To the Graduate Council:

I am submitting herewith a thesis written by Solomon Ahyuwa Yabaya entitled "Relationships between the Frequency of Contacts Corn Producers in Tennessee had with County Extension Agents and their Adoption of Eight Corn Production Practices." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Extension.

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RELATIONSHIPS BETWEEN THE FREQUENCY OF CONTACTS CORN PRODUCERS IN TENNESSEE HAD WITH COUNTY EXTENSION AGENTS AND THEIR ADOPTION OF EIGHT CORN PRODUCTION PRACTICES

A Thesis

Presented for the

Master of Science

Degree

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ABSTRACT

The major purpose of this study was to determine the relationship between the adoption of recommended corn production practices and the frequency of contacts that corn producers had with Extension Agents. Five contact methods and eight recommended corn production practices were analyzed. Influence of practice use upon corn yield for grain and for silage also were studied as well as the influences of size of operation upon Extension contact and upon corn yield.

Commercial corn producers provided the data from 61 corn producing counties of Tennessee. Corn producers were randomly selected in each county from a list of names using the Nth. number technique. Interview schedules were developed by Extension Agronomy Specialists at the University of Tennessee. County Extension Agents conducted personal interviews with 2,116 corn producers in the winter of 1970 and 961 producers in the winter of 1975.

Interview schedules were coded and data were punched on computer cards. Computations were done by the University of Tennessee Computer Center. Frequencies and percents were used to describe the population. Pearason correlation coefficient and one-way Analysis of Variance F-test statistics were used to determine relationship between dependent

and independent variables. The .05 probability level was selected as being statistically significant. Two major dependent variables (i.e., number of recommended corn production practices adopted and the number of contacts corn producers had with Extension Agents over a specified 12-month period) were used in the analysis.

Findings indicated that corn producers who used more recommended practices harvested significantly more acres of corn for grain and corn for silage during both time periods (i.e., 1970 and 1975). Larger producers used a larger number of the eight recommended practices and subsequently realized significantly higher yields (i.e., grain and silage) than those who used fewer of the practices. Of the eight recommended practices studied, planting a recommended stand of plants per acre, liming and fertilizing according to soil test recommendations, and controlling weeds according to recommendations were the practices most highly related to yield of corn for grain and corn for silage.

Producers who used the recommended corn production practices contacted Extension more frequently than those who were not using the practices. All Extension contact methods (i.e., Extension meetings, Extension corn production meetings, office visits, telephone calls and farm visits) were significantly related to the number of recommended corn production practices used by the corn producers. Larger

corn producers attended more Extension meetings, and more Extension corn production meetings, made more telephone calls, and received more farm visits from Extension Agents.

Implications and recommendations also were included.

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CHAPTER I

BACKGROUND AND PROBLEM

I. INTRODUCTION

The Cooperative Extension Service has long been recognized as a link between researchers and users of scientific knowledge. According to the Smith-Lever Act of 1914, Cooperative Extension work consists of diffusing among the people useful and practical information on subjects relating to agriculture and home economics and encouraging the application of such information in meeting individual and social needs. Thus, giving instruction is a major function of the Cooperative Extension Service (16:29).*

With this philosophy in mind, Extension Professionals therefore have an important role in educating farm leaders, supplying dealers with appropriate information and working with media to effectively diffuse information.

To achieve this objective, the Tennessee Agricultural Extension Service carries out many educational programs including Agricultural production and natural resource management. In Tennessee a large number of farmers grow corn for either grain and/or silage and this work area has

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*Numbers in parentheses refer to reference in the alphabetically listed Bibliography, those after the colon represent page numbers.

received priority educational emphasis through the years. Farmer surveys are conducted by Extension Agents to help identify areas of need for program emphasis. Two past surveys conducted in 1970 and 1975 showed that there were 715,000 and 730,000 acres of corn harvested for grain with average yields of 79 and 65 bushels per acre respectively (19:1).

One frequently observes farms side by side on which one operator is following the latest and most modern techniques in agriculture while the other operator is employing methods characteristic of a generation ago.

Numerous researchers have indicated that farmers do not usually adopt a farm practice or an idea as soon as they hear about it. There is usually a variation in the rate at which different farmers adopt a new idea. In trying to explain this variation, the adoption behavior of farmers has been correlated with a variety of social and economic factors (3.1-31).

The charge of Extension in work with corn producers is like that of any other area--to diffuse research varified facts and encourage the adoption of the same. In the corn production areas, emphases have been placed upon practices regarding planting recommended varieties, planting at the proper time and recommended plant population, harvesting at the proper time, controlling weed, insect and other pests.

Individual, group, and mass methods have been used to inform corn producers of these and other recommended practices. Variation in the use of these practices remains to be a problem in Tennessee. Thus, there still exists a gap between actual and potential corn yields.

This study was conducted to explore this gap and to determine the extent of Extension's influence on the use of corn production practices by producers.

II. STATEMENT OF THE PROBLEM

For the five-year period, 1970-1975, the yield of corn per acre and the change in the percent of those using or not using the practices have not changed. In the 1970 survey, 85 percent of those interviewed were using U.T. recommended varieties. When asked in 1970 and again in 1975 whether they planted the recommended stand of plants per acre, the percentages were 81 percent and 74 percent, respectively. This steadiness or fluctuation has been an increasing concern to Extension Service Staff both in the counties and the Department of Agricultural Extension Service at U.T., Knoxville. In view of the variation in corn yield and the use by producers of the recommended corn production practices, this study was therefore conducted to determine whether or not there was an influence or relationship between Extension contacts and the use of corn production

practices; the use of corn production practices and acres harvested and yield of corn for grain.

III. THE NEED FOR THE STUDY

Extension Agents in Tennessee are concerned with the relative effectiveness of their educational efforts. It was believed that if such work or effort was to be most effective, information was needed concerning the relative use of the recommended corn production practices, the relationships between the producers' use of the practices and acres of corn harvested for grain and yield per acre of corn harvested for silage and the numbers of contacts producers had with Extension Agents. Furthermore, it was felt that such information would be helpful to the Extension Staff in planning and conducting corn production programs in the state.

IV. PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of the study, then, was to determine the influence of contacts corn producers had with Extension on their use of recommended corn production practices and to determine the influence use upon corn yield.

More specifically, the objectives of this study were:

1. To determine the variation among the 61 major corn production counties as to acres of corn harvested for grain and for silage and yield per acre of corn for grain and corn for silage.

2. To compare use by corn producers of eight recommended corn production practices in 1970 and 1975.
3. To determine the relationship between the use by producers of eight recommended corn production practices and acres of corn harvested for grain and acres of corn harvested for silage.
4. To determine the realtionships between producers' use of each of eight recommended corn production practices and yield per acre of corn harvested for grain and corn harvested for silage.
5. To determine the relationship between the total number of eight recommended corn production practices used by producers and acres of corn they harvested for grain and acres of corn harvested for silage.
6. To determine the relationship between total number of eight recommended corn production practices used by producers and yield per acre of corn harvested for grain and corn harvested for silage.
7. To determine the variation among producers in the 61 major corn producing counties regarding the number of contacts they made

with County Extension Agents over a 12-month period.

9. To determine the relationship between the total number of corn production practices used by producers and the number of Extension contacts producers had with Extension over a 12-month period.
10. To determine the relationship between the total number of Extension contacts and acres of corn harvested in grain and acres of corn harvested for silage.
11. To determine the relationship between the total number of Extension contacts and yield per acre of corn harvested for grain and corn harvested for silage.

V. METHODS AND PROCEDURES

The data for this study were obtained in personal interviews with corn producers by Extension Agents using a survey instrument (i.e., Practice Checklist, see Appendix A) developed by Extension specialists of the University of Tennessee Agricultural Extension Service with the help of State program leaders in agriculture and home economics, district supervisors, county staff and the administrators.

Nature of the Instrument

The practice checklist survey is an instrument used to record the Clientele's use of recommended production and management practices. The adoption of a recommended practice is used as an indicator of changed behavior as a result of acquired new knowledge, skills and understanding.

This instrument contains leading questions to assist the interviewer (i.e., Extension Agent) in deciding whether or not each recommended practice or procedure is being followed. Among the components of the checklist is the information regarding the farmer's personal and family characteristics of the farmer and the farm enterprise. Also, included are facts regarding the total operation (e.g., size, major enterprise, etc.) as well as information regarding acreage, yield or production levels. Questions were also asked regarding the type and number of contacts respondents had with Extension Agents during the preceding 12 months are also asked.

Population

The population for this study included all corn producers in the 61 major corn producing counties of Tennessee. The Nth. number method of sampling was used to select the producers to be interviewed. The sample included 2116 producers in 1970 and 961 producers in the 1975 survey.

Interviews were conducted by agents in the winter of 1970 and again in the winter of 1975.

Analysis Procedures

The data were coded and punched on computer cards. Computations were made by the University of Tennessee Computing Center. The one way analysis of variance F test statistic and the Pearsonian correlation coefficient were used to determine the association between each dependent variable and each of the independent variables. F Values which achieved the .05 level of probability were accepted as being statistically significant. Numbers, percentages, and means also were used in the analysis.

Some variables were sometimes used both as dependent and independent variables. The eight corn production practices used in the study were:

1. Used corn variety recommended by the University of Tennessee.
2. Planted during the recommended dates.
3. Used recommended plant populations.
4. Applied lime and fertilizer to corn land according to soil test recommendations.
5. Used recommended procedures in applying fertilizer and lime.
6. Used recommended chemicals to control weeds.
7. Harvested corn at the proper maturity level.

8. Used recommended practices for pest control in stored grain.
9. A total corn production practices scores also was calculated for each grower.

The four variables regarding acres and yield were as follows:

1. Acres of corn harvested for grain.
2. Acres of corn harvested for silage.
3. Yield per acre of corn harvested for grain.
4. Yield per acre of corn harvested for silage.

Variables regarding the number of Extension contacts were as follows:

1. Number of Extension meetings attended over the past 12 months.
2. Number of Extension corn production meetings attended over the past 12 months.
3. Number of visits made to Extension office by corn producers over a 12-month period.
4. Number of telephone calls made to Extension office by producers over a 12-month period.
5. Number of farm visits corn producers received from Extension Agents over a 12-month period.
6. Total number of Extension contacts that corn producers had with Extension Agents over a 12-month period.

CHAPTER II

REVIEW OF RELATED STUDIES

For many years the influence of Extension work has been felt but relatively little work directly related to the present study has been done. The studies that did relate in some way are mentioned below.

I. STUDIES OF CORN PRODUCTION PRACTICES USED IN TENNESSEE

A search of relevant work done on corn production practices in Tennessee disclosed the Palmer Study (9) on corn as a function of several management factors expressed as variables in quadratic prediction equations and the Singh study (18) on the relation of corn yield to the adoption of corn production practices. Palmer's study was initiated in Bradley County, Tennessee, 1960 and showed that corn yields in Tennessee could be greatly increased by following recommended management practices.

Singh's study was initiated in 1967 and attempted to determine the relationship between corn yield and various corn production practices adopted. Two hundred and seventy-three producers were included in the study from six Tennessee counties and the total number of corn producers were divided into three yield groups.

The study indicated that a higher percent of the high yield group used the various recommended corn production practices than was true for the low yield group. The corn yields in the three yield groups showed a negative correlation with various practices adopted. Indications were that yield was not the only factor which influenced practice adoption.

II. OTHER STUDIES RELATED TO PRACTICE ADOPTION

In other related studies, Wilkening (20), in his study of the role of communicating technological change in agriculture, found that agricultural agencies (county agents, SCS technicians, etc.) were used by farmers to obtain the detailed instructions for putting a practice into effect and to help in decision making. Rogers and Beal (5) utilized a five-stage adoption process--awareness, interest, evaluation, trial, and adoption--to test the hypothesis that personal influence is more important at certain stages of the adoption process. They classified information sources as impersonal (i.e., primarily mass media) or personal (i.e., county agents, SCS technicians, neighbors, relatives, salesmen, dealers, etc.). They found that impersonal sources were used more at the awareness stage. Personal sources were used more at the other stages of the adoption process.

Copp, Sill, and Brown (7), in their study of the stage of the adoption process (i.e., awareness, interest,

acceptance, trial, and adoption) regarding three agricultural practices, found that the sources of information utilized were mass media (i.e., magazines, radios, and printed extension materials) and oral extension contacts (i.e., office calls, farm visits, meetings, etc.).

About thirty five years ago, Ryan and Gross published their famous study on the adoption of hybrid seed corn (15). Subsequent research confirmed their findings that the adoption of new farming methods is usually a rather lengthy process during which people become aware of new ideas mainly through mass media, but where the decision to adopt the new idea is predominantly made as a result of personal influence (4).

Copp, in his study, found that the number of recommended practices followed by a cattleman were influenced by three principal factors. These factors were: (1) size of farm operating unit, (2) acceptance of scientific and professional values in farming, and (3) mental flexibility in approaching problems of farm operation. The study indicated that farm practices were adopted to the extent that they can be integrated into the economic situation of the farm operator and his mental outlook. That is, practices are not adopted solely on a logical or economic basis. Their acceptance also is dependent on an appeal to attitudes, values, and perception.

Young (24), in his two studies, found that farmers who had talked with representatives of the agricultural agencies had adopted recommended practices more than had those who had not experienced this contact. He also found that as the amount of education increased, the percentage of farmers increased who reported attending meetings, reading bulletins, and talking with agricultural agency representatives. In addition there was definite increase in the percentage of farmers who read farm magazines, circular letters from the county agents, and newspapers.

Anderson and his group (1), noted that tenant-operators cited the role of the landlord in the production planning process as an important limitation to greater fertilizer used. Tenant-operators indicated a willingness to increase fertilizer use if their landlords would share the costs in the same proportion that crops were shared.

Wilkening (21), while studying the acceptance of improved farm practices in three coastal plain counties, showed that the tenure of the operator is an important factor influencing most farming operations. The lack of complete control of land, labor, capital, and management by one person, whether tenant or landlord, resulted in slower acceptance of improved practices. Also, acres of cropland operated were positively associated with the adoption of improved practices.

In a study conducted by Sawhney (17), information sources and media were found to be related to farm practice adoption and to the characteristics of the farmer. The study revealed that the use of personal-localite sources, personal cosmopolite sources, and mass media were related to the age of the farmer, formal education, farm size, income, and level of formal participation.

Hoffer and Stangland (6), in their study of attitudes and values of farmers in relation to adoption of approved practices in corn growing, revealed that if a farmer was efficient, had initiative, and was progressive, he was likely to adopt approved practices. On the other hand, if he tended to be conservative and valued security highly, he would postpone the adoption of a practice or possibly never adopt it.

Brandner and Keavl (2), in their study of congruence as a factor in adoption rate, confirmed hypothesis that persons who evaluate an innovation as congruent with a previous favorably evaluated practice will accept the innovation more rapidly than those who fail to make such an evaluation. In this study, the congruency factor was stronger than age, education, income, economic importance of the innovation, and several other factors normally associated with rapid adoption. They showed that in the area where hybrid corn had been grown, hybrid sorghums were accepted nearly four times as fast as in the non-corn area.

Lionberger (8), studying information seeking habits and characteristics of farm operators, found that 30 percent of the 279 farm operators interviewed obtained farm information from the county agent, 33 percent got their information from some other institutionalized source, and 37 percent had secured no farm information. This study found that non-users of farm informaiton were far less competent technologically than other farmers.

Moulik's (9), study showed that attitudes of farmers toward nitrogenous fertilizers, knowledge about nitrogenous fertilizers, self-rating of innovation proneness, self-rating of economic motivation, and self-rating of closeness with Extension Agents were significantly associated with the levels of adoption of nitrogenous fertilizers.

Numerous researchers suggest that Extension Agents success is positively related to the extent of Extension Agent effort (12). The degree of success of Extension Agents may be measured in terms of the adoption of innovations by members of the clientele system. This measure is frequently used because of the objective of much of the Extension work is to secure adoption of new ideas by the clientele. The greatest success in requiring adoption of new ideas by the clientele has been found to be characterized by Extension Agents who contacted more clientele and who spent fewer days in their offices (23).

In their studies, Wilson and Gallup (1955) indicated wide differences in the influence of the various Extension teaching methods upon adoption of farm and home practices. Approximately 74 out of 100 practices reported adopted were credited to meetings, farm and home visits and result demonstrations (22). However, only 7 percent of the practices adopted were associated with letters, radio, exhibits, and telephone calls. Wilson (1955) also noted that as the result of various Extension teaching methods out of 100 practices, 81 were adopted, of these 25 were credited as individual contacts, 33 to group contacts and 23 to mass media methods (22).

Emphasis of the present study was focused upon the relationship between the number of contacts corn producers in Tennessee reported having over a 12-month period with county Extension Agents and the adoption of recommended corn production practices by the producers. This study differs from some of the earlier studies basically in that a number of contacts with Extension Agents were those reported by the producers themselves, not those Extension Agents reported having had with producers in their county.

CHAPTER III

RELATIONSHIP BETWEEN CORN PRODUCERS SIZE OF OPERATION AND PER ACRE YIELD AND THE USE OF RECOMMENDED CORN PRODUCTION PRACTICES

I. INTRODUCTION

This chapter presents data regarding factors influencing producers use of recommended corn production practices. Data are presented regarding the mean acres of corn harvested for grain, acres of corn harvested for silage, and yield per acre of corn for grain and corn for silage. A comparison by percentage was made of corn producers who used the recommended corn production practices in 1970 and in 1975, the relationship between acres of corn harvested for silage, yield per acre of corn for grain and corn for silage and the producer's use of each of the eight recommended corn production practices. Comparisons were in terms of the mean acres and yield for producers who were and those who were not using each practice at each time period. The discussion was to determine: (1) relationship between acres of corn harvested for grain and the use of recommended practices, (2) relationship between acres of corn harvested for silage and the use of recommended practices, (3) relationship between yield in bushels of corn per acre for grain and the

use of recommended practices, and (4) relationship between yield in tons per acre for silage and the use of recommended practices. The one-way analysis of variance F test was used to test significance of differences observed.

II. CORN PRODUCTION BY COUNTIES

Table I presents data concerning the mean acres of corn harvested for grain and acres of corn harvested for silage, yield per acre of corn for grain and corn for silage in the 61 counties surveyed in 1975.

Corn for Grain

The mean number of acres harvested for grain in 1975 by counties ranged from 7.9 to 156.2 acres. All corn producers in the state averaged harvesting 41.2 acres for grain. Producers in 22 counties averaged harvesting more acres than the state average. Producers in three of the 22 counties averaged harvesting above a hundred acres of corn. Producers in 39 counties averaged below the state average. Producers in five of these counties averaged harvesting less than 15 acres of corn for grain.

With regards to yield, producers averaged harvesting between 53.6 bushels and 106.3 bushels per acre. All producers in the state averaged harvesting 78 bushels per acre. Producers in 27 counties averaged harvesting above the state average and of these, producers in five counties

TABLE I

MEAN ACRES OF CORN HARVESTED FOR GRAIN, FOR SILAGE, YIELD/ACRE IN BUSHELS OF GRAIN AND YIELD/ACRE IN TONS OF SILAGE IN THE 61 COUNTIES SURVEYED IN 1975

County Name	No. Resp.	Mean Acres Of Corn Harvested For Grain	No. Resp.	Mean Acres Of Corn Harvested For Silage	No. Resp.	Mean Yield/ Acre Bushels Of Grain	No. Resp.	Mean Yield/ Acre Tons Of Silage
District I								
Benton	10	53.4	--	--	10	74.0	--	--
Carroll	10	67.4	1	35.0	10	65.0	--	--
Chester	9	16.8	3	39.0	9	57.4	2	14.0
Crockett	10	12.2	2	15.0	10	71.5	2	17.5
De atur	10	26.5	--	--	10	60.7	1	16.0
Dyer	10	74.7	1	18.0	10	79.5	4	10.3
Fayette	9	37.4	4	56.8	9	55.8	3	17.0
Gibson	10	83.1	3	19.7	10	94.6	1	12.0
Hardin	10	51.7	1	4.0	10	77.6	2	13.5
Haywood	10	67.8	2	44.0	10	84.4	3	12.3
Henderson	10	67.3	3	25.0	10	81.8	3	18.0
Henry	9	72.6	3	61.7	9	79.7	2	18.5
Lake	4	29.0	--	--	4	103.8	--	--
Lauderdale	6	18.2	5	33.0	6	86.2	--	--
McNairy	10	19.3	--	--	10	86.0	--	--
Obion	9	156.2	2	23.0	10	100.1	3	14.7
Shelby	10	27.4	3	35.0	11	64.8	2	15.0
Tipton	9	31.4	2	45.0	9	56.9	3	19.7
Weakley	9	140.8	3	108.3	9	83.8	14	15.8
Subtotal	174	56.5	38	40.2	176	76.1	45	15.4
District II								
Bedford	17	24.8	14	34.8	17	63.5	--	--
Humphreys	14	60.2	7	52.6	14	92.5	7	20.9
Lewis	20	27.8	1	8.0	20	67.6	1	18.0
Marshall	7	52.1	18	44.3	7	81.4	18	15.2
Montgomery	19	63.2	2	22.5	18	69.5	2	19.0
Perry	20	81.4	1	10.0	20	74.0	1	20.0
Robertson	14	50.8	14	47.4	14	58.1	13	19.5
Rutherford	19	38.6	13	47.2	19	73.8	13	14.5
Stewart	20	44.1	1	100.0	20	76.6	--	--
Sumner	10	38.1	--	--	10	53.6	--	--
Wayne	20	26.9	2	16.5	20	79.0	2	20.0
Williamson	18	25.9	10	35.2	18	63.7	9	16.2
Wilson	15	35.9	8	24.9	14	62.7	8	11.1
Subtotal	214	48.7	91	39.7	212	72.9	74	16.4
District III								
Bradley	16	17.4	11	22.5	16	84.9	11	17.3
Franklin	18	59.9	4	20.5	18	95.7	3	19.7
Grundy	15	35.2	6	19.7	20	91.2	5	19.6
Marion	16	68.8	4	43.5	20	81.3	4	19.5
McMinn	18	84.0	18	110.4	10	78.5	17	17.6
Monroe	9	40.3	18	49.4	9	99.3	18	18.0
Polk	17	59.2	14	101.5	17	74.0	14	17.9
Rhea	9	65.3	4	12.8	9	62.4	4	13.8
Van Buren	7	16.0	4	16.0	7	106.3	4	28.8
Subtotal	125	52.5	83	60.7	126	85.5	80	18.4
District IV								
Cumberland	12	78.0	12	40.9	12	93.3	12	17.3
Morgan	20	64.8	3	14.7	20	95.3	3	15.3
Overton	20	37.7	2	48.0	20	70.4	2	18.0
Pickett	14	22.5	8	30.6	14	67.1	8	16.1
Putnam	17	19.9	4	62.5	17	75.0	4	18.8
Scott	15	28.8	13	40.1	15	94.5	13	16.1
Subtotal	98	40.8	42	39.2	98	82.3	42	16.7
District V								
Blount	17	22.8	7	21.6	17	70.4	7	15.4
Campbell	7	12.4	9	20.8	7	105.0	9	18.4
Carter	15	11.3	9	48.7	14	103.2	9	19.7
Cocke	11	14.1	9	21.1	11	61.8	9	11.8
Grainger	15	17.1	--	--	15	64.5	--	--
Hamblen	17	10.5	8	18.0	17	70.0	8	15.8
Jefferson	16	27.4	10	45.5	16	74.0	10	13.8
Johnson	6	9.0	6	48.3	6	101.8	6	20.3
Loudon	17	16.9	15	38.5	17	87.6	15	16.2
Roane	19	15.1	3	38.3	19	62.1	2	15.5
Sevier	19	37.6	2	15.0	19	76.6	2	20.0
Sullivan	18	20.0	7	31.3	19	99.1	7	17.3
Union	6	7.9	6	17.3	6	70.0	6	14.7
Washington	17	37.6	14	47.6	17	96.8	14	18.0
Subtotal	200	20.3	105	34.9	199	80.8	104	16.5
State Total	811	41.2	359	42.8	811	78.0	345	16.8

averaged harvesting over 100 bushels of grain per acre. Corn producers in 34 counties averaged harvesting below the state average.

Corn for Silage

Producers in 55 counties were producing corn silage. Producers in the 55 counties averaged between four and 110.4 acres of corn silage. The state average for all producers was 42.8 acres of corn silage. Producers in 20 counties averaged harvesting more acres for silage than the state average. Of these counties, four averaged above 100 acres for corn silage. The range of the five lowest counties was between four and 13 acres.

With regard to silage yield per acre, Table I, page 19, shows that producers responded in 53 counties. The yield ranged between 11.1 to 28.8 tons per acre. The average for the state was 16.8 tons per acre. Producers in 30 counties averaged harvesting more tons per acre than the state's average. Producers in 23 counties averaged harvesting fewer tons per acre than the state's average. The lowest counties ranged from 11 to 14 tons per acre with Wilson county being the lowest with 11.1 tons per acre.

Table I also revealed that producers in the counties who averaged high in acres harvested in grain were in districts one, two and three of the five Extension supervisory districts of the state. But producers in the first

ten counties that had the highest averages in yield per acre of corn for grain, six of these counties were in districts IV and V.

With the acres harvested for silage, producers with the high averages were in districts one, two and three also.

III. COMPARISON OF THE PERCENTAGE OF CORN PRODUCERS USING RECOMMENDED CORN PRODUCTION PRACTICES IN 1970 AND 1975

Table II presents a comparison by percentage between corn producers who were using or not using each of the eight recommended corn production practices. There were 2116 corn producers surveyed in 1970 and of these 2113 responses were analyzed. In 1975, there were 961 producers surveyed and 811 responses were analyzed.

The discussion was broken into three subsections: (1) corn producers in 1970; (2) corn producers in 1975, and (3) comparison by years.

Corn Growers in 1970

Data in Table II revealed that five of the practices (i.e., planted U.T. recommended varieties, planted during the recommended season, planted recommended stand of plants per acre, used recommended fertilizer application procedure, and harvested at recommended stage) were intensively used. The use of the above corn production practices was above 80 percent on each practice. The data also revealed that one

TABLE II

COMPARISON OF THE PERCENTAGE OF CORN PRODUCERS USING RECOMMENDED CORN PRODUCTION PRACTICES IN 1970 AND IN 1975

Name of Recommended Corn Production Practice		1970		1975	
		No. Resp.	%	No. Resp.	%
Planted U.T. Recommended Varieties					
	Yes	1790	85	810	85
	No	323	15	151	15
	Total	2113	100	961	100
Planted During the Reocmmended Season					
	Yes	1823	86	862	90
	No	290	14	99	10
	Total	2113	100	961	100
Planted Recom. Stand of Plants/Acre					
	Yes	1722	81	710	74
	No	391	19	251	26
	Total	2113	100	961	100
Limed & Fertilized According to Soil Test					
	Yes	655	31	416	43
	No	1458	69	545	57
	Total	2113	100	961	100
Used Recom. Fertilizer Application Procedure					
	Yes	1836	87	841	88
	No	277	13	120	12
	Total	2113	100	961	100
Controlled Weeds According to Recommendations					
	Yes	1644	78	742	77
	No	469	22	219	23
	Total	2113	100	961	100
Harvested at Recommended Stage					
	Yes	1949	92	894	93
	No	163	8	67	7
	Total	2112	100	961	100
Controlled Pests in Stored Grain					
	Yes	1137	54	522	54
	No	974	46	439	46
	Total	2111	100	961	100

practice (i.e., controlled weeds according to recommendations) had an average use of 78 percent. Two of the practices (i.e., limed and fertilized according to soil test and controlled pests in stored grain) had the least use with 54 and 34 percent, respectively.

Corn Producers in 1975

As shown in Table II, page 22, a total of 811 corn producers responded to the 1975 survey. The same corn production practices used in 1970 were used for the 1975 survey.

The data revealed that four of the practices (i.e., planted U.T. recommended corn varieties, planted during the recommended season, used recommended fertilizer application procedure and harvested at recommended stage) were intensively used. The use of each of these practices was above 80 percent of the remaining practices, two practices (i.e., planted recommended stand of plants per acre and controlled weeds according to recommendations) were used by 74 and 77 percent respectively of the producers. Two practices, (i.e., limed and fertilized according to soil test and controlled pests in stored grain) were shown to be used the least with 43 and 54 percent respectively.

A Comparison by Years

Of the intensively used practices in 1970, only one practice (i.e., planted recommended stand of plants per acre)

was found to have decreased in 1975. The three that were lowest in 1970 were still found to be the lowest in 1975.

The data showed that there were improvements on four practices (i.e., planted during the recommended season, limed and fertilized according to soil test, used recommended fertilizer application procedure and harvested at recommended stage). The largest single practice improvement registered in 1975 was the practice of liming and fertilizing according to soil test where the change was (+) 12 percent. The second largest improvement was the practice of planting during the recommended season, where the change was (+) 4 percent.

With respect to decrease in practices, the largest single practice decrease in 1975 was the practice of planting recommended stand of plants per acre where the decrease was 7 percent. The practice of controlling weeds according to recommendations had a decrease of 1 percent.

IV. RELATIONSHIP BETWEEN ACRES OF CORN HARVESTED FOR GRAIN AND USE OF RECOMMENDED CORN PRODUCTION PRACTICES IN 1970 AND 1975

Table III presents data concerned with mean acres of corn for grain and silage with references to producers' use of each of eight recommended corn production practices in 1970 and 1975.

TABLE III

RELATIONSHIP BETWEEN ACRES OF CORN HARVESTED FOR GRAIN AND FOR SILAGE, YIELD/ACRE OF GRAIN IN BUSHELS AND YIELD/ACRE OF SILAGE IN TONS AND WHETHER OR NOT THE PRODUCERS WERE USING EACH OF THE EIGHT RECOMMENDED CORN PRODUCTION PRACTICES IN 1970 AND 1975

Recommended Corn Production Practices		Acres of Corn Harvested For Grain				Acres of Corn Harvested For Silage				Yield/Acre Of Grain In Bushels				Yield/Acre of Silage In Tons			
		No. Resp.	Mean	F Value	Sign. Level	No. Resp.	Mean	F Value	Sign. Level	No. Resp.	Mean	F Value	Sign. Level	No. Resp.	Mean	F Value	Sign. Level
Planted UT Recommended Corn Varieties																	
1970	Yes	1488	32.2			560	30.5			1480	60.4			563	14.7		
	No	285	31.2	0.1	.7731	62	36.5	1.5	.2174	284	58.0	2.0	.1567	62	16.5	5.8	.0163
1975	Yes	685	42.8			309	43.9			686	79.7			295	17.1		
	No	126	32.7	3.4	.0644	50	35.5	1.7	.1884	125	68.8	27.0	.0000	50	15.3	8.1	.0048
Planted During the Recommended Season																	
1970	Yes	1522	32.0			549	29.6			1514	61.9			552	15.1		
	No	255	32.2	0.0	.9636	72	42.0	7.5	.0064	254	48.5	60.3	.0000	72	12.9	9.5	.0022
1975	Yes	725	41.8			317	43.3			726	79.2			304	17.1		
	No	86	36.6	0.7	.4201	42	38.4	0.5	.4778	85	68.1	20.0	.0000	41	14.7	12.6	.0004
Planted Recommended Stand of Corn Plant/Acre																	
1970	Yes	1445	33.9			531	31.0			1439	62.1			532	14.8		
	No	334	23.7	10.9	.0010	97	32.8	0.2	.6618	331	50.4	57.8	.0000	99	14.7	0.0	.8921
1975	Yes	603	46.7			282	42.8			604	82.5			269	17.1		
	No	208	25.4	22.6	.0000	77	42.7	0.0	.9810	207	64.9	113.4	.0000	76	15.8	5.4	.0205
Limed & Fertilized According to Soil Test Recommendations																	
1970	Yes	501	42.7			262	35.8			500	64.4			262	14.8		
	No	1275	27.8	30.9	.0000	361	28.0	6.9	.0087	1267	58.2	20.8	.0000	364	14.8	0.0	.8979
1975	Yes	341	50.1			195	44.7			342	83.3			190	17.2		
	No	470	34.7	14.9	.0001	164	40.6	0.9	.3387	469	74.1	36.1	.0000	155	16.3	4.8	.0294
Used Recommended Fertilizer Application Procedure																	
1970	Yes	1540	34.1			567	31.1			1534	60.6			570	14.8		
	No	242	19.1	18.3	.0000	63	32.3	0.1	.8054	239	46.2	6.0	.0142	63	15.1	0.2	.6363
1975	Yes	708	43.7			320	42.6			709	78.6			307	16.9		
	No	103	24.1	11.0	.0005	39	44.1	0.0	.8389	102	74.0	3.8	.0512	38	16.2	1.0	.3208
Controlled Weeds According To Recommendation																	
1970	Yes	1362	33.8			498	31.7			1356	62.2			501	15.0		
	No	407	25.7	7.5	.0061	123	28.7	0.7	.4011	405	52.5	54.1	.0000	123	14.0	3.0	.0813
1975	Yes	637	44.6			278	42.5			637	80.2			267	17.4		
	No	174	28.8	10.8	.0011	81	43.5	0.0	.8419	174	69.8	31.9	.0000	78	14.6	29.1	.0000
Harvested Crop at Recommended Proper Stage																	
1970	Yes	1658	33.1			564	32.0			1651	60.7			567	14.8		
	No	119	18.2	9.4	.0022	63	25.0	2.1	.1488	116	49.9	19.0	.0000	63	15.1	0.2	.6990
1975	Yes	771	41.2			316	42.7			771	80.1			307	17.1		
	No	40	41.7	0.0	.9522	43	43.5	0.0	.8976	40	66.9	11.0	.0010	38	14.3	16.1	.0001
Controlled Pests in Stored Corn																	
1970	Yes	830	40.4			298	32.7			826	58.6			296	14.2		
	No	913	23.8	46.8	.0000	198	28.7	1.3	.2605	908	61.1	4.7	.0425	204	15.8	9.2	.0026
1975	Yes	459	47.3			206	43.6			457	80.1			201	17.2		
	No	352	33.2	12.6	.0004	453	41.6	0.2	.6507	354	75.3	9.7	.0019	144	16.3	3.8	.0523

Planted U.T. Recommended Corn Varieties

Data in Table III, page 25, regarding acres of corn harvested for grain and the practice "Planted U.T. recommended varieties" showed that producers who used this practice in 1970 had an average of 1.0 more acre of corn harvested for grain than the non-users (32.2 vs 31.2 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level. Thus, use of recommended varieties was not significantly influenced by acres of corn harvested for grain in 1970.

In 1975, producers who used this practice had an average of 10.2 more acres of corn harvested for grain than the non-users (42.8 vs 32.7 acres). This difference in acres between users and non-users was not significant. Therefore, producers who planted recommended varieties of corn did not have a significant higher acres harvested for grain in 1975 than those who did not use a recommended variety.

A comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres harvested for grain by 10.2 acres (from 32.2 in 1970 to 42.8 in 1975) compared to an increase of 1.5 acres (31.2 in 1970 to 32.7 in 1975) by producers who did not plant recommended corn varieties.

Planted During the Recommended Season

Data in Table III, page 25, regarding acres of corn harvested for grain and the practice "Planted during the recommended season" showed that producers who used this practice in 1970 had an average of 0.2 less acres of corn harvested for grain than the non-users (32.0 vs 32.2 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level. Therefore, planting during the recommended season did not make a significant difference in acres of corn harvested for grain in 1970.

In 1975, producers who used this practice had an average of 5.2 more acres of corn for grain than the non-users (41.8 vs 36.6 acres). This difference in acres was not significant at the .05 level.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres of corn harvested for grain by 9.8 acres (from 32.0 in 1970 to 41.8 in 1975) compared to an increase of 4.4 acres by producers who did not plant during the recommended season.

Planted Recommended Stand of Corn Plant Per Acre

The data regarding acres of corn harvested for grain and the practice "Planted recommended stand of corn plant per acre" indicated that producers who used this practice in 1970

had an average of 10.2 more acres harvested for grain than the non-users (33.9 vs 23.7 acres). This difference in acres harvested for grain between users and non-users of this practice was significant at the .05 level. Producers who planted the recommended stand of corn plants per acre had significantly more acres of corn than did those who did not use this practice in 1970.

In 1975, producers who used this practice had an average of 21.3 more acres of corn harvested for grain than the non-users (46.7 vs 25.4 acres). This difference in acres harvested for grain between users and non-users of this practice was significant at the .05 level. Producers who planted recommended stand of corn plants per acre in 1970 and 1975 had significantly higher acres of corn harvested for grain than did those who did not use this practice.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres by 13.2 acres (from 33.9 in 1970 to 46.7 in 1975) compared to an increase of 2.4 acres (from 23.7 in 1970 to 25.4 in 1975) by producers who did not plant recommended stand of corn plant per acre.

Limed and Fertilized According to Soil Test Recommendations

The data regarding acres of corn harvested for grain and the practice "limed and fertilized according to soil

test recommendations" showed that producers who used this practice in 1970 had an average of 14.9 more acres of corn harvested for grain than the non-users (42.7 vs 23.7 acres). The difference in acres between users and non-users of this practice was significant at the .05 level. Producers who limed and fertilized according to soil test recommendations in 1970 had significantly higher acres than did those who did not use this practice.

In 1975, producers who used this practice had an average of 15.4 more acres of corn harvested for grain than the non-users (50.1 vs 34.7 acres). The difference in acres between users and non-users of this practice was significant at the .05 level. Thus, producers who limed and fertilized according to soil test recommendations in 1975 had significantly higher acres than the non-users.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres by 11.4 acres (from 42.7 in 1970 to 50.1 in 1975) compared to an increase of 6.9 acres (from 27.8 in 1970 to 34.7 in 1975) by producers who did not lime and fertilize according to soil test recommendations.

Used Recommended Fertilizer Application Procedure

The data regarding acres of corn harvested for grain and the practice "Used recommended fertilizer application

procedure" showed that producers who used this practice in 1970 had an average of 15.0 more acres of corn harvested for grain than the non-users (34.1 vs 19.1 acres). This difference in acres between users and non-users of this practice was significant at the .05 level.

In 1975, producers who used this practice had an average of 19.6 more acres of corn harvested for grain than the non-users (43.7 vs 24.1). This difference in acres between the users and the non-users of this practice was significant. Therefore, producers who used recommended fertilizer application procedure in 1970 and 1975 had significantly higher acres of corn harvested for grain than did those who did not use the practice.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres by 9.6 acres (from 34.1 in 1970 to 43.7 in 1975) compared to an increase of 5.0 acres (from 19.1 in 1970 to 24.1 in 1975) by producers who did not use recommended fertilizer application procedure.

Controlled Weeds According to Recommendations

The data regarding acres of corn harvested for grain and the practice "Controlled weeds according to recommendations" showed that producers who used this practice in 1970 had an average of 8.1 more acres of corn harvested for grain

than the non-users (33.8 vs 25.7 acres). This difference in acres between producers who used and those who did not use this practice was significant at the .05 level.

In 1975, producers who used this practice had an average of 15.8 more acres of corn harvested for grain than the non-users (44.6 vs 28.8 acres). The difference in acres between users and non-users of this practice was significant at the .05 level. Thus, producers who controlled weeds according to recommendations in 1970 and 1975 had significantly higher acres of corn harvested than did those who did not use this practice.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres by 10.8 acres (from 33.8 in 1970 to 44.6 in 1975) compared to an increase of 3.1 acres (from 25.7 in 1970 to 28.8 in 1975) by producers who did not control weeds according to recommendations.

Harvested Crop at Recommended Proper Stage

The data regarding acres of corn harvested for grain and the practice "Harvested crop at recommended stage" showed that producers who used this practice in 1970 had an average of 14.9 more acres of corn harvested for grain than the non-users (33.1 vs 18.2 acres). This difference in acres between users and non-users of this practice was significant

at the .05 level. Thus, producers who used this practice had significantly more acres of corn harvested for grain in 1970 than did the non-users.

In 1975, producers who used this practice had an average of 0.5 less acres of corn harvested for grain than the non-users (41.2 vs 41.7 acres). This difference in acres between users and non-users of this practice was not significant. Therefore, use of this practice did not make a significant difference in acres of corn harvested for grain in 1975.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased in acres of corn harvested for grain by 8.1 acres (from 33.1 in 1970 to 41.2 in 1975) compared to an increase of 23.5 acres (from 18.2 to 41.7) by producers who did not harvest crop at the recommended stage. There was greater increase by non-users of the practice.

Controlled Pests in Stored Grain

The data regarding the acres of corn harvested for grain and the practice "Controlled pests in stored grain" showed that producers who used this practice in 1970 had an average of 16.6 more acres of corn harvested for grain than the non-users (40.4 vs 23.8 acres). The difference in acres between the users and the non-users of this practice was

significant at the .05 level. Thus, users of this practice had significantly more acres of corn harvested for grain in 1970.

In 1975, producers who used this practice had an average of 14.1 more acres of corn harvested for grain than the non-users (47.3 vs 33.2 acres). The difference in acres between users and non-users of this practice was significant. Therefore, the use of this practice during the two time periods was significantly related to acres of corn harvested for grain.

Comparison of acres of corn harvested for grain by users and non-users of this practice during the two time periods revealed that the users increased by 6.9 acres (from 40.4 in 1970 to 47.3 in 1975) compared to an increase of 9.4 acres (from 23.8 in 1970 to 33.2 in 1975) by producers who did not control pests in stored grain. The data indicated a greater increase by non-users.

Summary

To briefly summarize the findings, it was shown that the mean acres of corn grown for grain in 1970 and 1975 by those who were using the recommended corn production practices and those who were not was shown to be significantly different for five out of the eight practices studied. More specifically, the acres of grain harvested was significantly larger both in 1970 and 1975 for those who were using the

following practices: (1) Planted recommended stand of corn plants per acre, (2) limed and fertilized according to soil test recommendations, (3) use recommended fertilizer application procedure, (4) controlled weeds according to recommendations, and (5) controlled pests in stored grain. Producers who were using these practices harvested more acres of corn for grain than did those who were not using the practices. There was no significant difference (i.e., at the .05 level) in the acres of corn harvested for grain either in 1970 or 1975 by those who were as compared to those those who were not using the following practices: (1) Planted U.T. recommended corn varieties, and (2) planted during the recommended season.

Also, the Table III, page 25, showed that there was a significant difference in 1970 an insignificant difference in 1975 as to acres harvested for grain by producers who used as compared to those who did not use the practice of harvesting corn for grain at the proper maturity stage.

V. RELATIONSHIP BETWEEN CORN YIELD FOR GRAIN AND USE OF RECOMMENDED CORN PRODUCTION PRACTICES

Data are presented in this section regarding corn yield per acre and the producer's use of each of eight recommended corn production practices during the years 1970 and in 1975. Corn producers were classified as either users or non-users of each practice at each time period. The mean bushels of

corn produced per acre harvested were computed for users and non-users of each practice during each time period. One-way analysis of variance was used to determine the significance of observed differences in yield among users compared to non-users of each practice at each time period. F-values which achieved the .05 level were considered significant. This section was organized according to recommended practices.

Planted U.T. Recommended Corn Varieties

Data in Table III, page 25, regarding corn yield and the practice "Planted U.T. recommended varieties" showed that producers who used this practice in 1970 had an average yield of 2.4 more bushels per acre than the non-users (60.4 vs 58.0 bushels). This difference in yield between users and non-users of this practice was not significant at the .05 level. Thus, use of recommended varieties did not make a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 10.9 more bushels of grain per acre than the non-users (79.7 vs 68.8 bushels). This difference in per acre yield was significant. Therefore, producers who planted recommended varieties of corn in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn yields by 19.3 bushels per acre (from 60.4 in 1970 to 79.7 in 1975) compared to an increase of 10.8 bushels per acre by producers who did not plant recommended corn varieties.

Planted During the Recommended Season

The data regarding corn yield and the practice "Planted during the recommended season" showed that producers who used this practice in 1970 had an average yield of 13.4 more bushels per acre than the non-users (61.9 vs 48.5 bushels). The difference in yield between the users and the non-users of this practice was significant at the .05 level. Thus, planting during the recommended season made a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 11.1 more bushels than the non-users (79.2 vs 88.1 bushels). This difference in yield per acre yield was significant. Therefore, producers who planted during the recommended season in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods indicated that the users increased corn yield, by 17.3 bushels per acre (from

61.9 in 1970 to 79.2 in 1975) compared to an increase of 19.6 bushels per acre (from 48.5 in 1970 to 68.1 in 1975) by producers who did not plant during the recommended season. The non-users of the practice had more increase than the users.

Planted Recommended Stand of Corn Plants Per Acre

Data regarding corn yield and the practice "Planted recommended stand of corn plants per acre" showed that producers who used this practice in 1970 had an average yield of 11.7 more bushels than the non-users (62.1 vs 50.4 bushels). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus, use of planting recommended stand of corn plant per acre made a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 17.6 more bushels than the non-users (from 82.6 in 1970 to 64.9 in 1975). The difference in per acre yield was significant. Therefore, producers who planted recommended varieties of corn in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn yield by 20.4 bushels per acre (from

62.1 in 1970 to 82.5 in 1975) compared to an increase of 14.5 bushels per acre (from 50.4 in 1970 to 64.9 in 1975) by producers who did not plant recommended stand of corn plant per acre.

Limed and Fertilized According to Soil Test Recommendations

Data regarding corn yield and the practice "Limed and fertilized according to soil test recommendations" showed that producers who used this practice in 1970 had an average yield of 6.2 more bushels of grain per acre than the non-users (64.4 vs 58.2 bushels). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus, use of liming and fertilizing according to soil test recommendations made a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 9.2 more bushels of grain per acre than the non-users (83.3 vs 74.1 bushels). The difference in per acre yield was significant. Therefore, producers who limed and fertilized according to soil test recommendations in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

When per acre yield by users and non-users of this practice during the two time periods was compared, the data revealed that the users increased by 18.9 bushels per acre

(from 64.4 in 1970 to 83.3 in 1975) compared to an increase of 15.9 bushels per acre (from 58.2 in 1970 to 74.1 in 1975) by producers who did not lime and fertilize according to soil test recommendations.

Used Recommended Fertilizer Application Procedure

Data regarding corn yield and the practice "Used recommended fertilizer application procedure" showed that producers who used this practice in 1970 had an average yield of 4.4 more bushels per acre than the non-users (60.6 bs 56.2 bushels). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus, those who used recommended fertilizer application procedure made significantly higher corn yield in 1970.

In 1975, producers who used this practice had an average yield of 4.6 more bushels of grain per acre than the non-users (78.6 vs 70.0 bushels). This difference in per acre yield was significant. Therefore, producers who used recommended fertilizer application procedure in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn yield by 18.0 bushels per acre (from 60.6 in 1970 to 78.6 in 1975) compared to an increase of

17.8 bushels per acre (from 56.2 in 1970 to 74.0 in 1975) by producers who did not use recommended fertilizer application procedure.

Controlled Weeds According to Recommendations

Data concerning corn yield and the practice "Controlled weeds according to recommendations" showed that producers who used this practice in 1970 had an average yield of 9.7 more bushels per acre than the non-users (62.2 vs 52.5 bushels). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus producers who controlled weeds according to recommendations made significantly higher corn yield in 1970.

In 1975, producers who used this practice had an average yield of 10.4 more bushels per acre than the non-users (80.2 vs 69.8 bushels). This difference in per acre yield was significant. Therefore, producers who controlled weeds according to recommendations in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn yield by 18.0 bushels per acre (from 62.2 in 1970 to 80.2 in 1975) compared to an increase of 17.3 bushels per acre by producers who did not use this practice.

Harvested Crop at Recommended Proper Stage

Data regarding corn yield and the practice "Harvested crop at recommended proper stage" showed that producers who used this practice in 1970 had an average yield 10.8 more bushels per acre than the non-users (60.7 vs 49.9 bushels). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus, producers who harvested at the recommended stage of maturity made significantly higher corn yield in 1970.

In 1975, producers who used this practice had an average yield of 13.2 more bushels per acre than the non-users (80.1 vs 66.9 bushels). The difference in yield between users and non-users of this practice was significant at the .05 level. Therefore, producers who harvested crop at the recommended stage of maturity in 1975 had higher yield per acre of corn harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased by 19.4 bushels per acre (from 60.7 in 1970 to 80.1 in 1975) compared to an increase of 17.0 bushels per acre (from 49.9 in 1970 to 66.9 in 1975) by producers who did not harvest at the recommended stage of maturity.

Controlled Pests in Stored Grain

Data concerning the corn yield and the practice "Controlled pests in stored grain" showed that producers who

used this practice in 1970 had an average yield of 2.5 less bushels per acre than the non-users (58.6 vs 61.1 bushels). This difference in per acre yield between users and non-users of this practice was significant at the .05 level. Thus, producers who controlled pests in stored grain made significantly higher corn yield in 1970.

In 1975, producers who used this practice had an average yield of 4.8 more bushels per acre than the non-users (80.1 vs 75.3 bushels). The difference in per acre yield was significant. Therefore, producers who controlled pests in stored grain ln 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

When the per acre yield by users and non-users of this practice during the two time periods was compared, it revealed that the users increased corn yield by 21.5 bushels per acre (from 58.6 in 1970 to 80.1 in 1975) compared to an increase of 14.2 bushels per acre (from 61.1 in 1970 to 75.3 in 1975) by producers who did not control pests in stored grain.

Summary

In summary, the findings revealed that the mean yield of corn for grain in 1970 and 1975 by those who were using the recommended corn production practices and those who were not was significantly different for all the eight practices studied except the use of recommended corn varieties in 1970.

Producers who were using these practices had higher corn yield per acre than did those who were not using the practices.

VI. RELATIONSHIP BETWEEN ACRES OF CORN HARVESTED FOR SILAGE AND USE OF RECOMMENDED CORN PRODUCTION PRACTICES IN 1970 AND 1975

Planted U.T. Recommended Corn Varieties

Data regarding acres of corn harvested for silage and the practice "Planted U.T. recommended varieties" showed that producers who used this practice in 1970 had an average of 6.0 less acres of corn harvested silage than the non-users (30.5 vs 36.5 acres). The difference in acres between users and non-users of this practice was not significant at the .05 level. Thus, producers use of recommended varieties did not differ significantly as to acres of corn harvested for silage in 1970.

In 1975, producers who used this practice had an average of 8.4 more acres of corn harvested for silage than the non-users (43.9 vs 35.5 acres). This difference in acres of corn harvested for silage was not significant. Therefore, producers who planted recommended varieties of corn in 1970 and 1975 did not have significant higher number of acres of corn harvested in silage than those who did not use the practice.

When the acres of corn harvested for silage by users and non-users of this practice during the two time periods

compared, the data revealed that the users increased acres of corn harvested for silage by 13.4 acres (from 30.5 in 1970 to 43.9 in 1975) compared to a decrease of 1.0 acres (from 36.5 in 1970 to 35.5 in 1975) by producers who did not plant recommended corn varieties.

Planted During the Recommended Season

Data regarding acres of corn harvested for silage and the practice "Planted during the recommended season" showed that producers who used this practice in 1970 had an average of 12.4 less acres of corn harvested for silage than the non-users (29.6 vs 42.0 acres). This difference in acres between users and the non-users of this practice was significant at the .05 level. Thus, producers who planted corn silage during the recommended season had significant fewer acres of corn harvested for silage in 1970.

In 1975, producers who used this practice had an average of 4.9 more acres of corn harvested for silage than the non-users (43.3 vs 38.4 acres). The difference in acres between users and the non-users of this practice was not significant. Therefore, whether or not producers plant during the recommended season did not differ significantly in acres of corn harvested for silage in 1975.

Comparison of acres of corn harvested for silage by users and non-users of this practice during the two time periods revealed that the users increased acres of corn

harvested for silage by 13.7 acres (from 29.6 in 1970 to 43.3 in 1975) compared to a decrease of 3.6 acres (from 42.0 in 1970 to 38.4 in 1975) by producers who did not plant during the recommended season.

Planted Recommended Stand of Corn Plant Per Acre

Data regarding acres of corn harvested for silage and the practice "Planted recommended stand of corn plant per acre" showed that producers who used this practice in 1970 had an average of 1.8 less acres of corn harvested for silage than the non-users (31.0 vs 32.8 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level. Thus, whether or not producers planted recommended stand of corn plants per acre did not differ significantly as to acres of corn harvested for silage in 1970.

In 1975 producers who used this practice had an average of 0.1 more acres of corn harvested for silage than the non-users (42.8 vs 42.7 acres). When the difference between the users and the non-users of this practice was tested by the F test, it was shown to be insignificant at the .05 level. Thus, producers who planted the recommended stand of corn plant per acre did not differ significantly from those who did not as to acres of corn harvested for silage.

Comparison of acres of corn harvested for silage by users and non-users of this practice during the two time periods revealed that the users increased acres of corn harvested for silage by 11.8 acres (from 31.0 in 1970 to 42.8 in 1975) compared to an increase of 9.9 acres (from 32.8 in 1970 to 42.7 in 1975) by producers who did not plant recommended stand of corn plants per acre.

Limed and Fertilized According to Soil Test Recommendations

Data concerning acres of corn harvested for silage and the practice "Limed and fertilized according to soil test recommendations" showed that producers who used this practice in 1970 had an average of 7.8 more acres of corn harvested for silage than the non-users (35.8 vs 28.0 acres). The difference in acres between users and non-users of this practice was significant at the .05 level. Thus, producers who limed and fertilized according to soil test recommendations harvested significantly more acres of corn for silage in 1970 than those who did not use this practice.

In 1975, producers who used this practice had an average of 4.1 more acres of corn harvested for silage than the non-users (44.7 vs 40.6 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level. Thus whether or not producers limed and fertilized according to recommendations did differ

significantly as to acres of corn harvested for silage in 1975.

When acres of corn harvested for silage by users and non-users of this practice during the two time periods were compared, the data revealed that the users increased acres of corn harvested for silage by 8.9 acres (from 35.8 in 1970 to 44.7 in 1975) compared to an increase of 12.0 acres (from 28.0 in 1970 to 40.6 in 1975) by producers who did not lime and fertilize according to soil test recommendations.

The figures showed that the increase in acres of corn harvested for silage for the non-users was greater than the users of this practice.

Used Recommended Fertilizer Application Procedure

Data regarding acres of corn harvested for silage and the practice "Used recommended fertilizer application procedure" showed that producers who used this practice in 1970 had an average of 1.2 less acres of corn harvested for silage than the non-users (31.1 vs 32.3 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level.

In 1975, producers who used this practice had an average yield of 1.5 less acres of corn harvested for silage than the non-users (42.6 vs 44.1 acres). This difference in acres between users and non-users was not significant.

Therefore, the use of recommended fertilizer application procedure did not differ significantly as to acres of corn harvested for silage in 1970 or 1975.

Comparison of acres of corn harvested for silage by users and non-users of this practice revealed that the users increased acres of corn harvested for silage by 11.5 acres (from 31.1 in 1970 to 42.6 in 1975) compared to an increase of 11.8 acres (from 32.3 in 1970 to 44.1 in 1975) by producers who did not use recommended fertilizer application procedure.

Controlled Weeds According to Recommendations

The analysis regarding acres of corn harvested for silage and the practice "Controlled weeds according to recommendations" showed that producers who used this practice in 1970 had an average of 3.0 more acres of corn harvested for silage than the non-users (31.7 vs 28.7 acres). The difference in acres between users and non-users of this practice was not significant at the .05 level.

In 1975, producers who used this practice had an average of 1.0 less acres of corn harvested for silage than the non-users (42.5 vs 43.5 acres). This difference in acres between users and non-users of this practice was not significant. Thus, use of controlling weeds according to recommendations did not differ significantly as to acres of corn harvested for silage in 1970 or 1975.

Comparison of acres of corn harvested for silage by users and non-users of this practice during the two time periods revealed that the users increased acres of corn harvested for silage by 10.8 acres (from 31.7 in 1970 to 42.5 in 1975) compared to an increase of 14.8 acres (from 28.7 in 1970 to 43.5 in 1975) by producers who did not control weeds according to recommendations. Producers who did not use this practice were shown to have had greater increase in acres than the user of the practice.

Harvested Crop at Recommended Stage

Data concerning acres of corn harvested for silage and the practice "Harvested crop at recommended stage" showed that producers who used this practice in 1970 had an average of 7.0 more acres of corn harvested for silage than the non-users (32.0 vs 25.0 acres). This difference in acres between the users and non users was not significant at the .05 level.

In 1975, producers who used this practice had an average of 0.8 less acres of corn harvested for silage than the non-users (42.7 vs 43.5 acres). This difference in acres between users and non-users of this practice was not significant. Therefore, use of harvesting crop at recommended stage of maturity did not differ significantly as to acres of corn harvested for silage in 1970 or 1975.

Comparison of acres of corn harvested for silage by users and non-users of this practice during the two time periods revealed that the users increased acres of corn harvested for silage by 10.7 acres (from 32.0 in 1970 to 42.7 in 1975) compared to an increase of 18.5 acres (from 25.0 in 1970 to 43.5 in 1975) by producers who did not harvest crop at recommended stage of maturity.

Controlled Pests in Stored Grain

Data concerning acres of corn harvested for silage and the practice "Controlled pests in stored grain" showed that producers who used this practice in 1970 had an average of 4.0 more acres of corn harvested for silage than the non-users (32.7 vs 28.7 acres). The difference in acres between users and non-users of this practice was not significant at the .05 level. Thus, use of controlling pests in stored grain did not differ significantly as to acres of corn harvested for silage.

In 1975, producers who used this practice had an average of 2.0 more acres of corn harvested for silage than the non-users (43.6 vs 41.6 acres). This difference in acres between users and non-users of this practice was not significant at the .05 level. Therefore, controlling pests in stored grain did not differ significantly as to acres of corn harvested for silage.

Comparison of acres of corn harvested for silage by users and non-users of this practice during the two time periods revealed that the users increased acres by 10.9 acres (from 32.7 in 1970 to 43.6 in 1975) compared to an increase of 12.9 acres (from 28.7 in 1970 to 41.6 in 1975) by producers who did not control pests in stored grain.

Summary

In summary, the data indicated that the mean acres of corn harvested for silage in 1970 and 1975 by those who were using the recommended corn production practices and those who were not was shown to be significantly different for two out of the eight practices studied in 1970 and insignificantly different for all the eight practices studies in 1975. More specifically, the acres of silage harvested was significantly larger in 1970 for those who were using the practice "Limed and fertilized according to soil test recommendations" but insignificantly less in 1970 for those who were using the practice "Planted during the recommended season." Producers who were using these practices did not harvest larger acres for silage than did those who were not using the practices in most cases.

VII. RELATIONSHIP BETWEEN CORN SILAGE YIELD AND USE OF RECOMMENDED CORN PRODUCTION PRACTICES

Data in Table III, page 25, regarding corn silage field and the practice "Planted U.T. recommended corn varieties" showed that producers who used this practice in 1970 had an average yield of 1.8 less tons per acre than the non-users (14.8 vs 16.5 tons). This difference in yield between users and non-users of this practice was significant at the .05 level. Thus, producers who used recommended varieties had a significantly lower silage yield in 1970.

In 1975, producers who used this practice had average yield of 1.8 more tons of silage per acre than the non-users (17.1 vs 15.3 tons). The difference in yield between users and non-users of this practice was significant at the .05 level. Therefore, producers who planted recommended varieties of corn in 1970 did not have a significantly higher yield per acre of corn silage harvested but did have higher yield in 1975 than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn silage yield by 2.4 tons per acre (from 14.7 in 1970 to 17.1 in 1975) compared to a decrease of 1.2 tons per acre (from 16.5 in 1970 to 15.3 in 1975) by producers who did not plant recommended corn varieties.

Planted During the Recommended Season

Data concerning the corn yield and the practice "Planted during the recommended season" showed that producers who used this practice in 1970 had an average yield of 2.2 more tons per acre than the non-users (15.1 vs 12.9 tons). This difference in yield between users and non-users of the practice was significant at the .05 level. Thus, use of planting during recommended season did make a significant difference in corn silage in 1970.

In 1975, producers who used this practice had an average yield of 2.4 more tons per acre than the non-users (17.1 vs 14.7 tons). The difference in per acre yield was significant. Therefore, producers who planted during recommended season in 1975 had significantly higher yield per acre of corn harvested for silage than did those who did use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn silage yield by 2.0 tons per acre (from 15.1 in 1970 to 17.1 in 1975) compared to an increase of 1.8 tons per acre (from 12.9 in 1970 to 14.7 in 1975) by producers who did not use plant during the recommended season.

Planted Recommended Stand of Corn Plants Per Acre

Data regarding corn silage yield and the practice "Planted recommended stand of corn plants per acre" showed producers who used this practice in 1970 had an average yield of 0.1 more tons per acre than the non-users (14.8 vs 17.4 tons). This difference in yield between users and non-users of this practice was not significant at the .05 level. Hence, use of planting recommended stand of corn plants per acre did not make a significant difference in corn silage yield in 1970.

In 1975, producers who used this practice had an average yield of 1.3 more tons than the non-users (17.1 vs 15.8 tons). The difference in yield between users and non-users of this practice was significant. Therefore, producers who planted recommended stand of corn plants per acre in 1975 had significantly higher yield of corn silage than did those who did not use this practice.

When the per acre yield by users and non-users of this practice during the two time periods were compared, the data showed that the users increased corn yield by 2.3 tons per acre (from 14.8 in 1970 to 17.1 in 1975) compared to an increase of 1.1 tons per acre (from 14.7 in 1970 to 15.8 in 1975) by producers who did not plant recommended stand of corn plants per acre.

Limed and Fertilized According to Soil Test Recommendations

Data concerning corn yield and the practice "Limed and fertilized according to soil test recommendations" indicated that producers who used this practice in 1970 and those who did not use the practice had an equal average yield (14.8 vs 14.8 tons). When tested by the F test to show if there was any significant difference it was shown that there was no significant difference at the .05 level. Thus, use of liming and fertilizing according to soil test recommendations did not make a significant difference in silage yield in 1970.

In 1975, producers who used this practice had an average yield of 0.9 more tons than the non-users (17.2 vs 16.3 tons). This difference in silage yield between users and non-users of this practice was significant. Therefore, producers who limed and fertilized according to soil test recommendations in 1975 had significantly higher yield per acre of corn harvested than did those who did not use this practice.

When the per acre yield by users and non-users of this practice during the two time periods were compared, the data revealed that the users increased corn silage yield by 2.3 tons per acre (from 14.8 in 1970 to 17.2 in 1975) compared to an increase of 1.5 tons per acre (from 14.8 in

1970 to 16.3 in 1975) by producers who did not lime and fertilize according to soil test recommendations.

Used Recommended Fertilizer Application Procedure

Data regarding corn yield and the practice "Use recommended fertilizer application procedure" showed that producers who used this practice in 1970 had an average yield of 0.3 less tons per acre than the non-users (14.8 vs 15.1 tons). This difference in corn silage yield between users and non-users of this practice was not significant at the .05 level. Hence, use of recommended fertilizer application procedure did not make a significant difference in corn silage yield in 1970.

In 1975, producers who used this practice had an average yield of 0.7 more tons of silage per acre than the non-users (16.9 vs 16.2 tons). The difference in yield between users and non-users of this practice was not significant. Therefore, producers who used recommended fertilizer application procedure in 1970 and 1975 did not have significantly higher yield per acre of corn silage harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods indicated that the users increased corn silage yield by 2.1 tons per acre (from 14.8 in 1970 to 16.9 in 1975) compared to an increase of 1.1 tons per acre (from 15.1 in 1970 to 16.2 in 1975) by

producers who did not use recommended fertilizer application procedure.

Controlled Weeds According to Recommendation

The analysis regarding corn yield and the practice "Controlled weeds according to recommendations" showed that producers who used this practice in 1970 had an average yield of 1.0 more tons that the non-users (15.0 vs 14.0 tons). This difference in silage yield between users and non-users of this practice was not significant at the .05 level. Thus, use of controlling weeds according to recommendation did not make a significant difference in corn yield in 1970.

In 1975, producers who used this practice had average yield of 2.8 more tons per acre of corn silage than the non-users (17.4 vs 14.6 tons). This difference in per acre yield was significant. Therefore, producers who controlled weeds according to recommendation in 1975 had a significantly higher yield per acre of corn silage harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn silage yields by 2.4 tons per acre (from 15.0 in 1970 to 17.4 in 1975) compared to an increase of 0.6 tons per acre (from 14.0 in 1970 to 14.6 in 1975) by

producers who did not control weeds according to recommendations.

Harvested Crop at Recommended Stage

Data concerning corn yield and the practice "Harvested crop at recommended stage" showed that producers who used this practice in 1970 had an average yield of 0.3 less tons of silage per acre than the non-users (14.8 vs 15.0 tons). The difference in yield between users and non-users of this practice was not significant at the .05 level. Hence use of harvesting crop at recommended stage did not make a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 2.8 more tons of silage per acre than the non-users (17.1 vs 14.3 tons). The difference in yield between users and non-users of this practice was significant at the .05 level. Therefore, producers who harvested crop at recommended stage of maturity in 1975 had significantly higher yield per acre of corn silage harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods indicated that the users increased corn yields by 2.3 tons per acre (from 14.8 in 1970 to 17.1 in 1975) compared to decrease of 0.8 tons per acre (from 15.1 in 1970 to 14.3 in 1975) by producers who did not harvest at recommended stage of maturity.

Controlled Pests in Stored Grain

The analysis regarding corn yield and the practice "Controlled pests in stored grain" revealed that producers who used this practice in 1970 had an average yield of 1.6 less tons per acre than the non-users (14.2 vs 15.8 tons). This difference in silage yield between users and non-users of this practice was significant at the .05 level. Thus, lack of use of controlling pests in stored grain did make a significant difference in corn yield in 1970.

In 1975, producers who used this practice had an average yield of 0.9 more tons per acre than the non-users (17.2 vs 16.3 tons). This difference in yield between users and non-users of this practice was significant. Therefore, producers who controlled pests in stored grain in 1975 had significantly higher yield per acre of corn silage harvested than did those who did not use this practice.

Comparison of per acre yield by users and non-users of this practice during the two time periods revealed that the users increased corn yields by 3.0 tons per acre (from 14.2 in 1970 to 17.2 in 1975) compared to an increase of 0.5 tons per acre (from 15.8 in 1970 to 16.3 in 1975) by producers who did not control pests in stored grain.

Summary

In summary, the data revealed that the mean yields of corn harvested for silage in 1970 and 1975 by those who were

using the recommended corn production practices and those who were not was shown to be significantly different for three out of the eight practices studied in 1970 and significantly different for seven out of eight of these practices in 1975. Specifically, the yields of corn silage per acre was significantly larger both in 1970 and 1975 for those who were using the following practices: (1) Planted U.T. recommended corn varieties, (2) planted during the recommended season, and (3) controlled pests in stored grain together with the above yields of corn silage per acre was significantly larger in 1975 on the following practices: (1) planted recommended stand of corn plants per acre, (2) limed and fertilized according to soil test recommendations, (3) controlled weeds according to recommendations, and (4) harvested crop at recommended stage of maturity. Thus, the use of recommended fertilizer application procedure was the only practice in 1975 that did not make a significant difference in corn yield.

VIII. RELATIONSHIP BETWEEN THE YIELD PER ACRE OF CORN HARVESTED FOR GRAIN, YIELD PER ACRE OF SILAGE HARVESTED IN 1970 AND 1975 AND THE TOTAL NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE PRODUCERS

Findings regarding the relationship between corn producers' use of eight recommended corn production practices and corn yield in bushels grain and in tons of corn silage for the years 1970 and 1975 are presented in Table IV.

TABLE IV

RELATIONSHIP BETWEEN THE YIELD/ACRE OF CORN HARVESTED FOR GRAIN, YIELD/ACRE OF SILAGE HARVESTED AND THE TOTAL NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE PRODUCERS IN 1970 AND 1975

Total No. Of Recommended Corn Prod. Practices Used	Yield/Acre Of Grain In Bushels 1970		Yield/Acre Of Silage In Tons 1970		Yield/Acre Of Grain In Bushels 1975		Yield/Acre Of Silage In Tons 1975	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
0	5	47.6	--	--	1	60.0	1	18.0
1	13	43.3	2	12.0	2	60.0	--	--
2	39	56.6	7	21.7	10	50.9	5	11.4
3	83	47.5	22	15.7	26	52.8	11	11.9
4	164	54.6	53	13.9	71	69.6	21	14.3
5	332	51.5	113	14.2	130	69.4	56	16.1
6	542	61.8	118	15.1	223	78.0	89	16.7
7	424	64.3	150	14.4	224	83.8	97	17.5
8	178	67.2	106	15.4	124	89.3	65	18.4
All Producers	2116	59.9	2116	14.8	961	78.0	961	16.8
F Value	9.9		2.4		19.4		7.3	
Sign. Level	0.000		0.0195		0.000		0.000	

The table shows that there were 2,116 corn producers surveyed in 1970 and 961 in 1975. These producers had an average per acre yield of 59.9 bushels of grain in 1970 and 78.0 bushels in 1975.

The discussion was organized into four subsections. The purpose was to show the relationship between yield per acre in bushels of corn harvested for grain and for silage and the number of recommended corn production practices used in 1970 and in 1975.

Relationship Between Per Acre Yield in Bushels of Corn Grown for Grain and Total Number of Recommended Corn Production Practices Used in 1970

Data in Table IV, page 61, shows that the 2,116 corn producers had an average per acre yield of 59.9 bushels of corn for grain in 1970. One hundred and forty of the producers (6.6 percent of all producers) were using less than four of the eight practices. These producers averaged between 43.3 and 56.6 bushels of grain per acre. The remaining producers (i.e., 1,976 or 93.4 percent of all producers) were using four or more of the eight practices and had an average per acre yield of between 51.5 and 67.2 bushels of grain. The analysis of variance F-test showed that yield per acre of grain harvested in 1970 was significantly related to the total number of recommended practices used by the 2,116 corn producers. These data indicate that producers who were using more of the recommended practices

had higher per acre yields than those who used fewer of the practices.

Relationship Between Per Acre Yield in Tons of Corn Harvested for Silage and Total Number of Recommended Corn Production Practices Used in 1970

The data shows that the 2,116 corn producers had an average per acre yield of 14.8 tons of corn for silage in 1970. Thirty-one of the producers (1.5 percent of all producers) were using less than four of the eight practices. These producers averaged between 12.0 and 15.7 tons of silage per acre. The remaining producers (i.e., 2,085 or 98.5 percent of all producers) were using four or more of the eight recommended practices and had an average per acre yield of between 13.9 and 15.4 tons of silage. The analysis of variance F-test showed that yield per acre of grain harvested in 1970 was significantly related to the total number of recommended practices used by the 2,116 corn producers. These data indicated that producers who were using more of the recommended practices had higher per acre yields than those who used fewer of the practices.

Relationship Between Per Acre Yield in Bushels of Corn Harvested for Grain and the Total Number of Recommended Corn Production Practices Used in 1975

The analysis shows that the 961 corn producers had an average per acre yield of 78.0 bushels of corn for grain in

1975. Thirty-nine of the producers (4.3 percent of all producers) were using less than four of the eight practices. These producers averaged between 50.9 and 60 bushels of grain per acre. The remaining producers (i.e., 922 or 95.7 percent of all producers) were using four or more of the eight practices and had an average per acre yield of between 69.4 and 89.3 bushels of grain. The analysis of variance F-test showed that yield per acre of grain harvested in 1975 was significantly related to the total number of recommended practices used by the 961 corn producers. These data indicated that producers who were using more of the recommended practices tended to have a somewhat higher per acre yield than those who used fewer of the practices.

Relationship Between Per Acre Yield in Tons of Corn Harvested for Silage and Total Number of Recommended Corn Production Practices Used in 1975

The data concerning per acre yield in tons of corn harvested for silage shows that the 961 corn producers had an average per acre yield of 16.8 tons of corn for silage in 1975. Seventeen of the producers (1.9 percent of all producers) were using less than four of the eight practices. These producers averaged between 11.4 and 18.0 tons of silage per acre. The remaining producers (i.e., 944 or 98.1 percent of all producers) were using four or more of the eight practices and had an average per acre yield of between 14.3 and 18.4 tons of silage. The analysis of variance F-

test showed that yield per acre of grain harvested in 1975 was significantly related to the total number of recommended practices used by the 961 corn producers. These data indicated that producers who were using more of the recommended practices had higher per acre yields than those who used fewer of the practices.

Summary

Though the yield of corn for grain and for silage per acre was shown to be significantly related to the use of the total number of recommended corn production practices in both time periods, most of the corn growers who used less than 6 practices harvested less than the state average in all cases. Those who used 6 or more practices had a greater yield than those who used fewer practices.

CHAPTER IV

RELATIONSHIP BETWEEN CORN PRODUCERS SIZE OF OPERATION, PER ACRE YIELD, NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED, AND THE NUMBER OF CONTACTS PRODUCERS HAD WITH EXTENSION

This chapter presents findings regarding the mean number of contacts producers had with Extension and the mean number of recommended corn production practices used, relationship between the number of contacts and the use of recommended corn production practices, relationship between the types of Extension contacts and the total number of recommended corn production practices and the relationship between acres in corn yield per acre and the number of contacts corn producers had with Extension over a 12-month period. Data are presented in four tables.

I. MEAN NUMBER OF CONTACTS PRODUCERS IN EACH OF THE 61 COUNTIES HAD WITH EXTENSION AGENTS OVER A 12-MONTH PERIOD AND THE MEAN NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE PRODUCERS IN 1975

Table V presents findings concerning the mean number of contacts producers in each of the 61 counties had with Extension Agents over a 12-month period and the mean number of recommended corn production practices used by the producers in 1975.

TABLE V

MEAN NUMBER OF CONTACTS PRODUCERS IN EACH OF THE 61 COUNTIES HAD WITH EXTENSION AGENTS OVER A 12-MONTH PERIOD AND THE MEAN NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE PRODUCERS IN 1975

County Name	Types of Ext. Contacts							
	No. Resp.	Mean No. Of Ext. Meetings Attended	Mean No. Corn Production Ext. Meetings Attended	Mean No. Of Visits To Co. Ext. Office	Mean No. Phone Calls To Ext. Office	Mean No. Farm Visits Received From Ext. Agents	Total No. Of Ext. Contacts Per Producer	Average No. Of Practices Used Per Producer
District I								
Benton	10	0.2	0.0	2.2	5.0	6.6	14.0	6.1
Carroll	11	0.7	0.3	1.4	2.5	1.5	6.3	6.1
Chester	10	1.1	0.0	3.4	3.9	3.2	11.6	6.5
Crocket	10	3.8	1.3	6.1	9.3	7.0	27.5	5.8
Decatur	10	5.4	0.7	7.5	10.3	8.8	32.7	5.1
Dyer	10	5.0	1.1	3.2	4.6	5.5	19.4	5.7
Fayette	10	1.0	0.1	3.1	5.5	4.8	14.5	5.0
Gibson	10	1.3	0.5	5.2	4.8	5.2	17.0	6.4
Hardin	10	1.3	0.7	1.6	1.2	0.9	5.5	5.5
Haywood	10	3.3	0.5	6.3	4.8	9.4	24.5	5.9
Henderson	10	1.6	0.5	2.8	6.4	7.0	18.3	6.2
Henry	10	3.2	0.6	2.9	3.5	1.5	11.7	5.6
Lake	5	1.8	0.2	5.6	3.6	3.4	16.0	6.4
Lauderdale	10	2.6	0.2	0.9	1.7	0.6	5.2	6.8
McNairy	10	3.1	0.7	4.3	10.0	3.8	21.4	6.5
Obion	10	1.8	0.7	2.0	4.9	3.0	13.7	7.5
Shelby	12	1.4	0.7	0.5	3.3	6.2	12.3	6.2
Tipton	10	1.9	0.2	4.0	3.0	6.4	15.0	6.4
Weakley	10	1.5	0.3	3.2	3.7	3.1	11.7	6.3
Subtotal	188	2.2	0.5	3.4	4.8	4.9	15.4	6.1
District II								
Bedford	21	1.0	0.0	2.8	5.8	1.9	12.3	4.8
Humphreys	20	1.6	0.6	3.1	5.1	2.8	13.0	7.3
Lewis	20	0.5	0.1	3.9	3.4	5.3	13.7	6.4
Marshall	20	1.6	p.7	3.7	1.8	4.4	14.8	6.0
Montgomery	19	0.5	0.2	0.9	4.8	1.7	5.1	6.3
Perry	20	2.9	0.9	4.7	3.7	7.4	20.7	5.6
Robertson	20	2.6	0.6	2.7	18.7	5.2	14.7	5.7
Rutherford	20	1.7	1.1	6.7	3.2	2.5	30.7	6.6
Stewart	20	2.4	0.9	2.6	3.1	4.4	13.4	5.2
Sumner	10	2.1	0.2	4.0	3.5	2.0	11.4	5.6
Wayne	20	1.8	0.3	4.1	6.8	2.8	12.4	6.2
Williamson	20	2.7	0.9	3.8	2.0	2.8	16.8	6.8
Wilson	20	0.9	0.5	2.8	4.1	1.8	7.9	5.7
Subtotal	250	1.7	0.7	3.5	5.6	3.6	14.5	6.0
Division III								
Bradley	20	1.4	0.4	2.5	3.3	2.4	10.8	6.8
Franklin	20	2.6	0.6	1.8	4.9	3.4	11.5	6.9
Grundy	20	1.5	0.5	3.7	3.3	3.3	12.1	6.4
Marion	20	1.1	0.0	2.3	4.9	4.5	12.7	6.8
McMinn	20	7.8	1.7	4.0	9.2	6.7	29.3	6.1
Monroe	20	5.6	1.4	3.1	9.4	4.4	23.8	6.4
Polk	20	1.6	0.6	2.5	3.5	4.5	12.6	7.0
Rhea	10	3.7	0.0	3.7	6.1	8.9	22.4	6.4
Van Buren	10	1.5	0.9	10.6	7.1	2.3	22.4	7.1
Subtotal	160	3.0	0.7	3.4	5.6	5.0	16.9	6.6
District IV								
Cumberland	15	1.7	1.1	3.6	7.1	9.6	24.9	7.1
Morgan	20	5.1	2.4	4.9	9.4	6.7	30.2	6.7
Overton	20	0.4	0.4	1.2	1.4	0.5	3.6	5.6
Pickett	20	4.5	0.5	5.5	9.5	3.2	25.7	5.4
Putnam	20	1.5	0.2	2.3	3.1	2.2	10.0	4.7
Scott	20	2.3	0.4	8.5	4.0	2.7	15.1	6.4
Subtotal	115	2.6	0.8	7.5	5.7	3.9	18.0	5.9
District V								
Blount	19	0.6	0.4	0.6	0.6	0.6	2.6	5.3
Campbell	15	4.3	1.3	4.8	12.7	9.4	32.2	5.8
Carter	20	0.9	0.4	5.6	7.4	6.8	19.4	6.0
Cocke	19	0.8	0.1	2.4	1.7	1.4	5.0	5.0
Grainger	15	0.1	0.1	1.2	0.0	0.1	0.9	5.6
Hamblen	20	0.9	0.3	1.3	3.9	1.3	7.4	6.5
Jefferson	20	1.0	0.3	2.0	4.6	4.0	12.7	7.3
Johnson	10	3.7	1.4	5.1	7.7	8.1	28.2	4.8
Loudon	20	2.4	1.3	3.3	4.7	3.1	14.1	5.8
Roane	20	1.0	0.3	3.6	2.2	3.0	8.6	3.8
Sevier	20	0.4	0.2	1.5	0.2	0.4	1.7	5.2
Sullivan	20	1.4	1.0	2.0	3.8	2.2	10.3	5.9
Union	10	0.1	0.0	0.4	0.0	2.0	2.3	6.5
Washington	20	2.8	1.0	3.6	8.3	3.0	19.7	6.3
Subtotal	248	1.4	0.7	2.7	3.7	3.1	9.8	5.7
State Total	961	2.1	0.6	3.3	4.9	3.8	11.7	6.0

The following discussion presents findings as to the types of Extension contacts, total number of Extension contacts per producer and the average number of practices used per producer.

Number of Extension Meetings Attended

The number of Extension meetings attended on the average ranged from less than one meeting to about nine for an average of 2.1 meetings attended per producer in the 61 counties. Producers in five counties attended five or more Extension meetings during the year.

Number of Extension Corn Production Meetings Attended

The number of corn production Extension meetings attend attended by producers in the 61 counties ranged from none to 2.4 for an average of 0.6 per producer during the 12 months.

Number of Visits Made to Extension Office

Producers in ten counties averaged visiting the Extension office five or more times during the year. Those in 23 counties averaged between three and four visits to Extension office. Producers in one county averaged 10.6 visits to Extension office. All of the 961 corn producers on the average made 3.3 visits per year to the Extension office.

Number of Telephone Calls to Extension Office

Producers in four counties on the average made less than one telephone call to Extension office. Producers in four counties made on the average, 10 or more phone calls to Extension office. Producers in 21 counties made five or more phone calls and those in 28 counties made between three and four phone calls to Extension office. All corn producers averaged 4.9 telephone calls per year.

Number of Farm Visits Received From Extension Agents

Producers in six counties averaged receiving less than one visit per year from Extension Agents. Producers in 18 counties averaged receiving five or more and those in another 18 counties averaged three or more visits per year from Extension Agents. Thus, producers in 60 percent of the counties averaged receiving three or more farm visits from Extension Agents. All 961 corn producers averaged receiving 3.8 farm visits per year from Extension Agents.

Total Number of Extension Contacts Per Producer

Producers in 15 counties averaged 20 or more Extension contacts per year. All 961 producers averaged making 14.7 contacts per year with Extension Agents.

Average Number of Practices Used Per Producer

Table V, page 67, revealed that producers in 30 counties averaged using six or more of the eight corn production practices. Producers in four counties averaged using less than five practices. Whereas, all 961 producers averaged using six of the eight corn production practices.

Summary

In summary Table V, page 67, showed that the number of contacts producers in the 61 counties had with Extension Agents per year varied among the counties and that the type of contact methods used most frequently also varied by counties. Also, it was shown that producers used the telephone to contact Extension more frequently than any other contact method. Meetings were used least frequently. Regarding producers use of the eight corn production practices it was shown that the use of the practices varied among the counties. All corn producers averaged using six of the eight recommended corn production practices in 1975.

II. RELATIONSHIP BETWEEN THE NUMBER OF CONTACTS 961 CORN PRODUCERS IN 61 COUNTIES HAD WITH EXTENSION AGENTS OVER A 12-MONTH PERIOD AND PRODUCERS' USE OF RECOMMENDED CORN PRODUCTION PRACTICES IN 1975

Findings regarding the relationship between the number of contacts 961 corn producers in 61 counties had with

Extension Agents over a 12-month period and producers use of eight recommended corn production practices in 1975 are presented in Table VI. Five contact methods were studied.

Planted U.T. Recommended Corn Varieties

Table III, page 25, shows that corn growers who planted U.T. recommended corn varieties in 1975 on the average attended 2.2 Extension meetings, 0.6 corn Extension meetings, made 3.6 visits to the Extension office, made 5.4 telephone calls to the Extension office, received 4.1 farm visits and had an average of 15.9 total contacts with Extension Agents during the preceding 12 months. Producers who did not plant recommended varieties attended on the average 1.2 Extension meetings, 0.3 corn Extension meetings, made 2.0 visits to Extension office, made 2.4 telephone calls to Extension office, received 2.4 farm visits from Extension Agents and had 8.2 total number of Extension contracts.

When the data for those who were using the practice were compared to those not using the practice, those that were using the practice made more contacts with Extension. When tested by the F test of Significance it was shown that the use of planting U.T. recommended corn varieties was significantly related to the number of Extension meetings attended, the number of corn Extension meetings attended, the number of visits made to Extension office, the number of telephone calls made to Extension office, the number of farm

TABLE VI

RELATIONSHIP BETWEEN THE NUMBER OF CONTACTS 961 CORN PRODUCERS IN 61 COUNTIES HAD WITH EXTENSION AGENTS OVER A 12-MONTH PERIOD AND PRODUCERS' USE OF RECOMMENDED CORN PRODUCTION PRACTICES IN 1975

Recommended Corn Production Practice		No Resp.	No. Ext. Meetings Attended Mean	F Value	Sign. Level	No. Ext. Corn Meetings Attended Mean	F Value	Sign. Level	No. Office Visits Made To Ext. Ofc. Mean	F Value	Sign. Level	No. Phone Calls Made To Ext. Ofc. Mean	F Value	Sign. Level	No. Farm Visits Received From Agent Mean	F Value	Sign. Level	Total No. Ext. Contacts Mean	F Value	Sign. Level
Planted Recommended Variety																				
	Yes	810	2.2			0.6			3.6			5.4			4.1			15.9		
	No	151	1.2	18.1	.0000	0.3	29.3	.0000	2.0	16.8	.0000	2.4	20.0	.0000	2.4	19.5	.0000	8.2	32.8	.0000
Planted Between April 20 & June 1																				
	Yes	862	2.1			0.6			3.4			4.8			3.9			14.8		
	No	99	1.7	1.9	.1689	0.4	8.8	.0031	2.9	1.1	.2972	6.1	2.9	.0888	3.1	2.6	.093	14.2	0.1	.7294
Planted Recommended Stands of Plants																				
	Yes	710	2.1			0.6			3.4			5.3			4.0			15.5		
	No	251	1.9	1.4	.2444	0.4	17.7	.0000	3.0	1.8	.1807	3.8	7.5	.0063	3.3	3.8	.0516	12.8	7.2	.0073
Lined & Fertilized According to Soil Test																				
	Yes	416	2.8			0.8			4.3			6.7			4.9			19.5		
	No	545	1.5	47.8	.0000	0.4	59.5	.0000	2.6	36.3	.0000	3.6	43.6	.0000	2.9	48.8	.0000	11.1	75.7	.0000
Used Recom. Fertilizer Application Procedure																				
	Yes	841	2.2			0.6			3.5			5.2			4.1			15.6		
	No	120	1.2	14.4	.0002	0.4	8.3	.0040	2.1	11.3	.0008	2.8	12.1	.0005	1.8	27.6	.0000	8.2	25.0	.0000
Controlled Weeds																				
	Yes	742	2.1			0.6			3.4			5.1			4.0			15.1		
	No	219	2.0	0.0	.8699	0.5	0.6	.4417	3.2	0.1	.7065	4.4	1.2	.2659	3.2	5.3	.0216	13.5	1.9	.1711
Harvested At Proper Stage																				
	Yes	894	2.1			0.6			3.3			5.0			3.8			14.8		
	No	67	2.1	0.0	.9595	0.4	2.2	.1409	3.3	0.0	.9479	4.3	0.5	.4714	3.3	0.8	.3569	14.4	0.5	.4879
Controlled Pests in Stored Corn																				
	Yes	522	2.1			0.6			3.6			5.5			3.8			15.7		
	No	439	2.0	0.2	.6940	0.5	3.4	.0656	3.0	5.2	.0228	4.3	6.3	.0124	3.7	0.2	.6292	13.5	4.7	.0303

visits received from Extension Agents and the total number of Extension contacts. Corn producers who used this practice made significantly more contacts with Extension than did producers not using the practice.

Planted Between April 20 and June 1

Corn growers who planted between April 20 and June 1 attended on the average 2.1 Extension meetings, 0.6 corn Extension meetings, made 3.4 farm visits to the Extension office, made 4.8 telephone calls to the Extension office, received 3.9 farm visits from Extension Agents during the preceding 12 months for a total of 14.8 Extension contacts. Those who did not use the practice on the average attended 1.7 Extension meetings, 0.4 corn Extension meetings, made 2.9 office visits to Extension office, made 6.1 telephone calls to Extension office, received 3.1 farm visits from Extension Agents for a total of 14.2 Extension contacts.

When tested by the F test only the number of corn meetings attended was significantly related to use of this practice. Producers who used the practice attended more corn production meetings than did those not using the practice.

Planted Recommended Stand of Plants Per Acre

The 710 corn producers who planted recommended stand of plants per acre attended on the average 2.1 Extension

meetings, 0.6 corn Extension meetings, made 3.4 visits to the Extension office, made 5.3 telephone calls to Extension office, received 4.0 farm visits from Extension Agents over the 12-month period. Producers who did not use the practice on the average attended 1.9 Extension meetings, 0.4 corn Extension meetings, made 3.0 visits to Extension office, made 3.8 telephone calls to Extension office, received 3.3 farm visits from Extension Agents, and made an average of 14.5 contacts with Extension. Those who were using the practice had more Extension contacts than those who were not. When tested by the F test it was shown that the number of corn Extension meetings, the number of telephone calls made to Extension office, the number of farm visits received from Extension Agents and the total number of Extension contacts were significantly related to the planting of recommended stands of plants per acre. The number of Extension meetings attended and the number of visits made to Extension office were not significantly related to the use of this practice.

Limed and Fertilized According to Soil Test Recommendations

The corn growers who limed and fertilized according to soil test recommendations on the average attended 2.8 Extension meetings, 0.8 corn Extension meetings, made 4.3 visits to Extension office, made 6.7 telephone calls to Extension

office, received 4.9 farm visits from Extension Agents and a total of 19.5 Extension contacts over the preceding 12 months. Those who did not use the practice on the average attended 1.5 Extension meetings, 0.4 corn Extension meetings, made 2.6 visits to Extension office, made 3.6 telephone calls to Extension office, received 2.9 farm visits from Extension Agents, and had a total of 11.1 contacts with Extension.

Producers who used the practice had more Extension contacts than those who did not. When the data were tested by the F test it was shown that each of the contact methods was significantly related to use of the practice of liming and fertilizing according to soil test recommendations.

Used Recommended Fertilizer Application Procedure

The data indicated that corn growers who used recommended fertilizer application procedure on the average attended 2.2 Extension meetings, 0.6 corn Extension meetings, made 3.5 visits to the Extension office, made 5.2 telephone calls to the Extension office, received 4.1 farm visits from Extension Agents, for a total of 15.6 Extension contacts. Those who did not use the practice on the average attended 1.2 Extension meetings, 0.4 corn Extension meetings, made 2.1 visits to Extension office, made 2.8 telephone calls to Extension office, received 1.8 farm visits from Extension

for a total of 8.2 Extension contacts during the preceding 12 months.

When the data for those who were using the practice were compared with those who were not, the numbers appeared to be larger for those who were using the practice. This was tested by the F test of Significance it was shown that there was a significant relationship between the use of recommended fertilizer application procedure and the number of Extension meetings attended, the number of visits made to Extension office, the number of telephone calls made to Extension office, the number of farm visits received by producers from Extension Agents, and the total number of Extension contacts. Producers who used this practice had more contacts with Extension Agents.

Controlled Weeds According to Recommendations

Producers who were using the practice of controlling weeds according to recommendations on the average attended 2.1 Extension meetings, 0.6 corn Extension meetings, made 3.4 visits to Extension office, made 5.1 telephone calls to Extension office, received 4.0 farm visits from Extension Agents for a total of 15.1 Extension contacts.

Producers who were not using the practice on the average attended 2.0 Extension meetings, 0.5 corn Extension meetings, made 3.2 visits to Extension office, made 4.4 telephone calls

to Extension office, received 3.2 farm visits from Extension Agents for a total of 13.5 Extension contacts.

A test by the F test of Significance revealed that there was not a significant relationship between the total number of Extension contacts made, the number of Extension meetings attended, the number of corn Extension meetings attended, the number of visits made to Extension office or the number of telephone calls made. However, there was a significant relationship between the farm visits received by producers from Extension Agents and their use of this practice. Thus, producers who controlled weeds according to recommendations received more visits by Extension Agents.

Harvested at Proper Stage

Producers who were harvesting at the proper stage on the average attended 2.1 Extension meetings, 0.6 corn Extension meetings, made 3.3 visits to Extension office, made 5.0 telephone calls to Extension office, received 3.8 farm visits from Extension Agents for a total of 14.8 Extension contacts. Producers who did not use the practice on the average attended 2.1 Extension meetings, 0.6 corn Extension meetings, made 3.3 visits to Extension office, made 4.3 telephone calls to Extension office, received 3.3 farm visits from Extension Agents for a total of 14.4 Extension contacts over the preceding 12 months.

Neither the total number of Extension contacts, nor the number of corn Extension meetings attended by producers, was significantly related to the producers' use of this practice. However, the number of Extension meetings attended, the number of visits made to Extension office, the number of telephone calls made to Extension office and the number of farm visits received by producers from Extension Agents were not significantly related to the use of this practice. Producers who used the practice had more contacts with Extension Agents.

Controlled Pests in Stored Grain

Corn growers who controlled pests in stored grain attended on the average 2.1 Extension meetings, 0.6 corn Extension meetings, made 3.6 visits to Extension office, made 5.5 telephone calls to Extension office, received 3.8 farm visits from Extension Agents for a total of 15.7 Extension contacts during the preceding 12 months.

Producers who did not use the practice on the average attended 2.0 Extension meetings, 0.5 corn Extension meetings, made 3.0 visits to Extension office, made 4.3 telephone calls to Extension office, received 3.7 farm visits from Extension Agents for a total of 13.5 Extension contacts during the preceding 12 months.

When the data for those who were using the practice were compared with the data for those who were not, it was

shown that the numbers were larger in all cases. When tested by the F test the total number of Extension contacts, the number of visits made to Extension office and the number of telephone calls made to Extension office were significantly related to the producers' use of the practice of controlling pests in stored grain. Those who used the practice had significantly more contacts. The number of Extension meetings attended, the number of corn meetings attended, and farm visits received by producers from Extension Agents were not significantly related to the controlling of pests in stored grain.

Number of Extension Meetings Attended

Use of practices regarding planting of U.T. recommended corn varieties, liming and fertilizing according to soil test recommendations, using recommended fertilizer application procedure was significantly related to Extension meetings attended. However, the producers' use of practices regarding controlling weeds, harvesting at the proper stage, and controlling pests in stored grain were not significantly related to the number of Extension meetings attended. Producers who limed and fertilized according to soil test attended the largest number of Extension meetings.

Number of Extension Corn Meetings Attended

Planting U.T. recommended corn varieites, planting between April 20 and June 1, planting recommended stand of

plants per acre, liming and fertilizing according to soil test recommendations and using recommended fertilizer application prodcedures were significantly related to the number of corn Extension meetings attended. However, the producers' use of practices regarding controlling weeds, harvesting at proper stage and controlling pests in stored grain were not significantly related to whether or not the producers were attending the corn Extension meetings.

Number of Visits Made to Extension Office

When tested by the F value it showed that practices regarding planting U.T. recommended corn varieties, liming and fertilizing according to soil test recommendations, using recommended fertilizer application procedure and controlling pests in stored grain were significantly related to the number of visits producers made the Extension office. However, use of practices regarding planting between April 20 and June 1, planting recommended stands of plants per acre, controlling weeds and harvesting at the proper stage were not significantly related to the number of visits made to the Extension office.

Number of Telephone Calls Made to Extension Office

Practices regarding the planting U.T. recommended corn varieties, planting recommended stands of plants per acre, liming and fertilizing according to soil test recommendations,

using recommended fertilizer application procedure, and controlling pests in stored grain were significantly related to the number of phone calls producers made to the Extension office. On the other hand, planting between April 20 and June 1, controlling weeds and harvesting at the proper stage were not significantly related to the number of telephone calls made to the Extension office.

Number of Farm Visits Received

Use of practices regarding planting U.T. recommended corn varieties, planting recommended stand of plants per acre, liming and fertilizing according to soil test, using recommended fertilizer application procedure and controlling weeds were significantly related to the number of farm visits received by producers from Extension Agents. However, planting between April 20 and June 1, harvesting at the proper stage and controlling pests in stored grain were not significantly related to the number of farm visits received from Extension Agents.

Total Number of Extension Contacts

Use of recommended practices regarding planting U.T. recommended corn varieties, planting recommended stand of plants per acre, liming and fertilizing according to soil test, using recommended application procedure and controlling pests in stored grain were significantly related to the total

number of Extension contacts made. However, the F test also showed that the use of the practices regarding planting between April 20 and June 1, controlling weeds and harvesting at the proper stage were not significantly related to the total number of Extension contacts made during the 12-month period.

Summary

Statistical analysis showed that the producers' use of U.T. recommended corn varieties was significantly related to the number of Extension meetings attended, the number of Extension corn meetings attended, number of visits made to Extension office, number of telephone calls made to Extension office, number of farm visits received by producers from Extension Agents and the total number of Extension contacts. Thus, the producers' use of this practice was significantly related to each Extension contact method. Producers who used this practice had more contacts than producers who were not using the practice.

The producers' use of the practice planting between April 20 and June 1, was significantly related to the number of corn Extension meetings attended. Other contact methods were not significantly related to the use of this practice. Producers who used this practice had significantly more contacts of all types than did those who were not using the practice.

Producers' use of the practice regarding weed control was significantly related to the number of farm visits received from Extension Agents. Other contact methods were not significantly related to the use of this practice.

Use of the practice regarding harvesting crops at the proper stage was not significantly related to any type of Extension contacts.

Producers' use of the practice regarding controlling pests in stored grain was significantly related to the number of visits made to Extension office, the number of telephone calls made to Extension office and the total number of Extension contacts. The number of Extension meetings attended, the number of corn meetings attended, and the number of farm visits received from Extension Agents were not significantly related to the use of this practice.

III. RELATIONSHIP BETWEEN THE TYPES OF EXTENSION CONTACTS AND THE NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE CORN PRODUCERS IN 1975

The producers' use of recommended stand of plants per acre was significantly related to the number of corn Extension meetings attended, the number of telephone calls made to Extension office, the number of farm visits received from Extension Agents and the total number of Extension contacts. Other contact methods were not significantly related to the use of this practice.

The producers' use of the practice of liming and fertilizing according to soil test recommendation was significantly related to each contact method. Producers who used the practice had significantly more contact of all types than did those who were not using the practice.

Producers' use of recommended fertilizer application procedure was significantly related to each contact method.

Table VII presents findings regarding the realtionship between the total number of corn production practices used by producers and the number of Extension meetings attended, the number of corn production Extension meetings attended, the number of visits and telephone calls made to Extension office, the number of farm visits received from Extension and total number of Extension contacts.

Number of Practices Used

Of the 961 corn producers surveyed, two producers did not use any of the practices. These producers also did not have any contacts with Extension Agents. About 31 percent of the producers used less than six of the eight practices. Thus, 69 percent were using six or more of the eight practices. All producers on the average were using six practices.

The 961 producers on the average attended 21 Extension meetings, 0.6 corn production Extension meetings, made 3.3 visits to Extension office, made 4.9 phone calls to Exten-

TABLE VII

RELATIONSHIP BETWEEN NUMBER OF EXTENSION MEETINGS ATTENDED, NUMBER OF EXTENSION CORN PRODUCTION MEETINGS ATTENDED, NUMBER OF VISITS AND TELEPHONE CALLS TO THE EXT. OFFICE, NUMBER OF FARM VISITS RECEIVED FROM EXTENSION, TOTAL NUMBER OF EXTENSION CONTACTS AND THE TOTAL NUMBER OF RECOMMENDED CORN PRODUCTION PRACTICES USED BY THE PRODUCERS IN 1975

No. Of Recommended Corn Production Practices Used By Producers	No. Resp.	Mean No. Of Ext. Meetings Attended	Mean No. Ext. Corn Prod. Meetings Attended	Mean No. Of Office Visits Made	Mean No. Of Phone Calls To Ext. Office	Mean No. Of Farm Visits Received From Ext.	Mean Of All Types Of Ext. Contacts
0	2	0.0	0.0	0.0	0.0	0.0	0.0
1	2	0.0	0.0	1.0	1.0	2.0	4.5
2	14	1.6	0.1	3.4	3.4	1.1	7.9
3	34	1.5	0.2	2.6	2.6	1.8	7.8
4	83	1.4	0.3	2.8	2.8	2.3	9.3
5	163	1.8	0.5	3.9	3.9	3.5	12.6
6	265	1.8	0.6	4.7	4.7	3.5	13.6
7	256	2.3	0.7	5.2	5.2	4.2	16.0
8	142	3.1	0.9	8.2	8.2	5.4	22.8
All Producers 6.0*	961	2.1	0.6	3.3	4.9	3.8	14.7
F Value		4.4	8.0	4.7	5.8	6.2	9.1
Sign. Level		0.000	0.000	0.000	0.000	0.000	0.000

*Mean No. Practices used.

sion office, received 3.8 farm visits from Extension Agents for an average of 14.7 contacts of all types.

Practices and Extension Meetings Attended

When the average number of Extension meetings attended by the corn producers was computed according to the number of practices and the range was from zero meetings attended by those who were not using any of the practices to 3.1 meetings by those who were using all of the eight practices. The mean mumber of practices used by all 961 producers was six and the mean number of Extension meetings attended was 2.1 (i.e., Table VII, page 85). Observation of the mean number of meetings attended by producers who were using varying numbers of practices revealed a general increase in meetings attended as the number of practices also increased. One-way analysis of variance F test of these means revealed a significant relationship between the number of practices used and the number of Extension meetings attended. Producers who used more practices attended a significantly larger number of Extension meetings.

Practices and Corn Production Meetings Attended

When the average number of corn production Extension meetings attended by the corn producers was computed according to the number of practices used, the range was from zero meetings attended by those who were not using any practices to 0.9 meetings by those who were using all of the

eight practices. The mean number of practices used by all 961 producers was six and the mean number of corn production meetings attended was 0.6 (i.e., Table VII, page 85). Reference to the mean number of meetings attended by producers who were using varying numbers of practices revealed that a general increase in meetings attended as the number of practices also increased. One-way analysis of variance F-test of these means revealed a significant relationship between the number of practices and the number of corn production Extension meetings attended. Producers who used more practices attended a significantly larger number of corn production Extension meetings.

Practices and Office Visits Made

Computing the average number of office visits made by the corn producers according to the number of practice used showed that the range was from zero visits made by those who were not using any practices to 8.2 visits by those who were using all of the eight practices. The mean number of practices used by all 961 producers was six and the mean number of office visits made was 3.3 (i.e., Table VII, page 85). The data on the mean number of office visits made by producers who were using varying numbers of practices revealed a general increase in office visits made as the number of practices also increased. One-way analysis of variance F-test of these means revealed a significant relationship

between the number of practices used and the number of office visits made. Producers who used more practices made a significantly larger number of office visits.

Practices Used and Telephone Calls Made to Extension Office

After computing the average number of telephone calls made to Extension office by the corn producers according to the number of practices used, the data showed that the range was from zero telephone calls made by those who were not using any practices to 8.2 telephone calls by those who were using all of the eight practices. The mean number of practices used by all 961 producers was six and the mean number of telephone calls made by producers who were using varying numbers of practices revealed a general increase in telephone calls made as the number of practices used also increased. One-way analysis of variance F test of the means revealed a significant relationship between the number of practices used and the number of telephone calls made. Producers who used more practices made a significantly larger number of telephone calls to Extension office.

Practices Used and Farm Visits Received From Extension Agents

When the average number of farm visits received from Extension Agents by the corn producers was computed according to the number of practices used the range was from zero farm

visits received by those who were not using any practices to 5.4 farm visits received by those who were using all of the eight practices. The mean number of practices used by all 961 producers was six and the mean number of farm visits received was 3.8 (i.e., Table VII, page 85). Reference to the data on the mean number of farm visits received by producers who were using varying numbers of practices revealed a general increase in farm visits received as the number of practices also increased. One-way analysis of variance F test of these means revealed a significant relationship between the number of practices used and the number of farm visits received. Producers who used more practices received a significantly larger number of farm visits from Extension Agents.

Practices Used and All Types of Extension Contacts

Computing the average number of all types of Extension contacts corn producers had with Extension Agents according to the number of practices used showed that the range was from zero Extension contacts by those who were not using any practices to 22.8 contacts by those who were using all of the eight practices. The mean number of practices used by all producers was six and the mean number of contacts producers had with Extension Agents was 14.7 (i.e., Table VII, page 85). Reference to the data on the mean number of Extension contacts producers had with Extension and who were

using varying numbers of practices revealed a general increase in Extension contacts as the number of practices also increased.

One-way analysis of variance F test of the means revealed a significant relationship between the number of practices used and the number of all types of Extension contacts producers had with Extension. Producers who used more practices had a significantly larger number of Extension contacts with Extension.

Summary

The data in the table revealed that the number of Extension contacts were associated with the number of practices used. Producers who used more practices used more different types of Extension contacts. Producers who used two practices were found to have higher number of contacts in visits to Extension office and phone calls made to Extension office than any other Extension contact. Generally, visits made to Extension office, telephone calls made to Extension office, and visits received from Extension Agents were found to have been the most frequent methods used by producers and the Extension Agents. The other contacts dealing with meeting attendance were found to have had fewer number of contacts. Thus, the higher the number of practices used by producers the higher the number of all the types of contacts with Extension.

IV. RELATIONSHIP BETWEEN ACRES, YIELD, AND THE NUMBER OF CONTACTS CORN PRODUCERS HAD WITH EXTENSION OVER A 12-MONTH PERIOD IN 1975

This section presents findings regarding the relationship between yield per acre of grain and silage, acres of corn in grain and silage and the number of contacts corn producers in 61 counties had with Extension over a 12-month period in 1975. This section is divided into two subsections. The first subsection deals with acres for corn and Extension contacts. The second subsection deals with yield of corn and Extension contacts.

The Extension contacts used were Extension meetings of all kinds attended, corn production Extension meetings attended, office visits made, farm visits received, telephone calls made and total number of Extension contacts. Extension contacts were classified into low, medium and high groups according to the number of contacts. The classification varied according to the type of contact due to the large variation in the number of contacts for the various contact methods.

One hundred and fifty respondents failed to answer questions regarding either the Extension contacts or questions regarding acres harvested or yield and as a result were not included in the analysis. This left a total of 811 respondents instead of 961 as shown in earlier tables.

Relationship Between Acres of Corn and Extension Contacts

Concerning the acres of corn for grain, Table VIII shows that 558 of 68.8 percent of the producers attended two or less Extension meetings (low contact group) and averaged 35.7 acres of corn harvested for grain. In the case of the medium group 233 or 28.7 percent of the producers attended from three to 12 Extension meetings and averaged 55.3 acres of corn harvested for grain. In the case of the high group two (2) or 0.3 percent of the producers attended from 15 to 25 Extension meetings and averaged 11 acres in corn harvested for grain.
harvested for grain.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension meetings attended and the acres of corn harvested for grain. Data in Table VIII shows that producers who attended more Extension meetings tended also to harvest more acres of corn for grain. This however, did not apply to the high group which had only two producers.

Acres of corn harvested in grain related to number of Extension corn production meetings attended. In the case of the low contact group, 791 or 97.5 percent of the corn producers attended two or less Extension corn production meetings and averaged 40.7 acres for corn harvested for

TABLE VIII

RELATIONSHIP BETWEEN ACRES FOR GRAIN AND SILAGE, YIELD PER ACRE OF GRAIN AND SILAGE AND THE NUMBER OF CONTACTS 811 PRODUCERS IN 61 COUNTIES HAD WITH EXTENSION OVER A 12-MONTH PERIOD

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
No. of Ext. Meetings of All Kinds Attended by Corn Producers Over a 12-Month Period								
0	312	32.3	97	36.7	311	74.5	94	16.0
1	124	34.1	63	42.4	143	74.1	58	16.4
2	122	45.9	66	40.6	122	81.0	65	16.7
Subtotal	558	35.7	226	39.4	576	75.8	217	16.3
% Low	68.8%		63.0%		71%		62.9%	
3	84	47.4	46	35.3	85	81.4	44	17.7
4	50	68.3	25	47.5	50	85.1	25	16.7
5	22	63.5	16	65.6	22	91.7	15	15.5
6.	33	49.2	17	39.6	32	81.9	17	18.2
7	4	58.5	5	40.8	4	77.0	4	21.2
8	16	47.0	6	62.0	16	88.1	6	16.3
9	4	240.5	3	100.0	4	98.8	3	17.3
10	11	26.9	5	79.0	11	82.7	5	18.2
12	9	24.0	4	33.0	9	67.8	4	17.5
Subtotal	233	55.3	127	46.8	233	83.8	123	17.3
% Medium	28.7%		35.4%		28.7%		35.7%	
15	1	10.0	4	53.8	1	110.0	4	17.8
16	1	12.0	--	--	1	75.0	--	--
20	--	--	1	65.	--	--	--	--
25	--	--	1	75.0	--	--	1	22.0
Subtotal	2	11.0	6	59.2	2	92.5	5	18.6
% High	3%		1.8%		3%		1.4%	
All Producers	811	41.2	359	42.8	811	78.0	345	16.8
F Value	6.8		2.7		3.5		1.2	
Sign Level	0.000		0.0010		0.000		0.2587	
Correlation Coefficient	0.131		0.160		0.146		0.154	

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
No. of Corn Production Meetings Attended by Corn Producers over a 12-Month period								
0	469	34.4	160	38.4	468	73.5	152	16.0
1	256	48.8	134	41.3	257	81.7	134	41.3
2	66	54.3	55	57.4	66	91.2	54	18.1
Subtotal	791	40.7	349	42.5	791	77.6	335	16.7
% Low	97.5%		97.2%		97.6%		97.1%	
3	14	42.6	6	56.2	14	96.0	6	19.3
4	5	98.6	3	55.7	5	83.0	3	16.3
Subtotal	19	57.3	9	56.0	19	92.6	9	18.3
% Medium	2.3%		2.5%		2.3%		2.6%	
5	1	88.0	1	12.0	1	110.0	1	15.0
Subtotal	1	88.0	1	12.0	1	110.0	1	15.0
% High	0.1%		1.3%		0.1%		0.3%	
All Producers	811	41.2	359	42.8	811	78.0	345	16.8
F Value	4.3		2.0		13.5		3.0	
Sign. Level	0.0007		0.0726		0.000		0.000	
Correlation Coefficient	0.144		0.128		0.266		0.174	
No. of Visits Made To Ext. Office by Corn Producers Over a 12-Month Period								
0	188	27.3	79	38.1	187	73.3	75	15.9
1	105	42.1	39	35.9	106	74.6	38	16.3
2	179	41.2	69	48.3	180	80.4	64	17.2
Subtotal	472	35.9	187	41.4	473	76.3	177	16.5
% Low	58.0%		52.8%		58.0%		51.0%	
3	78	45.8	43	45.0	77	81.4	43	16.8
4	77	49.6	30	57.8	78	75.6	28	16.7
5	44	59.3	29	40.7	44	77.5	28	18.5

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
6	46	42.0	25	34.9	45	81.4	25	16.9
7	5	98.0	4	40.5	5	89.4	4	14.8
8	19	41.1	5	28.6	19	85.2	5	17.4
9	4	44.3	--	--	4	90,0	--	--
10	15	74.4	10	35.5	15	78.3	10	16.8
11	1	8.0	--	--	1	100.0	--	--
12	21	37.8	9	76.2	21	86.2	9	19.6
14	1	10.0	--	--	1	60.0	--	--
15	13	52.0	9	31.7	13	88.9	8	14.6
16	2	94.0	2	36.0	2	62.5	2	19.5
20	4	26.0	1	15.0	4	65.0	--	--
24	1	20.0	--	--	1	60.0	1	12.0
Subtotal	331	49.2	167	44.6	330	80.0	163	17.1
% Medium	41.0%		47.0%		41%		47.0%	
25	3	9.0	1	80.0	3	104.3	--	--
27	1	12.0	1	12.0	1	100.0	1	18.0
30	2	66.5	1	25.0	2	64.5	1	23.0
32	--	--	1	35.0	--	--	1	20.0
36	1	5.0	1	20.0	1	110.0	1	17.0
50	1	25.0	--	--	1	100.0	1	15.0
Subtotal	8	32.0	4	57.5	8	94.0	5	18.6
% High	1.0%		1.0%		1.0%		1.0%	
All Producers	811	41.2	359	42.8	811	78.0	345	16.8
F Value	1.6		1.0		2.0		1.2	
Sign. Level	0.0443		0.4708		0.0055		0.2288	
Correlation Coefficient	0.056		0.007		0.119		0.074	
No. of Telephone Calls Made to County Ext. Office by Corn Producers over a 12-Month Period								
0	169	23.7	46	29.3	168	71.5	41	16.1
1	67	37.3	21	42.2	68	78.8	19	17.3
2	127	36.8	46	40.8	128	76.5	44	16.1
3	107	45.2	49	48.5	107	76.7	49	16.7
Subtotal	470	34.1	162	40.1	471	75.1	153	16.4
% Low	58.0%		45.1%		58.1%		44.3%	

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No Resp.	Mean	No Resp.	Mean	No Resp.	Mean	No Resp.	Mean
4	65	48.7	31	39.8	66	80.8	30	17.4
5	57	39.0	28	34.9	57	79.9	28	16.8
6	51	59.0	29	61.7	49	75.8	28	17.1
7	15	68.3	11	45.5	15	72.9	10	17.4
8	24	53.9	20	47.5	24	83.0	20	16.5
9	6	44.0	3	48.3	6	75.3	3	11.0
10	38	37.5	22	37.1	38	80.2	21	16.6
11	4	31.8	3	40.0	4	87.0	3	16.0
12	19	55.7	14	42.9	19	90.8	14	19.0
14	2	65.0	2	82.5	2	97.5	2	19.0
15	22	46.2	12	44.1	22	85.6	12	17.3
16	2	22.5	2	32.5	2	85.0	2	16.0
Subtotal	305	48.5	179	44.1	304	80.6	173	17.0
% Medium	37.6%		49.9%		37.5%		50.1%	
18	3	35.3	2	75.0	3	106.7	2	17.5
19	1	15.0	--	--	1	121.0	--	--
20	9	65.6	4	58.0	9	84.8	4	19.3
24	2	12.0	1	25.0	2	107.5	1	16.0
25	10	66.0	5	49.0	10	95.0	5	17.4
26	1	25.0	--	--	1	100.0	--	--
30	4	23.8	3	31.7	4	85.0	2	18.5
50	3	85.0	2	73.0	3	91.0	2	13.5
52	1	3.0	1	18.0	1	125.0	1	20.0
Subtotal	34	52.2	18	50.5	34	94.3	17	17.6
% Medium	4.2%		4.9%		4.2%		5.0%	
All Producers	811	41.2	359	42.8	811	48.0	345	16.8
F Value	1.7		0.8		2.5		0.7	
Sign. Level	0.0181		0.6876		0.0001		0.8277	
Correlation Coefficient	0.100		0.033		0.185		0.030	
No. of Farm Visits Corn Producers Received from Ext. Agents over a 12-Month Period								
0	161	69.0	37	27.9	162	20.4	32	13.9
1	110	75.5	39	24.2	111	38.9	39	17.1
2	136	82.3	75	41.1	133	34.6	72	15.7
3	100	81.4	58	45.5	101	41.1	57	17.4

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
Subtotal	507	76.4	209	36.8	507	32.3	200	16.2
% Low	62.5%		58.0%		62.5%		58.0%	
4	77	76.4	32	34.6	76	53.7	30	17.9
5	44	84.3	27	45.6	44	46.6	26	18.3
6	58	81.7	26	72.8	59	59.6	26	17.5
7	14	75.9	10	33.9	14	37.0	9	15.0
8	27	78.1	13	84.6	27	68.0	13	19.2
9	6	78.0	3	47.0	6	16.5	3	16.7
10	28	80.8	12	62.8	28	62.5	11	16.4
11	2	95.0	--	--	2	39.5	--	--
	8	84.1	5	40.6	8	57.5	5	16.6
Subtotal	264	79.9	128	52.9	264	53.0	123	17.6
% Medium	22.6%		36.0%		32.6%		35.7%	
13	1	130.0	--	--	1	30.0	--	--
14	7	100.9	4	34.3	7	81.6	4	18.5
15	9	76.1	8	22.7	9	82.0	8	17.5
16	1	75.0	2	31.0	1	50.0	2	21.0
18	3	105.0	1	20.0	3	25.7	1	20.0
20	12	76.7	5	52.6	12	72.4	5	16.4
24	2	80.0	--	--	2	75.0	--	--
25	2	75.0	2	44.0	2	11.0	2	18.0
30	3	86.7	--	--	3	48.0	--	--
Subtotal	40	85.0	22	34.2	40	66.3	22	17.9
% High	4.9%		6.0%		4.9%		6.4%	
All Producers	811	78.0	359	42.8	811	78.0	345	16.8
F Value	3.1		3.4		3.0		2.4	
Sign. Level	0.000		0.000		0.000		0.001	
Correlation Coefficient	0.185		0.121		0.128		0.140	
Total No. of Ext. Contacts Corn Producers Had With Agents over a 12-Month Period								
0	74	19.2	14	25.9	74	68.6	12	15.5
1	25	15.1	6	21.3	25	67.1	5	11.8
2	35	25.7	9	28.4	34	73.6	9	15.0
3	23	27.5	11	23.8	33	75.0	11	17.0

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
4	35	76.4	16	30.8	34	70.5	14	15.0
5	38	44.2	11	33.5	39	77.3	10	16.6
6	35	32.1	16	30.2	35	77.1	15	16.1
7	29	44.3	14	27.4	29	76.4	14	14.4
8	44	37.6	16	53.7	44	83.9	16	18.1
9	35	42.2	16	45.1	36	77.8	15	17.2
10	42	43.5	19	60.8	42	80.8	19	15.8
11	24	43.2	12	45.0	26	81.8	12	17.9
12	31	46.3	20	48.2	31	81.5	20	17.1
13	19	48.3	9	26.1	19	76.1	8	16.8
14	27	32.5	13	41.6	26	83.2	13	18.4
15	25	46.4	7	52.9	25	84.3	7	16.7
16	18	47.9	6	41.7	18	70.0	6	18.3
17	15	40.8	12	28.3	15	74.4	10	17.4
18	15	53.9	9	45.9	15	75.4	8	16.2
19	15	88.9	9	36.9	15	82.1	9	16.0
20	13	40.1	9	63.2	13	71.6	9	16.0
21	12	62.6	7	47.1	12	76.2	7	17.9
22	10	81.0	6	46.8	10	80.5	5	15.0
23	19	41.4	8	54.9	19	83.7	8	21.5
Subtotal	688	40.8	275	63.3	669	76.6	262	16.6
% Low	82.5%		32.3%		82.4%		76.6%	
24	8	67.8	3	27.3	7	82.7	3	16.2
25	6	63.0	2	145.0	6	82.9	2	18.3
26	6	80.1	6	90.8	8	95.1	6	18.0
27	11	84.1	7	34.1	11	63.0	7	17.3
28	2	28.0	1	210.0	2	78.5	1	18.7
29	9	73.0	3	34.0	9	82.8	3	18.5
30	5	51.2	3	61.7	5	84.5	3	19.0
31	5	41.0	6	50.3	5	75.8	6	15.3
32	4	39.3	1	65.0	5	88.0	1	19.0
33	2	11.5	3	43.0	4	95.0	3	15.3
Total No. of Ext. Contacts Corn Producers Had With Agents over a 12-Month Period (continued)								
34	7	17.4	3	86.7	2	73.3	3	14.0
35	5	8.6	4	32.8	7	95.5	4	17.3
36	2	92.5	1	25.0	5	105.0	1	19.0
37	5	89.2	5	32.6	2	95.4	5	16.8
38	--	--	1	50.0	--	--	1	20.0
39	4	86.0	2	67.5	4	81.3	2	16.0

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
40	1	12.0	2	43.5	1	100.0	2	22.5
41	3	58.0	--	--	3	75.0	--	--
42	4	12.0	5	18.0	4	78.8	5	19.0
43	5	58.3	1	20.0	5	89.0	1	20.0
44	2	28.5	--	--	2	115.0	--	--
45	1	50.0	--	--	1	90.0	--	--
46	3	86.0	2	23.5	3	93.3	2	15.0
47	2	30.0	1	45.0	2	82.5	1	15.0
48	3	22.7	2	95.0	3	104.3	2	20.0
49	1	30.0	--	--	1	130.0	--	--
50	2	72.5	3	75.0	2	80.0	3	16.3
51	4	43.0	1	75.0	4	109.0	1	20.0
53	1	6.0	--	--	1	65.0	--	--
55	6	60.2	2	13.0	6	76.7	2	15.0
56	1	88.0	--	--	1	30.0	--	--
58	2	42.0	1	60.0	2	62.5	1	15.0
59	1	35.0	1	25.0	1	70.0	1	16.0
Subtotal	125	55.4	72	52.8	124	85.1	72	17.3
% Medium	15.4%		20.1%		15.3%		20.9%	
61	2	14.0	3	16.3	2	100.0	3	18.0
62	1	6.0	--	--	1	140.0	--	--
63	1	80.0	--	--	1	80.0	--	--
64	3	28.3	2	15.0	3	88.3	2	18.5
65	1	10.0	--	--	1	75.0	--	--
67	1	425.0	--	--	1	110.0	--	--
69	1	200.0	1	130.0	1	126.0	1	15.0
72	1	48.0	--	--	1	45.0	--	--
73	--	--	1	35.0	--	--	1	17.0
74	1	18.0	--	--	1	75.0	--	--
75	1	10.0	1	80.0	1	100.0	1	18.0
Total No. Of Ext. Contacts Corn Producers Had With Agents over a 12-Month Period (continued)								
77	--	--	--	--	--	--	--	--
82	1	25.0	--	--	1	100.0	--	--
87	1	16.0	1	65.0	1	80.0	--	--
93	1	3.0	1	18.0	1	125.0	1	20.0
120	1	15.0	1	40.0	1	100.0	1	13.0
142	1	85.0	1	25.0	1	84.0	1	20.0

TABLE VIII (continued)

	Acres Of Corn Harvested For Grain		Acres Of Corn Harvested For Silage		Yield/Acre Of Grain In Bushels		Yield/Acre Of Silage In Tons	
	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean	No. Resp.	Mean
Subtotal	18	73.0	12	39.3	18	105.8	11	17.6
% High	2.2%		3.3%		2.2%		3.2%	
All Producers	811	41.2	359	42.8	811	78.0	345	16.8
F Value	2.1		1.6		2.0		0.8	
Sign. Level	0.000		0.0101		0.000		0.8937	
Correlation Coefficient	0.147		0.082		0.200		0.109	

grain. In the medium contact group, nineteen or 2.3 percent of the producers attended three or four Extension corn production meetings and harvested 57.3 acres. One of 0.1 percent of the producers in the high contact group attended five Extension corn production Extension meetings and harvested 88.0 acres.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension corn production Extension meetings attended and acres of corn harvested for grain. In other words, producers who attended fewer Extension corn production Extension meetings harvested fewer acres of corn for grain and conversely producers who attended Extension corn production Extension meetings most frequently harvested more acres of corn for grain.

Acres of corn harvested for grain related to the number of visits made to Extension office. Four hundred and seventy-two (472) or 58.0 percent of the producers were in the low contact group which made two or less visits to the Extension office and averaged 35.9 acres of corn harvested for grain. For the medium contact group, 331 or 41.0 percent of all the producers visited the Extension office from three to 24 times over the 12-month period and harvested 49.2 acres of corn for grain. In the case of the high contact

group, eight or 1.0 percent of the producers made 35 or more visits to Extension office and harvested 32 acres of corn.

The analysis of variance F test and the correlation coefficient indicated a significant relationship between the number of visits made to Extension office and acres of corn harvested for grain. The data in Table VII, page 85, showed that producers in the medium contact group harvested more acres than the low contact group. Although producers in the high contact group made more visits to the Extension office they harvested less acres. However, only eight producers were included in the high group.

Acres of corn harvested for grain related to the number of telephone calls made to Extension office. The low contact group, 470 or 58 percent of all the producers made three or less telephone calls to Extension office and averaged 34.1 acres of corn harvested for grain. Three hundred and five (305) or 37.6 percent of all the producers made from four to 16 telephone calls to Extension office and harvested 48.5 acres of corn. Thirty-four (34) or 4.2 percent of the producers were in the high contact group which made from 18 to 52 telephone calls to Extension and harvested 52.2 acres of corn for grain.

The analysis variance F test and the correlation coefficient showed a significant relationship between the number of telephone calls made to Extension office and acres

of corn harvested for grain. Producers who made more telephone calls to Extension office also harvested more acres of corn than did those who made fewer telephone calls.

Acres of corn harvested for grain related to number of farm visits received. In the low contact group, 507 or 62.5 percent of all the producers received three or less visits from Extension Agents and averaged 76.4 acres of corn for grain. Two hundred and sixty-four (264) or 32.6 percent of all the producers were in the medium contact group which received from four to 12 farm visits from Extension Agents and harvested 79.9 acres of corn. Forty (40) or 4.9 percent of all the producers were in the high group which received 13 or more farm visits from Extension Agents and harvested 85 acres of corn for grain.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of farm visits received by producers from Extension Agents and acres of corn harvested for grain. Reference to the table revealed that the medium contact group, which had received more farm visits than the low group, harvested more acres than the low group. The high group, which received more farm visits from Extension Agents than the low and the medium groups, harvested the greatest number of acres of corn. Thus, the larger producers received more farm visits from Agents than did the smaller producers.

Acres of corn harvested for grain related to the total number of Extension contacts. Six hundred and sixty-eight (668) or 82.4 percent of the producers were in the low group which had 23 or less contacts with Extension Agents over the 12-month period and harvested 40.8 acres of corn. One hundred and twenty-five (125) or 15.4 percent of the producers were in the medium contact group which had from 24 to 59 contacts with Extension Agents and averaged 55.4 acres of corn for grain. In the high contact group, 18 or 2.2 percent of all the producers had 61 or more contacts with Extension Agents and averaged 73.0 acres of corn.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the total number of contacts corn producers had with Agents and acres of corn harvested for grain.

The data revealed that producers who had high contacts harvested more acres of corn than the medium or the low contact groups. This suggested that the larger producers contacted Extension more frequently than did the smaller producers.

Acres of corn harvested for silage related to Extension meetings attended. In the low contact group, 226 or 63.0 percent of all the producers attended two or less Extension meetings and harvested 39.4 acres of corn silage.

One hundred and twenty-seven (127) or 35.4 percent of all the producers were in the medium group which attended three to 12 Extension meetings and averaged 46.8 acres of corn silage. Six or 1.8 percent of all the producers were in the high contact group which attended 15 or more Extension meetings and averaged 59.2 acres in corn silage. The 811 producers averaged 42.8 acres of corn silage.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension meetings attended and acres in corn silage.

These data showed that producers who attended more Extension meetings grew more acres of corn silage.

Acres of corn harvested for silage related to the number of Extension corn production Extension meetings attended. Three hundred and forty-nine (349) or 97.2 percent of all the producers were in the low contact group which attended two or less Extension corn production Extension meetings and harvested 42.5 acres of corn silage. Nine (9) or 2.5 percent of all producers were in the medium group which attended from three to four Extension corn production Extension meetings and harvested 56.0 acres of corn silage. One or 0.3 percent of all producers were in the high contact group which attended five Extension corn production Extension meetings and harvested 12 acres in corn silage.

The analysis of variance F test and the correlation coefficient indicated insignificant relationship between the number of Extension corn production meetings attended by corn producers and acres of corn grown for silage.

The data indicated that the medium contact group raised more acres of corn silage than the low contact group. This trend did not follow with the high contact group. The high contact group grew less acres for corn silage than the low and medium groups. However, only one producer was included in the high group.

Acres of corn harvested for silage related to number of visits made to Extension office. One hundred and eighty-seven (187) or 52.8 percent of all producers were in the low contact group which made two or less visits to Extension office and harvested 41.4 acres of corn silage. In the medium group, one hundred and sixty-seven (167) or 47.0 percent of all producers made from three to 24 visits to Extension office and harvested 44.6 acres of corn silage. Four (4) or 1.0 percent of all the producers were in the high contact group which made 25 or more visits to Extension office and harvested 57.5 acres of corn silage.

The analysis of variance F test and the correlation coefficient showed that the relationship between the number of visits made to Extension office by corn producers over

the 12-month period was not significantly related to acres of corn silage grown.

Acres of corn harvested for silage related to number of telephone calls made to Extension office. One hundred and sixty-two (162) or 45.1 percent of all producers were in the low group which made three or less telephone calls to Extension office and harvested 40.1 acres of corn silage. One hundred and seventy-nine (179) or 49.9 percent of all the producers were in the medium group which made from four to 16 phone calls to Extension office and averaged 44.1 acres of corn silage. Eighteen (18) or 5.0 percent of all producers were in the high contact group which made 18 or more phone calls to Extension office and harvested 50.5 acres in corn silage.

The analysis of variance F test and the correlation coefficient showed that the relationship between the number of telephone calls made to Extension office by corn producers over a 12-month period was not significantly related to the acres of corn silage.

Acres of corn harvested for silage related to number of farm visits received by corn producers. In the low contact group, two hundred and nine (209) or 58 percent of all producers received three or less farm visits from Extension agents and harvested 36.8 acres of corn silage. One hundred

and twenty-eight (128) or 36.0 percent of all producers were in the medium contact group, which received four or more farm visits from Extension Agents and averaged 52.9 acres of corn silage. Twenty-two (22) or 6.0 percent of all producers were in the high contact group which received 13 or more farm visits from Extension Agents and averaged 34.2 acres of corn silage.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of farm visits corn producers received from Extension Agents and acres of corn silage harvested. Larger producers tended to receive more visits than small producers. However, comparison of the means of the three groups showed the high contact group harvested fewer acres than the medium contact group.

Acres of corn harvested for silage related to total number of Extension contacts. Two hundred and seventy-five (275) or 76.6 percent of the producers were in low contact group which had 23 or less Extension contacts with Extension Agents and harvested 63.3 acres of corn silage. For the medium group, seventy two (72) or 20.1 percent of the producers had 24 or more Extension contacts and averaged 52.8 acres of corn silage. Twelve (12) or 3.3 percent of the producers in the high group had 71 or more Extension contacts and averaged 39.3 acres in corn silage.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the total number of contacts corn producers had with Extension Agents and acres of corn silage.

Relationship Between Yield of Corn and Extension Contacts

Yield per acre of grain and silage. The second subsection was also divided into two sub-sections. The first sub-section deals with yield per acre of grain in bushels related to Extension contacts and the second sub-section deals with yield per acre of silage in tons related to Extension contacts.

The purposes were also described as stated previously for acres for grain and silage.

Yield per acre of grain in bushels related to Extension meetings. Five hundred and seventy-six (576) or 71.0 percent of all producers were in the low contact group which attended two or less Extension meetings and harvested 75 bushels of corn yield per acre. For the medium contact group, 233 or 28.7 percent of all producers attended from three to 12 Extension meetings and averaged 83.8 bushels per acre. Two (2) or 0.3 percent of the producers were in the high contact group which attended 12 or more Extension meetings and averaged 92.5 bushels per acre. The 811 producers averaged 78.0 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension meetings attended and yield of grain in bushels per acre. Reference to the figures showed that producers in the medium contact group produced more bushels per acre than the low group and those in the high group a better, higher yield than either the low and the medium groups. Also, producers who had low contact had smaller yield and, conversely, those with high contact through Extension meetings tended to have high corn yield.

Yield per acre of grain in bushels related to number of Extension corn production meetings attended. Seven hundred and ninety-one (791) or 97.6 percent of the producers in the low contact group attended two or less Extension corn production meetings and averaged 77.6 bushels per acre. In the medium group, 19 or 2.3 percent of the producers attended from three to four Extension corn production meetings and averaged 92.6 bushels per acre.

One producer (1) or 0.1 percent of the producers in the high group attended all the five Extension corn production meetings over the 12-month period and averaged 110 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension corn production meetings attended and

the yield per acre of grain in bushels. The data showed that the medium group had better yield per acre than the low group and the high group had the best yield per acre. This suggested that the more Extension corn production meetings attended, the higher the yield in bushels per acre.

Yield per acre of grain in bushels related to the number of visits made to Extension office. The low contact group, 473 or 58.0 percent of the producers made two or less visits to Extension office and averaged 76.3 bushels per acre. For the medium group, 330 or 41.0 percent of the producers made from three to 24 visits to Extension office and averaged 80.0 bushels per acre. Eight or 1.0 percent of the producers in the high contact group made twenty-five or more visits to Extension office and averaged 94.0 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of visits made to Extension office and the yield per acre of grain in bushels. The data indicated that the medium had higher yields than the low group and the high group had the best yields. This suggested that the more visits made to Extension office by the producers the higher their corn yield.

Yield per acre of grain in bushels related to the number of telephone calls made to Extension office. In the low

contact group, 471 or 58.1 percent of the producers made three or less telephone calls to Extension office and averaged 75.1 bushels per acre. Three hundred and four (304) or 37.5 percent of the producers in the medium group made four or more telephone calls to Extension office and averaged 80.6 bushels per acre. In the high group, thirty-four or 4.2 percent of the producers made eighteen or more telephone calls to Extension office and averaged 94.3 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of telephone calls made to Extension office and yield per acre in bushels. The data showed that the medium group had better yield per acre than the low group and the high group had the best yield per acre. The figures then suggested that the more contacts the producers had with Extension through the phone, the higher their yield was likely to be.

Yield per acre of grain in bushels related to the number of farm visits received by producers. For the low contact group, 507 or 62.5 percent of the producers who received three or less farm visits from Extension Agents averaged 32.3 bushels per acre. For the medium contact group, 264 or 32.6 percent of the producers who received from 4 to 12 farm visits from Extension Agents averaged 53.0

bushels per acre. Forty (40) or 4.9 percent of the producers in the high contact group received 13 or more farm visits from Extension Agents and averaged 66.3 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of farm visits corn producers received from Extension Agents and the yield per acre of grain in bushels. Reference to the data showed that the medium group had better yield per acre than the low yield and the high group had higher yield per acre than the first two groups. This suggested that the more farm visits corn producers received from Extension Agents, the higher was their yield per acre.

Yield per acre of grain in bushels related to total number of Extension contacts corn producers had with Extension. For the low contact group, 699 or 82.5 percent of the producers had 23 or less Extension contacts and averaged 76.6 bushels per acre. For the medium contact group, 124 or 15.3 percent of the producers had from 24 to 59 contacts with Extension and averaged 85.1 bushels per acre. Eighteen (18) or 2.2 percent of the producers had 61 or more contacts with Extension and averaged 105.8 bushels per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the total number of contacts corn producers had with Extension Agents and the yield per acre of grain in bushels. Observa-

tion revealed that the medium contact group had higher yield per acre than the low contact group and the high contact group had the highest yield per acre. The figures suggested that the more contacts the producers had with Extension the higher was their yield per acre.

Yield per acre of silage in tons related to the number of Extension meetings attended. For the low contact group, 217 or 62.9 percent of the producers attended two or less Extension meetings and averaged 16.3 tons of silage per acre. In the medium contact group, 123 or 35.7 percent of the producers attended from three to 12 Extension meetings and averaged 17.3 tons per acre. Five (5) or 1.4 percent of the producers in the high contact group attended 13 or more Extension meetings and averaged 18.6 tons per acre. The 811 producers averaged 16.8 tons per acre.

Although the correlation coefficient was positively correlated, the F test showed that the relationship between the number of Extension meetings attended and the yield per acre of silage in tons was not significant at the .05 level. However, the figures showed that the medium contact group had higher yield per acre than the low group and the high contact group the highest yield per acre.

Yield per acre of silage in tons related to the number of Extension corn production meetings attended. For the low

contact group 335 or 97.1 percent of the producers attended two or less Extension corn production meetings and averaged 16.7 tons of silage per acre. For the medium contact group, nine or 2.6 percent of the producers attended three or four Extension corn production meetings and averaged 18.3 tons per acre. One or 0.3 percent of the producers in the high group attended five Extension corn production meetings over the 12-month period and averaged 15.0 tons of silage per acre.

The analysis of variance F test and the correlation coefficient showed a significant relationship between the number of Extension corn production meetings attended and the yield per acre of silage in tons. Observation of the figures revealed that although the medium group had higher yields than the low group this was not reflected in the high contact group.

Yield per acre of silage in tons related to the number of visits made to Extension office by corn producers. One hundred and seventy-seven (177) or 51.0 percent of the producers in the low contact group made two or less visits to Extension office and averaged 16.5 tons per acre. One hundred and sixty-three (163) or 47.0 percent of the producers in the medium contact group made from three to 24 visits to Extension office and averaged 17.1 tons per acre. Five (5) or 1.0 percent of the producers in the high group

made twenty-five or more visits to Extension office and averaged 18.6 tons per acre.

Although the correlation coefficient was positively correlated, the F test showed that the relationship between the number of visits made to Extension office by corn producers over the 12-month period and the yield per acre of silage in tons were not significantly related. However, reference to the figures showed that the medium group made better yield than the low group and the high group had the highest yield per acre.

Yield per acre of silage in tons related to the number of telephone calls made to Extension office by the corn producers. One hundred and fifty-three (153) or 44.3 percent of the producers in the low contact group made three or less phone calls to Extension office and averaged 16.4 tons per acre. For the medium contact group, 173 or 50.1 percent of the producers made from four to 16 phone calls to Extension office and averaged 17.0 tons per acre. Seventeen (17) or 4.9 percent of the producers in the high contact group made 18 or more telephone calls to Extension office and averaged 17.6 tons per acre.

The analysis of variance F test did not show a significant relationship between the number of telephone calls made to Extension office by corn producers over a 12-month period and the yield per acre. However, reference to

figures showed that the medium group had better yield per acre than the low group and the high group had the highest yield per acre.

Yield per acre of silage in tons related to the number of farm visits received from Extension Agents. For the low contact group, 200 or 58 percent of the producers received three or less farm visits from Extension Agents and averaged 16.2 tons per acre. For the medium contact group, 123 of the producers received from four to 12 farm visits from Extension Agents and averaged 17.6 tons per acre. Twenty-two (22) or 6.4 percent of the producers in the high contact group received 13 or more farm visits from Extension Agents and averaged 17.9 tons per acre.

The analysis of variance F test and the correlation coefficient indicated a significant relationship between the number of farm visits corn producers received from Extension Agents and yield per acre of silage. A comparison of the figures for the three groups showed that the producers who received more farm visits had higher yield than those who did not. Thus, the more farm visits received, the higher the yield per acre.

Yield per acre of silage in tons related to the total number of Extension contacts corn producers had from Extension Agents. For the low contact group, 262 or 32.3 percent of the producers had 23 or less total Extension contacts and

averaged 16.6 tons per acre. Seventy-two (72) or 20.9 percent of the producers in the medium group had from 24 to 59 Extension contacts and averaged 17.3 tons per acre. Eleven (11) or 3.2 percent of the producers in the high contact group had 61 or more Extension contacts and averaged 17.6 tons per acre.

The analysis of variance F test revealed that there was not a significant relationship between the total number of contacts corn producers had with Agents and the yield per acre of silage. However, observation showed a tendency for the number of tons per acre to increase as the total number of Extension contacts increased.

Summary

The purpose of the table was to determine the relation between acres of corn, corn yield and the number of contacts corn producers had with Extension Agents. Eight hundred and eleven producers were included in the study from 61 Tennessee counties. The number of contacts corn producers had with Extension Agents were divided into three contact groups. The F test and simple correlation analyses of the data were made. Table VIII, page 93, indicated that:

1. The number of Extension meetings of all kinds attended by corn producers over a 12-month period was significantly related to acres of corn harvested for grain, acres of corn harvested for silage and yield per acre of corn

harvested for grain. Larger corn producers attended more Extension meetings and had higher yield per acre harvested for grain. However, number of Extension meetings attended was not significantly related to yield per acre harvested for silage.

2. The number of Extension corn production meetings attended by corn producers over a 12-month period was significantly related to acres of corn harvested for grain, yield per acre of corn harvested for grain and corn harvested for silage. Larger corn producers attended more Extension corn production meetings and had higher yield per acre harvested for grain. The number of Extension corn production meetings was not significantly related to acres of corn harvested for silage.

3. The number of visits made to Extension office by corn producers over a 12-month period was significantly related to acres of corn harvested for grain and yield per acre of corn harvested for grain. However, neither the acres of corn harvested for silage nor the yield per acre of corn harvested for silage was significantly related to office visits. The data, however, showed that larger producers made more office visits and had higher yield per acre of corn harvested for grain and silage.

4. The number of telephone calls made to county Extension office by corn producers over a 12-month period

was significantly related to acres of corn harvested for grain. The number of telephone calls made to Extension office was not significantly related to acres of corn harvested for silage and yield per acre harvested for silage. Larger corn producers made more telephone calls to Extension office and had higher yield per acre of corn harvested for grain and silage.

5. The number of farm visits corn producers received from Extension Agents over a 12-month period was significantly related to acres of corn harvested for grain, acres of corn harvested for silage, and between silage and yield per acre of corn harvested for grain and silage. Larger corn producers had higher yield per acre of corn harvested for grain and silage.

6. The total number of Extension contacts corn producers had with Agents over a 12-month period was significantly related to acres of corn harvested for grain, acres of corn harvested for silage, and yield per acre of corn harvested for grain. The larger corn producers had more Extension contacts and had higher yield per acre harvested for grain and silage. The number of contacts corn producers had with Extension was not significantly related to the yield per acre harvested for silage.

CHAPTER V

SUMMARY OF MAJOR FINDINGS

The Tennessee Agricultural Extension Service strives to provide efficient and effective instructional programs and service to the people. Information about the educational needs of the people and about the effectiveness of Extension programs in helping to meet those needs is obtained as an ongoing part of Extension work in Tennessee. This study was directed toward helping the Tennessee Agricultural Extension Service evaluate the extent to which its educational efforts with corn producers was effective in helping to bring about the adoption of eight recommended corn production practices.

I. PURPOSE AND SPECIFIC OBJECTIVES

Purpose

The major purpose of this study then was to determine the relationship between corn producers' use of recommended corn production practices and the frequency of their contact with Extension Agents. The influence of five different methods used by corn producers to contact Extension Agents upon the producers' use of eight corn production practices was explored. Also studied was the influence or the relationship between selected characteristics of the corn

producers farm operation upon the adoption of recommended practices and upon the frequency of contacts corn producers had with Extension Agents.

Specific Objectives

In view of the above purposes, the following specific study objectives were stated:

1. To determine the variation among the 61 major corn production counties as to acres of corn harvested for grain and for silage and yield per acre of corn for grain and corn for silage.

2. To compare corn producers' use of eight recommended corn production practices in 1970 and 1975.

3. To determine the relationship between producers' use of eight recommended corn production practices and acres of corn harvested for grain and acres of corn harvested for silage.

4. To determine the relationships between producers' use of each of eight recommended corn production practices and yield per acre of corn harvested for grain and corn harvested for silage.

5. To determine the relationship between the total number of eight recommended corn production practices used by producers and acres of corn they harvested for grain and acres of corn harvested for silage.

6. To determine the relationship between total number of eight recommended corn production practices used by producers and yield per acre of corn harvested for grain and corn harvested for silage.

7. To determine the variation among producers in the 61 major corn producing counties regarding the number of contacts they made with County Extension Agents over a 12-month period.

8. To determine the relationship between producers' use of each of eight recommended corn production practices and the number of contacts they had with Extension over a 12-month period.

9. To determine the relationship between total number of corn production practices used by producers and the number of Extension contacts producers had with Extension over a 12-month period.

10. To determine the relationship between the total number of Extension contacts and acres of corn harvested in grain and acres of corn harvested for silage.

11. To determine the relationship between the total number of Extension contacts and yield per acre of corn harvested for grain and corn harvested for silage.

II. PROCEDURES

Population, Sample and Data Collection

Commercial corn producers in 61 major corn producing counties of Tennessee provided the data. Producers in each county were randomly selected from a list using the Nth. number technique. Twenty producers were selected in about 40 counties and ten in the remaining 21 counties. Interview schedules were developed by Extension Agronomy specialists at the University of Tennessee. County Extension Agents conducted personal interviews with 2116 corn producers in 1970 and 961 producers in 1975. Interviews were conducted in the winters of 1970 and 1975.

Analysis of Data

Interview schedules were coded and data were punched on computer cards. Computations were done by the University of Tennessee Computing Center. Frequencies and percentages were used to describe the population. Correlation statistics included Pearson and Analysis of variance. The .05 probability level was accepted as being significant. Null hypotheses were not stated but implied or assumed in the analysis of relationships between each dependent and independent variable.

III. MAJOR FINDINGS

Major findings were organized and briefly given below based upon the two major dependent variables (i.e., number of people adopting recommended practices and number of contacts corn producers had with Extension Agents over a specified 12-month period).

Relationship Between Practice Use and Selected Variables

This subsection presents major findings regarding the relationships between the use of recommended corn production practices by Tennessee producers in 1970 and 1975 and acres of corn harvested for grain, acres of corn harvested for silage, yield per acre of corn harvested for grain and yield per acre of corn silage harvested.

1. Acres of Corn Harvested for Grain in 1970 and in 1975.

Acres of corn harvested for grain in 1970 was significantly related to the producers' use of six of the eight recommended practices studied. Corn producers who used the following recommended practices harvested significantly more acres of corn for grain than did those who were not using the practice:

a) planted recommended stand of corn plants per acre.

b) limed and fertilized according to soil test recommendations.

c) followed recommended fertilizer application procedure.

d) controlled weeds according to recommendation.

e) harvested grain at proper maturity stage.

f) controlled pest in stored grain.

Acres of corn harvested for grain in 1970 was not significantly related to whether or not producers were using each of the following practices:

a) planted recommended corn variety.

b) planted during recommended season.

Acres of corn harvested for grain in 1975 was significantly related to the use of five of the eight practices studied. Corn producers who used the following recommended practices harvested significantly more acres of corn for grain than did those who were not using the practice:

a) planted recommended stand of corn plants per acre.

b) limed and fertilized according to soil test recommendations.

c) followed recommended fertilizer application procedure.

d) controlled weeds according to recommendations.

e) controlled pests in stored grain.

Acres of corn harvested for grain in 1975 was not significantly related to whether or not producers were using each of the following practices:

a) planted recommended corn variety.

b) planted during recommended season.

c) harvested grain at proper maturity stage.

2. Acres of Corn Harvested for Silage in 1970 and 1975.

Acres of corn harvested for silage in 1970 was significantly related to the producers' use of the following two of the eight recommended corn production practices:

a) planted corn for silage during the recommended season.

b) Limed and fertilized according to soil test recommendations.

Producers who planted during the recommended season in 1970 harvested significantly fewer acres of corn silage than those who did not use the practice.

Producers who limed and fertilized their corn for silage according to soil test recommendations in 1970 harvested significantly more acres of corn silage than those who did not follow this practice.

Acres of corn grown for silage in 1970 was not significantly related to whether or not producers used the following recommended practices:

a) planted recommended corn silage variety.

b) planted recommended stand of corn for silage.

c) followed recommended fertilizer applciation procedure.

d) controlled weeds in corn silage.

e) harvested corn silage at recommended maturity stage.

f) controlled pests in stored corn silage.

Acres of corn silage harvested in 1975 was not significantly related to whether or not producers used the recommended corn silage production practices.

3. Yield per Acre of Corn Grain in 1970 and 1975.

Yield per acre of corn grain in 1970 was significantly related to the producers' use of the following seven of the eight recommended corn production practices:

a) planted during the recommended season.

b) planted recommended stand of corn plants per acre.

c) limed and fertilized according to soil test recommendations.

d) followed recommended fertilizer application procedure.

e) controlled weeds according to recommendations.

f) harvested corn grain at recommended maturity stage.

g) controlled pests in stored grain.

Yield of corn grain per acre in 1970 was not significantly related to whether or not producers planted

recommended corn varieties. Producers who planted recommended corn varieties in 1970 harvested significantly fewer bushels of corn grain than those who did not use the practice. Producers who used the seven practices listed above that were significantly related to the yield harvested more bushels of corn grain per acre except those who used the practice of controlling pests in stored grain.

Yield of corn grain per acre in 1975 was significantly related to each of the eight practices. Producers who used the recommended corn production practices in 1975 harvested significantly more bushels per acre than those who did not use the practices.

4. Yield per acre of Corn Silage in 1970 and 1975.

Yield of corn silage in 1970 was significantly related to the producers' use of three of the eight recommended corn production practices studied. Corn producers who used the following recommended practices harvested significantly more bushels for corn per acre than did those who were not using the practice:

a) planted recommended corn varieties.

b) planted during the recommended season.

c) controlled pests in stored grain.

Yield of corn silage in 1970 was not significantly related to whether or not producers were using each of the following practices:

a) planted recommended stand of corn plants per acre.

b) limed and fertilized according to soil test recommendations.

c) followed recommended fertilizer application procedure.

d) controlled weeds according to recommendation.

e) harvested corn at recommended maturity stage.

Producers who planted during the recommended season in 1970 harvested significantly more tons of corn per acre for silage than those who did not use the practice. Producers who did not plant the recommended corn varieties and controlled pests in stored grain harvested significantly more tons of corn silage per acre than those who used the practices.

Yield of corn silage per acre in 1975 was significantly related to the producers' use of seven of the eight practices studied. Corn producers who used the following recommended practices harvested significantly more bushels of corn grain per acre than did those who were not using the practice:

a) planted recommended corn varieties.

b) planted recommended stand of corn plants per acre.

c) limed and fertilized according to soil test recommendations.

d) controlled weeds according to recommendations.

e) harvested corn at recommended maturity stage.

f) controlled pests in stored grain.

Yield of corn silage in 1975 was not significantly related to whether or not producers followed recommended fertilizer application procedure.

Producers who used the above practices that were shown to be significantly related to the yield of corn silage revealed that the producers who used these practices harvested more tons of corn silage per acre than those who did not use the practices.

Relationship Between the Number of Contacts Corn Producers Had With Extension and Producers' Use of Recommended Corn Production Practices in 1975

This subsection presents findings regarding the relationship between contacts corn producers had with Extension and producers' use of the eight recommended corn production practices.

1. The number of Extension meetings attended.

The number of Extension meetings attended was significantly related to the producers' use of the following three of the eight recommended practices:

a) planted recommended corn varieties.

b) limed and fertilized according to soil test recommendations.

c) followed recommended fertilizer application procedure.

Producers who followed these practices attended a larger number of Extension meetings than those who did not.

The number of Extension meetings attended was not significantly related to the producers' use of the following practices:

a) planted during recommended season.

b) planted recommended stand of plants per acre.

c) controlled weeds according to recommendations.

d) controlled pests in stored grain.

2. The number of corn production meetings attended.

The number of corn production meetings attended was significantly related to the producers' use of the following five recommended practices:

a) planted recommended corn varieites.

b) planted during recommended season.

c) planted recommended stand of corn plants per acre.

d) limed and fertilized according to soil test recommendations.

e) followed recommended fertilizer application procedure.

Producers who followed these practices attended significantly more corn meetings than those who did not.

The number of Extension meetings attended was not significantly related to the producers' use of the following corn production practices:

a) controlled weeds according to recommendations.

b) harvested crop at proper maturity stage.

c) controlled pests in stored grain.

3. The number of office visits made.

The number of office visits made was significantly related to the producers' use of the following four recommended practices:

a) planted recommended corn varieties.

b) limed and fertilized according to soil test recommendation.

c) followed recommended fertilizer application procedure.

d) controlled pests in stored grain.

Producers who used these practices made more office visits than those who did not use the practices.

The number of office visits made was not significantly related to the producers' use of the following practices:

a) planted during the recommended season.

b) planted recommended stand of corn plants per acre.

c) controlled weeds according to recommendations.

d) harvested corn at recommended maturity stage.

4. The number of telephone calls made to Extension office.

The number of telephone calls made to Extension office was significantly related to producers' use of the following five recommended corn production practices:

a) planted recommended corn varieties.

b) planted recommended stand of corn plants per acre.

c) limed and fertilized according to soil test recommendations.

d) followed recommended fertilizer application procedure.

e) controlled pests in stored grain.

Those who were using the above practices had made significantly more telephone calls to the Extension office than those who were not using the practices.

5. The number of farm visits received from Extension Agents.

The number of farm visits received from Extension Agents was significantly related to the producers' use of the following five recommended corn production practices:

a) planted recommended corn varieties.

b) planted recommended stand of corn plants per acre.

c) limed and fertilized according to soil test recommendations.

d) followed recommended fertilizer application procedure.

e) controlled weeds according to recommendations.

Producers who were using these practices had received significantly more farm visits from Extension Agents than those who were not using the practices.

The number of farm visits received from Extension Agents was not significantly related to the following practices:

a) planted during the recommended season.

b) harvested at the recommended maturity stage.

c) controlled pests in stored grain.

6. The total number of Extension contacts.

The total number of Extension contacts was significantly related to the producers' use of the following five recommended corn production practices:

a) planted recommended corn varieties.

b) planted recommended stand of corn plants per acre.

c) limed and fertilized according to soil test recommendations.

d) followed recommended fertilizer application procedure.

e) controlled pests in stored grain.

Producers who were using the above five practices had significantly more contacts than those who were not using the practices.

The total number of contacts was not significantly related to the following practices:

a) planted during the recommended season

b) controlled weeds according to recommendations.

c) harvested corn at the recommended maturity stage.

Relationship Between Selected Characteristics of the Corn Producers' Scope of Production and the Number of Contacts Producers Had With Extension Agents

This subsection presents findings concerned with the acres of corn harvested for grain and for silage, yield per acre of corn for grain and for silage and the number of contacts producers had with Extension over a 12-month period in 1975.

1. Acres of corn harvested for grain.

Acres of corn harvested for grain was significantly related to the total number of contacts corn producers had with Extension Agents through:

a) Extension meetings.

b) Extension corn production meetings.

c) visits made to the Extension office.

d) telephone calls to the Extension office

e) farm visits received from Extension Agents.

f) total contacts made with Extension Agents.

In each of the above contact methods producers who had more contacts with Extension Agents tended to be those who harvested larger acres of corn for grain.

2. Acres of corn harvested for silage.

Acres of corn harvested for silage was significantly related to three methods of contact producers had with Extension agents over a 12-month period. Producers who had more contacts through the following methods tended to be those who harvested more acres of corn silage:

a) number of Extension meetings of all kinds attended.

b) number of farm visits corn producers received from Extension Agents.

c) total number of contacts corn producers had with Extension Agents.

Acres of corn harvested for silage was not significantly related to the following contact methods:

a) number of corn production meetings attended.

b) number of visits made to Extension office.

c) number of telephone calls made to Extension office.

3. Yield per acre of corn grain.

Yield per acre of corn grain was significantly related to each of the methods corn producers used to contact Extension Agents.

4. Yield of corn silage per acre.

The per acre yield of corn silage was significantly related to:

a) number of Extension corn production meetings attended by corn producers.

b) number of farm visits corn producers received from Extension Agents.

Producers who had higher contacts with Extension Agents through the above methods tended also to have higher yields per acre of silage harvested.

Yield of corn silage per acre was not significantly related to the following:

a) number of Extension meetings of all kinds attended.

b) number of visits made to Extension office.

c) number of telephone calls made to Extension office.

d) the total number of contacts corn producers had with Extension Agents over a 12-month period.

IV. IMPLICATIONS AND RECOMMENDATIONS

This study suggests that the staff of the University of Tennessee Agricultural Extension Service was a factor influencing the adoption of selected corn production practices. Corn producers reported having relatively frequent contacts with county Extension Agents through Extension meetings, office visits, telephone calls and farm visits. It was shown that a high percentage of the corn producers who frequently contacted the Extension Agents were using the recommended practices.

The study did not show whether or not producers who frequently contacted the Extension Service for advice possessed characteristics unique from those who contacted Extension less frequently. However, the data did reveal

that producers who made more frequent contacts with Extension had significantly more acreage and yield for both grain and silage than those who had fewer contacts. Extension Service is therefore challenged to continue to serve all corn producers not only courteously but also as completely and efficiently as possible. It would seem important that greater emphasis be placed on Extension Agents reaching and instructing those producers who are reluctant to contact the Extension Service.

It has been shown that the rate of diffusion of an innovation at any given time or stage of adoption is difficult to measure and it is not necessarily in a direct relationship with the efforts put forth by the Agents (16: 259-260). This study showed that the relationships between the use of some of the recommended corn production practices and Extension contacts were not significant at the required .05 level of probability. This may be explained partly by the fact that most of the producers were already using the practices. The earlier adoption of these practices may have been influenced by Extension Agents efforts in the past years.

Practices regarding liming and fertilizing according to soil test recommendations and controlling weeds according to recommendations were shown to be the least used percentage wise. It would seem evident that greater emphasis should be made to increase the adoption of these priority practices.

V. RECOMMENDATIONS FOR FURTHER STUDIES

1. A similar study should be conducted over a period of years in Tennessee counties to determine the farmers' confidence and satisfaction with Extension's efforts to introduce new recommended production practices.

2. Similar studies should be conducted in Tennessee to determine not only the influence of Extension upon the adoption of production practices in farm enterprises other than corn but also influence of the Extension Agents' attitude regarding the recommended production practices.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Anderson, M. A.; Cairns, L. E.; Heady, E. O.; and Baun, E. L. "An appraisal of Factors Affecting the Acceptance and Use of Fertilizer in Iowa" Agr. Expt. Sta. Special Report, 16 pp. 36, Ames 1956.

2. Brandner, L. and Bryant Keavl. "Evaluation for Congruence as a Factor in Adoption Rate of Innovations." Rural Sociology, Vol. 29, No. 3:288-303, 1964.

3. Copp, J. H. "Personal Social Factors Associated with the Adoption of Recommended Farm Practices Among Cattlemen." Kansas Agr. Expt. Station Tech. B.83. 31 p. Manhattan, 1956.

4. Copp, James H. Maurice L. Sill, and Emory J. Brown. "The Function of Information Sources in the Farm Practice Adoption Process," Rural Sociology, 23 (1958), pp. 145-157.

5. Hoffer, C. R. and Stangland. "Farmer's Attitude and Values in Relation to Adoption of Approved Practices in Corn Growing." Rural Sociology, Vol. 23, No. 2:112-120, 1958.

6. Lionberger, H. F. "Information Seeking Habits and Characteristics of Farm Operators," Missouri Agr. Expt. Sta. Research Bulletin, No. 581, 53 p., 1955.

7. Moulik, T. K., J. P. Hvadovszky, C. S. Rao. "Productive Values of Some Factors of Adoption of Nitrogen Fertilizers by North Indian Farmers," Rural Sociology, Vol. 31, No. 4:467-477, 1966.

8. Palmer, R. G. "Corn Yield as a Function of Several Management Factors Expressed as Variables as Quadratic Equation." Unpublished M.S. Thesis, University of Tennessee, pp. 1-121, 1962.

9. Raudabaugh, J. N. "Application of Evaluation as Concept to Extension Program Development" Washington, D.C.; United States Department of Agriculture, 1972.

10. Rogers, E. M. and A. E. Havens. "Prediction of Multipractice Adoption Behavior from Some Predicting Innovativeness," Sociological Inquiry, 32:34-42, 1962 (cited in) Moulik, T. K., J. P. Hvadovszky, C. S. Rao.

"Productive Values of Some Factors of Adoption of Nitrogen Fertilizers by North Indian Farmers," Rural Sociology, Vol. 31, 4:467-477, 1966.

11. Rogers, E. M. The Diffusion of Innovations, New York Free Press, 1962, Ch. IV.

12. Rogers, E. M. Diffusion of Innovations, New York. The Free Press of Glenco, 1962, p. 259-260.

13. Rogers, E. M. and George Beal. "The Importance of Personal Influences in the Adoption of Technological Changes," Social Forces, 36 (1958), pp. 329-335.

14. Rogers, E. M. and Shoemaker, F. F. Communication of Innovations. New York. The Free Press, 1962.

15. Ryan, B. and N. Gross. "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, 8(1943), pp. 15-24.

16. Sanders, H. C. The Cooperative Extension Service Prentice-Hall, Inc., Englewood Cliffs, N.J. 1966, p. 29.

17. Sawhney, M. M. "Farm Practice Adoption and the Use of Information Sources and Media in a Rural Community in India," Rural Sociology, Vol. 32, No. 3:310.

18. Singh, S. "Relation of Corn Yield to the Adoption of Corn Production Practices." Unpublished M.S. Paper, University of Tennessee, pp. 1-24 1967.

19. "Tennessee County Estimates, Corn," The Tennessee Department of Agriculture, Nashville, Tennessee, April 1978.

20. Wilkening, Eugene A. "Roles of Communicating Agents in Technological Change in Agriculture," Social Forces, 24 (1956), pp. 361-367.

21. Wilkening, E. A. "Acceptance of Improved Farm Practices in Three Coastal Plain Counties," Tech. Bulletin No. 98, North Carolina Agr. Expt. Sta., pp. 1-75, 1952.

22. Wilson, Meredith C. and Gladys Gallup. Extension Teaching Methods and Other Factors that Influence Adoption of Agricultural and Home Economics Practices. Ext. Service Circular 495, August 1955.

23. Yatim, Baharibin, "Relationship Between the Characteristics of Grade A Producers in FY 1970 and The Number of Activities Reported, Hours Spent and Contacts Agents Made in 41 Tennessee Major Dairy Counties During FY 1971-1975." Unpublished Master's Thesis. The University of Tennessee, Knoxville, August 1976.

24. Young, J. N. and March, C. P. "The Adoption of Recommended Farm Practices and Sources of Farmer Information." Some Findings From Surveys Conducted in 1950 and 1955, Washington County, Kentucky; Ky. Agr. Expt. Sta. Prog. Report 40, 18 p., Lexington, 1956.

APPENDICES

APPENDIX A

STATE SUMMARY
(61 COUNTIES)
THE AGRICULTURAL EXTENSION SERVICE, UNIVERSITY OF TENNESSEE
Knoxville, Tenenssee

1975 TENNESSEE CORN PRODUCTION SURVEY

Name of Respondent_____ Address _____

1 (1) Card Number

_____ _____ _____ County _____ Date _____
(2) (3) (4)

A. General

1. How many acres of corn did you plant last year?

_____ _____ _____ a. For grain (Actual acres planted.)
(5) (6) (7) A 999 = 1,000 or more.

_____ _____ _____ b. For silage (Actual acres planted)
(8) (9) (10)

2. How many acres of corn did you harvest last year:

_____ _____ _____ a. For grain (Actual acres
(11) (12) (13) harvested)

_____ _____ _____ b. For silage (Actual acres
(14) (15) (16) harvested)

3. Per acre yield:

_____ _____ _____ a. Bushels of grain
(17) (18) (19)

_____ _____ _____ b. Tons of silage
(20) (21) (22)

4. How much of the harvested acreage was:

_____ _____ _____ a. Owned?
(23) (24) (25)

Rev. 8/1/75

___ ___ ___ (26) (27) (28) b. Cash rented?

___ ___ ___ (29) (30) (31) c. Shared?

5. What percent of the grain acreage was harvested by:

___ ___ ___ (32) (33) (34) a. Picker sheller?

___ ___ ___ (35) (36) (37) b. Picker?

___ ___ ___ (38) (39) (40) c. Other?

6. What percent of last year's corn grain crop did you:

___ ___ ___ (41) (42) (43) a. Sell?

___ ___ ___ (44) (45) (46) b. Feed?

___ ___ ___ (47) (48) (49) c. Other?

7. If you fed part or all of last year's harvested corn grain crop, about how many bushels were:

___ ___ ___ (50) (51) (52) a. Fed to swine?

___ ___ ___ (53) (54) (55) b. Beef?

___ ___ ___ (56) (57) (58) c. Dairy?

___ ___ ___ (59) (60) (61) d. Other?

B. Recommended Practices

	RECOMMENDED PRACTICE	(See corresponding number on explanatory guide sheet) 1 = yes; 2 = no
___ (62)	(1) Did you plant a corn variety or varieties recommended by U.T. last year?	

____ (63) (2) Did you plant: a) in East and Middle Tennessee, between April 20 and June 1; b) in West Tennessee and Southwest Corn Borer infested counties in Middle Tennessee between April 1 and May 1; or c) in the delta area, the same as in item b or earlier?

____ (64) (3) Did you have a recommended stand (plant population) of plants last year? (12,000-18,000 for grain; 18,000-20,000 for silage)

____ (65) (4) Did you lime and fertilize your corn land according to soil test recommendations?

____ (66) (5) Did you use recommended procedures in applying fertilizer? (especially taking care to separate seed and nitrogen containing fertilizer)

____ (67) (6) Were weeds effectively controlled in a recommended way last year?

____ (68) (7) Did you harvest your corn (grain and/or silage) at the proper stage(s)?

____ (69) (8) Did you adequately protect your stored grain from pests?

C. The number of contacts producer had with County Extension Agents during previous 12 months (record actual number):

____ (70) ____ (71) a. Number of Extension meetings of all kinds attended?

____ (72) ____ (73) b. Number of Extension meetings where corn production was discussed?

____ (74) ____ (75) c. Number of visits made to the County Extension office?

____ (76) ____ (77) d. Number of telephone calls made to the County Extension office?

____ (78) ____ (79) e. Number of farm visits received by the corn producer from all County Extension Agents?

____ (80) (10) Tenure Status (1 = owner; 2 = other)

APPENDIX B

THE AGRICULTURAL EXTENSION SERVICE, UNIVERSITY OF TENNESSEE
Knoxville, Tennessee

1970 TENNESSEE CORN PRODUCTION SURVEY

Name of Farmer_____ Address_____

County_____ Date _____ Interview Number_____

1. How many acres of corn did you plant last year for grain? ____for silage____

2. How many acres of corn did you harvest last year for grain? ____for silage?____

3. Per acre yield: Bushels of grain?____Tons of silage?____

4. How much of the harvested acreage was: Owned?____Cash rented?____Shared?____

5. What percent of the grain acreage was harvested by picker sheller?____

6. What percent of last year's corn grain crop did you sell?____Feed?____Other?____

7. If you fed part or all of the last year's harvested corn grain crop, about how many bushels were fed to swine? ____Beef?____Dairy?____Other?____

RECOMMENDED PRACTICE	(See corresponding number on explanatory guide sheet)	YES	NO
(1)	Did you plant a corn variety or varieties recommended by U.T. last year?		
(2)	Did you plant: a) in East and Middle Tennessee, between April 20 and June 1; b) in West Tennessee and Southwest Corn Borer infested counties in Middle Tennessee between April 1 and May 1 or c) in the delta area, the same as in item b or earlier?		
(3)	Did you plan a recommended stand (plant population) of plants last year? (12,000-18,000 for grain; 18,000-20,000 for silage)		
(4)	Did you lime and fertilize your corn land according to soil test recommendations?		

(5)	Did you use recommended procedure in applying fertilizer? (especially taking care to separate seed and nitrogen containing fertilizer)
(6)	Were weeds effectively controlled in a recommended way last year?
(7)	Did you harvest your corn (grain and/or silage) at the proper stage(s)?
(8)	Did you adequately protect your stored grain from pests?

APPENDIX C

POSSIBLE LEAD QUESTIONS FOR CORN SURVEY

(Questions are related to corresponding practice number.)

1. What variety or varieties of corn did you plant last year? _____

2. Approximately when did you plant your last year's corn crop? _____
(date)

3. A. What was your row width? _____

B. How far apart were your corn plants at harvest?

Distance Between Plants (In.)	Row Width (Inches				
	30	36	38	40	42
6	34,848	29,040	27,570	26,084	24,891
7	29,876	24,892	23,546	22,454	21,332
8	26,084	21,780	20,645	19,622	18,695
9	23,733	19,630	18,341	17,424	16,626
10	20,942	17,424	16,500	15,669	14,918
11	19,022	15,840	15,021	14,282	13,570
12	17,428	14,520	13,756	13,069	12,446
13	16,074	13,403	12,700	12,066	11,493
14	14,918	12,446	11,804	11,198	10,676
15	13,961	11,616	11,000	10,446	9,945
18	11,616	9,680	9,171	8,712	8,297

4. A. How much fertilizer did you use per acre? _____

B. What kind of analysis was used (N-P-K)? _____

C. Did you lime and how much per acre was used? _____

D. If no lime used last year, when was land last limed? _____

E. Did you take a soil sample for corn production? _____
(If yes, when was last sample taken? _____)

F. What were the soil test recommendations (N-P-K)?____
Lime _____

G. Who tested your soil? _____

H. Where was it sent to be tested? _____
(Check soil test records in your office before interview

5. A. How did you apply your mixed fertilizer?_____
Broadcast _____ Banded with the seed _____
Banded beside and below the seed _____

B. How did you apply your straight fertilizer materials? _____
Broadcast _____ Banded _____

C. When did you apply your P and K (mixed fertilizer?
Immediately before planting_____
Three weeks or more before planting _____

D. When did you apply your nitrogen? Immediately before planting _____
Three weeks or more before planting _____
Topdressed or sidedressed after planting_____

6. What method of weed control was used? Chemicals_____
Cultivation_____ or both _____
If chemicals were used, which ones?_____
Rate/A_____. B. Method of application?
Broadcast_____ Banded _____
Incorporated _____. C. Where did you obtain your chemicals? _____. D. How much of problem were weeds? Severe____Moderate____Slight_____
Not a problem _____

7. A. How did you decide when to harvest your corn for silage?_____

B. What stage of maturity did you harvest your silage
Roasting ear (milk) _____ Dough_____
Dent_____ Mature_____

C. How did you decide when to harvest your corn for grain?_____

D. What percent moisture was your corn for grain when harvested? _____

8. A. Where and how did you store your grain?_____
_____

B. Did you have an insect problem?_____ If so, was it severe?____Moderate?____Slight?____Not a problem?___

C. Did you have a rat problem?____ If so, was it severe?____Moderate?____Slight?____Not a problem?___

APPENDIX D

GUIDE SHEET FOR TENNESSEE CORN PRODUCTION SURVEY

(For General Recommendation, See Current Revision of Publication 443, "More Corn Per Acre." Each item below is related to one of the corresponding practices in the check-list, TAEE 4163F3a)

1. See current bulletin, "Performance Trials of Field Crop Varieties," for recommended varieties.

2. Percent of plants girdled by Southwestern corn borer for different seeding dates: April 20, 4%; May 7, 6%; May 16, 23%; May 29, 23%; June 15, 39%. Girdled plants fall down. Other data showed yields in bu./acre as follows: April 20, 88; May 21, 82; June 3, 76; June 23, 57. (Tennessee Farm and Home Science, January 1965, Revised 1969)

3. The average yields for 9,000, 12,000, 15,000 and 18,000 plants per acre were 100,110, 116 and 119 bushels per acre respectively. The average increase was 10 bushels for 12,000 over 9,000 plants, 6 bushels for 15,000 over 12,000 and 3 bushels for 18,000 over 15,000. (See Bulletin 392, "Plant Population and Row Spacing for Corn")

   Lodging increased about 3% when stalk population per acre increased from 9,000 to 12,000 and about 5% from 12,000, 15,000 stalks per acre. (See Bulletin 337, "Nitrogen and Plant Population in Corn Production"). A practical limit of 12,000 to 18,000 stalks per acre for grain and 18,000 to 20,000 stalks per acre for silage is suggested due to the added lodging and very small increases in yield at the higher stalk populations.

4. Corn Fertilization Demonstrations, 1969. - Donald Howard.

5. See Publication 443 for recommendations.

   Two hundred pounds of 6-12-12 or 10-10-10 put in the row with the corn seed reduced the stand 5 to 10% over no fertilizer with the seed. Three hundred pounds in contact with the seed killed 50 to 60% of the stand. (Unpublished data, W. L. Parks, U.T.)

6. For chemical weed control see Publication 385 and 671.

7. Ear corn 20% moisture or below, shelled corn 15% moisture or below - Silage - when corn is in dough to dent stage = grains are firm with no milk to full dent, shuck is beginning to turn white. (E. C. 548, "Silage Production in Tennessee")

8. See SP 332, Revised 1970, "Farm Stored Grain Sanitation."

VITA

The researcher was born in Kafom, Kaduna State, Nigeria, in November of 1946. He had four years of Junior elementary education at Madakiya (where his family now lives) from 1956 to 1959, and three years of Senior elementary education at Unguwar Rimi from 1960 to 1962. In 1963, he entered the Sudan Interior Mission Teachers' College, Kagoro, now Government Teachers' College Kagoro. He obtained a Grade Two Teacher Certificate in 1967. He taught in his hometown, Madakiya from January 1968 to September 1970.

He entered the Advanced Teachers' College, Ahmadu Bello University, Zaria, in September, 1970, and completed the requirements for a Nigerian Certificate of Education (N.C.E.) in June 1974. In the same month he was employed by the Ministry of Education, Kaduna State, and posted to Government Secondary School, Kagoro, as a teacher.

In December 1975, he applied for a study leave from the Ministry of Education, Kaduna, to continue his education at the University of Tennessee, Knoxville, Tennessee. He obtained a Bachelor's degree in Agriculture with a major in Agricultural Education in 1977. He entered graduate school at the University of Tennessee, Knoxville, in the field of Agricultural Extension, in September 1977 and completed his work in December 1978. He is a member of Gamma Sigma Delta and Phi Kappa Phi.

He is married to the former Rhoda Kahuwai and they have a son and daughter, Jimmy Bisan and Joyce Zanak respectively.