately 41 percent (n = 36) of the producers responding did not visit the Extension office. Just over 18 percent (n = 16) made one visit to the Extension office. A little over 36 percent (n = 32) made between two and four visits to the Extension office. Five or more visits to the Extension office were made by 5.4 percent (n = 4) of the producers. Four producers did not answer

this question.

Tobacco related phone calls to Extension office: Of those responding, approximately 43 percent (n = 39) of the producers responding did not make any phone calls to the Extension office. One to five phone calls were made by 50.5 percent (n = 46) of the producers. Six to 10 calls were made by 3.3 percent (n = 3) of the producers. Eleven or more phone calls were also made by 3.3 percent (n = 3) of the producers.

Tobacco related farm visits by the Extension agent: Eighty percent (n = 72) of the tobacco producers responding did not receive any visits from the Extension agent. Approximately 16.7 percent (n = 15) of the producers received one to five visits from the Extension agent. A little over two percent (n = 2) of the producers received six to 10 visits from the Extension agent. Eleven or more visits by the Extension agent were made to 1.1 percent (n = 1) of the producers responding to this question. There were two producers that did not provide an answer to this question.

Tobacco related internet contacts: Of those responding, approximately 94 percent (n = 85) of the producers reported that they had not used the internet for tobacco related information, while 5.6 percent (n = 5) producers reported having 1 to 5 internet contacts related to tobacco.

II. Relationship Between Extension Contact and Personal and Farm Characteristics

The relationships reported in this section are those between age, education level, employment, acreage grown, and pounds of tobacco per acre and Extension contact, as measured by the number of tobacco meetings attended, the number of tobacco related visits

to the Extension office, the number of tobacco related phone calls to the Extension office, and the number of farm visits by an Extension agent. The independent variables for this objective were age, education level, employment, acreage grown, and pounds per acre. The dependent variables were the number of tobacco meetings and/or field days attended, the number of tobacco related visits to the Extension office, the number of tobacco related phone calls to the Extension office, and the number of tobacco related farm visits by an Extension agent.

When appropriate, some of the nominally scaled variables associated with objective 2 were collapsed to fewer categories in an effort to produce valid Chi Square tests. When it was not logical to collapse the variables into fewer categories and a valid test could not be produced, frequencies and percentages were reported and were described only as they related to those responding in this sample. The age variable was collapsed from four categories to three combining the 60 to 79 category and the 80 and over category. The education level variable was collapsed from three categories to two with the some college category and the college graduate category being combined. The employment variable was collapsed from four to three categories with the full-time farm category and full-time farm with part-time work categories being combined. The acreage grown variable was collapsed from three to two categories with the three to 10 acres category and the more than 10 acres category being combined. The pounds of tobacco per acre variable was collapsed from an interval scaled variable to three categories. The three categories were 2000 and less, 2001 to 2500, and 2501 and more. The number of tobacco meetings and/or field days variable was collapsed from four to two categories

with the one meeting category, the two to four meetings category, and the five or more meetings category being combined. The number of tobacco related visits to office variable was collapsed from four to two with the one to five visits category, the six to 10 visits category, and the 11 or more category being combined. The variables concerning the number of tobacco related phone calls to the Extension office and the number of tobacco related farm visits by an Extension agent were collapsed from four to two categories with the one to five category, the six to 10 category, and the 11 or more category being combined.

This section is divided into five sub-sections: relationship between age and Extension contacts; relationship between education and Extension contacts; relationship between employment status and Extension contacts; relationship between acreage grown and Extension contacts; and the relationship between pounds of tobacco per acre and Extension contacts. The findings for this section are reported in the following tables. Means and standard deviations are used to report the findings in these tables.

Relationship Between Age and Extension Contacts

As reported in Table 3, the levels of the independent variable, age, used in this study were 18 - 39, 40 to 59, and 60 and over. The levels of the dependent variables measuring type of Extension contact were none and one or more.

Tobacco meetings and/or field days: Based upon the data presented in Table 3, there was no reason to conclude that there was a significant relationship between age and the number of tobacco meetings and/or field days attended. In all three age categories, the majority were more likely to attend no tobacco meetings and/or field days.

Type of Contact	Age					
	18 - 39		40 - 59		60 and over	
	n	%	n	%	n	%
Tobacco Meetings and/or Field Days Attended						
None	8	72.7	30	68.2	24	70.6
1 or more	3	27.3	14	31.8	10	29.4
Total	11	100.0	44	100.0	34	100.0
Statistics: Chi Square = .108	df = 2	p = .947				
Tobacco Related Visits to the Office						
None	8	72.7	13	29.5	15	45.5
1 or more	3	27.3	31	70.5	18	54.5
Total	11	100.0	44	100.0	33	100.0
Statistics: Chi Square = 7.239	df = 2	p = .027				
Tobacco Related Phone Calls to Office						
None	3	27.3	14	31.8	22	61.1
1 or more	8	72.7	30	68.2	14	38.9
Total	11	100.0	44	100.0	36	100.0
Statistics: Chi Square = 8.178	df = 2	p = .017				
Tobacco Related Farm Visits by Agent						
None	11	100.0	30	68.2	31	88.6
1 or more	0	0.0	14	31.8	4	11.4
Total	11	100.0	44	100.0	35	100.0
Statistics: Chi Square = 8.198	df = 2	p = .017				

Tobacco related visits to the Extension office: Approximately 73 percent ($n = 8$) of the 18 to 39 age group, compared to 45.5 percent ($n = 15$) of the 60 and over and 29.5 percent ($n = 13$) of the 40 to 59 age group did not make any tobacco related visits to the Extension office. Just over 70 percent ($n = 31$) of the respondents of the 40 to 59 age group, compared to 54.5 percent ($n = 18$) of the 60 and over age group and 27.3 percent ($n = 3$) of the 18 to 39 age group made one or more tobacco related visits to the Extension office. When the relationship differences in age groups were compared using the Chi Square test, there was a significant relationship at the .027 probability level. Respondents in the middle age group were more likely to make visits to the Extension office than were the other two groups. Furthermore, the older age group was more likely to make visits to the Extension office than the younger age group.

Tobacco related phone calls to the Extension office: When the differences between age and the number of tobacco related phone calls to the Extension office were compared using the Chi Square test, there was a significant relationship at the .017 probability level. Approximately 27 percent ($n = 3$) of the producers in the 18 to 39 age group, compared to almost 32 percent of the producers in the 40 to 59 age group and approximately 61 percent ($n = 22$) of the producers in the 60 and over age group did not make any tobacco related phone calls to the Extension office. Approximately 73 percent ($n = 8$) of the producers in the 18 to 39 age group, compared to 68.2 percent ($n = 30$) of those in the 40 to 59 age group and 38.9 percent ($n = 14$) of those in the 60 and over age group made one or more tobacco related phone calls to the Extension office. Producers in the younger and middle age groups were more likely to make phone calls than those in

the older age group.

Tobacco related farm visits from an Extension agent: One hundred percent ($n = 11$) of the producers in the 18 to 39 age group, compared to 68.2 percent ($n = 30$) of the producers in the 40 to 59 age group and 88.6 percent ($n = 31$) of the 60 and over age group did not receive any tobacco related farm visits from an Extension agent. No producers in the 18 to 39 age group, compared to almost 32 percent ($n = 14$) of those producers in the 40 to 59 age group compared to 11.4 percent ($n = 4$) of those in the 60 and over age group received one or more tobacco related farm visits from an Extension agent. When these differences were compared using the Chi Square test, there was a significant relationship between age and the number of farm visits received from an Extension agent. Producers in the 40 to 59 age group were more likely to have received a tobacco related farm visit from an Extension agent than those producers in the other two age groups.

Relationship Between Education Level and Extension Contacts

The levels of the independent variable, education, were high school or less and some college or college graduate. The levels of the dependent variables measuring type of Extension contact were none and 1 or more. The data for this relationship are reported in Table 4.

Tobacco meetings and/or field days: Approximately 77 percent ($n = 49$) of the producers with a high school education or less compared to 50 percent ($n = 12$) of producers with some college or being a college graduate did not attend any tobacco meetings and/or field days. Approximately 23 percent ($n = 15$) of the producers with a

Table 4. Relationship Between the Education Level of Carter County, TN Burley Tobacco Producers and the Number of Extension Contacts

Type of Contact	Education Level			
	High school or less		Some college or graduate	
	n	%	n	%
Tobacco Meetings and/or Field Days Attended				
None	49	76.6	12	50.0
1 or more	15	23.4	12	50.0
Total	64	100.0	24	100.0
Statistics:	Chi Square = 4.609	df = 1	p = .032	
Tobacco Related Visits to the Office				
None	28	44.4	8	33.3
1 or more	35	55.6	16	66.7
Total	63	100.0	24	100.0
Statistics:	Chi Square = .486	df = 1	p = .486	
Tobacco Related Phone Calls to Office				
None	32	49.2	7	28.0
1 or more	33	50.8	18	72.0
Total	65	100.0	25	100.0
Statistics:	Chi Square = 2.506	df = 1	p = .113	
Tobacco Related Farm Visits by Agent				
None	56	87.5	15	60.0
1 or more	8	12.5	10	40.0
Total	64	100.0	25	100.0
Statistics:	Chi Square = 6.808	df = 1	p = .009	

high school education or less compared to 50 percent ($n = 12$) of the producers with some college or being a college graduate attended one or more tobacco meetings and/or field days. After comparing these differences using a Chi Square test, there was a significant relationship at the .032 probability level. Producers who had attended college or graduated from college were more likely to attend tobacco meetings and/or field days.

Tobacco related visits to the Extension office: Based on the data reported in Table 4, there was no reason to believe that there was a significant relationship between age and the number of tobacco related visits to the Extension office. The majority of producers were more likely to have made one or more tobacco related visits to the Extension office regardless of education level.

Tobacco related phone calls to the Extension office: There was no significant relationship between the number of tobacco related phone calls made to the Extension office and education level.

Tobacco related farm visits from an Extension agent: Approximately 88 percent ($n = 56$) of the producers with a high school or less education compared to 60 percent ($n = 15$) of those with some college or a college degree did not receive any visits from an Extension agent. Almost 13 percent ($n = 8$) of those producers with a high school education or less compared to 40 percent ($n = 10$) or those producers with some college or a college degree received one or more visits from an Extension agent. Based on this data, there was a significant relationship between education level and the number of tobacco related farm visits received from an Extension agent. Producers with some college experience or a college degree were more likely to have received a tobacco

related farm visit from an Extension agent.

Relationship Between Employment Status and Extension Contacts

The levels of the independent variable, employment status, were full-time farm, part-time farm, and retired and farming. The levels of the dependent variable measuring type of Extension contact were none and one or more.

Tobacco meetings and/or field days: Based on the data presented in Table 5, there was no reason to conclude that there was a significant relationship between employment status and the number of tobacco meetings and/or field days attended. Producers in all types of employment in this sample were more likely to not attend tobacco meetings and/or field days.

Tobacco related visits to the Extension office: There was no significant relationship between employment status and the number of tobacco related visits to the Extension office.

Tobacco related phone calls to the Extension office: Based on the data presented in Table 5, there was no significant relationship between employment status and the number of tobacco related calls to the Extension office.

Tobacco related farm visits by an Extension agent: Based on the data reported in Table 5, there was no significant relationship between employment status and the number of tobacco related farm visits from an Extension agent. The majority of producers in all three employment types were more likely to not have received a tobacco related farm visit from an Extension agent regardless of employment type.

Table 5. Relationship Between the Employment Status of Carter County, TN Burley Tobacco Producers and the Number of Extension Contacts

Type of Contact	Employment Status					
	Full-time		Part-time		Retired and	
	n	%	n	%	n	%
Tobacco Meetings and Field Days Attended						
None	20	74.1	25	69.4	15	62.5
1 or more	7	25.9	11	30.6	9	37.5
Total	27	100.0	36	100.0	24	100.0
Statistics: Chi Square = .802 df = 2 p = .670						
Tobacco Related Visits to the Office						
None	10	37.0	14	38.9	12	52.2
1 or more	17	63.0	22	61.1	11	47.8
Total	27	100.0	36	100.0	23	100.0
Statistics: Chi Square = 1.394 df = 2 p = .498						
Tobacco Related Phone Calls to Office						
None	11	40.7	12	33.3	16	61.5
1 or more	16	59.3	24	66.7	10	38.5
Total	27	100.0	36	100.0	26	100.0
Statistics: Chi Square = 5.028 df = 2 p = .081						
Tobacco Related Farm Visits by Agent						
None	21	80.8	26	72.2	23	88.5
1 or more	5	19.2	10	27.8	3	11.5
Total	26	100.0	36	100.0	26	100.0
Statistics: Chi Square = 2.481 df = 2 p = .289						

Relationship Between Acreage Grown and Extension Contacts

The levels of the independent variable, acreage grown, were less than three acres and three acres or more. The levels of the dependent variables measuring type of Extension contact were none and one or more. The data for this relationship are reported in Table 6.

Tobacco meetings and/or field days: Approximately 80 percent ($n = 49$) of the producers growing less than three acres compared to 46.4 percent ($n = 13$) of those growing three acres or more attended no tobacco meetings and/or field days. Almost 20 percent ($n = 12$) of the producers in the less than three acres category compared to 53.6 percent ($n = 15$) of those in the three acres or more attended one or more tobacco meetings and/or field days. By using the Chi Square test, a probability level of .003 was found for the relationship between acreage grown and the number of tobacco meetings and/or field days. Those producers in the three acres or more group were much more likely to attend tobacco meetings and/or field days than those producers in the less than three acres group.

Tobacco related visits to the Extension office: Based on the data presented in Table 6, there was no reason to conclude that there was a significant relationship between acreage grown and the number of tobacco related visits to the Extension office.

Tobacco related phone calls to the Extension office: Based on the data reported in Table 6, there was no reason to conclude that there was a significant relationship between acreage grown and the number of tobacco related phone calls to the Extension office. The majority of producers in this sample were more likely to have made one or

Table 6. Relationship Between the Acreage of Tobacco Grown and the Number of Extension Contacts

Type of Contact	Acreage Grown			
	Less than 3 acres		3 acres or more	
	n	%	n	%
Tobacco Meetings and Field Days Attended				
None	49	80.3	13	46.4
1 or more	12	19.7	15	53.6
Total	61	100.0	28	100.0
Statistics: Chi Square = 8.893	df = 1	p = .003		
Tobacco Related Visits to the Office				
None	26	43.3	10	35.7
1 or more	34	56.7	18	64.3
Total	60	100.0	28	100.0
Statistics: Chi Square = .197	df = 1	p = .657		
Tobacco Related Phone Calls to Office				
None	28	45.9	11	36.7
1 or more	33	54.1	19	63.3
Total	61	100.0	30	100.0
Statistics: Chi Square = .374	df = 1	p = .541		
Tobacco Related Farm Visits by Agent				
None	51	85.0	21	70.0
1 or more	9	15.0	9	30.0
Total	60	100.0	30	100.0
Statistics: Chi Square = 1.953	df = 1	p = .162		

more tobacco related phone calls to the Extension office regardless of acreage grown.

Tobacco related farm visits from an Extension agent: According to the data given in Table 6, there was no reason to conclude that there was a significant relationship between acreage grown and the number of tobacco related farm visits received from an Extension agent. Producers in both acreage grown categories in this sample were more likely to not have received a visit from an Extension agent.

Relationship Between the Pounds of Tobacco per Acre and Extension Contacts

The levels of the independent variable, pounds of tobacco per acre, were 2000 or less, 2001 to 2500, and 2501 and more. The levels of the dependent variables measuring type of Extension contact were none and one or more.

Tobacco meetings and/or field days: According to the data presented in Table 7, approximately 78 percent ($n = 31$) of the producers growing 2000 or less pounds per acre, compared to 77.8 percent ($n = 14$) of the producers growing between 2001 and 2500 pounds per acre and 48 percent ($n = 12$) of the producers growing 2501 pounds or more per acre did not attend any tobacco meetings and/or field days. Roughly 23 percent ($n = 9$) of the producers growing 2000 or less pounds per acre, compared to 22.2 percent ($n = 4$) of the producers growing between 2001 and 2500 pounds per acre and 52 percent ($n = 13$) of the producers growing 2501 pounds or more attended one or more tobacco meetings and/or field days. There was a significant relationship between the number of pounds of tobacco per acre and the number of tobacco meetings and/or field days attended. Producers growing 2501 and more pounds per acre were more likely to have attended one or more tobacco meetings and/or field days.

Table 7. Relationship Between the Pounds of Tobacco Produced per Acre and the Number of Extension Contacts

Type of Contact	Pounds of Tobacco per Acre					
	2000 or less		2001 - 2500		2501 or more	
	n	%	n	%	n	%
Tobacco Meetings and/or Field Days Attended						
None	31	77.5	14	77.8	12	48.0
1 or more	9	22.5	4	22.2	13	52.0
Total	40	100.0	18	100.0	25	100.0
Statistics:	Chi Square = 7.109	df = 2	p < 0.001			
Tobacco Related Visits to the Office						
None	13	33.3	9	50.0	10	40.0
1 or more	26	66.7	9	50.0	15	60.0
Total	39	100.0	18	100.0	25	100.0
Statistics:	Chi Square = 1.452	df = 2	p = .484			
Tobacco Related Phone Calls to Office						
None	18	42.9	7	38.9	10	40.0
1 or more	24	57.1	11	61.1	15	60.0
Total	42	100.0	18	100.0	25	100.0
Statistics:	Chi Square = .102	df = 2	p = .950			
Tobacco Related Farm Visits by Agent						
None	36	87.8	14	77.8	16	64.0
1 or more	5	12.2	4	22.2	9	36.0
Total	41	100.0	18	100.0	25	100.0
Statistics:	Chi Square = 5.236	df = 2	p = .073			

Tobacco related visits to the Extension office: Based on the data found in Table 7, there was no reason to conclude that there was a significant relationship between the pounds of tobacco per acre and the number of tobacco related visits to the Extension office.

Tobacco related phone calls to the Extension office: Based on the data presented in Table 7, there was no reason to believe that there was a significant relationship between the pounds of tobacco per acre and the number of tobacco related phone calls to the Extension office. The majority of producers in this sample were more likely to have made one or more phone calls regardless of the pounds of tobacco per acre grown.

Tobacco related farm visits from an Extension agent: Based on the data reported in Table 7, there was no reason to conclude that there was a significant relationship between the pounds of tobacco per acre and the number of tobacco related farm visits received from an Extension agent. The majority of producers in this sample were more likely to have not received a tobacco related farm visit from an Extension agent.

III. Relationship Between Extension Contact and Selected Tobacco Production Practices

The relationships reported in this section are those between the number of tobacco meetings and/or field days attended; the number of tobacco related visits to the Extension office; the number of tobacco related phone calls to the Extension office; the

number of tobacco related farm visits received from an Extension agent; the acreage of tobacco grown; the pounds of tobacco per acre; and selected tobacco production practices, as measured by the percentage of plants grown in a conventional plant bed; percentage of plants grown in a float bed; percentage of tobacco varieties including TN 97, KY 14xL8, Clay 403, TN 86, TN 90, and a category compiling other varieties; pounds of fertilizer applied pre-plant; pounds of fertilizer applied as a side dress; use of and effectiveness of Prowl, Devrinol, Command, a combination of Prowl and Devrinol, and a combination of Spartan and Command; the plant spacing between rows; the plant spacing in the row; percentage of tobacco topped at various stages including button to elongated button, elongated button to early flower, early to mid-flower, and mid-flower to full flower; percentage of tobacco cured in various structures including a conventional barn, a 2-rail field structure, and a 3-rail field structure; float tray size; use of soil testing; frequency of soil testing; method of weed control; use of Poast; and the time between topping and cutting. The levels of the independent variables describing Extension contacts are none and one or more. The dependent variables describing the intervally scaled tobacco production practices were reported as percentages of conventional plant bed plants, percentages of float bed plants, percentages of various tobacco varieties mentioned previously, measures of the effectiveness of various herbicides and combinations mentioned previously, plant spacing between the rows, percentages of tobacco topped at various stages mentioned previously, percentages of tobacco cured with various methods mentioned previously, float tray size, use of soil testing, frequency of soil testing, method of weed control, use of Poast, and the time between topping and

cutting. The nominally scaled dependent variables were described using frequencies and percentages. The levels for plant spacing in the row were 12 - 15 inches, 16 - 19 inches, and 20 - 24 inches. The levels for float tray size were 200 cell, 253 cell, 288 cell, and other cell. The levels for use of soil testing were yes and no. The levels for frequency of soil testing were every year, every second year, every three to five years, and other. The levels for method of weed control were chemical, cultivation, and chemical and cultivation. The levels for use of Poast were yes and no. The levels for the time between topping and cutting were one week or less, two weeks, three weeks, four weeks, five weeks, and six weeks or more.

In some instances, the researcher chose to not report the results of the t-tests because of extremely low numbers of respondents in one or both groups. In such instances, the relationships were described only as they relate to the sample.

This section is divided into four sub-sections: the relationship between the number of tobacco meetings and/or field days attended and selected tobacco production practices; the relationship between the number of tobacco related farm visits to the Extension office and selected tobacco production practices; the relationship between the number of tobacco related phone calls to the Extension office and selected tobacco production practices; and the number of tobacco related farm visits received from an Extension agent and selected tobacco production practices. The findings for this section are reported in the following tables. Means and standard deviations are used to report the findings in these tables.

Relationship Between the Number of Tobacco Meetings and/or Field Days Attended and Interval Scaled, Selected Tobacco Production Practices

Percentage of plants grown in conventional plant bed: Based on the data in Table 8, producers who had not attended any tobacco meetings and/or field days got an average of approximately 67 percent (s.d. = 46.0) of their tobacco plants from a conventional plant bed while those producers who had attended one or more tobacco meetings and/or field days got an average of 41.3 percent (s.d. = 46.8) of their tobacco plants from a conventional plant bed. The described relationship, reported in Table 8, was significant at the probability level of .021. Producers who had not attended any tobacco meetings and/or field days were more likely to use a higher percentage of plants grown in a conventional plant bed than those producers who had attended one or more tobacco meetings and/or field days.

Percentage of plants grown in a float bed: Producers who had not attended any tobacco meetings and/or field days got an average of 33.2 percent (s.d. = 46.0) of their tobacco plants from a float bed while those producers who had attended one or more tobacco meetings and/or field days got an average of 58.9 percent (n = 46.8) of their tobacco plants from a float bed. There was a significant relationship at the .021 probability level based on the t-test between these two sample means. Producers who had attended one or more tobacco meetings and/or field days used a higher percentage of float bed plants than those producers who had not attended any meetings and/or field days.

Percentage float bed plants direct seeded: Based on the data reported in Table

Table 8. Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Meetings and/or Field Days Attended.

Production Practice	Number of Meetings/Field Days Attended					
	n	$\bar{x}$	s.d.	n	$\bar{x}$	s.d.
Percent of Plants Grown in Conventional Plant Bed	62	66.8	46.0	26	41.3	46.8
Statistics: $t = 2.356$	df = 86	p = .021				
Percent of Plants Grown in Float Bed	62	33.2	46.0	26	58.7	46.8
Statistics: $t = 2.356$	df = 86	p = .021				
Percent direct seeded	22	22.7	42.9	17	50.0	50.0
Statistics: $t = -1.832$	df = 37	p = .075				
Percent purchased pre-finished	22	0.0	0.0	17	8.8	26.4
Statistics: $t = -1.376$	df = 16	p = .188				
Percent purchased finished	22	73.9	44.0	17	41.2	47.6
Statistics: $t = 2.222$	df = 37	p = .032				
Percent grown in greenhouse	21	76.2	43.6	17	64.7	49.3
Statistics: $t = .762$	df = 36	p = .451				
Percent grown in outdoor bed	21	23.8	43.6	17	35.3	49.3
Statistics: $t = -.762$	df = 36	p = .451				
Percent TN 97	53	17.9	38.1	23	18.5	34.2
Statistics: $t = -.060$	df = 74	p = .952				
Percent KY 14xL8	53	5.2	21.6	23	0.0	0.0
Statistics: $t = 1.751$	df = 52	p = .086				
Percent Clay 403	53	0.0	0.0	23	4.3	20.9
Statistics: $t = -1.000$	df = 22	p = .328				
Percent TN 86	53	11.7	32.0	23	2.6	10.5
Statistics: $t = 1.851$	df = 70	p = .068				
Percent TN 90	53	45.8	49.5	23	46.5	45.8
Statistics: $t = -.057$	df = 45	p = .954				

Table 8. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Meetings and/or Field Days Attended.

Production Practice	Number of Meetings/Field Days Attended					
	None			1 or more		
	n	$\bar{x}$	s.d.	n	$\bar{x}$	s.d.
Percent Other Variety	53	19.3	39.4	23	28.0	42.6
Statistics: $t = -.863$	df = 74	p = .391				
Pounds 5-10-15 per Acre	28	1548.2	564.6	10	1375.0	860.0
Statistics: $t = .593$	df = 11	p = .564				
Pounds 34-0-0 per Acre	15	546.7	210.8	12	616.7	444.8
Statistics: $t = -.540$	df = 25	p = .594				
Pounds 9-18-27 per Acre	8	1450.0	466.0	9	1277.8	327.0
Statistics: $t = *$						
Pounds 19-19-19	13	1707.7	459.1	5	1180.0	649.6
Statistics: $t = *$						
Pounds 16-0-0 per Acre	3	483.3	453.7	2	500.0	141.4
Statistics: $t = *$						
Pounds Other Fertilizer	6	1045.8	729.1	4	1637.5	518.6
Statistics: $t = *$						
Pounds Fertilizer Applied Pre-plant	42	1533.3	522.2	23	1604.3	591.4
Statistics: $t = -.500$	df = 63	p = .619				
Pounds Fertilizer Applied Side Dress	35	829.3	658.7	15	533.3	435.3
Statistics: $t = 1.871$	df = 39.3	p = .069				
Plant Spacing Between the Rows	58	43.1	5.8	27	42.9	6.1
Statistics: $t = .131$	df = 83	p = .896				
Percent Topped Button to Elongated Button	61	5.3	19.1	26	23.1	40.0
Statistics: $t = -2.163$	df = 30	p = .039				

* Researcher chose to not report significance of this test due to very low numbers of respondents in each category.

Table 8. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Meetings and/or Field Days Attended.

Production Practice	Number of Meetings/Field Days Attended					
	n	None $\bar{x}$	s.d.	n	1 or more $\bar{x}$	s.d.
Percent Topped Elongated Button to Early Flower	61	27.1	40.1	26	48.1	48.1
Statistics:	t = -1.950	df = 40	p = .058			
Percent Topped Early to Mid-flower	61	28.5	40.9	26	15.4	30.4
Statistics:	t = 1.658	df = 62.9	p = .102			
Percent Topped Mid-flower to Full Flower	61	39.0	46.4	26	13.5	33.3
Statistics:	t = 2.894	df = 64.8	p = .005			
Percent Cured Conventional Barn	62	93.5	21.0	27	93.3	13.2
Statistics:	t = .049	df = 87	p = .961			
Percent Cured Field Structure 2-rail	62	0.0	0.0	27	3.3	10.0
Statistics:	t = -1.732	df = 26	p = .095			
Percent Cured Field Structure 3-rail	62	6.5	21.0	27	3.3	9.9
Statistics:	t = .736	df = 87	p = .464			

8, there was no significant relationship between the number of tobacco meetings and/or field days attended and the average percentage of direct seeded float bed plants per producer. Producers direct seeded similar percentages of their float bed plants regardless of the number of tobacco meetings and/or field days attended.

Percentage float bed plants purchased pre-finished: Based on the data presented in Table 8, there was no significant relationship between the number of tobacco meetings and/or field days attended and the average percentage of plants purchased pre-finished per producer. The number of tobacco meetings and/or field days attended was irrelevant as it related to the average percentage of float bed plants purchased pre-finished per producer.

Percentage float bed plants purchased finished: Of the producers responding, those who attended no tobacco meetings and/or field days purchased an average of 73.9 percent (s.d. = 44.0) of their float bed plants finished, compared to those who attended one or more tobacco meetings and/or field days purchased an average of 41.2 percent (s.d. = 47.6) of their plants finished. Based on the probability level of .032, there was a significant relationship between the number of tobacco meetings and/or field days attended and the average percentage per producer of float bed plants purchased finished. Producers who had not attended any tobacco meetings and/or field days were more likely to purchase a higher percentage of finished float bed plants than those producers who had attended one or more tobacco meetings and/or field days.

Percentage float bed plants grown in a greenhouse and an outdoor float bed: Table 8 also describes the relationship between the number of tobacco meetings and/or

field days attended and the average percentage of float bed plants per producer grown in a greenhouse or the average percentage of float bed plants per producer grown in an outdoor float bed. Neither of these relationships were statistically significant. The majority of float bed plants per producer were produced in greenhouses regardless of the number of tobacco meetings and/or field days attended.

Percentage tobacco varieties: Based on the data regarding percentage of varieties in the study, there was no statistically significant relationship between the number of tobacco meetings and/or field days attended and the average percentage per producer of each of the tobacco varieties in the study. One could conclude based on data regarding varieties in Table 2 that there would be an average of 18.9 percent TN 97 per producer, an average of 3.6 percent KY 14xL8 per producer, an average of 1.3 percent Clay 403 per producer, an average of 8.7 percent TN 86 per producer, an average of 46.2 percent TN 90 per producer, and an average of 21.4 percent other varieties per producer.

Pounds of fertilizer per acre: Based on the data regarding pounds per acre of fertilizers in the study, there was no significant relationship between the number of tobacco meetings and/or field days attended and the pounds per acre of 5-10-15 and 34-0-0. The number of producers responding with regard to the other types of fertilizer were so low that the researcher chose to not report the statistics. One could conclude based on data regarding pounds of fertilizer analyses applied per acre in Table 2, Carter County tobacco producers applied a mean of 1502.6 pounds of 5-10-15 per acre, a mean of 1600.0 pounds of 6-12-18 per acre, a mean of 577.8 pounds of 34-0-0 per acre, a mean of 300 pounds of 15-0-14 per acre, a mean of 266.7 pounds of 46-0-0 per acre, a mean of

1344.4 pounds of 9-18-27 per acre, a mean of 1561.1 pounds of 19-19-19 per acre, a mean of 490.0 pounds of 16-0-0 per acre, a mean of 1282.5 pounds per acre, a mean of 1551.5 pounds of other fertilizer per acre.

Pounds fertilizer applied pre-plant and as a side dress: Based on the data regarding the timing of fertilizer application, there was no statistically significant relationship between the number of tobacco meetings and/or field days attended and whether fertilizer was applied before or after planting. Based on the data reported in Table 2, a mean of 1551.5 pounds of fertilizer was applied before planting compared to a mean of 740.5 pounds after planting.

Plant spacing between the rows: The relationship, described in Table 8, was not statistically significant. The number of tobacco meetings and/or field days attended had no impact on the plant spacing between the tobacco rows.

Percentage topped button to elongated button: An average of 5.3 percent (s.d. = 19.1) of the tobacco belonging to producers who attended no tobacco meetings and/or field days, compared to an average of 23.1 percent (s.d. = 40.0) of tobacco belonging to those who attended one or more tobacco meetings and/or field days was topped at the button to elongated button stage. There was a statistically significant relationship at the probability level of .039 based on the t-test between the two sample means. Producers attending one or more tobacco meetings and/or field days were more likely to top a higher percentage of their tobacco at the button to elongated button stage than those producers who did not attend any tobacco meetings and/or field days.

Percentage topped elongated button to early flower: Based on the data

reported in Table 8, there was not a statistically significant relationship between the number of tobacco meetings and/or field days attended and the average percentage per producer of tobacco topped at the elongated button to early flower stage. Producers topped similar percentages of their tobacco at the elongated button to early flower stage regardless of the number of tobacco meetings and/or field days attended.

Percentage topped early to mid-flower: There was no statistically significant relationship between the number of tobacco meetings and/or field days attended and the average percentage of tobacco topped in the early to mid-flower stage. Producers topped similar percentages of their tobacco at the early to mid-flower stage regardless of the number of tobacco meetings and/or field days attended.

Percentage topped mid-flower to full flower: Based on the data reported in Table 8 regarding this relationship, there was a statistically significant relationship at the probability level of .005 between the number of tobacco meetings and/or field days attended and the average percentage per producer of tobacco topped in the mid-flower to full flower stage. An average of approximately 39 percent (s.d. = 46.4) of the tobacco represented by producers who did not attend any tobacco meetings and/or field days compared to an average of 13.5 percent (s.d. = 33.3) of the tobacco represented by producers who attended one or more tobacco meetings and/or field days topped was topped in the mid-flower to full flower stage. Producers attending one or more tobacco meetings and/or field days topped a lower percentage of their tobacco in the mid-flower to full flower than those who did not attend any tobacco meetings and/or field days.

Percentage cured in various structures: Based on the data regarding the

percentage of tobacco cured in the structures in the study, there was no statistically significant relationship between the number of tobacco meetings and/or field days attended and the types of curing structures in the study. One could conclude that the data in Table 2 regarding curing methods could describe the range of curing methods for producers in Carter County. Based on this information, an average of 93.6 percent of the tobacco per producer would be cured in a conventional barn, an average of zero percent of the tobacco per producer would be cured on high tensile wire, an average of one percent of the tobacco per producer would be cured on a 2-rail field structure, and an average of 5.4 percent of the tobacco per producer would be cured on a 3-rail field structure.

Relationship Between the Number of Tobacco Meetings and/or Field Days Attended and Nominally Scaled, Selected Tobacco Production Practices

Float tray size: Although unable to produce a valid test due to low expected frequencies, data in Table 9 may be cautiously described as they relate to only those responding to this survey. No conclusions can be drawn with regard to other producers in Carter County. For the sample the majority of respondents appear to use 253 and 288 cell trays regardless of the number of tobacco meetings and/or field days attended.

Use of soil testing: Of the producers responding to the question, approximately 30.6 percent ($n = 19$) who attended no tobacco meetings and/or field days soil tested, while 66.7 percent ($n = 18$) who attended one or more tobacco meetings and/or field days soil tested. Approximately 69 percent ($n = 43$) of the producers attending no tobacco meetings and/or field days did not soil test, while 33.3 percent ($n = 9$) of those who

Table 9. Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Meetings and Field Days Attended.

Production Practice	Number of Meetings/Field Days Attended			
	None		1 or more	
	n	%	n	%
Float Tray Size Used				
200 cell	3	14.3	2	12.5
253 cell	11	52.4	9	56.3
288 cell	7	33.3	4	25.0
Other cell	0	0.0	1	6.3
Total	21	100.0	16	100.0
Statistics:	Chi Square *			
Use of Soil Testing				
Yes	19	30.6	18	66.7
No	43	69.4	9	33.3
Total	62	100.0	27	100.0
Statistics:	Chi Square = 8.619 df = 1 p = .003			
Frequency of Soil Testing				
Every year	3	15.0	4	22.2
Every 2 nd year	7	35.0	8	44.4
Every 3 - 5 years	9	45.0	5	27.8
Other frequency	1	5.0	1	5.6
Total	20	100.0	18	100.0
Statistics:	Chi Square *			
Method of Weed Control				
Chemical	3	5.2	2	7.4
Cultivation	23	39.7	6	22.2
Chemical and cultivation	32	55.2	19	70.4
Total	58	100.0	27	100.0
Statistics:	Chi Square *			
Use of Poast				
Yes	2	3.4	1	3.8
No	56	96.6	25	96.2
Total	58	100.0	26	100.0
Statistics:	Chi Square *			

* Unable to get a valid test due to low expected frequencies.

Table 9. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Meetings and/or Field Days Attended.

Production Practice	Number of Meetings/Field Days Attended			
	None		1 or more	
	n	%	n	%
Plant Spacing in the Row				
12 - 15 inches	21	34.4	4	14.8
16 - 19 inches	27	44.3	13	48.1
20 - 24 inches	13	21.3	10	37.0
Total	61	100.0	27	100.0
Statistics:	Chi Square = 4.367 df = 2 p = .113			
Time Between Topping and Cutting				
1 week or less	2	3.2	0	0.0
2 weeks	8	12.9	0	0.0
3 weeks	26	41.9	11	42.3
4 weeks	18	29.0	3	11.5
5 weeks	7	11.3	11	42.3
6 weeks or more	1	1.6	1	3.8
Total	62	100.0	26	100.0
Statistics:	Chi Square *			

* Unable to get a valid test due to low expected frequencies.

attended one or more tobacco meetings and/or field days. The relationship between the number of tobacco meetings and/or field days attended and the use of soil testing was statistically significant at the .003 probability level. Producers attending one or more tobacco meetings and/or field days were more likely to soil test than those not attending any tobacco meetings and/or field days.

Frequency of soil testing: Again the researcher was unable to produce a valid test. However, most respondents in the sample are sampling every second and third year regardless of the number of tobacco meetings and/or field days attended.

Method of weed control: Again the researcher was unable to produce a valid test. However, most respondents in the sample are using chemical and cultivation methods of weed control regardless of the number of tobacco meetings and/or field days attended.

Use of Poast: Again the researcher was unable to produce a valid test. However, most respondents in the sample are not using Poast regardless of the number of tobacco meetings and/or field days attended.

Plant spacing in the row: Based on the described relationship in Table 9 between the number of tobacco meetings and/or field days attended and the plant spacing in the row, there was not a statistically significant relationship.

Time between topping and cutting: Again the researcher was unable to produce a valid test. However, most respondents in the sample are waiting three to five weeks between the topping and cutting of their tobacco regardless of the number of tobacco meetings and/or field days attended.

Relationship Between the Number of Tobacco Related Visits to the Extension office and Interval Scaled, Selected Tobacco Production Practices

Percentage of plants grown in a conventional plant bed and a float bed: Based on the data reported in Table 10 regarding the percentage of conventional plant bed and float bed plants, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and the producers' choice between tobacco plants grown in a conventional plant bed or float bed. The conclusion could be drawn based on the data in Table 2 that an average of 60.6 percent of the tobacco plants per producer would be conventional plant bed plants and an average of 39.4 percent of the tobacco plants per producer would be float bed plants.

Percentage float bed plants direct seeded: There was no statistically significant relationship based on the data in Table 10 between the number of tobacco related visits to the Extension office and the average percentage of float bed plants per producer direct seeded. Producers who did not make any tobacco related visits to the Extension office were just as likely to direct seed as those who made one or more visits to the Extension office.

Percentage float bed plants purchased pre-finished and finished: Based on the data reported in Table 10 regarding the percentages of float bed plants purchased pre-finished and finished, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and either the average percentage of float bed plants per producer purchased pre-finished or the average percentage of float bed plants per producer purchased finished. One could conclude that the data in Table 2

Table 10. Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Visits to the Extension Office.

Production Practice	Number of Visits to Extension Office					
	n	None $\bar{x}$	s.d.	1 or more n	$\bar{x}$	s.d.
Percent of Plants Grown in Conventional Plant Bed	36	61.5	47.8	51	56.9	47.6
Statistics:	t = .449	df = 85	p = .654			
Percent of Plants Grown in Float Bed	36	38.5	47.8	51	43.1	47.6
Statistics:	t = -.449	df = 85	p = .654			
Percent direct seeded	15	33.3	48.8	24	35.4	47.7
Statistics:	t = -.131	df = 37	p = .896			
Percent purchased pre-finished	15	10.0	28.0	24	0.0	0.0
Statistics:	t = 1.382	df = 14	p = .189			
Percent purchased finished	15	51.7	48.6	24	64.6	47.7
Statistics:	t = -.816	df = 37	p = .419			
Percent grown in greenhouse	15	66.7	48.8	23	73.9	44.9
Statistics:	t = -.470	df = 36	p = .641			
Percent grown in outdoor bed	15	33.3	48.8	23	26.1	44.9
Statistics:	t = .470	df = 36	p = .641			
Percent TN 97	29	18.1	38.3	46	18.5	36.4
Statistics:	t = -.043	df = 73	p = .966			
Percent KY 14xL8	29	3.4	18.6	46	3.8	18.2
Statistics:	t = -.082	df = 73	p = .935			
Percent Clay 403	29	0.0	0.0	46	2.2	14.7
Statistics:	t = -.792	df = 73	p = .431			
Percent TN 86	29	12.4	31.7	46	7.0	25.0
Statistics:	t = .829	df = 73	p = .410			
Percent TN 90	29	37.6	49.0	46	52.4	47.2
Statistics:	t = -1.303	df = 73	p = .197			

Table 10. (Continued) Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Visits to the Extension Office.

Production Practice	Number of Visits to Extension Office					
	n	None		1 or more		
		$\bar{x}$	s.d.	n	$\bar{x}$	s.d.
Percent Other Variety	29	28.4	45.2	46	16.2	35.3
Statistics:	t = 1.241	df = 49.1	p = .220			
Pounds 5-10-15 per Acre	18	1661.1	625.8	19	1326.3	647.1
Statistics:	t = 1.598	df = 35	p = .119			
Pounds 34-0-0 per Acre	10	535.0	197.3	16	603.1	404.3
Statistics:	t = -.495	df = 24	p = .625			
Pounds 9-18-27 per Acre	5	1420.0	356.4	12	1333.3	422.8
Statistics:	t = *					
Pounds 19-19-19	6	1783.3	348.8	12	1450.0	615.7
Statistics:	t = *					
Pounds Other Fertilizer	2	1575.0	106.1	8	1209.4	763.4
Statistics:	t = *					
Pounds Fertilizer Applied Pre-plant	29	1584.5	553.6	36	1537.5	543.3
Statistics:	t = .344	df = 63	p = .732			
Pounds Fertilizer Applied Side Dress	17	711.8	635.5	33	755.3	608.3
Statistics:	t = -.236	df = 48	p = .814			
Plant Spacing Between the Rows	35	42.9	6.7	49	43.0	5.3
Statistics:	t = -.087	df = 82	p = .931			
Percent Topped Button to Elongated Button	36	6.9	19.5	50	13.5	33.0
Statistics:	t = -1.154	df = 81.3	p = .252			

* Researcher chose to not report significance of this test due to very low numbers of respondents in each category.

Table 10. (Continued) Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Visits to the Extension Office.

Production Practice	n	Number of Visits to Extension Office					
		None			1 or more		
		$\bar{x}$	s.d.		$\bar{x}$	s.d.	
Percent Topped Elongated Button to Early Flower	36	30.3	43.0	50	36.3	44.1	
Statistics:	t = -.631	df = 84	p = .530				
Percent Topped Early to Mid-flower	36	27.6	40.5	50	20.9	35.7	
Statistics:	t = .817	df = 84	p = .416				
Percent Topped Mid-flower to Full Flower	36	35.1	45.1	50	29.3	44.2	
Statistics:	t = .599	df = 84	p = .551				
Percent Cured Conventional Barn	36	91.9	22.1	52	94.4	16.6	
Statistics:	t = -.600	df = 86	p = .550				
Percent Cured Field Structure 2-rail	36	.8	5.0	52	1.2	6.2	
Statistics:	t = -.259	df = 86	p = .796				
Percent Cured Field Structure 3-rail	36	7.2	21.9	52	4.4	15.7	
Statistics:	t = .699	df = 86	p = .487				

regarding the percentage of float bed plants that were purchased pre-finished or finished could describe the likely average percentages per producer for Carter County. Based on this information, an average of 3.8 percent of producers' float bed plants were purchased as pre-finished plants and an average of almost 60 percent per producer were purchased as finished plants.

Percentage float bed plants grown in a greenhouse and an outdoor bed: Table 10 also describes the relationship between the number of tobacco related visits to the Extension office and the average percentage of float bed plants per producer grown in a greenhouse or the average percentage of float bed plants per producer grown in an outdoor float bed. Neither of these relationships were statistically significant. The majority of float bed plants per producer were grown in greenhouses regardless of the number of tobacco related visits to the Extension office.

Percentage tobacco varieties: Based on the data reported in Table 10 regarding percentage of varieties in the study, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and the average percentage per producer of each of the tobacco varieties in the study. One could conclude based on data regarding varieties in Table 2 that an average percentage of tobacco varieties per producer would be 18.9 percent TN 97, 3.6 percent KY 14xL8, 1.3 percent Clay 403, 8.7 percent TN 86, 46.2 percent TN 90, and 21.4 percent other.

Pounds of fertilizer per acre: Based on the data regarding pounds per acre of fertilizers in the study, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and the pounds per acre of 5-10-

15 and 34-0-0. The numbers of producers responding to the other types of fertilizer were so low that the researcher chose to not report the statistics. One could conclude that based on data regarding pounds of fertilizer analyses applied per acre in Table 2, Carter County tobacco producers applied a mean of 1502.6 pounds of 5-10-15 per acre, a mean of 1600.0 pounds of 6-12-18 per acre, a mean of 577.8 pounds of 34-0-0 per acre, a mean of 300 pounds of 15-0-14 per acre, a mean of 266.7 pounds of 46-0-0 per acre, a mean of 1344.4 pounds of 9-18-27 per acre, a mean of 1561.1 pounds of 19-19-19 per acre, a mean of 490.0 pounds of 16-0-0 per acre, a mean of 1282.5 pounds per acre, a mean of 1551.5 pounds of other fertilizer per acre.

Pounds fertilizer applied pre-plant and as a side dress: Based on the data regarding the timing of fertilizer application, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and whether fertilizer was applied before or after planting. Based on the data reported in Table 2, a mean of 1551.5 pounds of fertilizer was applied before planting compared to a mean of 740.5 pounds after planting.

Plant spacing between the rows: The relationship, described in Table 10, between the number of tobacco related visits to the Extension office and the plant spacing between the rows was not statistically significant. The difference in the plant spacing between the rows could not be attributed to the levels of the independent variable, none and one or more.

Percentage of tobacco topped at various stages: Based on the data reported in Table 10 regarding stage of topping, there was no statistically significant relationship

between the number of tobacco related visits to the Extension office and the percentages of tobacco topped in various stages in the study. One could conclude based on the data in Table 2 that an average of 10.5 percent of the tobacco per producer was topped at the button to elongated button stage, an average of 33.0 percent per producer was topped at the elongated button to early flower stage, an average of 25.5 percent per producer was topped at the early to mid-flower stage, and an average of 31.0 percent per producer was topped at the mid-flower to full flower stage.

Percentage of tobacco cured in various structures: Based on the data reported in Table 10 in relation to curing methods, there was no statistically significant relationship between the number of tobacco related visits to the Extension office and the methods of curing in the study. Based on the data in Table 2, one could expect an average of 93.6 percent of the tobacco per producer to be cured in a conventional barn, an average of zero percent per producer to be cured on high tensile wire, an average of one percent per producer to be cured on a 2-rail field structure, and an average of 5.4 percent per producer to be cured on a 3-rail field structure.

Relationship Between the Number of Tobacco Related Visits to the Extension office and Nominally Scaled, Selected Tobacco Production Practices

Float tray size: Although unable to produce a valid test due to low expected frequencies, data in Table 11 may be cautiously described as they relate to only those responding to this survey. No conclusions can be drawn with regard to other producers in Carter County. For the sample the majority of respondents appear to use 253 and 288 cell trays regardless of the number of tobacco related visits to the Extension office.

Table 11. Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Visits to the Extension Office.

Production Practice	Number of Visits to Extension Office			
	None		1 or more	
	n	%	n	%
Float Tray Size Used				
200 cell	1	6.7	4	18.2
253 cell	8	53.3	12	54.5
288 cell	6	40.0	5	22.7
Other cell	0	0.0	1	4.5
Total	15	100.0	22	100.0
Statistics:	Chi Square *			
Use of Soil Testing				
Yes	14	38.9	23	44.2
No	22	61.1	29	55.8
Total	36	100.0	52	100.0
Statistics:	Chi Square = .078 df = 1 p = .780			
Frequency of Soil Testing				
Every year	2	14.3	5	20.8
Every 2 nd year	5	35.7	10	41.7
Every 3 - 5 years	7	50.0	7	29.2
Other frequency	0	0.0	2	8.3
Total	14	100.0	24	100.0
Statistics:	Chi Square *			
Method of Weed Control				
Chemical	4	11.8	1	2.0
Cultivation	9	26.5	20	40.0
Chemical and cultivation	21	61.8	29	58.0
Total	34	100.0	50	100.0
Statistics:	Chi Square *			
Use of Poast				
Yes	2	5.9	1	2.0
No	32	94.1	48	98.0
Total	34	100.0	49	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

Table 11. (Continued) Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Visits to the Extension Office.

Production Practice	Number of Visits to Extension office			
	None		1 or more	
	n	%	n	%
Plant Spacing in the Row				
12 - 15 inches	9	25.0	16	31.4
16 - 19 inches	17	47.2	22	43.1
20 - 24 inches	10	27.8	13	25.5
Total	36	100.0	51	100.0
Statistics:	Chi Square = .4197 df = 2 p = .811			
Time Between Topping and Cutting				
1 week or less	1	2.9	1	1.9
2 weeks	3	8.6	5	9.6
3 weeks	12	34.3	25	48.1
4 weeks	11	31.4	9	17.3
5 weeks	7	20.0	11	21.2
6 weeks or more	1	2.9	1	1.9
Total	35	100.0	52	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

Use of soil testing: The relationship between the number of tobacco related visits to the Extension office and the use of soil testing was not statistically significant.

Producers visiting the Extension office one or more times for tobacco purposes were no more likely to use soil testing than those producers not making any tobacco related visits to the Extension office.

Frequency of soil testing: Again the researcher was unable to produce a valid test. However, most respondents in the sample are sampling every second and third year regardless of the number of tobacco related visits to the Extension office.

Method of weed control: Again the researcher was unable to produce a valid test. However, over half of the respondents in the sample are using both chemical and cultivation for weed control regardless of the number of tobacco related visits to the Extension office.

Use of Poast: Again the researcher was unable to produce a valid test. However, most respondents in the sample are not using Poast regardless of the number of tobacco related visits to the Extension office.

Plant spacing in the row: Based on the described relationship in Table 11, there was not a statistically significant relationship between the number of tobacco related visits to the Extension office and the plant spacing in the row. Regardless of the number of tobacco related visits to the Extension office, producers chose similar in-row plant spacings.

Time between topping and cutting: Again the researcher was unable to produce a valid test. However, most respondents in the sample are waiting three to five weeks

between the topping and cutting of their tobacco regardless of the number of tobacco related visits to the Extension office.

Relationship Between the Number of Tobacco Related Phone Calls and Interval Scaled, Selected Tobacco Production Practices

Percentage of plants grown in a conventional plant bed and a float bed: Based on the data reported in Table 12 regarding the average percentage of conventional plant bed and float bed plants per producer, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and the producers' choice between tobacco plants grown in a conventional plant bed or a float bed. The conclusion could be drawn based on the data in Table 2 that an average of 60.6 percent of the tobacco plants per producer was grown in a conventional plant bed and an average of 39.4 percent of the tobacco plants per producer was grown in a float bed.

Percentage float bed plants direct seeded: There was not a statistically significant relationship between the number of tobacco related phone calls to the Extension office and the average percentage of float bed plants per producer direct seeded. Producers who did not make any tobacco related phone calls to the Extension office were just as likely to direct seed as those who made one or more phone calls to the Extension office.

Percentage float bed plants purchased pre-finished and finished: Based on the data reported in Table 12 regarding the percentages of float bed plants purchased pre-finished and finished, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and either the average

Table 12. Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Phone Calls to the Extension Office.

Production Practice	n	Number of Phone Calls					
		None			1 or more		
		$\bar{x}$	s.d.		$\bar{x}$	s.d.	
Percent of Plants Grown in Conventional Plant Bed	39	64.6	46.8	51	56.8	47.7	
Statistics:	t = .779	df = 88	p = .438				
Percent of Plants Grown in Float Bed	39	35.4	46.8	51	43.2	47.7	
Statistics:	t = -.779	df = 88	p = .438				
Percent direct seeded	14	21.4	42.6	25	42.0	49.3	
Statistics:	t = -1.366	df = 30.5	p = .182				
Percent purchased pre-finished	14	3.6	13.4	25	4.0	20.0	
Statistics:	t = -.072	df = 37	p = .943				
Percent purchased finished	14	69.6	44.0	25	54.0	49.8	
Statistics:	t = 1.014	df = 30	p = .319				
Percent grown in greenhouse	14	57.1	51.4	24	79.2	41.5	
Statistics:	t = -1.366	df = 36	p = .185				
Percent grown in outdoor bed	14	42.9	51.4	24	20.8	41.5	
Statistics:	t = 1.366	df = 22.9	p = .185				
Percent TN 97	33	15.2	36.4	44	19.9	36.9	
Statistics:	t = -.560	df = 75	p = .577				
Percent KY 14xL8	33	8.3	27.0	44	0.0	0.0	
Statistics:	t = 1.773	df = 32	p = .086				
Percent Clay 403	33	0.0	0.0	44	2.3	15.1	
Statistics:	t = -.865	df = 75	p = .390				
Percent TN 86	33	12.1	33.1	44	6.4	22.2	
Statistics:	t = .863	df = 52.7	p = .392				
Percent TN 90	33	48.5	50.8	44	45.5	46.7	
Statistics:	t = .268	df = 65.8	p = .789				

Table 12. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Phone Calls to the Extension Office.

Production Practice	Number of Phone Calls					
	n	None $\bar{x}$	s.d.	n	1 or more $\bar{x}$	s.d.
Percent Other Variety	33	15.9	36.3	44	26.0	42.7
Statistics:	t = -1.121	df = 73.7	p = .266			
Pounds 5-10-15 per Acre	18	1616.7	586.4	20	1400.0	695.7
Statistics:	t = 1.032	df = 36	p = .309			
Pounds 34-0-0 per Acre	9	488.9	220.5	18	622.2	370.7
Statistics:	t = *					
Pounds 9-18-27 per Acre	7	1400.0	416.3	11	1309.1	385.9
Statistics:	t = *					
Pounds 19-19-19	9	1444.4	661.6	9	1677.8	429.5
Statistics:	t = *					
Pounds Other Fertilizer	2	800.0	989.9	8	1403.1	626.0
Statistics:	t = *					
Pounds Fertilizer Applied Pre-plant	26	1557.7	498.9	40	1547.5	575.8
Statistics:	t = .074	df = 64	p = .941			
Pounds Fertilizer Applied Side Dress	18	913.9	719.4	32	643.0	529.1
Statistics:	t = 1.524	df = 48	p = .134			
Plant Spacing Between the Rows	37	43.1	6.0	49	42.9	5.8
Statistics:	t = .217	df = 84	p = .829			
Percent Topped Button to Elongated Button	38	4.6	17.3	50	15.0	33.3
Statistics:	t = -1.898	df = 77.1	p = .061			

* Researcher chose to not report significance of this test due to very low numbers of respondents in each category.

Table 12. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Phone Calls to the Extension Office.

Production Practice	n	Number of Phone Calls					
		None			1 or more		
		$\bar{x}$	s.d.		$\bar{x}$	s.d.	
Percent Topped Elongated Button to Early Flower	38	32.0	44.5	50	33.8	42.8	
Statistics:	t = -.195	df = 86	p = .846				
Percent Topped Early to Mid-flower	38	23.8	38.8	50	26.7	39.4	
Statistics:	t = -.342	df = 86.0	p = .733				
Percent Topped Mid-flower to Full Flower	38	39.6	46.2	50	24.5	41.8	
Statistics:	t = 1.582	df = 75.3	p = .118				
Percent Cured Conventional Barn	37	93.0	21.6	52	93.8	16.9	
Statistics:	t = -.214	df = 87	p = .831				
Percent Cured Field Structure 2-rail	37	0.0	0.0	52	1.7	7.3	
Statistics:	t = -1.701	df = 51	p = .095				
Percent Cured Field Structure 3-rail	37	7.0	21.6	52	4.4	15.7	
Statistics:	t = .659	df = 87	p = .512				

percentage of float bed plants per producer purchased pre-finished or the average percentage of float bed plants per producer purchased finished. One could derive from the data in Table 2 regarding the percentage of float bed plants that were purchased pre-finished or finished could describe the likely average percentages per producer for Carter County. Based on this information, an average of 3.8 percent of the float bed plants per producer were purchased as pre-finished plants and an average of almost 60 percent per producer were purchased as finished plants.

Percentage float bed plants grown in a greenhouse and an outdoor bed: Table 12 also describes the relationship between the number of tobacco related phone calls to the Extension office and the average percentage of float bed plants per producer grown in a greenhouse or the average percentage of float bed plants per producer grown in an outdoor float bed. Neither of these relationships were statistically significant. The majority of float bed plants per producer in Carter County were produced in greenhouses regardless of the number of tobacco related phone calls to the Extension office.

Percentage tobacco varieties: Based on the data regarding percentage of varieties in the study, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and the average percentage per producer of each of the tobacco varieties in the study. Based on data regarding varieties in Table 2, one could conclude the average percentage of varieties per producer would be 18.9 percent TN 97, 3.6 percent KY 14xL8, 1.3 percent Clay 403, 8.7 percent TN 86, 46.2 percent TN 90, and 21.4 percent other.

Pounds of fertilizer per acre: Based on the data regarding pounds per acre of fertilizers in the study, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and the pounds per acre of 5-10-15. The number of producers responding with percentages of the other types of fertilizer were so low that the researcher chose to not report the statistics. One could conclude, based on data regarding pounds of fertilizer analyses applied per acre in Table 2, Carter County tobacco producers applied a mean of 1502.6 pounds of 5-10-15 per acre, a mean of 1600.0 pounds of 6-12-18 per acre, a mean of 577.8 pounds of 34-0-0 per acre, a mean of 300 pounds of 15-0-14 per acre, a mean of 266.7 pounds of 46-0-0 per acre, a mean of 1344.4 pounds of 9-18-27 per acre, a mean of 1561.1 pounds of 19-19-19 per acre, a mean of 490.0 pounds of 16-0-0 per acre, a mean of 1282.5 pounds per acre, a mean of 1551.5 pounds of other fertilizer per acre.

Pounds fertilizer applied pre-plant and as a side dress: Based on the data regarding the timing of fertilizer application, there was no statistically significant relationship between the number of phone calls to the Extension office and whether fertilizer was applied before or after planting. Based on the data reported in Table 2, a mean of 1551.5 pounds of fertilizer was applied before planting compared to a mean of 740.5 pounds after planting.

Plant spacing between the rows: The relationship, described in Table 12, between the number of tobacco related phone calls to the Extension office and the plant spacing between the rows was not statistically significant. The difference in the plant spacing between the rows could not be attributed to the number of tobacco related phone

calls, none and one or more.

Percentage of tobacco topped at various stages: Based on the data reported in Table 12 regarding stage of topping, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and stages of topping in the study. One could conclude based on the data in Table 2 that an average of 10.5 percent per producer was topped at the button to elongated button stage, an average of 33.0 percent per producer was topped at the elongated button to early flower stage, an average of 25.5 percent per producer was topped at the early to mid-flower stage, and an average of 31.0 percent per producer was topped at the mid-flower to full flower stage.

Percentage of tobacco cured in various structures: Based on the data reported in Table 12 in relation to curing methods, there was no statistically significant relationship between the number of tobacco related phone calls to the Extension office and the methods of curing in the study. Based on the data in Table 2, one could expect an average of 93.6 percent of the tobacco per producer to be cured in a conventional barn, an average of zero percent per producer to be cured on high tensile wire, an average of one percent per producer to be cured on a 2-rail field structure, and an average of 5.4 percent per producer to be cured on a 3-rail field structure.

Relationship Between the Number of Tobacco Related Phone Calls and Nominally Scaled, Selected Tobacco Production Practices

Float tray size: Although unable to produce a valid test due to low expected frequencies, data in Table 13 may be cautiously described as they relate to only those responding to this survey. No conclusions can be drawn with regard to other producers

Table 13. Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Phone Calls to the Extension Office.

Production Practice	Number of Phone Calls			
	None		1 or more	
	n	%	n	%
Float Tray Size Used				
200 cell	3	21.4	2	8.7
253 cell	6	42.9	14	60.9
288 cell	5	35.7	6	26.1
Other cell	0	0.0	1	4.3
Total	14	100.0	23	100.0
Statistics:	Chi Square *			
Use of Soil Testing				
Yes	10	26.3	27	51.9
No	28	73.7	25	48.1
Total	38	100.0	52	100.0
Statistics:	Chi Square = 4.936 df = 1 p = .026			
Frequency of Soil Testing				
Every year	2	18.2	5	18.5
Every 2 nd year	4	36.4	11	40.7
Every 3 - 5 years	4	36.4	10	37.0
Other frequency	1	9.1	1	3.7
Total	11	100.0	27	100.0
Statistics:	Chi Square *			
Method of Weed Control				
Chemical	3	8.3	2	4.0
Cultivation	15	41.7	14	28.0
Chemical and cultivation	18	50.0	34	68.0
Total	36	100.0	50	100.0
Statistics:	Chi Square *			
Use of Poast				
Yes	2	5.6	1	2.0
No	34	94.4	48	98.0
Total	36	100.0	49	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

Table 13. (Continued) Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Phone Calls to the Extension Office.

Production Practice	<u>Number of Phone Calls</u>			
	None		1 or more	
	n	%	n	%
Plant Spacing in the Row				
12 - 15 inches	7	18.9	18	35.3
16 - 19 inches	22	59.5	18	35.3
20 - 24 inches	8	21.6	15	29.4
Total	37	100.0	51	100.0
Statistics:	Chi Square = 5.277 df = 2 p = .071			
Time Between Topping and Cutting				
1 week or less	1	2.7	1	2.0
2 weeks	4	10.8	4	7.8
3 weeks	17	45.9	20	39.2
4 weeks	9	24.3	12	23.5
5 weeks	5	13.5	13	25.5
6 weeks or more	1	2.7	1	2.0
Total	37	100.0	51	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

in Carter County. For the sample the majority of respondents appear to use either the 253 and 288 cell trays regardless of the number of tobacco related phone calls to the Extension office.

Use of soil testing: The relationship between the number of tobacco related phone calls to the Extension office and the use of soil testing was statistically significant at the .026 probability level. Producers making one or more tobacco related phone calls to the Extension office were more likely to soil test than those not making any tobacco related phone calls to the Extension office.

Frequency of soil testing: Again the researcher was unable to produce a valid test. However, most respondents in the sample are sampling every second and third year regardless of the number of tobacco related phone calls to the Extension office.

Method of weed control: Again the researcher was unable to produce a valid test. However, at least half of the respondents in the sample are using both chemical and cultivation for weed control regardless of the number of tobacco related phone calls to the Extension office.

Use of Poast: Again the researcher was unable to produce a valid test. However, most respondents in the sample are not using Poast regardless of the number of tobacco related phone calls to the Extension office.

Plant spacing in the row: Based on the described relationship in Table 13, there was not a statistically significant relationship between the number of tobacco related phone calls to the Extension office and the plant spacing in the row. Regardless of the number of tobacco related phone calls to the Extension office, producers chose similar

in-row plant spacings.

Time between topping and cutting: Again the researcher was unable to produce a valid test. However, most respondents in the sample are waiting three to five weeks between the topping and cutting of their tobacco regardless of the number tobacco related phone calls to the Extension office.

Relationship Between the Number of Tobacco Related Farm Visits Received from an Extension Agent and Interval Scaled, Selected Tobacco Production Practices

Percentage of plants grown in a conventional plant bed and a float bed: Based on the data reported in Table 14 regarding the average percentage of conventional plant bed and float bed plants per producer, there was no statistically significant relationship between the number of tobacco related farm visits from an Extension agent and the producers' choice between tobacco plants grown in a conventional plant bed or float bed. The conclusion could be drawn based on the data in Table 2 that an average of 60.6 percent of the tobacco plants per producer would be conventional plant bed plants and an average of 39.4 percent of the tobacco plants per producer would be float bed plants.

Percentage float bed plants direct seeded: The relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage of float bed plants direct seeded was statistically significant at the .004 probability level. Producers receiving one or more visits were more likely to direct seed a higher percentage of their float bed plants than those who were not visited.

Percentage float bed plants purchased pre-finished: Based on the data presented in Table 14, there was not a statistically significant relationship between the

Table 14. Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Farm Visits by an Extension Agent.

Production Practice	n	Number of Farm Visits				
		None		1 or more		
		$\bar{x}$	s.d.	n	$\bar{x}$	s.d.
Percent of Plants Grown in Conventional Plant Bed	71	64.5	46.2	18	46.4	49.1
Statistics:	t = 1.468	df = 87	p = .146			
Percent of Plants Grown in Float Bed	71	35.5	46.2	18	53.6	49.1
Statistics:	t = -1.468	df = 87	p = .146			
Percent direct seeded	28	21.4	41.8	11	68.2	46.2
Statistics:	t = -3.053	df = 37	p = .004			
Percent purchased pre-finished	28	5.4	20.8	11	0.0	0.0
Statistics:	t = .847	df = 37	p = .403			
Percent purchased finished	28	70.5	44.6	11	31.8	46.2
Statistics:	t = 2.414	df = 37	p = .021			
Percent grown in greenhouse	28	75.0	44.1	10	60.0	51.6
Statistics:	t = .883	df = 36	p = .383			
Percent grown in outdoor bed	28	25.0	44.1	10	40.0	51.6
Statistics:	t = -.833	df = 36	p = .383			
Percent TN 97	60	13.1	32.7	16	36.9	45.5
Statistics:	t = -1.960	df = 19.3	p = .065			
Percent KY 14xL8	60	4.9	20.3	16	0.0	0.0
Statistics:	t = .898	df = 74	p = .372			
Percent Clay 403	60	1.7	12.9	16	0.0	0.0
Statistics:	t = .514	df = 74	p = .609			
Percent TN 86	60	11.2	30.6	16	.6	2.5
Statistics:	t = 2.632	df = 61.8	p = .011			
Percent TN 90	60	45.0	48.8	16	50.0	46.9
Statistics:	t = -.367	df = 74	p = .714			

Table 14. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Farm Visits by an Extension Agent.

Production Practice		n	Number of Farm Visits				s.d.
			None		1 or more		
			$\bar{x}$	s.d.	n	$\bar{x}$	
Percent Other Variety		60	24.5	41.7	16	12.5	34.2
Statistics:	t = 1.189	df = 28.2	p = .244				
Pounds 5-10-15 per Acre		32	1518.8	665.4	6	1416.7	584.5
Statistics:	t = *						
Pounds 34-0-0 per Acre		18	583.3	390.3	9	566.7	173.2
Statistics:	t = *						
Pounds 9-18-27 per Acre		12	1291.7	416.6	6	1450.0	333.2
Statistics:	t = *						
Pounds 19-19-19		13	1615.4	602.6	4	1400.0	489.9
Statistics:	t = *						
Pounds Fertilizer Applied Pre-plant		52	1525.0	545.7	13	1700.0	527.6
Statistics:	t = -1.041	df = 63	p = .302				
Pounds Fertilizer Applied Side Dress		39	800.6	632.9	10	530.0	522.9
Statistics:	t = 1.245	df = 47	p = .219				
Plant Spacing Between the Rows		68	42.4	6.2	17	44.8	4.0
Statistics:	t = -1.512	df = 83	p = .134				
Percent Topped Button to Elongated Button		69	8.8	25.2	18	17.5	37.0
Statistics:	t = -.939	df = 21.3	p = .358				
Percent Topped Elongated Button to Early Flower		69	27.1	40.9	18	51.9	46.2
Statistics:	t = -2.235	df = 85	p = .028				

* Researcher chose to not report significance of this test due to very low numbers of respondents in each category.

Table 14. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Farm Visits by an Extension Agent.

Production Practice	Number of Farm Visits					
	n	None $\bar{x}$	s.d.	n	1 or more $\bar{x}$	s.d.
Percent Topped Early to Mid-flower Statistics: $t = .767$	69 df = 85	27.4 p = .445	40.3	18	19.4	34.2
Percent Topped Mid-flower to Full Flower Statistics: $t = 2.720$	69 df = 36.8	36.7 p = .010	45.6	18	11.1	32.3
Percent Cured Conventional Barn Statistics: $t = .435$	70 df = 86	93.9 p = .665	20.0	18	91.7	14.6
Percent Cured Field Structure 2-rail Statistics: $t = -1.179$	70 df = 18.1	.4 p = .254	3.6	18	3.3	10.3
Percent Cured Field Structure 3-rail Statistics: $t = .146$	70 df = 86	5.7 p = .884	19.8	18	5.0	11.9

number of tobacco related farm visits received from an Extension agent and the average percentage of plants per producer purchased pre-finished. The number of tobacco related farm visits received from an Extension agent was irrelevant as it related to the percentage of float bed plants purchased pre-finished.

Percentage float bed plants purchased finished: Of the producers responding, those receiving no tobacco related farm visits from an Extension agent purchased an average of approximately 71 percent (s.d. = 44.6) per producer of their tobacco plants finished compared to those receiving one or more tobacco related farm visits from an Extension agent purchased an average of almost 32 percent (s.d. = 46.2) per producer as finished plants. Based on the probability level of .021, there was a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of float bed plants purchased finished. Producers who had not received any tobacco related farm visits from an Extension agent were more likely to purchase finished float bed plants than those producers who had received a visit.

Percentage float bed plants grown in a greenhouse and an outdoor float bed: Table 14 also describes the relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of float bed plants grown in a greenhouse or the average percentage per producer of float bed plants grown in an outdoor float bed. Neither of these relationships were statistically significant. The majority of float bed plants per producer in were produced in

greenhouses regardless of the number of tobacco related farm visits received from an Extension agent.

Percentage TN 97: There was not a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of the variety TN 97 planted. Producers who did not receive any tobacco related farm visits from an Extension agent were just as likely to plant the variety, TN 97.

Percentage KY 14xL8: Based on the data presented in Table 14, there was not a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of KY 14xL8 planted. Producers who did not receive any tobacco related farm visits from an Extension agent were just as likely to plant the variety, KY 14xL8.

Percentage Clay 403: There was not a statistically significant relationship between the number of tobacco related farm visits from an Extension agent and the average percentage per producer of Clay 403 planted. Producers who did not receive any tobacco related farm visits from an Extension agent were just as likely to plant the variety, Clay 403.

Percentage TN 86: There was a statistically significant relationship at the .011 probability level between the number of tobacco related farm visits from an Extension agent and the average percentage per producer of the variety, TN 86. Producers who did not receive one or more tobacco related farm visits from an Extension agent planted a higher percentage of the variety, TN 86, than those producers who did receive a visit.

Percentage TN 90: Based on the data reported in Table 14, there was not a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of the variety, TN 90. Producers who did not receive a tobacco related farm visit from an Extension agent were just as likely to plant TN 90 as those producers who did receive a tobacco related farm visit from an Extension agent.

Percentage other variety: Based on the data reported in Table 14, there was not a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of other varieties planted. Producers who did receive a tobacco related farm visit from an Extension agent were just as likely to plant a variety other than those listed in the study as those producers who did not receive a tobacco related farm visit from an Extension agent.

Pounds of fertilizer per acre: Due to the low number of producers responding to the question, regarding the types of fertilizer, the researcher chose to not report the statistics. One could conclude, based on data regarding pounds of fertilizer analyses applied per acre in Table 2, Carter County tobacco producers applied a mean of 1502.6 pounds of 5-10-15 per acre, a mean of 1600.0 pounds of 6-12-18 per acre, a mean of 577.8 pounds of 34-0-0 per acre, a mean of 300 pounds of 15-0-14 per acre, a mean of 266.7 pounds of 46-0-0 per acre, a mean of 1344.4 pounds of 9-18-27 per acre, a mean of 1561.1 pounds of 19-19-19 per acre, a mean of 490.0 pounds of 16-0-0 per acre, a mean of 1282.5 pounds per acre, a mean of 1551.5 pounds of other fertilizer per acre.

Pounds fertilizer applied pre-plant and as a side dress: Based on the data regarding the timing of fertilizer application, there was no statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and whether fertilizer was applied before or after planting. Based on the data reported in Table 2, a mean of 1551.5 pounds of fertilizer was applied before planting compared to a mean of 740.5 pounds after planting.

Plant spacing between the rows: The relationship, described in Table 14, between the number of tobacco related farm visits received from an Extension agent and the plant spacing between the rows was not statistically significant. The difference in the plant spacing between the rows could not be attributed to the number of tobacco related farm visits received from an Extension agent.

Percentage topped button to elongated button: Based on the data presented in Table 14, the relationship between the number tobacco related farm visits from an Extension agent and the average percentage per producer of tobacco topped in the button to elongated button stage was not statistically significant. Producers receiving one or more tobacco related farm visits from an Extension agent were no more likely to top their tobacco in the button to elongated stage than those producers who did not receive any visits.

Percentage topped elongated button to early flower: Those producers not receiving any tobacco related farm visits topped an average of 27.1 (s.d. = 40.9) percent per producer at the elongated button to early flower, while those producers receiving one or more tobacco related farm visits from an Extension agent topped an average of 51.9

percent (s.d. = 46.2) per producer at the elongated button to early flower stage. There was a significant relationship between the number of tobacco related farm visits received from an Extension agent and the average percentage per producer of tobacco topped at the elongated button to early flower stage. Producers receiving one or more tobacco related farm visits from an Extension agent topped a higher percentage of their tobacco in the elongated button to early flower stage than those producers who did not receive a visit.

Percentage topped early to mid-flower: There was no statistically significant relationship between the number of tobacco related farm visits and the average percentage per producer of tobacco topped in the early to mid-flower stage. Regardless of the number of tobacco related farm visits received from an Extension agent, producers topped their tobacco at the early to mid-flower stage.

Percentage topped mid-flower to full flower: Those receiving no tobacco related farm visits from an Extension agent topped an average of 36.7 percent (s.d. = 45.6) per producer at the mid-flower to full flower stage, while those receiving one or more tobacco related farm visits topped an average of 11.1 percent (s.d. = 32.3) per producer at the mid-flower to full flower stage. Producers who were visited by an Extension agent topped a lower percentage of their tobacco in the mid-flower to full flower stage than those producers who were not visited.

Percentage of tobacco cured in various structures: Based on the data reported in Table 14 in relation to curing methods, there was no statistically significant relationship between the number of tobacco related farm visits from an Extension agent

and the methods of curing in the study. Based on the data in Table 2, one could expect an average of 93.6 percent per producer to be cured in a conventional barn, an average of zero percent to be cured on high tensile wire, an average of one percent to be cured on a 2-rail field structure, and an average of 5.4 percent per producer to be cured on a 3-rail field structure.

Relationship Between the Number of Tobacco Related Farm Visits Received from an Extension Agent and Nominally Scaled, Selected Tobacco Production Practices

Float tray size: Although unable to produce a valid test due to low expected frequencies, data in Table 15 may be cautiously described as they relate to only those responding to this survey. No conclusions can be drawn with regard to other producers in Carter County. For the sample at least half of the respondents appear to use 253 and 288 cell trays regardless of the number of tobacco related farm visits received from an Extension agent.

Use of soil testing: The relationship between the number of tobacco related farm visits from an Extension agent and the use of soil testing was statistically significant at the .003 probability level. Producers receiving one or more tobacco related farm visits from an Extension agent were more likely to soil test than those not receiving any tobacco related farm visits.

Frequency of soil testing: Again the researcher was unable to produce a valid test. However, most respondents in the sample are sampling every second year or every three to five years regardless of the number of tobacco related farm visits received from an Extension agent.

Table 15. Relationship Between Selected Nominally Scaled Production Practices and the Number of Tobacco Related Farm Visits by an Extension Agent.

Production Practice	Number of Farm Visits by Agent			
	None		1 or more	
	n	%	n	%
Float Tray Size Used				
200 cell	3	11.1	2	20.0
253 cell	15	55.6	5	50.0
288 cell	9	33.3	2	20.0
Other cell	0	0.0	1	10.0
Total	27	100.0	10	100.0
Statistics:	Chi Square *			
Use of Soil Testing				
Yes	24	33.8	13	72.2
No	47	66.2	5	27.8
Total	71	100.0	18	100.0
Statistics:	Chi Square = 7.216 df = 1 p = .003			
Frequency of Soil Testing				
Every year	3	12.0	4	30.8
Every 2 nd year	9	36.0	6	46.2
Every 3 - 5 years	11	44.0	3	23.1
Other frequency	2	8.0	0	0.0
Total	25	100.0	13	100.0
Statistics:	Chi Square *			
Method of Weed Control				
Chemical	3	4.5	2	11.1
Cultivation	23	34.3	5	27.8
Chemical and cultivation	41	61.2	11	61.1
Total	67	100.0	18	100.0
Statistics:	Chi Square *			
Use of Poast				
Yes	3	4.5	0	0.0
No	64	95.5	17	100.0
Total	67	100.0	17	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

Table 15. (Continued) Relationship Between Selected Interval Scaled Production Practices and the Number of Tobacco Related Farm Visits by an Extension Agent.

Production Practice	Number of Farm Visits by Agent			
	None		1 or more	
	n	%	n	%
Plant Spacing in the Row				
12 - 15 inches	20	29.0	5	27.8
16 - 19 inches	34	49.3	5	27.8
20 - 24 inches	15	21.7	8	44.4
Total	69	100.0	18	100.0
Statistics:	Chi Square = 4.263 df = 2 p = .119			
Time Between Topping and Cutting				
1 week or less	2	2.9	0	0.0
2 weeks	6	8.7	2	11.1
3 weeks	30	43.5	6	33.3
4 weeks	20	29.0	1	5.6
5 weeks	10	14.5	8	44.4
6 weeks or more	1	1.4	1	5.6
Total	69	100.0	18	100.0
Statistics:	Chi Square *			

* Unable to get valid test due to low expected frequencies.

Method of weed control: Again the researcher was unable to produce a valid test. However, most of the respondents in the sample are using both chemical and cultivation for weed control regardless of the number of tobacco related farm visits received from an Extension agent.

Use of Poast: Again the researcher was unable to produce a valid test. However, most respondents in the sample are not using Poast regardless of the number of tobacco related farm visits received from an Extension agent.

Plant spacing in the row: Based on the described relationship in Table 15, there was not a statistically significant relationship between the number of tobacco related farm visits received from an Extension agent and the plant spacing in the row. Regardless of the number of tobacco related farm visits, producers chose similar in-row plant spacings.

Time between topping and cutting: Again the researcher was unable to produce a valid test. However, most respondents in the sample are waiting three to five weeks between the topping and cutting of their tobacco regardless of the number tobacco related farm visits received from an Extension agent.

IV. Carter County, Tennessee Burley Tobacco Producers' Opinion of the Current Tobacco Educational Programming, Their Need for Future Tobacco Educational Programming, and Their Plans for Tobacco Production Over the Next Five Years

This section is divided into two major sub-sections. The first section reports the findings regarding tobacco educational programming. Two questions dealing with this

topic were included in the Carter County Burley Tobacco Survey. The second section reports the tobacco producers' plans for future production over the next five years complete with details regarding the percentages of increase or decrease.

Tobacco Educational Programming

A thematic analysis was completed for the purpose of summarizing the most common themes regarding the two questions on tobacco educational programming. The first question was: "How do the University of Tennessee Agricultural Extension Service's educational programs help you with tobacco production?" The second question asked was: "What additional tobacco related educational programs do you think would be of benefit to you?"

Producers' opinion of current tobacco educational programming: Of the responses to the question regarding current tobacco educational programs, several major themes were apparent. One major theme indicated that producers are benefitting from programs related to chemicals, new variety information, weed control, and disease control. A second theme related to the application methods of weed, insect, and disease control. A third major theme centered around overall management, cost savings techniques, general production information, new methods, and literature. Several other responses relating to soil erosion, field structures, fertilizers, lime, float beds, greenhouse management, topping, and curing were also mentioned as areas where producers were benefitting.

Need for future tobacco educational programming: Of the responses to the question regarding needed tobacco educational programs, the following key themes were

identified. Information on marketing, labor laws, and contract buying were areas of interest. Some of the same concepts addressed in the question regarding current programs were also present in the responses to the question regarding needed future tobacco educational programs. Some of responses related to curing methods, no-till, and float system techniques. Also mentioned was the need for new information on chemicals, fertilizers, and blue mold.

Production Plans

Future production: Based on the data found in Table 16, 12 percent ($n = 10$) plan on increasing, just over 49 percent ($n = 41$) plan on keeping their current production level, almost 22 percent ($n = 18$) plan on decreasing their production, and almost 17 percent ($n = 14$) plan on not growing any tobacco. Nine producers did not answer.

Percent Increase: Based on the data presented in Table 17, the seven producers responding to the question regarding an increase in production plan on increasing their production by an average of 51.4 percent ($s.d. = 32.5$).

Percent Decrease: The 10 producers responding to the question regarding a decrease in production plan to decrease by an average of 38.0 percent ($s.d. = 19.2$)

V. Summary

The purpose of this chapter was to present the findings with regard to personal and farm characteristics, their relationship with Extension contact, and the relationship between Extension contact and selected production practices.

A majority of the producers were 40 years old or older with some type of off farm

Table 16. Carter County Burley Tobacco Producers' Future Production Plans for the Next Five Years

Production Plans	Burley Tobacco Producers	
	Number	Valid Percent
Increase Production	10	12.0
Remain the Same	41	49.4
Decrease Production	18	21.7
No Production	14	16.9
Missing	9	Missing
Total	92	100.0

Table 17. Carter County Burley Tobacco Producers' Plans for Production Changes

Production	n	$\bar{x}$	s.d.
Percentage Increase	7	51.4	32.5
Production Decrease	10	38.0	19.2

employment and less than a high school education. A large percentage of the producers surveyed grew less than three acres with yield ranges from 2000 and less to 2501 and more pounds per acre. Producers in the higher yield category were more likely to attend tobacco meetings and/or field days.

A surprisingly high percentage of the producers did not soil test, but those producers who attended one or more tobacco meetings and/or field days, made one or more phone calls to the Extension office, or received one or more tobacco related farm visits from an Extension agent were more likely to soil test.

An average of approximately 61 percent per producer of the tobacco plants were grown in a conventional plant bed. A statistically significant relationship was found where the producers who had attended one or more tobacco meetings and/or field days were more likely to use float bed plants.

Producers in the older age group were much more likely to make visits to the Extension office, while the younger producers were much more likely to make phone calls. The middle age group was more likely to have received a tobacco related farm visit from an Extension agent than the younger age group.

Producers were more likely to top a higher percentage of their tobacco at an earlier stage when they had attended one or more tobacco meetings and/or field days or received one or more tobacco related farm visits from an Extension agent.

Producers were more likely to allow a period of time closer to five weeks between the topping and cutting of their tobacco when they had attended one or more tobacco meetings and/or field days or had received one or more tobacco related farm

visits from an Extension agent.

CHAPTER V

SUMMARY OF MAJOR FINDINGS

This chapter summarizes the major findings of this study. The chapter was divided into five sections pertaining to the purposes and objectives, the methods of investigation, major findings, implications and recommendations for Carter County, and recommendations for further study.

I. Purpose and Objectives of the Study

Purpose

The purpose of this study was to characterize Carter County, Tennessee burley tobacco producers and their farms, their contact with the U. T. Agricultural Extension Service, and their use of selected production practices.

Objectives

1. To characterize Carter County, Tennessee burley tobacco producers and their farms, their contact with Extension, and their use of selected production practices.
2. To study the relationship between the producers' personal and farm characteristics and the amount and kind of contacts they had with Extension.
3. To study the relationship between Extension contacts and their use of selected production practices.
4. To categorize the producers' opinion of current tobacco educational programming, their need for future programming, and their future production plans over the next five years.

II. Methods of Investigation

Population

The population for this study was all of the burley tobacco producers in Carter County, Tennessee which was approximately 200. A current list of producers was obtained through the local Farm Service Agency. A sample of 150 producers was selected from the population via the use of the true random sample technique. After the study sample of 150 producers was identified, a sample of 10 producers was blindly selected from the remaining eligible producers in the population.

Survey Instrument

The survey (Appendix A) was compiled by combining questions from surveys used by Cynthia McCall's 1994 study (8) and Michael Barry's 1998 study (2). Dr. Donald Fowlkes also contributed to the survey content with regard to current tobacco production practices and concerns. The survey addressed six major areas related to burley tobacco production in Carter County, TN. The areas of the survey were as follows: producer and farm characteristics; transplant production; fertility, weed control, and transplanting; topping, harvesting, and curing; Extension contact; and to categorize the producers' satisfaction with current tobacco educational programming, their need for future programming, and to indicate their future production plans over the next 5 years.

Method of Data Collection

The surveys were mailed directly to the producers complete with a cover letter (Appendix B) and a self-addressed stamped envelope. For the pilot study and the actual study, a post card (Appendix C) reminder was mailed 7 to 10 days following the initial

letter and survey. A follow-up cover letter (Appendix D) with a second survey and self-addressed stamped envelope was then sent seven to 10 days after the post card reminder. The pilot study yielded a 70 percent return, while the actual study had a 62 percent return resulting in 92 usable surveys. The acceptance of surveys was cut off two weeks after the mailing of the follow-up letter and survey.

Method of Analysis

The data were analyzed using the SPSS version 10.0.05 for Windows. Descriptive statistics including frequencies, percentages, means, modes, and standard deviations were used to describe the survey data. The Chi Square test was used to analyze the relationship between producer and farm characteristics and the producers' contact with Extension, all of which were nominally scaled variables. Some of the nominally scaled variables were collapsed to fewer categories in order to produce valid Chi Square tests. A t-test was used to analyze the relationship between Extension contact and the use of selected production practices. The .05 probability level was used to determine whether the relationships between variables were statistically significant.

III. Major Findings

The major findings were summarized according to the four objectives of the study.

Personal and Farm Characteristics of Carter County, Tennessee Burley Tobacco Producers, Their Tobacco Production Practices, and Their Contacts with the University of Tennessee Agricultural Extension Service

Personal characteristics: Twelve percent of the producers responding were in the 18 to 39 age group with approximately 48 percent in the 40 to 59 age group, just under 35 percent in the 60 to 79 age group, and approximately five percent being in the 80 and over age group.

Approximately 71 percent of the producers had a high school education or less, compared to 14 percent who had some college and 14 percent who were college graduates.

Of those producers responding, almost 19 percent were full-time farmers, compared to 11 percent who reported full-time farming with part-time work off the farm, compared to approximately 40 percent who were part-time farmers with full-time jobs off the farm and around 29 percent who were retired and farming.

Farm characteristics: Of the producers responding, approximately 67 percent grew less than three acres, 25 percent grew three to 10 acres, and 7.6 percent grew more than 10 acres.

Approximately 19 percent of the producers yielded 1500 pounds per acre or less, compared to 30.6 percent having 1501 to 2000 pounds per acre, compared to 21.2 percent having 2001 to 2500 pounds per acre and just over 29 percent growing more than 2500 pounds per acre.

Production practice: Of the producers answering the question regarding float tray size, 13.5 percent reported using a 200 cell tray, approximately 54 percent reported using a 253 cell tray, almost 30 percent reported using a 288 cell tray, and 2.7 percent reported using a float tray of a size not listed.

Of those responding to the soil test question, 40.7 percent reported that they soil tested. Approximately 18 percent of these tested every year, compared to just under 40 percent who tested every second year, compared to approximately 37 percent who tested every three to five years and five percent who tested at a frequency not listed.

Almost six percent of those responding used chemical weed control only, while a little over 33 percent used cultivation only and 70 percent used chemical and cultivation. The effectiveness of chemicals used was ranked on a scale from one to five with one representing no control and 5 representing excellent control. The following ratings were reported based on the average effectiveness of several herbicides: Prowl - 3.6; Devrinol - 4.0; Command - 4.2; Spartan - 5.0; Prowl/Devrinol - 3.4; Spartan/Command - 4.4. Of the producers responding, 3.5 percent reported using Poast with an average effectiveness of 4.7.

Regarding the spacing of plants in the row, 28 percent used a 12 - 15 spacing, almost 46 percent used a 16 - 19 spacing, and approximately 26 percent spaced their plants 20 to 24 inches. The average spacing between the tobacco rows was 43 inches.

Of the tobacco represented by the 88 producers responding, 10.5 percent was topped at the button to elongated button stage, while 33 percent was topped at the elongated button to early flower stage, while 26 percent was topped at the early to mid-flower stage and 31 percent was topped at the mid-flower to full flower stage.

For the interval between topping and cutting, 2.3 percent waited one week, just over nine percent waited two weeks, 42 percent waited three weeks, almost 24 percent waited four weeks, approximately 24 percent waited five weeks and 2.3 percent extended

the interval to six weeks or more.

Of the tobacco in the study, an average of 93.6 percent per producer was cured in a conventional barn, an average of one percent per producer was cured on a 2-rail structure, and an average of 5.4 percent per producer was cured on a 3-rail structure.

An average of approximately 61 percent per producer of the tobacco plants in Carter County were grown in a conventional plant bed. Of the approximately 39 percent average float bed plants per producer, an average of 35 percent per producer were direct seeded, an average of 4 percent per producer were purchased as pre-finished, and an average of 60 percent per producer were purchased as finished plants. Of the float bed plants, just under an average of 71 percent per producer were grown in a greenhouse with the rest being grown in an outdoor float bed.

An average of approximately 19 percent per producer of the tobacco was the TN 97 variety. TN 90 accounted for an average of approximately 46 percent per producer, while an average of nine percent per producer was represented by TN 86. Varieties representing smaller percentages were KY 14xL8 with an average of 3.6 percent per producer, Clay 403 with an average of one percent per producer, and other varieties with an average of 21.4 percent per producer.

The average pounds of the fertilizer analyses applied per acre were as follows: 1502.6 pounds of 5-10-15, 1600 pounds of 6-12-18, 577.8 pounds of 34-0-0, 300 pounds of 15-0-14, 266.7 pounds of 46-0-0, 1344.4 pounds of 9-18-27, 1561.1 pounds of 19-19-19, 490 pounds of 16-0-0, 1282.5 pounds of unspecified analyses. An average of 1551.5 pounds of fertilizer per acre was applied before planting with 740.5 pounds being applied

after planting.

Extension contacts: Approximately 70 percent of those who responded did not attend any tobacco meetings or field days, while 15.7 percent attended one meeting, while almost 15 percent attended two to four meetings.

Approximately 41 percent of those responding did not make any visits to the Extension office, while just over 18 percent made one visit, while a little over 36 percent made between two and four visits. Five or more visits were made by 5.4 percent.

Approximately 43 percent of those responding did not make any tobacco related phone calls to the Extension office, while almost 51 percent made one to five calls, while 3.3 percent made six to 10 calls and 3.3 percent made 11 or more calls to the Extension office.

Of the producers answering this question, 80 percent did not have any tobacco related farm visits from an Extension agent, while approximately 16.7 percent received one to five visits, while a little over two percent received six to 10 visits and 1.1 percent received 11 or more visits.

Approximately 6 percent reported using the internet between one and five times for tobacco related information.

Relationship Between the Number and Type of Extension Contacts and the Personal and Farm Characteristics of the Tobacco Producers

There were statistically significant relationships between age, education level, acreage grown, and pounds of tobacco per acre and the four types of Extension contacts.

The study showed that older producers preferred face to face contact over phone

calls. Producers 40 years of age and older were more likely to make visits to the Extension office and receive farm visits from an Extension agent than those younger producers. Those producers in the 18 to 39 age group were more likely to make tobacco related phone calls than those producers 40 years of age and older.

Producers who had some college or were college graduates were more likely to attend tobacco meetings and field days and receive farm visits from an Extension agent than those producers with a high school education or less.

Tobacco producers growing less than three acres and yielding 2500 pounds or less per acre were not as likely to attend tobacco meetings and/or field days as those producers who grew three acres or more or yielded more than 2500 pounds per acre.

Relationship Between the Number and Type of Extension Contacts and Their Use of Selected Production Practices

There were statistically significant relationships between the number of tobacco meetings and/or field days attended and seven of the production practices in the study. Tobacco producers attending one or more tobacco meetings and/or field days used a higher percentage of plants grown in a float bed, while producers who did not attend any meetings and/or field days used a higher percentage of plants grown in a conventional plant bed. Producers who did not attend any tobacco meetings and/or field days, compared to those who attended one or more tobacco meetings and/or field days, purchased a higher percentage of finished float bed plants. Those tobacco producers attending one or more tobacco meetings and/or field days, compared to those producers who did not attend any meetings and/or field days, topped a higher percentage of their

tobacco at the button to elongated button stage. Producers who did not attend any tobacco meetings and/or field days, compared to those producers who attended one or more meetings and/or field days, topped a higher percentage of their tobacco at the mid-flower to full flower stage. Producers were more likely to use soil testing when they had attended one or more tobacco meetings and/or field days than when they had not attended any tobacco meetings and/or field days. Producers who had attended one or more tobacco meetings, compared to those producers who had not attended any meetings or field days, were more likely to allow three to five weeks between topping and cutting.

There was a statistically significant relationship between the number of tobacco related phone calls to the Extension office and the use of soil testing. Tobacco producers who did not make any tobacco related phone calls to the Extension office were more likely to not use soil testing than those producers who made one or more phone calls to the Extension office.

There were statistically significant relationships between the number of tobacco related farm visits received by an Extension agent and six of the production practices in the study. Tobacco producers receiving one or more tobacco related farm visits, compared to those producers not receiving any tobacco related farm visits, used a higher percentage of direct seeded plants. Producers who did not receive any tobacco related farm visits purchased a higher percentage of finished float bed plants than those producers who did receive one or more tobacco related farm visits. Producers who had not received any tobacco related farm visits planted a higher percentage of the variety, TN 86, than those producers who had received one or more tobacco related farm visits.

Producers who had received one or more tobacco related farm visits topped a higher percentage of their tobacco at the elongated button to early flower stage than those producers who did not receive any tobacco related farm visits. Producers who had not received any tobacco related farm visits topped a higher percentage of their tobacco at the mid-flower to full flower stage than those producers who had received one or more tobacco related farm visits. Producers who had received one or more tobacco related farm visits were more likely to soil test than those producers who had not received any tobacco related farm visits. Producers who had received one or more tobacco related farm visits, compared to those producers who had not received any tobacco related farm visits, tended to allow three to five weeks between the topping and cutting of their tobacco.

The Carter County Burley Tobacco Producers' Satisfaction of Current Tobacco Educational Programming, Their Needs for Future Tobacco Educational Programming, and Their Future Production Plans for the Next Five Years

Producers responded favorably stating that current tobacco educational programming was of benefit to them in their tobacco production efforts. A major theme indicated producers were benefitting from programs related to chemicals, new variety information, weed control, and disease control. Producers also reported they had received helpful information relating to the application methods of weed, insect, and disease control chemicals. Overall management, cost savings techniques, general production information, new methods, and tobacco related literature were areas where producers reported benefitting. Several other responses relating to soil erosion, field

structures, fertilizers, lime, float beds, greenhouse management, topping, and curing were also mentioned as areas where producers were benefitting.

The tobacco producers indicated several areas where there was a need for additional tobacco educational programming. Marketing information, labor laws, and contract buying were indicated as areas of interest. Production issues such as curing methods, no-till, float system techniques, chemicals, fertilizers, and Blue Mold were also areas of interest for future educational programming.

Of those responding, 12 percent plan on increasing their production, just over 49 percent plan no change, almost 22 percent plan a decrease in production, and 17 percent plan on not growing any tobacco. Seven producers responding to the question regarding an increase in production plan on increasing their production by an average 51.4 percent. Ten producers responding to the question regarding a decrease in production plan on decreasing their production by an average of 38 percent.

IV. Implications and Recommendations

Based upon the findings of this study, the following implications and recommendations are drawn.

5. A majority (82.6 percent) of the producers surveyed were between 40 and 79 years old. Approximately 71 percent of the producers had a high school education or less compared to a study done by Ivens in 1964 showed that only 11 percent had some college exposure (6). Just over 50 percent of the producers surveyed reported having either a part-time job or full-time job off the farm compared to producers described in a study

done in 1985 by Turner where 47.3 percent were full-time farmers (11). Farmers are more likely to be employed in off-farm jobs today. These findings have implications for the type of program delivery that would be the most effective. As reported in the relationship between age and Extension contact, middle age and older producers tend to prefer face to face contact over phone calls. Although there is an increasing percentage of farmers with a college education, program delivery should be on an elementary school level to be effective.

15. A majority (67.4 percent) of the producers surveyed reported growing less than three acres of burley tobacco. Of these producers a large percentage did not attend tobacco meetings and/or field days or receive farm visits from an Extension agent. Farm visits are often made in response to a request for technical expertise regardless of the size of the producer. The implications would be that the smaller producers are likely to be harder to reach resulting in them adopting practices slower. Smaller producers often do not take the time to manage their crop to its fullest potential due to career obligations, other priorities, and less dependence on tobacco as a source of income.

16. A surprisingly high percentage (59.3 percent) reported that they did not soil test. Therefore, soil testing would be an area that should be stressed through tobacco meetings and/or field days, visits to the Extension office, phone calls to the Extension office, and farm visits.

17. Tobacco producers growing less than three acres were not as likely to attend tobacco meetings and/or field days than those producers growing more three acres or more. The smaller producer often does not make the effort to attend tobacco meetings

and/or field days due to other priorities and work obligations in their busy schedule.

5. Producers growing 2501 and more pounds of tobacco per acre were more likely to attend tobacco meetings and/or field days than producers yielding 2500 and less pounds per acre. This would imply that producers in the higher yield category are more interested in increasing their understanding of tobacco production than those producers in the lower yield categories.

6. The tobacco meetings and/or field days are an effective method of program delivery. Producers who attended one or more tobacco meetings and/or field days, compared to those producers who did not attend any meetings or field days, were more likely to use a higher percentage of float bed plants, to top a higher percentage of their tobacco at the button to elongated button stage, to soil test, and to allow three to five weeks between topping and cutting. Therefore, this would imply that an emphasis on these issues would be worthwhile to include in tobacco meetings and/or field days.

7. Producers who made one or more tobacco related phone calls to the Extension office were more likely to soil test than those producers who did not make any tobacco related phone calls to the Extension office. This would imply that the Extension personnel are encouraging soil testing to clientele who make phone calls to the Extension office.

8. Those producers who received one or more tobacco related farm visits from an Extension agent, compared to those who did not receive any, direct seeded a lower percentage of their float bed plants, purchased a lower percentage of finished float bed plants, topped a higher percentage of their tobacco at the elongated button to early flower

stage, more likely to soil test, and more likely to wait five weeks between topping and cutting.

9. Approximately 46 percent of the producers responding used the 16 to 19 inch in-row plant spacing. Therefore, plant spacing would be an area where some difference could be made in relation to production efficiency.

10. Carter County producers on average used a higher percentage of plants grown in a conventional plant bed. Therefore, converting producers to the use of float beds would be an area where progress could be made.

11. Carter County producers feel that they are benefitting from current tobacco educational programming on pesticides, new varieties, and production related information.

12. Producers mentioned marketing information, labor laws, and contract buying as areas for future tobacco educational programming.

13. The answers to the question regarding changes in future production support show the uncertainty among the tobacco producers. Seventeen percent plan on not growing any tobacco in five years. Twelve percent plan on increasing their production by just over 50 percent. About 50 percent plan on producing the same amount of tobacco. Twenty-two percent plan on decreasing their production by 38 percent.

V. Recommendations for Further Study

The fate of tobacco and the livelihood of tobacco producer are constantly in jeopardy, but tobacco continues to ride these waves of uncertainty. As long as tobacco

thrives and survives, this type of study or similar studies should be conducted periodically to identify the producer and farm characteristics, the relationships between producer and farm characteristics and Extension contact, and the relationships between Extension contact and selected tobacco production practices. The following is a list of similar and possibly beneficial studies that could be completed in the future.

1. A study should be completed that would identify characteristics of the producers participating and analyze the satisfaction and understanding of contract buying.
2. A study should be completed that would analyze the relationship between Extension contact and market preparation methods.
3. A regional or statewide study should be completed in order to identify producer and farm characteristics, their relationship with Extension contact, and the relationship between Extension contact and selected tobacco production practices.
4. A similar study should be done addressing tobacco production practices of concern not addressed in this study.

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BIBLIOGRAPHY

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APPENDICES

APPENDIX A
SURVEY INSTRUMENT

ID # _____

Carter County Burley Tobacco Survey

(Please answer the following questions regarding the 1999 growing season.)

I. Producer and Farm Information?

A. Please select the category that best describes your age.

- ☐ 18 to 39
- ☐ 40 to 59
- ☐ 60 to 79
- ☐ 80 and over

B. Level of education?

- ☐ High school or less
- ☐ Some college
- ☐ College graduate

C. Employment status?

- ☐ Full-time farmer
- ☐ Full-time farm/part-time off farm
- ☐ Part-time farm/full-time off farm
- ☐ Retired from public job/part-time farm
- ☐ Other (Specify _____)

D. Please indicate the category that best describes your burley acreage for 1999.

- ☐ Less than 3 acres
- ☐ 3 to 10 acres
- ☐ More than 10 acres

E. What was your average yield per acre for 1999?

- ☐ Pounds per acre

II. Transplants

A. Please indicate the percentage of each type of plants that you used in 1999.

- ☐ Conventional plant bed
- ☐ Float bed

*Answers combined should equal 100 percent.

If you answered 100% conventional, then please skip to question E.

Questions B. through D. are for float bed plants only.

B. Please indicate the percentage of each of the following:

- ☐ Direct seeding
☐ Plug and transfer
☐ Purchased pre-finished plants
☐ Purchased finished plants
 *Answers combined should equal 100 percent.

C. Please indicate the percentage of each of the following:

- ☐ Greenhouse
☐ Outdoor bed
 *Answers combined should equal 100 percent.

D. Please indicate the size of float tray used.

- ☐ 200 cell
☐ 253 cell
☐ 288 cell
☐ Other (Specify _____)

E. Please indicate the percentages of the following varieties that you grew in the 1999 season.

- | | |
|-----------------------------------|--|
| ☐ TN 97 | ☐ TN 90 |
| ☐ KY 14xL8 | ☐ Other (Specify _____) |
| ☐ Clay 403 | ☐ Other (Specify _____) |
| ☐ TN 86 | ☐ Other (Specify _____) |

III. Fertility, Weed Control, and Transplanting

A. Do you use soil testing?

- ☐ Yes ☐ No

B. If you answered yes, how often do you soil test?

- ☐ Every year
☐ Every 2nd year
☐ Every 3 to 5 years
☐ Other (Specify _____)

C. Please indicate the number of pounds per acre of each type of fertilizer that you used:

- | | |
|----------------------------------|--|
| ☐ 5-10-15 | ☐ 9-18-27 |
| ☐ 6-12-18 | ☐ 19-19-19 |
| ☐ 34-0-0 | ☐ 16-0-0 |
| ☐ 15-0-14 | ☐ Other (Specify _____) |
| ☐ 46-0-0 | ☐ Other (Specify _____) |

D. Of the fertilizer identified in question C.:

- _____ How many pounds were applied before planting?
 _____ How many pounds were applied as a side dress?

E. Method of weed control used?

- _____ Chemical
 _____ Cultivation
 _____ Chemical and cultivation

F. If chemical, please rate the effectiveness of the chemical(s) used.
 (Please circle the number....1 = no control....5 = excellent control)
 Do not answer for chemicals not used.

- Prowl.....(1 2 3 4 5)
 Devrinol.....(1 2 3 4 5)
 Command.....(1 2 3 4 5)
 Spartan.....(1 2 3 4 5)
 Prowl/Devrinol combination.....(1 2 3 4 5)
 Spartan/Command combination.....(1 2 3 4 5)
 Other combination.....(1 2 3 4 5)

G. Did you use Poast in 1999?

- _____ Yes
 _____ No

H. If so, what level of control did you get?(1 2 3 4 5)
 (Please circle the number....1 = no control....5 = excellent control)

I. Please indicate the plant spacing in the row?

- _____ 12 to 15 inches
 _____ 16 to 19 inches
 _____ 20 to 24 inches
 _____ Other (Specify _____)

J. Please indicate the spacing between rows.

- _____ inches

IV. Topping, Harvesting and Curing

A. Please indicate the percentage of tobacco topped at each of the following stages:

- _____ Button to elongated button
 _____ Elongated button to early flower
 _____ Early to mid-flower
 _____ Mid-flower to full flower

*Answers combined should equal 100 percent.

B. What was the average time between topping and cutting?

- ☐ 1 week or less
- ☐ 2 weeks
- ☐ 3 weeks
- ☐ 4 weeks
- ☐ 5 weeks
- ☐ 6 weeks or more

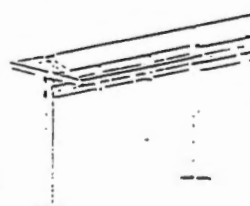
C. What percent of your harvest was cured using each of the following methods?

☐ Conventional barn

☐ High tensile wire

☐ Field structure (2 rail)

☐ Field structure (3 rail)



**Answers combined should equal 100 percent.*

V. Extension Contacts

A. Please indicate the number of tobacco meetings and/or field days you attended in 1999.

- ☐ None
- ☐ 1
- ☐ 2 to 4
- ☐ 5 or more

B. Please indicate the number of tobacco-related visits to the Extension office in 1999?

- ☐ None
- ☐ 1
- ☐ 2 to 4
- ☐ 5 or more

C. Please indicate the number of tobacco-related telephone calls to the Extension office 1999?

- ☐ None
☐ 2
☐ 1 to 5
☐ 6 to 10
☐ 11 or more

D. Please indicate the number of tobacco-related farm visits received from the Extension agent 1999?

- ☐ None
☐ 1 to 5
☐ 6 to 10
☐ 11 or more

E. Please indicate the number of tobacco-related Extension contacts on the internet in 1999?

- ☐ None
☐ 1 to 5
☐ 6 to 10
☐ 11 or more

VI. Extension Programming Needs of the Producer

A. How do the University of Tennessee Agricultural Extension Service's educational programs help you with tobacco production? (*Use back of page if necessary.*)

B. What additional tobacco related educational programs do you think would be of benefit to you? (*Use back of page if necessary.*)

C. What do you anticipate your personal future tobacco production to be for the next 5 years?

- ☐ Increase production (If so, by what percent?) _____
☐ Remain the same / No change
☐ Decrease production (If so, by what percent?) _____
☐ No tobacco production

Would you like to receive a copy of the survey results? ☐ Yes ☐ No

APPENDIX B
INITIAL COVER LETTER

AGRICULTURAL EXTENSION SERVICE
THE UNIVERSITY OF TENNESSEE INSTITUTE OF AGRICULTURE



824 E. Elk Ave.
Elizabethton, TN 37643

March 25, 2000

Dear Carter County Tobacco Producer:

My name is Chris Ramsey, and I am employed with the Carter County Agricultural Extension Service as the 4-H Agriculture Agent. I am conducting a study to learn more about Carter County tobacco producers and their educational and other needs which could be met by the Carter County Agricultural Extension Service. As part of this study, I am sending a survey to a number of randomly selected Carter County tobacco producers. Your name was on the list as a tobacco grower in Carter County. If you are not involved in the growing of the tobacco or are uncomfortable with answering the questions, I would greatly appreciate you forwarding the survey to the appropriate person. The primary objectives of the survey are to learn more about your current tobacco production methods, what kinds of Extension tobacco educational programs might best suit your needs, and how frequently you use the Extension office in Carter County to help solve tobacco-related production problems.

Please note that completion of this survey is totally voluntary, and if you choose to complete the survey, your response will be kept strictly confidential. Note that there is an identification number on your survey. Once it is returned (completed or left blank) your identification number will be marked off of my follow-up list and you will not be bothered again. Since I am using a random sample instead of surveying every tobacco producer in Carter County, each individual response is important in order to assure valid findings from my study. I greatly appreciate you taking the time that is required to complete it. Upon completion of the survey, simply return it in the self-addressed stamped envelope.

I would be glad to send you a summary of the survey results, if you request it. You may request a copy of the survey summary by responding appropriately in the space provided on the last page of the survey. Please feel free to call me at 542-1818 at work or 538-0677 at home. In order to avoid sending a follow-up letter, I would greatly appreciate your response by Monday, April 3. Again, THANK YOU very much for assisting me in the completion of this project. I look forward to working with you in meeting your tobacco education needs.

Sincerely,

A handwritten signature in cursive script that reads 'Chris Ramsey'.

Chris Ramsey
Assistant Extension Agent

A State Partner in the Cooperative Extension System
THE UNIVERSITY OF TENNESSEE, U.S. DEPARTMENT OF AGRICULTURE, AND COUNTY GOVERNMENTS COOPERATING
The Agricultural Extension Service offers its programs to all eligible persons regardless of race, color,
national origin, sex, age or disability and is an Equal Opportunity Employer.

APPENDIX C
POST CARD REMINDER

No Name
101 Where Street
Now, NN 00000



No Name
101 Here Street
Then, NN 00000

Dear Tobacco Producer:

Approximately one week ago, I sent you a tobacco survey. This is just a reminder to please return the survey. If you have already done so, please disregard this reminder and thank you for participating in this study.

Thanks,

Chris Ramsey

APPENDIX D
FOLLOW-UP COVER LETTER

AGRICULTURAL EXTENSION SERVICE
THE UNIVERSITY OF TENNESSEE INSTITUTE OF AGRICULTURE



824 E. Elk Ave.
Elizabethton, TN 37643

April 17, 2000

Dear Carter County Tobacco Producer:

Approximately two weeks ago, I sent you a tobacco survey. In the event you did not receive this survey in the mail, please read my explanation below. If you did receive the first survey, but choose not to participate then simply return the survey in the enclosed envelope and I will mark your name off the list. I am conducting this study to learn more about Carter County tobacco producers and their educational and other needs which could be met by the Carter County Agricultural Extension Service. As part of this study, I am sending a survey to a number of randomly selected Carter County tobacco producers. Your name was on the list as a tobacco grower in Carter County. *If you are not involved in the growing of the tobacco or are uncomfortable with answering the questions, I would greatly appreciate you forwarding the survey to the appropriate person.* The primary objectives of the survey are to learn more about your current tobacco production methods, what kinds of Extension tobacco educational programs might best suit your needs, and how frequently you use the Extension office to help solve tobacco-related production problems.

Please note that completion of this survey is totally voluntary, and if you choose to complete the survey, your response will be kept strictly confidential. Note that there is an identification number on your survey. Once it is returned (completed or left blank) your identification number will be marked off of my follow-up list and you will not be bothered again. Since I am using a random sample instead of surveying every tobacco producer in Carter County, each individual response is important in order to assure valid findings from my study. I greatly appreciate you taking the time that is required to complete it. Upon completion of the survey, simply return it in the self-addressed stamped envelope.

I would be glad to send you a summary of the survey results, if you request it. You may request a copy of the survey summary by responding appropriately in the space provided on the last page of the survey. Please feel free to call me at 542-1818 at work or 538-0677 at home. I would greatly appreciate your response by Friday, April 28. Again, THANK YOU very much for assisting me in the completion of this project. We look forward to working with you in meeting your tobacco education needs.

Sincerely,


Chris Ramsey
Assistant Extension Agent

VITA

Christopher Wayne Ramsey was born on April 20, 1967, to Carl W. and Wilma J. Ramsey of Sullivan County, Kingsport, Tennessee. He graduated from Sullivan South High School in Kingsport, Tennessee in May of 1985. He graduated from East Tennessee State University in Johnson City, Tennessee with a degree in Industrial Technology in August of 1989. He went to the University of Tennessee at Knoxville and graduated with a B.S. in Animal Science in December of 1991. While attending UT, he became a member of the Livestock Judging Team and the Block and Bridle Club. During the summer of 1991 he served as a Philip Morris Tobacco Intern in Carter County, Tennessee with the Agricultural Extension Service office.

After graduating, he worked in the fertilizer industry for two years before accepting employment with the University of Tennessee Agricultural Extension Service in Carter County, Elizabethton, Tennessee. While employed with the UTAES, he entered into a Master of Science program in the Agriculture and Extension Education Department at the University of Tennessee, Knoxville to begin his graduate program.

He is a member of the Tennessee Association of Extension 4-H Workers, Epsilon Sigma Phi, and Blountville First Baptist Church.

Presently, he is living in Carter County, Bluff City, Tennessee with his wife, Melissa and two children, Amber and Austin. In August 2000, he graduated with his Master of Science Degree in Agriculture and Extension Education.

8106 1217 19
10•11•00 MAB