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I am submitting herewith a thesis written by Marcus F. McLemore entitled "Selected Farm Characteristics of Swine Producers in Tennessee and Their Use of Recommended Production Practices in Relationship to the Number of Contacts Producers Had with County Extension Agents." 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.

Cecil E. Carter, Jr., Major Professor

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SELECTED FARM CHARACTERISTICS OF SWINE PRODUCERS IN TENNESSEE AND THEIR USE OF RECOMMENDED PRODUCTION PRACTICES IN RELATIONSHIP TO THE NUMBER OF CONTACTS PRODUCERS HAD WITH COUNTY EXTENSION AGENTS

A Thesis

Presented for the

Master of Science

Degree

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Marcus F. McLemore

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DEDICATION

This thesis is dedicated to my parents, Robert and Ruth McLemore. Throughout my life they have given me encouragement and support in any endeavor I have pursued. They have always given themselves to me completely, for this I dedicate my thesis and express to them my love and respect for all they have done. Thank you Mother and Daddy.

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ABSTRACT

The purpose of this study was to determine the relationship between characteristics of Tennessee swine producers' farming operations, their use of recommended swine production practices, and the number of contacts producers had with Extension agents. A total of 897 Tennessee swine producers were randomly selected from 57 counties for which data were available. An interview survey schedule was developed by The University of Tennessee Agricultural Extension Swine Specialist and mailed to County Extension Leaders in the spring of 1976. The "nth" number method of sampling was used to select the producers to be interviewed. Personal interviews were conducted with each swine producer by the Extension Leader. Information was obtained about the general farm characteristics of the swine producers, their use of recommended swine practices, and the number of contacts they had with Extension agents over a 12-month period.

The data were coded and punched on computer cards, and computations were made by The University of Tennessee Computing Center. The analysis of variance F test was used to determine the strength of relationship between the dependent and independent variables. F values which achieved the .05 probability level were accepted as significant.

Major findings included the following:

1. More than 80% of the swine producers were using the recommended practices of breeding their gilts at 8 months of age and 250 pounds, providing creep feed to baby pigs from 2 weeks of age through weaning, and castrating their male pigs before they were 4 weeks of age. However,

over 80% of the swine producers were not using the practices of washing sows before farrowing, identifying pigs soon after birth, and keeping lifetime sow records.

2. Sixteen percent of the producers used fewer than 10 of the 25 recommended swine production practices in 1975. Sixty-four percent used from 11 to 20 of the practices, and the remaining 20% used more than 20 of the recommended practices that year.

3. Forty-seven percent of the swine producers did not attend any Extension meetings, 20% did not visit the Extension office, 18% did not telephone the Extension office, and 22% did not receive any farm visits from Extension agents over a 12-month period.

4. The swine producers in Tennessee, on the average, attended 1.4 Extension meetings, visited the Extension office 3.1 times, telephoned the Extension office 4.1 times, and received 2.85 farm visits from Extension agents over a 12-month period.

5. The swine producers' number of females farrowing twice and the number of pigs raised to weaning were significantly related to the number of Extension meetings attended, swine meetings attended, office visits and telephone calls made to the Extension office, and farm visits received from Extension agents. Producers who had more females to farrow twice and those who raised more pigs to weaning tended to have had significantly more total Extension contacts.

6. The total number of contacts swine producers had with Extension agents was significantly related to their use of 23 of the 25 recommended swine production practices. Producers who were using the

recommended practices had made a significantly larger number of total contacts with Extension agents than had those producers who were not using the practices.

Implications and recommendations also were made.

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CHAPTER I

THE PROBLEM AND ITS SETTING

I. INTRODUCTION

The swine industry is a very important part of agriculture in almost every state. This is especially true in Tennessee where swine production in 1975 contributed $121,047,000 to the farmers' annual gross income (5).*

The trend today in Tennessee is to increase total swine production. One measure of production that has increased is the total number of pigs produced per year. Since 1974, the number has increased from 1,426,000 pigs to 2,139,000 pigs in 1978 (7).

There also has been an increase in receipts from Tennessee feeder pig sales across the state. In 1974, total receipts were $13,718,232 as compared to $39,449,055 in 1978 (6). These increases indicate the importance of swine production in the state of Tennessee.

Extension through the years has been involved in this growth by assisting producers to become more aware of the needs to adopt recommended practices which help to increase the efficiency of swine production. This study was concerned with the extent to which swine producers in Tennessee were following 25 recommended swine production practices as well as the extent to which swine producers had been in contact with the county

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*Numbers in parentheses refer to alphabetically numbered references in the Bibliography; those after the colon are page numbers.

Extension agents. Furthermore, the relationship between contacts and practice use was a concern of the study.

II. NEED FOR THE STUDY

Swine production in the state of Tennessee is just one of the major fields of agricultural production in which Extension agents provide educational information. Since Extension agents have limited time to devote to any one area, it is important that the Extension program focus upon the critical swine production practices that are most needed to improve the efficiency of their swine operation.

It was felt that a study was needed to determine the characteristics of the Tennessee swine producers' farming operations, the numbers of contacts they had with Extension, their use of recommended swine production practices, and the relationship between the number of contacts producers had with Extension and their use of recommended practices.

This information was needed to help Extension better plan its programs to meet the critical needs of the swine producers.

III. PURPOSE OF THE STUDY

The main purpose of this study, then, was to determine the characteristics of the swine producers' farming operations, the number of contacts they had with Extension, their use of recommended swine production practices, and the relationship between the number of Extension contacts and their use of recommended swine production practices.

The specific objectives of this study were:

1. To characterize the swine producers as to the size of their farming operation, the extent to which they were using swine production practices, and the number of contacts they had with Extension.

2. To determine the extent to which the swine producers were using recommended swine production practices.

3. To determine the relationship between the number of contacts swine producers had with Extension and their use of selected size of operation and production efficiency variables.

4. To determine the relationship between the number of contacts swine producers had with Extension and their use of recommended swine production practices.

IV. RELATED STUDIES

Very little information was available on general farm characteristics as related to the number of contacts producers had with Extension agents or the relationship between the adoption of recommended production practices and Extension contacts. However, available studies are reported under the following headings: (1) relationship between personal characteristics of the farming operation and Extension contacts, (2) relationship between farm characteristics of the farming operation and Extension contacts, (3) relationship between personal characteristics of the farming operation and the use of recommended practices, and (4) relationship between Extension contacts and the use of recommended practices.

Relationship between Personal Characteristics of the Farming Operation and Extension Contacts

Arnett (1), Extension Agent in Wilson County, Tennessee, found in his study conducted in 1973 that the number of office visits was significantly related to the educational level of the 203 farmers who visited the county Extension office at least once over a 3-year period. Farmers who had attended high school or college tended to have made more visits to the Extension office than had those completing fewer grades.

Freeman (2) in his 1978 study of Grade A dairy producers in Tennessee found that the educational level of farm operator was significantly related to the number of office visits made to the Extension office over a 12-month period. The more educated farmers had made significantly more office visits to the Extension office than those less educated.

Relationship between Farm Characteristics of the Farming Operation and Extension Contacts

Wilson and Gallup found in their classic nationwide study that the average County Agricultural Extension Agent makes approximately 400 farm or home visits for all purposes each year. They also found that the average County Extension Agent handles between 900 and 1,000 office visits and 893 telephone calls a year (8:33-38).

In Arnett's (1) study, the number of visits and telephone calls to the Extension office were significantly related to the number of Extension meetings attended. Those who attended a larger number of Extension meetings tended to have made more visits and more telephone

calls to the Extension office than had those not attending Extension meetings.

In Haywood County, Tennessee, Gordon (3) found in his study of feeder pig producers that source of income, farming situation, and major source of farm income were not significantly related to the number of Extension contacts. However, the producers who planned to increase the size of their operation were significantly related to the number of Extension and swine meetings attended and telephone calls they made to the Extension office. Thus, the producers who had plans to increase the size of their operation attended more Extension and swine meetings and telephoned the Extension office more times than those producers who were not expanding.

Jenkins (4) found in his 1977 study of soybean producers in Fayette County, Tennessee, that the producers' major occupation was not significantly related to the number of soybean meetings attended, office visits and telephone calls made to the Extension office, and farm visits received from Extension agents. However, the producers' major occupation was significantly related to the total number of Extension meetings attended. He also found that the major source of income was not significantly related to the number of Extension and soybean meetings attended, office visits and telephone calls made to the Extension office, or farm visits received from Extension agents.

Relationship between Personal Characteristics of the Farming Operation and the Use of Recommended Practices

Wilson and Gallup found in their study that the age of farmers was not significantly related to their use of recommended production

practices. They also found that farmers with some college training showed a somewhat higher use of recommended practices (6% difference) than those with just a high school education. In this same study, the size of the farm was significantly related to the use of recommended practices. The farmers with large farms were using a significantly higher number of recommended practices than those with smaller farms. Whether the family owned or rented the farm on which they lived seemed to have little effect upon their use of recommended practices. They further found that farmers higher on the socioeconomic scale used a significantly higher number of recommended practices (15% more) than those farmers on the lower scale (8:22-25).

Relationship between Extension Contacts and the Use of Recommended Practices

Gordon (3) found that the number of contacts producers had with Extension in Haywood County was significantly related to their use of 5 of the 21 recommended swine production practices. The producers using the recommended practices made a significantly larger number of contacts with Extension than those producers not using these practices.

In Fayette County, Jenkins (4) found that soybean producers who fertilized and limed either part or all of their soybean land by soil test reported attending on an average significantly more total Extension meetings and more Extension soybean meetings than did those who did not use the practice.

Freeman (2) found in his statewide study that the total number of recommended dairy practices used by farmers was significantly related

to the number of Extension office visits they made and the number of group meetings they attended. Farmers who used more of the total number of recommended dairy practices were making significantly more office visits and attending significantly more Extension group meetings than those farmers who used fewer of the total number of recommended dairy practices.

V. LIMITATIONS OF THE STUDY

This study was limited to data collected from 897 swine producers in 57 counties in the state of Tennessee for 1975 production. Twenty swine producers were randomly selected in each county and interviewed by the county Extension leaders. However, in 18 Extension District I counties (see Appendix), there were only 10 swine producers per county that were interviewed.

VI. METHOD OF INVESTIGATION

Source of Data

The data for this study were collected from 897 Tennessee swine producers who were randomly selected in the 57 counties for which data were available (see Appendix).

An interview survey schedule was developed by The University of Tennessee Agricultural Extension Specialists and mailed to the Extension leaders in the spring of 1976. The "nth" number method of sampling was used to select the producers to be interviewed in the counties. A personal interview was scheduled between the Extension leader and swine

producer, and information was recorded on the interview schedule and returned to the Agricultural Extension Education office upon completion.

Method of Analysis

The data were coded and punched on computer cards. Computations were made by The University of Tennessee Computing Center. The analysis of variance F test was used to determine the strength of relationship between the dependent and independent variables. F values which achieved the .05 probability level were accepted as indicating a significant relationship between dependent and independent variables. The means, lows, highs, numbers, and percentages were computed and given for the variables where appropriate.

Variables for the study were classified into dependent and independent variables. The five independent variables were the number of contacts swine producers had with Extension (e.g., Extension and swine meetings attended, office visits and telephone calls made to the Extension office, and farm visits received from Extension agents). The four groups of dependent variables were the characteristics of the swine producers' farming operation, use of recommended swine production practices, use of selected swine breeding variables, and the use of recommended swine management practices. Some variables were used both as dependent in one table and independent in another table.

VII. DEFINITION OF TERMS

Extension Contact. The number of Extension meetings attended, number of telephone calls, number of office visits made to the County

Extension office, or the number of farm visits received by the swine producer during the past 12 months.

Practice. A research verified and commonly accepted procedure or task which, if performed correctly and on a regular basis, will increase or help insure a desired outcome or return.

Swine Producers. Individuals making all or part of their farming income from the production of swine for sale. They constitute the target audience considered in this study.

CHAPTER II

STUDY FINDINGS

The findings of this study were organized into four tables with each table constituting a section. Selected variables were discussed under subheadings within a section.

Section I presents findings regarding the characteristics of swine producers and their farming operations.

Section II presents findings regarding the numbers and percents of swine producers using each recommended swine production practice.

Section III presents findings regarding the relationship between size of swine operation variables (e.g., number of females farrowing twice last year, number of pigs raised to weaning last year, and the average weight of pigs in pounds at 8 weeks of age) and the number of contacts (e.g., meetings, office visits, telephone calls, farm visits, and total extension contacts) swine producers had with Extension agents over a 12-month period.

Section IV presents findings regarding the relationship between recommended swine management practices (e.g., replacing herd sows) and the number of contacts swine producers had with Extension over a 12-month period.

I. CHARACTERISTICS OF SWINE PRODUCERS AND THEIR FARM OPERATION

Table 1 presents 18 quantitative variables which tend to characterize the swine producers and their farm operations. In all cases

Table 1. Characteristics of Swine Producers and Their Farm Operations

Name of Variable	Number of Producers (N = 897)	Percent of Producers
Number of sows bred once last year		
Not any	424	47.3
1-10	364	40.6
11-20	68	7.6
21-over	41	4.5
Mean = 9.3 Low = 1.0 High = 120.0		
Number of sows bred twice last year		
Not any	68	7.6
1-10	534	59.5
11-20	176	19.6
21-50	83	9.3
51-over	36	4.0
Mean = 14.2 Low = 1.0 High = 400.0		
Number of sows farrowed once last year		
Not any	370	41.2
1-10	421	47.0
11-20	71	7.9
21-over	35	3.9
Mean = 8.2 Low = 1.0 High = 115.0		
Number of sows farrowed twice last year		
Not any	71	7.9
1-10	545	60.7
11-20	170	19.0
21-over	111	12.4
Mean = 13.3 Low = 1.0 High = 390.0		
Number of pigs weaned last year		
Not any	2	0.2
1-60	184	20.5
61-120	288	32.1
121-180	153	17.1
181-over	270	30.1
Mean = 192.1 Low = 4.0 High = 3600.0		

Table 1, continued

Name of Variable	Number of Producers (N = 897)	Percent of Producers
Average weight of pigs 8 weeks of age (in pounds)		
Not any	22	2.5
25-34	70	7.8
35-39	226	25.2
40-44	356	39.7
45-over	223	24.8
Mean = 40.3 Low = 25.0 High = 60.0		
Number of pigs marketed as feeders		
Not any	145	16.2
3-40	152	17.0
41-90	238	26.5
91-200	219	24.4
201-over	143	15.9
Mean = 141.0 Low = 3.0 High = 1695.0		
Number of pigs marketed for slaughter		
Not any	416	46.4
1-10	172	19.2
11-70	123	13.7
72-over	186	20.7
Mean = 127.0 Low = 1.0 High = 3000.0		
Number of pigs marketed through feeder pig sales		
Not any	200	22.3
5-74	103	11.5
75-99	129	14.4
100-over	465	41.8
Mean = 92.9 Low = 5.0 High = 620.0		
Number of pigs marketed through contracts		
Not any	887	98.9
5-over	10	1.1
Mean = 52.8 Low = 5.0 High = 100.0		

Table 1, continued

Name of Variable	Number of Producers (N = 897)	Percent of Producers
Number of pigs marketed through trade		
Not any	787	87.7
2-19	32	3.6
20-99	48	5.4
100-over	30	3.3
Mean = 50.3 Low = 2.0 High = 172.0		
Number of swine production practices used		
1-10	140	15.6
11-20	572	63.8
21-over	185	20.6
Mean = 16.0 Low = 1.0 High = 25.0		
Number of Extension meetings attended		
Not any	422	47.0
1-2	303	33.8
3-12	172	19.2
Mean = 1.4 Low = 0.0 High = 12.0		
Number of Extension meetings attended on swine		
Not any	526	58.6
1	245	27.3
2-6	126	14.1
Mean = 0.62 Low = 0.0 High = 6.0		
Number of visits to Extension office		
Not any	175	19.5
1-3	469	52.3
4-10	227	25.3
11-over	26	2.9
Mean = 3.1 Low = 0.0 High = 50.0		

Table 1, continued

Name of Variable	Number of Producers (N = 897)	Percent of Producers
Number of telephone calls to Extension office		
Not any	157	17.5
1-4	458	51.0
5-12	249	27.8
13-68	32	3.6
No response	1	.1
Mean = 4.1 Low = 0.0 High = 99.0		
Number of farm visits by Extension agents		
Not any	197	22.0
1-3	467	52.1
4-12	212	23.6
13-over	21	2.3
Mean = 2.85 Low = 0.0 High = 30.0		
Total number of Extension contacts		
Not any	52	5.8
1-5	231	25.7
6-20	478	53.3
21-over	136	15.2
Mean = 12.1 Low = 0.0 High = 121.0		

the number of producers equals 897. The mean, low, and high are given for each variable. Variables were also analyzed as to percents of producers by selected categories.

Number of Sows Bred Once Last Year

Table 1 shows that 47.3% of the 897 producers surveyed did not have any sows bred only once in 1975. The producers who bred from 1 to 10 sows totaled 40.6%, while only 12.1% bred 11 or more sows last year. The mean number of sows bred once last year was 9.3 with a low of 1 and a high of 120 females.

Number of Sows Bred Twice Last Year

There were 59.5% of the producers who bred from 1 to 10 sows twice in 1975. There was another 19.6% that bred 11 to 20 sows and 9.3% that bred 21 to 50 sows twice. Only 7.6% of the producers did not breed any females twice last year. It was interesting to note that only 4% of the producers bred from 51 to 400 sows twice in 1975.

Number of Sows Farrowed Once Last Year

A group of 41.2% of the farmers stated that they did not have any sows to farrow only once last year. Forty-seven percent had from 1 to 10 sows to farrow once, and 11.8% had 11 or more sows to farrow once. The mean number of sows farrowed once was 8.2 with a low of 1 and a high of 115 sows.

Number of Sows Farrowed Twice Last Year

Almost two-thirds (60.7%) of the producers reported having from 1 to 10 sows to farrow twice. Nineteen percent had from 11 to 20 sows, and

12.4% had 21 or more sows to farrow twice. Only 7.9% stated they did not have any sows to farrow twice last year. The mean number of sows farrowed twice was 13.3 with a low of 1 and a high of 390.

Number of Pigs Weaned Last Year

The number of pigs weaned last year by all producers ranged from a low of 4 pigs to a high of 3,600 pigs. The mean number weaned was 192.1 pigs. A total of 20.5% of the producers weaned between 1 to 60 pigs. Another 32.1% weaned from 61 to 120 pigs, and 17.1% had 121 to 180 pigs weaned. It was interesting to note that 30.1% of the producers had from 181 to 3,600 pigs weaned last year.

Average Weight of Pigs at 8 Weeks of Age

The weight of pigs ranged from a low of 25 pounds to a high of 60 pounds with a mean weight of 40.3 pounds for all producers. About 40% of the producers had pigs that averaged from 40 to 44 pounds at 8 weeks of age, 25.2% ranged from 35 to 39 pounds, and 24.8% averaged 45 to 60 pounds.

Number of Pigs Marketed as Feeders

The mean number of pigs marketed as feeders was 141 with a low of 3 and a high of 1,695. Seventeen percent of the producers had from 3 to 40 pigs, 26.5% had 41 to 90 pigs, 24.4% had 91 to 200 pigs, and 15.9% marketed over 200 pigs as feeders. Another 16.2% of the producers did not market any pigs as feeders in 1975.

Number of Pigs Marketed for Slaughter

The mean number of pigs marketed for slaughter was 127 pigs with

a low of 1 and a high of 3,000. There were 46.4% that did not market any pigs for slaughter in 1975. This high percentage not marketed for slaughter assumes that the producers marketed their pigs through a feeder pig sale, contracts, trade, or as feeders.

Number of Pigs Marketed through Feeder Pig Sale

About 52% of the producers sold over 100 pigs through local feeder pig sales in 1975. There were 22.3% that marketed their pigs by some other means other than through feeder pig sales. The mean number marketed through feeder pig sales was 92.9 pigs with a low of 5 and a high of 620 pigs.

Number of Pigs Marketed through Contracts

Eight hundred and eighty-seven of the 897 producers surveyed or 98.9% said that they did not contract any pigs in 1975. The mean number marketed through contracts was 52.8 with a low of 5 and a high of 100 pigs.

Number of Pigs Marketed through Trade

A high percent (87.7) of the producers used some market outlet other than trade to sell their pigs. The mean number of pigs sold this way was 50.3 with a low of 2 and a high of 172 pigs.

Number of Swine Production Practices Used

The number of swine production practices used ranged from a low of 1 to a high of 25. The mean number of practices used was 16. There were 63.8% of the producers that used 11 to 20 practices and 15.6% that used 1 to 10 practices in 1975. The remaining 20.6% used 21 to 25 practices.

Number of Extension Meetings Attended

Forty-seven percent of the swine producers did not attend any extension meetings while 33.8% said they attended at least two meetings. All producers attended an average of 1.4 Extension meetings over a 12-month period.

Number of Extension Meetings Attended on Swine

Over half (58.6%) of the producers did not attend any Extension swine meetings in 1975. However, the number of swine meetings attended ranged from a low of 1 to a high of 6 meetings. The mean number of Extension swine meetings attended by all producers was 0.62.

Number of Visits to Extension Office

There were 52.3% of the producers that visited the Extension office 1 to 3 times for various reasons. Another 25.3% visited the office 4 to 10 times for information. Only 19.5% did not visit the office at all for information. Twenty-six producers or only 2.9% came to the office 11 or more times. The mean was 3.1 with a low of 0 and a high of 50 visits.

Number of Telephone Calls to Extension Office

Fifty-one percent of the producers surveyed call the Extension office 1 to 4 times for information. Another 27.8% telephoned the office 5 to 12 times, and 3.6% indicated they called 13 to 68 times for information. There were 17.5% that did not call the county Extension office in 1975. The mean in this case was 4.1, the low 0, and the high 99.

Number of Farm Visits by Extension Agents

There were 52.1% of the producers visited by Extension agents from 1 to 3 times over a 12-month period. Twenty-two percent did not receive any farm visits from Extension agents. Another 23.6% received 4 to 12 farm visits, and only 2.3% were visited 13 or more times. The mean number of visits received by all producers was 2.85 with a low of 0 to a high of 30 visits.

Total Number of Extension Contacts

The mean number of contacts all producers had with Extension over a 12-month period was 12.1 with a low of 0 to a high of 121 contacts. Over half (53.3%) of the producers had from 6 to 20 contacts in 1975. It was interesting to note that only 5.8% of the producers did not have any contacts with Extension in 1975.

II. USE OF RECOMMENDED SWINE PRODUCTION PRACTICES

Table 2 presents data regarding swine producers' use of 25 recommended swine production practices in 1975. The number of producers responding is reported for each practice. Over half (54.7%) of the producers were full-time farmers, and 93.4% of them owned their farms.

Used Recommended Procedures for Replacing Herd Sows

Six hundred and seventy-eight or 76.1% of the producers used recommended procedures for replacing herd sows. The other 23.9% did not use the recommended procedures.

Table 2. Use of Recommended Swine Production Practices

Recommended Production Practice	Number of Producers*	Percent of Producers
Used recommended procedures for replacing herd sows		
Yes	678	76.1
No	213	23.9
Total	891	100.0
Used recommended procedures for replacing herd sires		
Yes	619	69.6
No	217	30.4
Total	890	100.0
Used crossbreeding program		
Yes	673	76.6
No	206	23.4
Total	879	100.0
Sows vaccinated for Leptospirosis		
Yes	332	37.2*
No	560	62.8
Total	892	100.0
Gilts bred at 8 months and about 250 pounds		
Yes	746	83.7
No	145	16.3
Total	891	100.0
Feeding practices used for pregnant females on pasture		
Yes	656	74.0
No	231	26.0
Total	887	100.0

Table 2, continued

Recommended Production Practice	Number of Producers*	Percent of Producers
Feeding practices used for pregnant females off pasture		
Yes	614	70.5
No	257	29.5
Total	871	100.0
Farrowing facilities adequate		
Yes	462	51.7
No	432	48.3*
Total	894	100.0
Hogs, other than those farrowing, kept out of farrowing house		
Yes	706	78.9
No	189	21.1
Total	895	100.0
Sows wormed 3-14 days before due to farrow		
Yes	388	43.3*
No	508	56.7
Total	896	100.0
Sows brought into farrowing house 3 days before they were due to farrow		
Yes	701	78.2
No	195	21.8
Total	896	100.0
Sows washed before entering farrowing house		
Yes	172	19.2*
No	724	80.8
Total	896	100.0

Table 2, continued

Recommended Production Practice	Number of Producers*	Percent of Producers
Sows' feed changed when entering farrowing to 3 days after farrowing		
Yes	632	70.5
No	264	29.5
Total	896	100.0
When born, were pigs dried off, nostrils cleaned, and help provided in nursing		
Yes	555	61.9
No	342	38.9
Total	897	100.0
Needle teeth clipped the first 24-28 hours		
Yes	493	55.0*
No	404	45.0
Total	897	100.0
Tails docked the first 24-48 hours		
Yes	585	66.0
No	302	34.0
Total	887	100.0
After farrowing, was sows' feed gradually increased		
Yes	672	74.9
No	225	25.1
Total	897	100.0
Methods used to prevent pig anemia		
Yes	628	70.0
No	269	30.0
Total	897	100.0

Table 2, continued

Recommended Production Practice	Number of Producers*	Percent of Producers
Creep feed provided to pigs from 2 weeks of age through weaning		
Yes	789	88.0
No	108	12.0
Total	897	100.0
Farrowing house kept well ventilated, cleaned, and dry		
Yes	679	76.0
No	214	24.0
Total	893	100.0
Pigs systematically identified soon after birth		
Yes	78	8.7*
No	819	91.3
Total	897	100.0
Pigs castrated before 4 weeks of age		
Yes	733	81.7
No	164	18.3
Total	897	100.0
Lifetime sow records kept		
Yes	158	17.6*
No	739	82.4
Total	897	100.0
Farrowing house cleaned and disinfected after sows were removed		
Yes	431	48.1*
No	465	51.9
Total	896	100.0

Table 2, continued

Recommended Production Practice	Number of Producers*	Percent of Producers
Disease break provided between cleaning and farrowing again		
Yes	568	63.4
No	328	36.6
Total	896	100.0

*Practices with less than 60% using are considered "weak" practices and are pulled out for special emphasis in educational programs.

Used Recommended Procedures for Replacing Herd Sires

There were 69.6% of the 890 surveyed that used recommended procedures for replacing herd sires. The remaining 30.4% did not use the recommended procedures.

Used Crossbreeding Program

A crossbreeding program was used by 76.6% of the producers. Some other breeding program was used by 23.4%.

Sows Vaccinated for Leptospirosis

About 63% of the producers did not vaccinate their sows for Leptospirosis in 1975. The other 37.2% of the producers did use this production practice.

Gilts Bred at 8 Months and about 250 Pounds

Most swine producers were breeding their gilts at the recommended age and weight. Only 145 producers or 16.3% did not breed their gilts at 8 months and about 250 pounds.

Feeding Practices Used for Pregnant Females on Pasture

Seventy-four percent or 656 of the producers surveyed used recommended feeding practices for pregnant females on pasture. Twenty-six percent or 231 producers did not use the recommended feeding practices.

Feeding Practices Used for Pregnant Females off Pasture

There were 70.5% that used recommended feeding practices for pregnant females not on pasture. The remaining 29.5% did not use this practice.

Farrowing Facilities Adequate

Farrowing facilities were considered adequate for 51.7% of the producers. The other 48.3% did not have adequate facilities for farrowing.

Hogs, Other than Those Farrowing, Kept Out of Farrowing House

About 21% of the producers had hogs, other than those farrowing, in the farrowing facilities. The remaining 78.9% did keep hogs other than those farrowing out of the farrowing house.

Sows Wormed 3-14 Days Before Due to Farrow

About 57% of the producers did not worm their sows 3-14 days before farrowing. The remaining 43.3% did practice this procedure.

Sows Brought into Farrowing House 3 Days Before They Were Due to Farrow

The producers that brought sows into farrowing house 3 days before they were due to farrow made up 78.2% of the producers. The remaining 21.8% did not use this recommended practice in 1975.

Sows Washed Before Entering Farrowing House

Seven hundred and twenty-four or 80.8% of the producers did not wash their sows before entering the farrowing house. Only 19.2% of the producers followed this practice in 1975.

Sows' Feed Changed When Entering Farrowing to 3 Days After Farrowing

The feed was changed by 70.5% of the producers when entering sows in the farrowing house. The remaining 29.5% used some other feeding practice in 1975.

When Born, Were Pigs Dried Off, Nostrils Cleaned, and Help Provided in Nursing

About 38% of the producers did not take adequate care of pigs at birth in 1975.

Needle Teeth Clipped the First 24-28 Hours

Fifty-five percent of the producers clipped their baby pigs' needle teeth the first 24-28 hours following birth. The remaining 45% clipped the pigs' teeth at some time other than what was recommended if they were clipped.

Tails Docked the First 24-48 Hours

Sixty-six percent of the producers docked their pigs' tails the first 24-48 hours after birth. Thirty-four percent of the producers docked their pigs' tails at some time other than what was recommended if they were in fact docked.

After Farrowing, Was Sows' Feed Gradually Increased

The sows' feed was gradually increased after farrowing by 74.9% of the producers. Some other practice was used for the remaining 25.1% of the producers.

Methods Used to Prevent Pig Anemia

Methods were used by 70% of the producers to prevent baby pig anemia. The remaining 30% did not use any method to prevent pig anemia.

Creep Feed Provided to Pigs From 2 Weeks of Age through Weaning

Eighty-eight percent of the producers provided a creep feed ration to the baby pigs from 2 weeks of age through weaning. Only 12% did not follow this practice in 1975.

Farrowing House Kept Well Ventilated, Cleaned, and Dry

About 76% of the producers kept their farrowing house well ventilated, clean, and dry. Twenty-four percent failed to use this recommended practice.

Pigs Systematically Identified Soon After Birth

Identifying the pigs systematically soon after birth was not practiced by most of the swine producers. Only 8.7% said they used this practice.

Pigs Castrated Before 4 Weeks of Age

Pigs were castrated before they were 4 weeks of age by about 82% of the producers. The other 18.3% were kept for boars or castrated later than recommended.

Lifetime Sow Records Kept

Sow records were kept by 17.6% of the swine producers surveyed. Most of the producers (82.4%) did not keep lifetime records on their sows.

Farrowing House Cleaned and Disinfected After Sows Were Removed

The farrowing house was cleaned and disinfected after the sows were removed by 48.1% of the producers in 1975. The other half or 51.9% neglected this practice.

Disease Break Provided between Cleaning and Farrowing Again

A disease break was provided by 63.4% of the producers surveyed. The remaining 36.6% did not provide this break.

III. RELATIONSHIPS BETWEEN THE NUMBER OF CONTACTS PRODUCERS HAD WITH EXTENSION AGENTS AND SELECTED VARIABLES REGARDING SIZE OF SWINE OPERATION AND THE AVERAGE WEIGHT OF PIGS AT 8 WEEKS OF AGE

Table 3 presents data regarding the relationships between the number of contacts producers had with Extension agents over a 12-month period and two variables regarding the size of the producers' swine operation and one variable regarding the average weight of pigs produced at 8 weeks of age. Extension contacts were used as dependent variables in this table. Five contact variables were analyzed: (1) total number of Extension meetings attended, (2) number of Extension meetings on swine production attended during the last 12 months, (3) number of visits producers made to the Extension office, (4) number of telephone calls producers made to the Extension office, and (5) number of farm visits producers received from Extension agents during the 12 months prior to conducting the survey. The other contact variable pertained to the total number of contacts of all types that producers had over a 12-month period with county Extension agents.

The three independent variables included in Table 3 were: (1) number of females farrowed twice over the previous 12-month period, (2) number of pigs raised to weaning during the previous 12 months, and (3) average weight of pigs at 8 weeks of age. The major purpose of this table was to show the relationship between the size of producers' operation and the number of contacts they had with Extension agents. The

Table 3. Relationships between the Number of Contacts Producers Had with Extension Agents and Selected Variables Regarding Size of Swine Operation and the Average Weight of Pigs at 8 Weeks of Age

Number of Ext. Contacts	No. Females Farrowed Twice Last Year			No. Pigs Raised to Weaning Last Year			Wt. of Pigs at 8 Weeks of Age		
	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean
Ext. Meetings Attended									
0	381	46.1	10.3	422	47.1	146.1	412	47.1	40.1
1	149	18.0	12.7	160	17.9	188.2	153	17.5	39.9
2	132	16.0	14.8	141	15.7	218.2	141	16.1	40.1
3	62	7.5	16.4	65	7.3	244.7	63	7.2	41.1
4	32	3.9	33.2	33	3.7	425.5	33	3.8	42.2
5	18	2.2	14.2	19	2.1	266.6	19	2.2	41.5
6	21	2.5	14.1	24	2.7	214.2	24	2.7	39.8
7	10	1.2	15.7	10	1.1	245.7	10	1.1	43.5
8	9	1.1	23.8	9	1.0	396.4	9	1.0	40.8
10	6	.7	20.3	6	.7	401.2	5	.6	40.4
11	2	.2	10.5	2	.2	187.5	2	.2	36.0
12	4	.5	10.7	4	.4	122.7	4	.5	39.0
Total	826		13.3	895		192.1	875		40.3
Amt. Variance	$F = 3.9$	$p < .05$		$F = 5.2$	$p < .05$		$F = 1.3$	$p > .05$	
Ext. Meetings Attended on Swine									
0	472	57.1	10.3	525	58.7	148.0	515	58.9	40.0
1	234	28.3	15.1	244	27.3	222.5	236	27.0	40.0
2	85	10.3	24.0	90	10.1	340.1	90	10.3	42.5
3	24	2.9	15.4	25	2.8	249.3	23	2.6	41.2
4	4	.5	14.7	4	.4	255.7	4	.5	42.5
5	3	.4	22.3	3	.3	398.7	3	.3	43.3
6	4	.5	15.2	4	.4	230.7	4	.5	38.5
Total	826		13.3	895		192.1	895		40.3
Amt. Variance	$F = 5.9$	$p < .05$		$F = 8.7$	$p < .05$		$F = 3.7$	$p < .05$	
Visits to Ext. Office									
0	154	18.6	9.5	174	19.5	135.8	163	18.6	38.8
1	155	18.8	12.5	167	18.7	176.1	161	18.4	40.6
2	169	20.5	13.3	182	20.4	194.7	182	20.8	40.6
3	111	13.4	12.6	120	13.4	198.9	119	13.6	40.8
4	60	7.3	13.8	68	7.6	201.6	66	7.5	40.6
5	42	5.1	12.1	45	5.0	195.1	45	5.1	40.3
6	49	5.9	23.7	49	5.5	294.2	50	5.7	39.8

Table 3, continued

Number of Ext. Contacts	No. Females Farrowed Twice Last Year: No. Resp.	% Resp.	Mean	No. Pigs Raised to Weaning Last Year: No. Resp.	% Resp.	Mean	Wt. of Pigs at 8 Weeks of Age: No. Resp.	% Resp.	Mean
Visits to Ext. Office									
7	8	1.0	9.1	8	.9	181.2	8	.9	37.0
8	31	3.7	23.7	31	.3	341.5	30	3.4	41.7
9	12	1.4	19.2	14	1.6	300.0	14	1.6	40.3
10	10	1.2	9.7	11	1.2	149.9	11	1.3	42.8
11	3	.4	5.7	3	.3	109.0	3	.3	42.0
12	6	.7	11.5	6	.7	189.2	6	.7	43.5
15	6	.7	10.7	6	.7	138.8	6	.7	42.3
16	1	.1	3.0	1	.1	52.0	1	.1	25.0
20	3	.4	13.7	3	.3	175.0	3	.3	38.3
22	2	.2	35.5	2	.2	706.0	2	.2	41.0
36	1	.1	9.0	1	.1	164.0	1	.1	36.0
50	3	.4	11.7	3	.3	120.7	3	.3	41.7
Total	826		13.3	894		192.1	874		40.3
Amt. Variance	$F = 1.7$	$p < .05$		$F = 2.0$	$p < .05$		$F = 2.1$	$p < .05$	
Telephone Call to Ext. Office									
0	139	16.8	9.5	157	17.6	135.1	147	16.8	39.6
1	92	11.1	10.8	103	11.5	139.6	96	11.0	40.7
2	149	18.1	11.2	155	17.3	181.4	154	17.6	39.6
3	103	12.5	12.5	113	12.6	189.2	112	12.8	40.2
4	81	9.8	12.1	86	9.6	181.0	85	9.7	40.8
5	51	6.2	12.5	54	6.0	182.4	54	6.2	40.6
6	64	7.8	15.6	72	8.0	203.9	72	8.2	40.9
7	20	2.4	13.6	23	2.6	197.8	23	2.6	41.7
8	31	3.8	22.4	34	3.8	341.3	34	3.9	40.1
9	22	2.7	21.1	22	2.5	407.7	22	2.5	40.7
10	20	2.4	15.3	20	2.2	236.1	20	2.3	39.2
11	5	.6	9.6	5	.6	137.4	5	.6	40.0
12	18	2.2	21.9	19	2.1	276.4	18	2.1	42.7
13	1	.1	12.0	1	.1	290.0	1	.1	38.0
14	2	.2	13.0	3	.3	187.7	3	.3	39.7
15	8	1.0	23.7	9	1.0	349.1	9	1.0	41.6
16	2	.2	204.0	2	1.0	1982.5	2	.2	37.5
18	1	.1	15.0	1	.1	282.0	1	.1	45.0
20	8	1.0	17.0	7	.8	184.7	8	.9	39.6
22	1	.1	5.0	1	.1	231.0	1	.1	35.0
24	1	.1	5.0	1	.1	120.0	1	.1	40.0
25	2	.2	13.5	2	.2	197.0	2	.2	40.0
26	2	.2	16.0	2	.2	132.5	2	.2	45.0

Table 3, continued

Number of Ext. Contacts	No. Females Farrowed Twice Last Year			No. Pigs Raised to Weaning Last Year			Wt. of Pigs at 8 Weeks of Age		
	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean
Telephone Call to Ext. Office									
35	1	.1	2.0	1	.1	64.0	1	.1	40.0
68	1	.1	10.0	1	.1	30.0	1	.1	35.0
Total	825		13.3	894		192.1	875		40.3
Amt. Variance	$F = 9.4$	$p < .05$		$F = 6.3$	$p < .05$		$F = .08$	$p > .05$	
Farm Visits From Ext. Agents									
0	174	21.1	8.9	197	22.0	123.8	185	21.1	39.1
1	195	23.6	9.6	208	23.2	143.6	202	23.1	40.6
2	145	17.5	14.8	156	17.4	215.8	155	17.7	41.2
3	95	11.5	13.1	103	11.5	189.2	103	11.8	41.1
4	50	6.0	19.0	55	6.1	224.0	55	6.3	39.4
5	38	4.6	12.5	39	4.4	213.9	39	4.5	40.7
6	44	5.3	14.9	44	4.9	220.8	43	4.9	39.3
7	13	1.6	17.8	14	1.6	332.2	15	1.7	43.1
8	20	2.4	19.4	22	2.5	281.2	21	2.4	41.4
9	1	.1	19.0	3	.3	168.0	3	.3	35.7
10	15	1.8	24.9	15	1.7	325.5	15	1.7	39.6
11	2	.2	7.0	2	.2	207.5	2	.2	39.0
12	15	1.8	56.3	16	.3	662.2	16	1.8	38.9
13	2	.2	7.0	2	.6	112.0	2	.2	39.0
14	2	.2	9.0	3	.1	90.3	3	.3	39.7
15	5	.6	35.6	5	.2	571.6	5	.6	39.8
16	1	.1	20.0	1	.6	380.0	1	.1	45.0
18	2	.2	25.0	2	.1	372.5	2	.2	35.0
20	4	.5	39.7	5	.1	430.4	5	.6	39.0
24	1	.1	5.0	5	.1	120.0	1	.1	40.0
25	1	.1	10.0	1		130.0	1	.1	40.0
30	1	.1	3.0	1		52.0	1	.1	25.0
Total	826		13.3	895		192.1	875		40.3
Amt. Variance	$F = 5.1$	$p < .05$		$F = 5.3$	$p < .05$		$F = 2.1$	$p < .05$	
Total No. Ext. Contacts									
0	44	5.3	8.5	52	5.8	116.8	46	5.3	38.6
1	27	3.3	7.7	31	3.5	103.9	30	3.4	39.5
2	34	4.1	7.3	39	4.4	89.1	38	4.3	40.2

Table 3, continued

Number of Ext. Contacts	No. Females Farrowed Twice Last Year			No. Pigs Raised to Weaning Last Year			Wt. of Pigs at 8 Weeks of Age		
	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean
Total No. Ext. Contacts									
3	54	6.5	8.5	59	6.6	132.5	56	6.4	39.3
4	49	5.9	9.5	51	5.7	140.6	48	5.5	40.2
5	47	5.7	10.3	51	5.7	144.3	49	5.6	39.7
6	48	5.8	9.4	54	6.0	147.9	53	6.1	39.4
7	42	5.1	9.2	46	5.1	133.3	45	5.1	41.0
8	52	5.6	15.5	55	6.1	230.1	54	6.2	41.9
9	42	5.1	11.2	46	5.1	153.6	46	5.3	41.1
10	38	4.6	15.8	42	4.7	249.0	42	4.8	40.5
11	30	3.6	14.3	30	3.3	268.5	31	3.5	41.0
12	26	3.1	14.6	30	3.3	188.7	30	3.4	39.5
13	25	3.0	11.6	26	2.9	187.3	25	2.9	38.5
14	25	3.0	10.3	27	3.0	145.7	27	3.1	41.4
15	21	2.5	14.9	23	2.6	198.5	23	2.6	39.5
16	28	3.4	13.2	28	3.1	230.8	28	3.2	40.5
17	16	1.9	14.0	17	1.9	215.7	16	1.8	38.6
18	17	2.1	12.4	18	2.0	188.2	18	2.1	40.6
19	17	2.1	20.1	20	2.2	253.9	20	2.3	42.5
20	14	1.7	14.6	15	1.7	261.0	15	1.7	42.5
21	8	1.0	6.4	8	.9	108.9	8	.9	41.0
22	8	1.0	38.5	9	1.0	392.3	9	1.0	41.3
23	8	1.0	8.9	8	.9	151.2	8	.9	40.5
24	9	1.1	39.7	9	1.0	547.2	9	1.0	43.1
25	9	1.1	13.8	9	1.0	213.9	9	1.0	38.3
26	4	.5	27.2	4	.4	331.0	4	.5	43.0
27	4	.5	5.5	5	.6	88.0	5	.6	40.4
28	7	.8	17.9	7	.8	269.0	7	.8	41.1
29	3	.4	14.0	3	.3	216.0	3	.3	37.3
30	7	.8	19.6	7	.8	325.1	7	.8	40.6
31	2	.2	33.5	2	.2	595.0	2	.2	37.5
32	3	.4	29.7	3	.3	501.3	3	.3	41.3
33	3	.4	30.7	4	.4	415.0	4	.5	36.0
34	9	1.1	22.8	8	.9	273.4	9	1.0	45.1
35	3	.4	26.3	4	.4	269.2	4	.5	38.0
36	9	1.1	19.6	10	1.1	312.9	10	1.1	42.1
37	5	.6	19.6	5	.6	399.6	5	.6	37.2
39	3	.4	11.3	3	.3	208.3	2	.2	44.0
40	1	.1	390.0	1	.1	3600.0	1	.1	40.0
41	2	.2	17.5	2	.2	331.0	2	.2	45.0
42	4	.5	35.2	4	.4	563.0	4	.5	41.2
44	1	.1	8.0	1	.1	128.0	1	.1	42.0
45	1	.1	7.0	1	.1	125.0	1	.1	35.0

Table 3, continued

Number of Ext. Contacts	No. Females Farrowed Twice Last Year			No. Pigs Raised to Weaning Last Year			Wt. of Pigs at Weeks of Age		
	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean	No. Resp.	% Resp.	Mean
Total No. Ext. Contacts									
46	1	.1	12.0	1	.1	490.0	1	.1	34.0
47	1	.1	59.0	1	.1	1181.0	1	.1	47.0
49	1	.1	9.0	1	.1	164.0	1	.1	36.0
53	2	.2	3.5	2	.2	37.0	2	.2	41.5
55	1	.1	10.0	1	.1	130.0	1	.1	40.0
56	1	.1	3.0	1	.1	57.2	1	.1	25.0
58	1	.1	19.0	1	.1	266.0	1	.1	38.0
59	1	.1	21.0	1	.1	218.0	1	.1	40.0
60	1	.1	3.0	2	.2	51.0	2	.2	40.0
62	1	.1	2.0	1	.1	64.0	1	.1	40.0
63	1	.1	12.0	1	.1	231.0	1	.1	35.0
68	1	.1	2.0	1	.1	42.0	1	.1	40.0
70	1	.1	5.0	1	.1	120.0	1	.1	40.0
83	1	.1	30.0	1	.1	250.0	1	.1	45.0
90	1	.1	10.0	1	.1	130.0	1	.1	35.0
121	1	.1	26.0	1	.1	275.0	1	.1	35.0
Total	826		13.3	895		192.1	875		40.3
Amt. Variance	$F = 11.7$	p	.05	$F = 6.2$	p	.05	$F = 1.3$	p	$> .05$

following discussion of Table 3 was organized on the basis of the dependent variables.

Relationships between the Number of Extension Meetings Attended and the Size of Operation and the Weight of Pigs at 8 Weeks of Age

Table 3 shows that the number of Extension meetings producers attended over a 12-month period ranged from not any to 12. Over 45% of the producers did not attend any meetings. Producers who did not attend any Extension meetings tended to be those with a small number of sows and thus those who raised fewer pigs. Larger producers, on the other hand, tended to attend more Extension meetings. The analysis of variance F test showed that both of the size of operation variables were significantly related to the number of Extension meetings swine producers had attended. The data indicated that as the size of operation increased the number of Extension meetings attended also tended to increase.

Analysis of data in Table 3 regarding the weight of pigs at 8 weeks of age showed that this variable was not significantly related to the number of Extension meetings producers attended.

Relationship between the Number of Extension Swine Meetings Producers Attended and Size of Their Operation and Weight of Pigs at 8 Weeks of Age

The number of Extension swine meetings producers attended varied from not any to 6 with nearly 60% not attending any swine meetings during the 12 months prior to the survey. Analysis of data regarding the size of operation showed that both the number of females farrowed twice and the number of pigs raised to 8 weeks of age were significantly related to the number of Extension swine meetings producers attended. Producers

who had larger swine operations tended to attend more Extension swine meetings than did the smaller operators.

Weight of pigs at 8 weeks of age was also significantly (.05 level) related to the number of Extension swine meetings attended by the producers. Producers who attended more Extension swine meetings tended to have heavier pigs at 8 weeks of age.

Relationships between the Number of Visits Producers Made to the Extension Office and Size of Operation and Weight of Pigs at 8 Weeks of Age

Table 3 shows that the number of visits producers made to the Extension office varied from not any to 50. About 19% of the producers had not visited the Extension office during the 12 months prior to the survey. Both of the size of swine operation variables were significantly related to the number of visits producers made to the Extension office. Larger producers tended to make more visits to the Extension office than did the smaller producers.

Weight of pigs at 8 weeks of age was also shown in Table 3 to be significantly related to the number of visits producers made to the Extension office. Producers who reported lighter weight pigs tended to have visited the Extension office less frequently than did those having heavier pigs at 8 weeks of age.

Relationship between the Number of Telephone Calls Producers Made to the Extension Office and Size of Operation and Weight of Pigs at 8 Weeks of Age

Table 3 shows that the number of telephone calls producers made to the Extension office varied from not any to a high of 68 calls. Almost

20% of the producers had not called the Extension office during the 12 months prior to the survey. Analysis of data regarding size of operation showed that both of these variables were significantly related to the number of telephone calls producers made to the Extension office. The data indicated that smaller producers tended to make fewer telephone calls to the Extension office than did the larger producers.

Weight of pigs at 8 weeks of age was shown in Table 3 not to be significantly related to the number of telephone calls producers made to the Extension office.

Relationship between the Number of Farm Visits Swine Producers Received from Extension Agents and Size of Operation and Weight of Pigs at 8 Weeks of Age

Table 3 showed that the number of farm visits producers received from Extension agents varied from not any to 30. The analysis of variance F test showed that both of the size of operation variables were significantly related to the number of visits Extension agents made to the swine producers' farms. Smaller producers tended to receive fewer farm visits than did the larger producers.

Weight of pigs at 8 weeks of age was shown in Table 3 to be significantly related to the number of visits agents made to the producers' farms. Producers who received more farm visits from Extension agents tended to have heavier pigs than those who received fewer farm visits.

Relationship between the Total Number of Contacts Swine Producers Had with Extension Agents and the Size of Producers' Swine Operation and the Weight of Pigs at 8 Weeks of Age

Table 3 shows that the variation in total number of contacts swine producers had with Extension agents over a 12-month period was from not any to 121 contacts. The analysis of variance F test of the size of swine producers' operation variables showed that total contacts were significantly related to both the number of females farrowed twice and to the number of pigs raised to 8 weeks of age. These data indicate that larger producers had more total contacts with Extension agents than did the smaller producers.

When the weight of pigs at 8 weeks of age was analyzed as to total number of contacts producers had with Extension agents, the one-way analysis of variance F test showed that these variables were not significantly related.

IV. RELATIONSHIP BETWEEN RECOMMENDED SWINE PRACTICES USED AND THE NUMBER OF EXTENSION CONTACTS

Table 4 presents data regarding the relationship between recommended swine management practices and what influence if any the number of Extension contacts had with the swine producer.

Replacing Herd Sows and Number of Extension Contacts

There were 678 of the 891 producers surveyed that used recommended swine practices for replacing their herd sows. The producers who used the recommended practices for replacing herd sows attended more Extension

Table 4. Relationship between Recommended Swine Practices Used and the Number of Extension Contacts

Recommended Swine Practices	Mean Number of Extension Contacts in 1975					
	Ext. Meetings	Swine Meetings	Office Visits	Telephone Calls	Farm Visits	Total Ext. Contacts
Replacing herd sows						
Yes (N = 678)	1.6	0.7	3.3	4.5	3.1	13.2
No (N = 213)	0.9	0.4	2.4	2.8	2.0	8.5
Total (N = 891)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 17.4	F = 21.0	F = 7.0	F = 15.0	F = 15.9	F = 25.3
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Selection of herd sires						
Yes (N = 619)	1.6	0.7	3.4	4.7	3.3	13.2
No (N = 271)	0.9	0.4	2.3	2.7	1.9	8.2
Total (N = 890)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 24.4	F = 23.1	F = 13.7	F = 22.5	F = 28.9	F = 41.4
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Use of crossbreeding program						
Yes (N = 673)	1.5	0.6	3.2	4.4	2.9	12.7
No (N = 206)	1.0	0.5	2.7	3.1	2.6	9.9
Total (N = 879)	1.4	0.6	3.1	4.1	2.9	12.0
Amt. Variance	F = 9.6	F = 5.1	F = 2.4	F = 7.6	F = 1.2	F = 8.3
	p < .05	p < .05	p > .05	p < .05	p > .05	p < .05
Vaccination for Leptospirosis						
Yes (N = 332)	1.8	0.8	3.3	5.1	3.1	14.2
No (N = 560)	1.2	0.5	2.9	3.4	2.7	10.7
Total (N = 892)	1.4	0.6	3.1	4.0	2.8	12.0
Amt. Variance	F = 16.8	F = 26.6	F = 1.8	F = 20.8	F = 3.4	F = 18.3
	p < .05	p < .05	p > .05	p < .05	p > .05	p < .05
Gilts bred at 8 months and 250 pounds						
Yes (N = 746)	1.4	0.6	3.1	4.3	2.9	12.4
No (n = 145)	1.3	0.6	2.8	2.8	2.6	10.1
Total (N = 891)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 0.6	F = 0.5	F = 0.5	F = 8.5	F = 1.3	F = 4.5
	p > .05	p > .05	p > .05	p < .05	p < .05	p < .05
Feeding pregnant females on pasture						
Yes (N = 565)	1.6	0.7	3.3	4.4	3.1	13.0
No (N = 231)	1.0	0.4	2.5	3.1	2.3	9.3
Total (N = 887)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 15.6	F = 11.7	F = 5.3	F = 10.1	F = 7.1	F = 16.5
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05

Table 4, continued

Recommended Swine Practices	Mean Number of Extension Contacts in 1975					
	Ext. Meetings	Swine Meetings	Office Visits	Telephone Calls	Farm Visits	Total Ext. Contacts
Feeding pregnant females off pasture						
Yes (N = 614)	1.6	0.7	3.3	4.4	3.0	12.9
No (N = 257)	1.1	0.4	2.6	3.3	2.6	10.1
Total (n = 871)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 9.9	F = 12.7	F = 3.9	F = 7.2	F = 1.7	F = 10.1
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Adequate farrowing facilities						
Yes (N = 462)	1.6	0.7	3.4	4.7	3.0	13.3
No (N = 432)	1.3	0.6	2.8	3.4	2.6	10.7
Total (N = 894)	1.4	0.6	3.1	4.1	2.8	12.0
Amt. Variance	F = 4.3	F = 2.8	F = 4.0	F = 10.8	F = 2.9	F = 10.6
	p < .05	p > .05	p < .05	p < .05	p > .05	p < .05
Other hogs kept out of farrowing house						
Yes (N = 706)	1.5	0.6	3.2	4.3	3.1	12.7
No (N = 189)	1.3	0.5	2.5	3.4	2.1	9.8
Total (N = 895)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 1.5	F = 1.3	F = 4.1	F = 4.1	F = 10.3	F = 8.6
	p > .05	p > .05	p < .05	p < .05	p < .05	p < .05
Sows wormed 3-14 days before farrowing						
Yes (N = 388)	1.7	0.8	3.6	4.7	3.4	14.1
No (N = 508)	1.2	0.5	2.7	3.6	2.5	10.5
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 13.5	F = 17.9	F = 11.1	F = 7.7	F = 13.8	F = 20.9
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Sows in farrowing house 3 days before farrowing						
Yes (N = 701)	1.5	0.7	3.4	4.3	3.1	13.0
No (N = 195)	1.1	0.5	2.0	3.2	1.9	8.6
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 8.0	F = 5.7	F = 15.1	F = 6.6	F = 16.7	F = 20.9
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Sows washed before farrowing						
Yes (N = 172)	1.9	0.8	4.0	5.5	3.4	15.7
No (N = 724)	1.3	0.6	2.9	3.7	2.7	11.2
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 11.1	F = 12.7	F = 10.2	F = 13.6	F = 6.0	F = 20.0
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05

Table 4, continued

Recommended Swine Practices	Mean Number of Extension Contacts in 1975					
	Ext. Meetings	Swine Meetings	Office Visits	Telephone Calls	Farm Visits	Total Ext. Contacts
Bulky feed supplied before farrowing						
Yes (N = 632)	1.5	0.7	3.3	4.4	3.1	13.0
No (N = 264)	1.1	0.5	2.6	3.4	2.3	9.8
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 7.4	F = 10.7	F = 5.4	F = 5.2	F = 10.2	F = 12.8
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Care of pigs at birth						
Yes (N = 555)	1.5	0.7	3.4	4.5	3.0	13.1
No (N = 342)	1.3	0.5	2.5	3.4	2.7	10.4
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 1.1	F = 9.6	F = 9.4	F = 8.5	F = 1.2	F = 10.4
	p > .05	p < .05	p < .05	p < .05	p > .05	p < .05
Needle teeth clipped first 24-28 hours						
Yes (N = 493)	1.5	0.7	3.4	4.6	3.2	13.4
No (N = 404)	1.3	0.5	2.6	3.4	2.5	10.4
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 2.0	F = 8.4	F = 7.3	F = 9.9	F = 8.9	F = 14.5
	p > .05	p < .05	p < .05	p < .05	p < .05	p < .05
Tails docked first 24-48 hours						
Yes (N = 585)	1.5	0.7	3.4	4.4	2.9	12.9
No (N = 302)	1.4	0.5	2.5	3.5	2.8	10.7
Total (N = 887)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 0.7	F = 4.8	F = 8.5	F = 5.0	F = 0.1	F = 6.3
	p > .05	p < .05	p < .05	p < .05	p > .05	p < .05
Increase sows' feed after farrowing						
Yes (N = 672)	1.5	0.7	3.3	4.2	3.1	12.8
No (N = 225)	1.1	0.5	2.4	3.8	2.1	9.8
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 8.3	F = 8.1	F = 7.5	F = 0.9	F = 13.2	F = 10.4
	p < .05	p < .05	p < .05	p > .05	p < .05	p < .05
Prevent pig anemia						
Yes (N = 628)	1.4	0.6	3.1	4.1	2.9	12.2
No (N = 269)	1.4	0.6	3.0	4.0	2.7	11.7
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 0.1	F = 0.1	F = 0.1	F = 0.0	F = 0.7	F = 0.3
	p > .05	p > .05	p > .05	p > .05	p > .05	p > .05

Table 4, continued

Recommended Swine Practices	Mean Number of Extension Contacts in 1975					
	Ext. Meetings	Swine Meetings	Office Visits	Telephone Calls	Farm Visits	Total Ext. Contacts
Pigs provided 18-20% creep ration						
Yes (N = 789)	1.5	0.7	3.3	4.2	3.0	12.6
No (N = 108)	0.9	0.4	1.8	3.2	2.0	11.7
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 9.7	F = 8.9	F = 11.5	F = 3.2	F = 6.6	F = 0.3
	p < .05	p < .05	p < .05	p > .05	p < .05	p < .05
Farrowing house kept clean, dry, etc.						
Yes (N = 679)	1.5	0.6	3.1	4.2	2.8	12.2
No (N = 214)	1.4	0.6	3.0	3.8	2.9	11.7
Total (N = 893)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 0.4	F = 0.3	F = 0.0	F = 0.4	F = 0.1	F = 0.3
	p > .05	p > .05	p > .05	p > .05	p > .05	p > .05
Pigs identified soon after birth						
Yes (N = 78)	2.0	0.9	4.2	6.2	3.5	16.9
No (N = 819)	1.4	0.6	3.0	3.9	2.8	11.6
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 7.8	F = 9.3	F = 6.0	F = 11.9	F = 3.1	F = 14.0
	p < .05	p < .05	p < .05	p < .05	p > .05	p < .05
Pigs castrated before 4 weeks						
Yes (N = 733)	1.5	0.7	3.3	4.3	2.8	12.5
No (N = 164)	1.3	0.4	2.3	3.0	3.0	10.0
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 1.1	F = 8.1	F = 7.0	F = 6.8	F = 0.2	F = 6.0
	p > .05	p < .05	p < .05	p < .05	p > .05	p < .05
Lifetime sow records kept						
Yes (N = 158)	2.2	1.1	4.0	6.0	3.8	17.1
No (N = 739)	1.3	0.5	2.9	3.7	2.6	11.0
Total (N = 897)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 24.4	F = 58.2	F = 8.7	F = 22.1	F = 15.1	F = 34.7
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05
Farrowing house cleaned after sows moved						
Yes (N = 431)	1.6	0.7	3.3	4.7	3.1	13.5
No (N = 465)	1.3	0.5	2.8	3.5	2.6	10.7
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.0
Amt. Variance	F = 5.5	F = 7.4	F = 3.6	F = 10.0	F = 5.4	F = 12.1
	p < .05	p < .05	p < .05	p < .05	p < .05	p < .05

Table 4, continued

Recommended Swine Practices	Mean Number of Extension Contacts in 1975					
	Ext. Meetings	Swine Meetings	Office Visits	Telephone Calls	Farm Visits	Total Ext. Contacts
Disease break provided before using farrowing house again						
Yes (N = 568)	1.5	0.6	3.3	4.6	3.1	13.0
No (N = 328)	1.3	0.6	2.8	3.3	2.5	10.4
Total (N = 896)	1.4	0.6	3.1	4.1	2.9	12.1
Amt. Variance	F = 2.3	F = 1.8	F = 2.6	F = 10.7	F = 5.5	F = 10.1
	p .05	p .05	p .05	p < .05	p < .05	p < .05

meetings and swine meetings, made more visits and telephone calls to the Extension office, and received a large number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. When tested by the F test, their differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice regarding replacing herd sows.

Selection of Herd Sires and Number of Extension Contacts

Six hundred and nineteen or 70% of the swine producers sampled used recommended swine practices in selecting their herd sires. The producers who used the recommended practices in selecting their herd sires attended more Extension meetings and swine meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. When tested by the F test, their differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice in selecting herd sires.

Use of Crossbreeding Program and Number of Extension Contacts

A crossbreeding program was used by 673 or 77% of the swine producers. The producers who used the recommended crossbreeding program attended more Extension meetings and swine meetings, made more visits and telephone calls to the Extension office, and received more farm visits which resulted in more total Extension contacts made than those

not using this practice. However, when tested by the F test, the number of office visits and farm visits were not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, producers who attended more Extension and swine meetings and called the Extension office more times were using the recommended crossbreeding program in their operation.

Vaccinated for Leptospirosis and Number of Extension Contacts

The majority or 63% of the 892 sampled did not vaccinate their animals for Leptospirosis. But the ones that used this recommended practice attended more Extension and swine meetings, made more office visits and telephone calls to the Extension office, and received more farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, the number of office visits and farm visits was not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, producers who attended Extension meetings and swine meetings and called the Extension office more times were the producers that vaccinated their animals for Leptospirosis.

Bred Gilts at 8 Months and 250 Pounds and Number of Extension Contacts

There were 746 producers (84%) that used the recommended practice of breeding their gilts at 8 months and 250 pounds. The producers who used this practice attended more Extension meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total

Extension contacts made than those not using this practice. When tested by the F test, the number of telephone calls made to the Extension office was significant at the .05 level. Other types of Extension contacts were not significant at the .05 level. Therefore, producers who called the Extension office for information were significantly influenced to breed their gilts at 8 months and 250 pounds.

Feeding Pregnant Females on Pasture and Number of Extension Contacts

Seventy-four percent of the 887 producers surveyed used the recommended practice of feeding pregnant females on pasture. The producers who used this recommended practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their feeding pregnant females on pasture.

Feeding Pregnant Females off Pasture and Number of Extension Contacts

Six hundred and fourteen producers used the recommended practice of feeding pregnant females off pasture. The producers who used this recommended practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their feeding pregnant females off pasture.

Adequate Farrowing Facilities and Number of Extension Contacts

Over half (52%) of the producers used adequate farrowing facilities in their operation. The producers who used this recommended practice attended more Extension meetings and swine meetings, made more office visits and telephone calls to the Extension office, and received more farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, the number of swine meetings and farm visits was not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, the number of Extension meetings attended, office visits and telephone calls made to the Extension office did significantly influence their use of the recommended practice of providing adequate farrowing facilities.

Keeping Other Hogs Out of Farrowing House and Number of Extension Contacts

Seventy-nine percent of the 895 sampled used the recommended practice of keeping hogs other than those farrowing out of the farrowing house. The producers who used this recommended practice attended more Extension and swine meetings, made more visits and telephone calls to the office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, the number of Extension meetings and swine meetings were not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, the number of office visits, telephone calls, and farm visits did significantly influence their use of the recommended practice of keeping other hogs out of the farrowing house.

Worm Sows 3-14 Days Before Farrowing and Number of Extension Contacts

Only 40% of the producers used this recommended practice of worming sows 3-14 days before farrowing. The producers who used this recommended practice did attend more Extension meetings and swine meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice of worming sows 3-14 days before farrowing.

Sows in Farrowing House 3 Days Before Farrowing and Number of Extension Contacts

Nearly 80% of the 896 tested used this recommended practice of bringing sows in the farrowing house 3 days before farrowing. The ones using this practice attended more Extension and swine meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice of bringing sows in the farrowing house 3 days before farrowing.

Sows Washed Before Farrowing and Number of Extension Contacts

There were only 172 (19%) of the producers using this recommended practice. This small percentage that used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, their differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice of washing sows before farrowing.

Bulky Feed Supplied Before Farrowing and Number of Extension Contacts

Seventy percent of the 896 producers surveyed used this recommended practice of feeding sows bulky feed before farrowing. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice of feeding sows bulky feed before farrowing.

Care of Pigs at Birth and Number of Extension Contacts

Sixty-two percent of the producers used this practice of caring for pigs at birth. The producers who used this practice attended more Extension and swine meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test,

the number of Extension meetings and farm visits were not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, the number of swine meetings, office visits and telephone calls did significantly influence their use of the recommended practice of caring for pigs at birth.

Needle Teeth Clipped First 24-28 Hours and Number of Extension Contacts

Fifty-five percent of the producers used this recommended practice of clipping needle teeth the first 24-28 hours after birth. The ones using this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. However, when tested by the F test, the number of Extension meetings was not significant at the .05 level, but all other contacts were significant at this level. Therefore, the number of swine meetings, office visits, telephone calls, and farm visits did significantly influence their use of the recommended practice of clipping needle teeth the first 24-28 hours.

Tails Docked First 24-48 Hours and Number of Extension Contacts

Sixty-six percent or 585 producers used this recommended practice of docking their baby pigs' tails the first 24-48 hours. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. However, when tested by the F test, the number of Extension meetings and farm visits were not significant at the .05 level, but the other Extension contacts were significant at

the .05 level. Therefore, the number of swine meetings, office visits, and telephone calls did significantly influence their use of the recommended practice of docking their tails the first 24-48 hours.

Increase Sows' Feed After Farrowing and Number of Extension Contacts

Almost three-fourths of the 897 producers surveyed used this recommended practice of increasing the sows' feed after farrowing. The producers who used this practice attended more Extension meeting, swine meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, the number of telephone calls made to the Extension office was not significant at the .05 level, but all other Extension contacts were significant at the .05 level. Therefore, the number of Extension and swine meetings, office visits, and farm visits did significantly influence their use of the recommended practice of increasing sows' feed after farrowing.

Prevent Pig Anemia and Number of Extension Contacts

Seventy percent of the producers liked to use this recommended production practice. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were not significant at the .05 level. Therefore, the number of contacts producers had with Extension did not significantly influence their use of the recommended practice of preventing pig anemia.

Pigs Provided 18-20% Creep Ration and Number of Extension Contacts

Eighty-eight percent of the producers provided an 18% to 20% creep ration to their baby pigs. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. However, when tested by the F test, the number of telephone calls made to the Extension office was not significant at the .05 level, but the other Extension contacts were significant at the .05 level. Therefore, the number of Extension and swine meetings, office visits, and farm visits did significantly influence their use of the recommended practice of providing an 18% to 20% creep ration.

Farrowing House Kept Clean, Dry, and Number of Extension Contacts

Seventy-six percent of the 893 producers surveyed used this practice. The producers who used this recommended practice attended more Extension meetings, made more visits and telephone calls to the office, which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, these differences were not significant at the .05 level. Therefore, the number of contacts producers had with Extension did not significantly influence their use of the recommended practice of keeping the farrowing house clean and dry.

Pigs Identified Soon After Birth and Number of Extension Contacts

There were only 78 producers (8.7%) that liked to use this recommended practice. The small number that used the practice was

contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. However, when tested by the F test, the number of farm visits received by Extension agents was not significant at the .05 level, but all the other contacts were significant at the .05 level. Therefore, the number of Extension and swine meetings, office visits, and telephone calls to the Extension office did significantly influence their use of the recommended practice of identifying pigs soon after birth.

Pigs Castrated Before 4 Weeks and Number of Extension Contacts

Over 80% of the producers surveyed castrated their pigs before 4 weeks of age. The producers who used this recommended practice attended an average of 1.5 Extension meetings, 0.7 swine meetings, made an average of 3.3 visits and 4.3 telephone calls to the Extension office, and received an average of 2.8 farm visits from Extension agents which resulted in an average 12.5 total Extension contacts. When tested by the F test, the number of Extension meetings attended and farm visits received by Extension agents were not significant at the .05 level. Therefore, the number of swine meetings, office visits, and telephone calls to the Extension office did significantly influence their use of the recommended practice of castrating pigs before 4 weeks of age.

Lifetime Sow Records Kept and Number of Extension Contacts

A small percentage (17.6%) used this recommended practice of keeping lifetime sow records. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits,

telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, the number of contacts producers had with Extension did significantly influence their use of the recommended practice of keeping lifetime sow records.

Farrowing House Cleaned After Sows Moved and Number of Extension Contacts

About 50% of the producers surveyed used this recommended practice of cleaning the farrowing house after the sows were moved. The producers who used this practice were contacted more times by all the methods listed (meetings, office visits, telephone calls, farm visits) than those not using this practice. When tested by the F test, these differences were significant at the .05 level. Therefore, contacts producers had with Extension agents did significantly influence their use of the recommended practice of cleaning the farrowing house after the sows were moved.

Disease Break Provided Before Using Farrowing House Again and Number of Extension Contacts

There were 63.4% of the producers surveyed that used this recommended practice. These producers attended more Extension meetings, made more visits and telephone calls to the Extension office, and received a larger number of farm visits from Extension agents which resulted in more total Extension contacts made than those not using this practice. However, when tested by the F test, the number of Extension meetings, swine meetings, and office visits were not significant at the

.05 level, but all other contacts were significant at the .05 level. Therefore, the number of telephone calls to the Extension office and farm visits from Extension agents did significantly influence their use of the recommended practice of providing a disease break before using farrowing houses again.

CHAPTER III

SUMMARY OF MAJOR FINDINGS

I. PURPOSES AND SPECIFIC OBJECTIVES

Purposes

The purposes of this study were to determine the characteristics of the swine producers' farming operations, the number of contacts they had with Extension, their use of recommended swine production practices, and the relationship between the number of Extension contacts and their use of recommended swine production practices.

Specific Objectives

The specific objectives of this study were:

1. To characterize the swine producers as to the size of their farming operation, the extent to which they were using swine production practices, and the number of contacts they had with Extension.

2. To determine the extent to which the swine producers were using recommended swine production practices.

3. To determine the relationship between the number of contacts swine producers had with Extension and their use of selected size of operation and production efficiency variables.

4. To determine the relationship between the number of contacts swine producers had with Extension and their use of recommended swine practices.

II. METHOD OF INVESTIGATION

A total of 897 Tennessee swine producers were randomly selected in the 57 counties for which data were available. An interview survey schedule was developed by The University of Tennessee Agricultural Extension Specialists and mailed to the Extension leaders in the spring of 1976. The "nth" number method of sampling was used to select the producers to be interviewed in the counties. A personal interview was scheduled between the Extension leader and swine producer, and 1975 production information was recorded on the interview schedule and returned to the Agricultural Extension Education office upon completion. Twenty swine producers were randomly selected in each county except in 18 Extension District I counties where there were only 10 swine producers per county interviewed.

The data were coded and punched on computer cards. Computations were made by The University of Tennessee Computing Center. The analysis of variance F test was used to determine the strength of relationship between the dependent and independent variables. F values which achieved the .05 probability level were accepted as indicating a significant relationship between dependent and independent variables. The means, lows, highs, numbers, and percentages were computed and given for the variables where it was needed.

III. MAJOR FINDINGS

Major findings were classified and presented under headings related to the objectives of the study.

Selected Characteristics of Swine Producers and Their General Farming Operation in 1975

1. About 60% of the swine producers bred from 1 to 10 females twice within a 12-month period. The number of females bred twice ranged from a low of 1 to a high of 400 females. The average number of females bred twice by all producers reporting was 14.2.

2. Over 60% of the swine producers farrowed from 1 to 10 females twice within a 12-month period. The number of females farrowed twice ranged from a low of 1 to a high of 390 females. The average number of females farrowed twice by all producers reporting was 13.3.

3. The average weight of pigs at 8 weeks of age ranged from 25 to 60 pounds. About 40% of the producers had pigs which ranged from 40 to 44 pounds at 8 weeks. The average pig weight at 8 weeks of age for all producers reporting was 40.3.

4. The swine producers had several alternatives when marketing their pigs. Their first choice was to market their pigs as feeders. A total of 752 or 84% of the swine producers followed this procedure. The second choice was feeder pig sales. There were 697 producers or 78% that used this marketing system.

5. Sixty-four percent of the swine producers used from 11 to 20 of the 25 swine production practices recommended in 1975. The average number of swine production practices used by all producers reporting was 16.

6. Forty-seven percent of the swine producers did not attend any Extension meetings that year. About 34% of the producers attended from 1 to 2 Extension meetings. The average number of Extension meetings attended by all producers reporting was 1.4.

7. About 59% of the swine producers did not attend any Extension meetings on swine. Only 27% of the producers attended one Extension swine meeting within a 12-month period.

8. Fifty-two percent of the swine producers visited the Extension office from 1 to 3 times for information. About 19% of the producers did not visit the Extension office in 1975. The average number of office visits by all producers reporting was 3.1.

9. Fifty-one percent of the swine producers telephoned the Extension office from 1 to 4 times for information. About 17% of the producers did not call the Extension office that year. The average number of telephone calls by all producers reporting was 4.1.

10. Fifty-two percent of the swine producers received from 1 to 3 farm visits by Extension agents that year. Twenty-two percent of the producers did not receive any farm visits from Extension agents. The average number of farm visits received by all producers reporting was 2.85.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Number of Extension Meetings

1. The number of females farrowing twice per year and the number of pigs raised to weaning were significantly related to the number of Extension meetings attended by the swine producers. Producers who had more females to farrow twice and those who raised more pigs tended to attend a larger number of Extension meetings. Over one-half of the producers attended at least 1 Extension meeting in 1975.

2. The weight of pigs at 8 weeks of age was not significantly

related to the number of Extension meetings attended by the swine producers.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Number of Extension Meetings on Swine

1. The number of females farrowing twice per year, number of pigs raised to weaning, and the weight of pigs at 8 weeks of age were significantly related to the number of Extension meetings attended on swine by the swine producers. Producers who had more females to farrow twice, those who raised more pigs, and those who had heavier weights at 8 weeks of age tended to attend a larger number of Extension meetings on swine. Over 40% of the producers attended at least 1 Extension meeting on swine within the past 12 months.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Number of Visits to the Extension Office

1. The number of females farrowing twice per year, number of pigs raised to weaning, and the weight of pigs at 8 weeks of age were significantly related to the number of visits to the Extension office by the swine producers. Producers who had more females to farrow twice, those who raised more pigs, and those who had heavier weights at 8 weeks of age tended to visit the Extension office more times for information. Over 80% of the producers had visited the Extension office at least once within the past 12 months.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Number of Telephone Calls to the Extension Office

1. The number of females farrowing twice per year and the number of pigs raised to weaning were significantly related to the number of telephone calls to the Extension office by the swine producers. Producers who had more females to farrow twice and those who raised more pigs tended to telephone the Extension office more times for information. Over 82% of the producers had telephoned the Extension office at least once that year.

2. The weight of pigs at 8 weeks of age was not significantly related to the number of telephone calls to the Extension office by the swine producers.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Number of Farm Visits from Extension Agents

1. The number of females farrowing twice per year, number of pigs raised, and the weight of pigs at 8 weeks of age were significantly related to the number of farm visits received by the swine producers. Producers who had more females to farrow twice, those who raised more pigs, and those who had heavier weights at 8 weeks of age tended to receive a larger number of farm visits from Extension agents. Only about 22% of the producers did not receive any Extension farm visits in 1975.

Relationship between Selected Size of Swine Operation and Production Efficiency Variables and Total Number of Extension Contacts

1. The number of females farrowing twice per year and the number of pigs raised to weaning were significantly related to the total number of Extension contacts received by the swine producers. Producers who had more females to farrow twice and those who raised more pigs tended to have had more total Extension contacts. Over 94% of the producers were contacted at least once by Extension within the past 12 months.

2. The weight of pigs at 8 weeks of age was not significantly related to the total number of Extension contacts received by the swine producers.

Relationship between Extension Contacts and Use of Recommended Swine Management Practices

1. The swine producers who were using the recommended practices regarding replacing herd sows and selecting herd sires did differ significantly from those not using these practices in terms of the number of Extension and swine meetings attended, office visits and telephone calls made, and farm visits received from Extension agents. The producers using these practices attended a significantly higher number of Extension and swine meetings, made a significantly larger number of visits and telephone calls to the Extension office, and received a significantly larger number of farm visits from Extension agents than those swine producers not using these practices.

2. The swine producers who were using the recommended practices of crossbreeding and vaccinating for Leptospirosis and those not using

these practices did not differ significantly as to the number of visits to the office and farm visits received from Extension agents. However, they did differ significantly as to the number of Extension and swine meetings attended and telephone calls they made to the Extension office. The producers using these practices attended a significantly higher number of Extension and swine meetings and made a significantly higher number of telephone calls to the Extension office than those not using these practices.

3. The swine producers who were using the recommended practice of breeding gilts at 8 months of age and 250 pounds and those not using this practice did not differ significantly as to the number of Extension and swine meetings attended, visits to the office, and farm visits received from Extension agents. However, they did differ significantly as to the number of telephone calls they made to the Extension office. The producers using this practice telephoned the Extension office significantly more times than those not using this practice.

4. The swine producers who were using the recommended practices of feeding pregnant females on and off pasture did differ significantly from those not using these practices in terms of the number of Extension and swine meetings attended, office visits and telephone calls made, and farm visits received from Extension agents. The producers using these practices attended a significantly higher number of Extension and swine meetings, made a significantly larger number of visits and telephone calls to the Extension office, and received a significantly larger number of farm visits from Extension agents than those swine producers not using these practices.

5. The swine producers who were using the recommended practice of adequate farrowing facilities and those not using this practice did not differ significantly as to the number of swine meetings attended and farm visits received from Extension agents. However, they did differ significantly as to the number of Extension meetings attended, office visits and telephone calls made to the Extension office. The producers using this practice attended a significantly higher number of Extension meetings and made a significantly larger number of visits and telephone calls to the Extension office than those swine producers not using this practice.

6. The swine producers who were using the recommended practice of keeping other hogs out of the farrowing house and those not using this practice did not differ significantly as to the number of Extension and swine meetings attended. However, they did differ significantly as to the number of office visits and telephone calls made to the office and farm visits received from Extension agents. The producers using this practice made a significantly larger number of visits and telephone calls to the Extension office and received a significantly larger number of farm visits from Extension agents than those swine producers not using this practice.

7. The swine producers who were using the recommended practices of worming sows 3 to 14 days before farrowing, putting sows in farrowing house 3 days before farrowing, washing sows before farrowing, and providing a bulky feed supply before farrowing did differ significantly from those not using these practices in terms of the number of Extension

and swine meetings attended, office visits and telephone calls made, and farm visits received from Extension agents. The producers using these practices attended a significantly higher number of Extension and swine meetings, made a significantly larger number of visits and telephone calls to the Extension office, and received a significantly larger number of farm visits from Extension agents than those swine producers not using these practices.

8. The swine producers who were using the recommended practice of caring for pigs at birth and those not using this practice did not differ significantly as to the number of Extension meetings attended and farm visits received from Extension agents. However, they did differ significantly as to number of swine meetings attended, and office visits and telephone calls made to the Extension office. The producers using this practice attended a significantly higher number of swine meetings and made a significantly larger number of visits and telephone calls to the Extension office than those swine producers not using this practice.

9. The swine producers who were using the recommended practice of clipping needle teeth the first 24 to 28 hours after birth and those not using this practice did not differ significantly as to the number of Extension meetings attended. However, they did differ significantly as to the number of swine meetings attended, office visits and telephone calls made to the office, and farm visits received from Extension agents. The producers using this practice attended a significantly higher number of swine meetings, made a significantly larger number of visits and telephone calls to the Extension office, and received a significantly

larger number of farm visits from Extension agents than those swine producers not using this practice.

10. The swine producers who were using the recommended practice of docking their tails the first 24 to 48 hours after birth and those not using this practice did not differ significantly as to the number of Extension meetings attended and farm visits received from Extension agents. However, they did differ significantly as to the number of swine meetings attended, and office visits and telephone calls made to the Extension office. The producers using this practice attended a significantly higher number of swine meetings and made a significantly larger number of visits and telephone calls to the Extension office than those swine producers not using this practice.

11. The swine producers who were using the recommended practices of increasing sows' feed after farrowing and putting pigs on 18 to 20% creep ration and those not using these practices did not differ significantly as to the number of telephone calls made to the Extension office. However, they did differ significantly as to the number of Extension and swine meetings attended, visits to the Extension office, and farm visits received from Extension agents. The producers using these practices attended a significantly higher number of Extension and swine meetings, made a significantly larger number of visits to the Extension office, and received a significantly larger number of farm visits from Extension agents than those swine producers not using these practices.

12. The swine producers who were using the recommended practices of preventing pig anemia and keeping the farrowing house clean and dry

and those not using these practices did not differ significantly as to the number of Extension and swine meetings attended, visits and telephone calls made to the Extension office, and farm visits received from Extension agents.

13. The swine producers who were using the recommended practice of identifying pigs soon after birth and those not using this practice did not differ significantly as to the number of farm visits received from Extension agents. However, they did differ significantly as to the number of Extension and swine meetings attended and visits and telephone calls made to the Extension office. The producers using this practice attended a significantly higher number of Extension and swine meetings and made a significantly larger number of visits and telephone calls to the Extension office than those swine producers not using this practice.

14. The swine producers who were using the recommended practice of castrating male pigs before 4 weeks of age and those not using this practice did not differ significantly as to the number of Extension meetings attended and farm visits received from Extension agents. However, they did differ significantly as to the number of swine meetings attended and office visits and telephone calls made to the Extension office. The producers using this practice attended a significantly higher number of swine meetings and made a significantly larger number of visits and telephone calls to the Extension office than those swine producers not using this practice.

15. The swine producers who were using the recommended practices of keeping lifetime sow records and cleaning the farrowing house after

sows were moved and those not using these practices did differ significantly as to the number of Extension and swine meetings attended, office visits and telephone calls made, and farm visits received from Extension agents. The producers using these practices attended a significantly higher number of Extension and swine meetings, made a significantly larger number of visits and telephone calls to the Extension office, and received a significantly larger number of farm visits from Extension agents than those swine producers not using these practices.

16. The swine producers who were using the recommended practice of providing a disease break before using farrowing house again and those not using this practice did not differ significantly as to the number of Extension and swine meetings attended and visits to the Extension office. However, they did differ significantly as to the number of telephone calls they made to the Extension office and farm visits received from Extension agents. The producers using this practice made a significantly larger number of telephone calls and received a significantly larger number of farm visits from Extension agents than those swine producers not using this practice.

IV. IMPLICATIONS AND RECOMMENDATIONS

Based upon the findings of the present study, the implications and recommendations below are drawn.

1. It was found that 16% of the swine producers used less than 10 of the 25 swine production practices recommended in 1975. This statement implies that a large number of swine producers are not using the recommended swine production practices. Therefore, it would seem

important that Extension find out who these people are and make efforts to reach them.

2. It was noted that 47% of the swine producers did not attend any Extension meetings, 20% did not visit the Extension office, 18% did not telephone the Extension office, and 22% did not receive any farm visits from Extension agents over a 12-month period. Again, this finding implies that a large number of swine producers are not having any contact with Extension through meetings, office visits, telephone calls, or farm visits. For this reason, it is important that Extension find out who these people are and how they can better serve their needs.

3. The number of females farrowed twice and the number of pigs raised to weaning were significantly related to the number of Extension and swine meetings attended, office visits and telephone calls made to the Extension office, and farm visits received from Extension agents. Producers who had more females to farrow twice and those who raised more pigs to weaning tended to have had more total Extension contacts. Thus, these data tend to imply that the smaller swine producers had fewer contacts with Extension than did the larger producers. It would seem important, therefore, that Extension agents place greater emphasis on planning and organizing programs to better meet the needs of the smaller swine producers.

4. The total number of contacts swine producers had with Extension was significantly related to their use of 23 of the 25 recommended swine production practices studied. Producers who were using the recommended practices had made a significantly larger number

of total contacts with Extension than had those who were not using the practices. Implications are that either Extension is spending time contacting producers who are already using the recommended practices or that producers are using the practices as a result of the Extension contacts. In either case, it seems important that Extension make more effort to reach those producers who have had fewer contacts in the past.

V. RECOMMENDATIONS FOR FURTHER STUDY

1. A similar study should be conducted over a period of years in Tennessee to determine the relationship between the number of Extension contacts swine producers make with Extension and their use of recommended swine production practices.

2. Similar studies should be conducted in other work areas in Tennessee to determine what effect Extension teaching has upon the use of recommended practices.

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APPENDIX

THE UNIVERSITY OF TENNESSEE AGRICULTURAL EXTENSION SERVICE

1975 SWINE SURVEY

Part I. Pig Production

Name of Respondent _____ Address _____

1 (1) Card Number

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

(5) Tenure Status (1 = owner; 2 = other _____)

A. General

1. How many females (sow and gilts) were bred to farrow

(6) (7) (8) a. Once last year? (Actual Number) A 999 = 1,000 or more

(9) (10) (11) b. Twice last year? (Actual Number)

2. How many females actually farrowed

(12) (13) (14) a. Once last year? (Actual Number)

(15) (16) (17) b. Twice last year? (Actual Number)

(18) (19) (20) (21) 3. How many pigs were raised to weaning age in your herd last year?

(22) (23) 4. What was the average weight of your pigs at 8 weeks of age?

5. How many pigs were marketed as

(24) (25) (26) (27) a. Feeders? (Actual Number)

(28) (29) (30) (31) b. For slaughter? (Actual Number)

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6. If pigs were marketed as feeders, what percent were disposed of?

___ ___ ___ (32) (33) (34) a. Through feeder pig sales?

___ ___ ___ (35) (36) (37) b. Through contracts?

___ ___ ___ (38) (39) (40) c. Through trades?

___ ___ ___ (41) (42) (43) d. Other?

___ (44) 7. Do you receive 50% or more of your total gross family income from farm sales? (1 = Yes; 2 = No)

___ (45) 8. Are you a full time farmer? (1 = Yes; 2 = No)

B. Recommended Practices

RECOMMENDED PRACTICE (See attached explanatory guide sheet 1 = Yes; 2 = No)

___ (46) (1) Were recommended procedures used for replacing herd sows?

___ (47) (2) Were recommended procedures used for selecting herd sires?

___ (48) (3) Was a recommended crossbreeding program used (may not apply to some purebred breeders)?

___ (49) (4) Were sows vaccinated for leptospirosis?

___ (50) (5) Were gilts bred after attaining approximately 8 months of age and a weight of about 250 lbs.?

___ (51) (6) Were recommended feeding practices followed for pregnant females on pasture?

___ (52) (7) Were recommended feeding practices followed for pregnant females off pasture?

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(53) _____ (8) Were farrowing facilities adequate in terms of recommended standards?

(54) _____ (9) Were all hogs, other than those farrowing, kept out of the farrowing quarters?

(55) _____ (10) Were sows wormed 3-14 days before due to farrow?

(56) _____ (11) Were sows brought into the farrowing quarters at least 3 days before they were due to farrow?

(57) _____ (12) Was each sow carefully washed before bringing her into the clean farrowing quarters?

(58) _____ (13) Were concentrates reduced or bulky feed supplied when sows were placed in farrowing quarters--continuing to 3 days after farrowing?

(59) _____ (14) As pigs were born, were they dried off, any membranes removed from nostrils and was help provided in nursing?

(60) _____ (15) Were needle teeth clipped the first 24-28 hours?

(61) _____ (16) Were tails docked the first 24-48 hours (if selling feeder pigs or finishing in confinement)?

(62) _____ (17) After 3 post-farrowing days on a bulky ration, were sows fed a gradually increased ration to roughly 10 lbs. in 7-14 days?

(63) _____ (18) Were appropriate methods used to prevent pig anemia?

(64) _____ (19) Were pigs provided with an 18-20% creep feed during the period from about 2 weeks of age through weaning?

(65) _____ (20) Were farrowing quarters kept well ventilated, clean, and dry?

(66) _____ (21) Were pigs systematically identified soon after birth?

(67) _____ (22) Were pigs castrated before 4 weeks of age?

(68) _____ (23) Were lifetime sow records kept?

_____ (69) (24) Was (were) the farrowing house(s) thoroughly cleaned and disinfected after sows were removed?

_____ (70) (25) Was a disease break provided between the time the farrowing house was cleaned and disinfected and the re-use of the same facilities for farrowing?

_____ (71) (26) Was the advice of a professional agricultural worker sought with regard to management of the herd (e.g., pig vaccination).

C. Future Assistance

_____ (72) 1. Would you be interested in attending meeting dealing with any of the following (1 = Yes; 2 = No):

a. Selection of foundation stock?

b. Feeding of a sow-pig operation?

c. Management of the herd?

d. Housing and equipment?

e. Parasite and disease control?

D. Number of Contacts with Extension Agents

_____ _____ (73) (74) a. Actual number Extension meetings attended in past 12 months.

_____ _____ (75) (76) b. Actual number Extension meetings attended on swine in past 12 months.

_____ (77) c. Actual number visits made to County Extension office (12 months).

_____ (78) d. Actual number of telephone calls made to the County Extension office (12 months).

_____ _____ (79) (80) e. Actual number of farm visits received by pig producers from County Extension Agents.

Table 5. Names of Counties and Number of Producers Included in the 1975 Swine Survey

County	Number of Producers	County	Number of Producers
Benton	10	Wilson	20
Carroll	10	Bradley	20
Chester	10	Bledsoe	20
Crockett	10	Franklin	20
Decatur	10	Grundy	20
Fayette	10	Marion	19
Gibson	10	McMinn	20
Hardin	10	Monroe	14
Haywood	10	Polk	20
Henderson	10	Rhea	10
Henry	10	Van Buren	10
Lauderdale	10	Cumberland	15
Madison	10	Morgan	17
McNairy	10	Overton	30
Obion	10	Pickett	20
Shelby	10	Putnam	20
Tipton	10	Scott	20
Weakley	10	Trousdale	20
Bedford	20	Blount	20
Humphreys	20	Claiborne	20
Lewis	20	Cocke	20
Maury	20	Grainger	10
Montgomery	20	Hamblen	22
Perry	20	Jefferson	20
Rutherford	14	Johnson	10
Stewart	20	Loudon	20
Sumner	20	Roane	19
Wayne	20	Washington	7
Williamson	20		
		Total	897

VITA

Marcus Franklin McLemore was born April 7, 1950, to Mr. and Mrs. Robert F. McLemore of Lavinia, Carroll County, Tennessee. He began his formal education at the Lavinia elementary school and attended high school at Milan High and graduated in 1968.

He attended The University of Tennessee at Martin in 1968 and completed the requirements for a Bachelor of Science Degree in Agricultural Science in 1972. Along with his studies, he played varsity basketball on scholarship for the university.

After farming and working at Proctor and Gamble in Jackson, Tennessee, he was employed as Assistant Extension Agent in Hardin County, Tennessee, in June of 1973.

He is married to the former Jenny Lynn Sanders of Milan, Tennessee, and they have one daughter, Jana Leigh (age 4 years).

He is a member of the Alpha Tau Omega, a social fraternity, and Epsilon Sigma Phi, an honorary Extension fraternity.