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# SELECTED CHARACTERISTICS AND COMPARISON OF TENNESSEE FEEDER PIG PRODUCERS IN DISTRICT I AND OTHER EXTENSION DISTRICTS AS TO THEIR PERSONAL AND FARM CHARACTERISTICS, USE OF SELECTED PRODUCTION PRACTICES AND CONTACTS PRODUCERS HAD WITH EXTENSION AGENTS

A Thesis

Presented for the

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Degree

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James Edward Reaves

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## DEDICATION

This thesis is dedicated to my parents, William and Coren Reaves. They have always encouraged and supported any endeavors of their twelve children. Their love and support has given me the desire to always strive for higher goals. For this I dedicate my thesis and express my gratitude and love for them.

## ACKNOWLEDGMENTS

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Appreciation is expressed to my wife, Regina, and my children, Jason, Ebonie and Laytonya for their patience, love and understanding during this study.

ABSTRACT

The purpose of this study was to compare feeder pig producers in three west Tennessee counties having feeder pig sales and producers in other District I counties and statewide as to their personal and farm characteristics, use of pig production practices and Extension contacts.

Data were obtained from three Extension leaders in west Tennessee; state feeder pig sale summary compiled by Dr. Emmit Rawls and 577 feeder pig and farrow-to-finish producers located in 77 Tennessee counties. Interview survey data were collected and the data were then coded and processed for computer analysis. Computations were made by the University of Tennessee Computing Center. The chi square test was used to determine the significance and strength of the relationship between the dependent and independent variable. The .05 probability level was accepted as significant.

Major findings included the following:

1. In 1985 the percent of feeder pigs sold grading number 1 were higher at the Huntingdon sale than either the Brownsville or Lexington sale. The percent of pigs grading number 2 and 3 was higher in 1985 and 1986 at Lexington than either Brownsville or Huntingdon.

2. Feeder pig producers in the three sale counties did not differ as to age, education or employment.

3. Carrol County had the highest percent of producers with less than 42 sows, weaning and selling less than 200 pigs compared to

Haywood and Henderson. Haywood had the highest percent of producers selling lighter weight (less than 50 pounds) pigs compared to Carrol or Henderson Counties.

4. Henderson and Haywood had a higher percentage of producers practicing health recommendations by vaccinating sows twice for leptospirosis, vaccinating sows twice for rhinitis, vaccinating sows and boars twice for parvovirus, worming sows four times per year, treating sows five or more times for lice and using medication and antibiotics in water compared to Carrol County.

5. Carrol County had a higher percentage of producers following the recommended feeding practices by feeding pregnant sows 4-6 pounds of feed, feeding nursing sows 13 to 20 pounds of feed, feeding pigs creep feed only, using both medication in sow gestation and pigs weaning ration compared to Haywood and Henderson Counties.

6. Haywood and Henderson Counties had a higher percent of their producers making Extension office visits and Extension farm visits compared to Carrol County.

7. Other feeder pig sale counties had a higher percentage of producers that were part-time farmers compared to producers in sale counties.

8. Feeder pig producers in sale counties and other feeder pig sale counties did not differ in farm characteristics.

9. Sale counties had a higher percentage of producers following the recommended feeding practices compared to other feeder pig sale counties.

10. Sale counties had a higher percent of producers attending swine meetings and receiving farm visits from the veterinarian, compared to other feeder pig sale counties.

11. Feeder pig producers in sale counties and other District I counties did not differ in producer characteristics.

12. Other District I counties had a larger percent of producers that sold pigs weighing 51 pounds and over compared to sale counties.

13. Sale counties had a higher percentage of producers following the recommended feeding practices by feeding under 6 pounds of feed to pregnant sows, feeding 13 to 20 pounds of feed to nursing sows, feeding creep feed only and using both medication in sow gestation and pigs weaning ration than other feeder pig sale counties.

14. Sale counties had the highest percent of producers attending swine meetings, making telephone calls and receiving farm visits, compared to other District I counties.

Implications and recommendations were also included.

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# CHAPTER I

# THE PROBLEM AND ITS SETTING

## I. INTRODUCTION

The swine industry in Tennessee has been a major source of farm income for many years. However, many changes in the swine industry have taken place in Tennessee over the past several years. In recent years, many counties shifted their farm program emphasis heavily to that of raising feeder pigs as a major source of their income.

The Extension service has, for many years, been actively involved with the swine industry of the state by focusing on more efficient production methods and educating producers and others in the basic ideals and production practices that research has proven to be essential.

The three feeder pig sales included in the study, located at Brownsville, Henderson and Huntingdon, Tennessee were organized in the late 50's and early 60's to provide a fair market for producers pigs. Towns where feeder pig sales are located are west of the Tennessee River between Benton and Shelby County, Tennessee. Much of the land in these counties is devoted to row crops such as corn, soybeans, cotton, small grain, with beef cattle and feeder pigs making up most of the remaining farm enterprises. Also, West Tennessee is a major area in which producers finish purchased feeder pigs and farrow-to-finish pigs.

This study was concerned with characterizing and comparing swine producers in sale counties (Brownsville, Henderson, Huntingdon) with producers in District I counties and with producers in other feeder pig sale counties regarding their personal characteristics, characteristics of the swine operation, number and types of contacts with Extension, their use of recommended prodution practices and the interrelation among these variables. The other sales are located at Carthage, Cookeville, Dickson, Lawrenceburg, Manchester, McMinnville, Savannah, Sevierville and Woodbury, Tennessee.

## II. PURPOSE OF THE STUDY

The purposes of this study were to characterize and compare feeder pig producers in sale counties (Brownsville, Henderson, Huntingdon), District I counties and producers in other feeder pig sale counties regarding personal and farm characteristics, their use of recommended swine management practices and number and types of contacts producers had with Extension agents to determine interrelationships among these variables. These sales are located at Carthage, Cookeville, Dickson, Lawrenceburg, Manchester, McMinnville, Savannah, Sevierville and Woodbury.

The specific objectives were:

1. To compare Lexington, Brownsville and Huntingdon feeder pig sales as to grade, weight and price producers received from pigs in 1985 and 1986.;

2. characterize feeder pig producers in Extension District I;

3. compare feeder pig producers in the three sale counties as to their personal and farm characteristics, use of recommended pig production practices and contacts with Extension agents;

4. compare feeder pig producers located in sale counties with those in other feeder pig sale counties as to personal and farm characteristics, use of recommended pig production practices and contacts made with Extension agents; and

5. compare feeder pig producers located in sale counties to other feeder pig producers in District I as to personal and farm characteristics, use of recommended pig production practices and contacts made with Extension agents.

## III. NEED FOR THE STUDY

Extension agents in the feeder pig sale counties as well as other sale counties in the state are always seeking ways to improve their educational programs. It was felt that this study would help Extension agents and specialists in planning and evaluating educational programs for feeder pig producers in Tennessee.

This study attempted to determine which west Tennessee feeder pig sale sold higher percentage of grade number 1, 2 and 3 feeder pigs; to determine which sale tended to sell the lighest and heaviest grade number 1, 2 and 3 feeder pigs; and to determine which sale averaged the highest price per pound for grade number 1, 2 and 3 feeder pigs. It was believed that this information would help Extension agents in the feeder pig sale counties to evaluate and identify problem areas regarding the sale in their counties.

This study also characterized and compared feeder pig producers in sale counties, District I counties and other feeder pig sale counties as to their personal characteristics, characteristics of the swine operation, number and types of contacts with Extension, their use of recommended production practices and the interrelation among these variables. This information should help Extension agents in all Tennessee counties to identify ways to improve their swine educational programs.

## IV. LIMITATION

This study was limited to analysis of data from feeder pig sale reports from Extension leaders of three counties in west Tennessee where feeder pig sales were conducted. Also, information was obtained from 1985 and 1986 Tennessee's State Feeder Pig Sale summary reports, prepared by Dr. Emmit Rawls, Professor, Extension Agriculture Economic and Resource Development (7).* Data also were used from a survey of feeder pig and farrow-to-finish producers who had five or more sows in production in 1987. This survey was conducted by the University of Tennessee Agriculture Extension Service.

## V. METHOD OF INVESTIGATION

Data from feeder pig and farrow-to-finish producers were obtained by county Extension agents through personal interviews using survey schedules

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*The numbers in parentheses refer to alphabetically numbered references in the Bibliography.

developed by the University of Tennessee Agriculture Extension Service Swine Specialist. The survey population consisted of all Tennessee counties with producers having at least five sows. Data from 77 counties were included in this study. The "$n^{th}$" number random sample technique was used to select individuals to be included in the survey. The number of producers included varied depending upon how many producers were in each county. Counties with less than 50 producers interviewed 15 persons; counties with 50 to 100 producers interviewed 20 persons; and counties with over 100 producers interviewed 25 persons. The survey data were coded and processed for computer analysis. Computations were made by the University of Tennessee Computing Center. The chi square test was used to determine strength of the relationship between dependent and independent variables. The .05 probability level was accepted as significant.

## VI. DEFINITION OF TERMS

1. Feeder Pig Producers. Individuals deriving all or part of their farm income from the sale of feeder pigs.

2. Feeder Pig. A young gilt or barrow between the weights of 30-90 pounds which is sold at a graded feeder pig sale.

3. Sale Counties. Carrol, Haywood and Henderson are three counties located in west Tennessee which conduct feeder pig sales.

4. Extension Contacts. The number of Extension meetings attended, number of visits to the Extension office, number of telephone calls to the Extension office, and farm visits received by the swine producer of a 12-month period.

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

6. Other Feeder Pig Sale Counties. Sales conducted at Carthage, Cookeville, Dickson, Lawrenceburg, Manchester, McMinnville, Savannah, Sevierville and Woodbury, Tennessee.

# CHAPTER II

## REVIEW OF RELATED STUDIES

This chapter presents findings from studies concerning relationship between the characteristics of producers and their farm operations, their contacts with Extension and their use of recommended production practices.

Section I presents study findings regarding relationships between the characteristics of swine producers, their farm operations and Extension contacts.

Section II presents study findings regarding relationships between the number of contacts producers had with Extension and characteristics of their swine operation.

## I. RELATIONSHIP BETWEEN THE CHARACTERISTICS OF SWINE PRODUCERS, THEIR FARM OPERATION AND EXTENSION CONTACTS

Perry's study of Tennessee swine producers in 1980 indicated that full-time and part-time farmers did differ significantly in terms of the number of contacts they had with Extension through meetings, office visits, telephone calls, farm visits and total Extension contacts. Swine producers who were full-time farmers attended significantly more Extension meetings, made more visits and telephone calls to the Extension office, received more farm visits from Extension

agents, and had more total Extension contacts than part-time farmers (6).

Blair's study of Tennessee swine producers in 1987 indicated that producers age, education, and the number of sows maintained were related to the number of Extension contacts of various types. Young farmers with some college education and those maintaining at least 40 sows attended more Extension meetings. It was further noted that a higher percentage of those who attended Extension meetings were using the recommended pig production practices (1).

Gordon's study in 1977 found that grade 1 and 2 pigs sold during the five years (1970-1974) by the feeder pig producers was not significantly related to the number of Extension meetings attended, or to the number of swine meetings attended by the feeder pig producers in Haywood County, Tennessee. However, there was a significant positive relationship between the number of grade 1 and 2 pigs sold and the number of visits to the Extension office in 1971, the number of telephone calls to the Extension office in 1971 and 1972, and the number of farm visits received from Extension agents in 1974 (3).

Chadwell's 1987 statewide study indicated that younger swine producers did differ significantly from older producers in terms of the number of contacts they had with Extension through office visits, telephone calls and farm visits. Swine producers who were 35 years of age or under attended more Extension swine meetings, made more office visits

and telephone calls to the Extension office and received more farm visits from Extension agents than producers who were over 35 (2).

## II. RELATIONSHIP BETWEEN EXTENSION CONTACTS AND PRODUCERS USE OF RECOMMENDED MANAGEMENT PRACTICES

McLemore's statewide study of Tennessee swine producers reported that the swine producers who were using the recommended practices of increasing sows feed after farrowing and putting pigs on 18 to 20 percent 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 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 (4).

Osikonobia found in a 1979 study that swine producers using individual practices reported making significantly more total contacts with Extension the previous year than non-users. Also, the more total Extension contacts producers reported having had the previous year, the higher the average number of recommended swine production practices they tended to be using (5).

Chadwell reported in his 1987 study that there was a significant relationship between the use of 10 of the recommended swine management practices and the total number of Extension contacts through swine meetings, office visits, telephone calls to the office and farm visits from the agent. These practices were vaccination of sows for leptospirosis, vaccination of sows for rhinitis, vaccination of boars for parvovirus, use of medication in the water to treat disease, use of sulfa in the water to treat disease, use of antibiotic in the water to treat disease, medication used in sow gestation/lactation ration, frequency with which iron shots were given to pigs, whether or not needle teeth were clipped, and increase of feed fed to pregnant sows. The swine producers who used each of these practices attended significantly more Extension meetings, made more visits and telephone calls to the Extension office and received more farm visits from the Extension agent than those producers who did not use these practices (2).

# CHAPTER III

## A COMPARISON OF THREE WEST TENNESSEE FEEDER PIG SALES REGARDING THEIR GRADES, WEIGHTS AND PRICES RECEIVED IN 1985 AND 1986, AND TO CHARACTERIZE AND COMPARE DISTRICT I AND SALE COUNTIES PRODUCERS PERSONAL AND FARM CHARACTERISTICS, USE OF RECOMMENDED PIG PRODUCTION PRACTICES AND EXTENSION CONTACTS

This chapter was organized into three sections dealing with the first three tables of this study. Selected variables were discussed under subheadings within each section.

Section I presents data comparing Lexington, Brownsville and Huntingdon feeder pig sales as to grades, weights, and prices received in the years 1985 and 1986.

Section II presents data regarding District I feeder pig producers personal characteristics, the characteristics of their swine operation and the number and type of contacts the producers had with the Agriculture Extension Service during the past year.

Section III presents findings comparing feeder pig producers in the three sale counties as to their personal and farm characteristics, use of recommended pig production practices and contacts the producers had with the Agriculture Extension Service.

## I. A COMPARISON OF LEXINGTON, BROWNSVILLE AND HUNTINGDON FEEDER PIG SALES AS TO GRADES, WEIGHTS AND PRICES RECEIVED

The purpose of this subsection was to present findings regarding the grades, weights and prices of pigs sold in 1986 and 1986 at three west Tennessee feeder pig sales located at Lexington, Brownsville, and Huntingdon, Tennessee. Findings (Table I) are presented under two subsections. The first subsection presents findings from the sales held in 1985,while findings regarding sales held in 1986 are presented in a seperate subsection.

### Comparison of Three West Tennessee Feeder Pig Sales in 1985

Findings reported in this subdivision deal with: (1) number and percent of grades 1, 2 and 3 pigs sold, (2) average weight of grades 1, 2, and 3 pigs sold, and (3) average price per pound of grade 1, 2 and 3 pigs sold in 1985.

Number and percent of grades 1, 2 and 3 pigs sold in 1985. Huntingdon sold 44,963 grade 1 pigs compared to 4,374 sold at Brownsville and 1,775 sold at Lexington. Fifty-four percent of the feeder pigs were graded number 1 at the Huntingdon sale compared to 42 percent at Brownsville and 4 percent at Lexington. In comparing the three west Tennessee feeder pig sales as to number and percent of the grade 1 pigs sold in 1985, Huntingdon sold the largest number of pigs and had the highest percent of pigs grading number 1 compared to the Brownsville and Lexington sales.

Table I. A Comparison of Lexington, Brownsville and Huntingdon Feeder Pig Sales as to Grade, Weight and Price Received in 1985 and 1986

| | Location of Feeder Pig Sales | | | | | |
|---|---|---|---|---|---|---|
| | Lexington | | Brownsville | | Huntingdon | |
| | 1985 | 1986 | 1985 | 1986 | 1985 | 1986 |
| Number pigs graded 1 | 1,775 | 3,684 | 4,374 | 4,905 | 44,963 | 40,271 |
| Percent of pigs graded 1 | 4.1 | 7.3 | 42.3 | 42.2 | 54.2 | 48.8 |
| Number pigs graded 2 | 17,801 | 18,440 | 4,255 | 4,408 | 31,205 | 36,335 |
| Percent of pigs graded 2 | 41.2 | 36.7 | 41.2 | 37.9 | 37.6 | 44.0 |
| Number pigs graded 3 | 23,677 | 28,109 | 1,711 | 2,318 | 6,786 | 5,990 |
| Percent of pigs graded 3 | 54.7 | 56.0 | 16.5 | 19.9 | 8.2 | 7.2 |
| Weight of pigs graded 1 | 59 | 57 | 51 | 51 | 50 | 50 |
| Weight of pigs graded 2 | 55 | 55 | 47 | 47 | 46 | 46 |
| Weight of pigs graded 3 | 52 | 54 | 42 | 42 | 47 | 41 |
| Price per pound of graded 1 | .91 | .71 | .95 | .95 | .82 | .97 |
| Price per pound of graded 2 | .94 | .75 | .93 | .93 | .80 | .99 |
| Price per pound of graded 3 | .89 | .73 | .77 | .77 | .66 | .86 |
| Total pigs sold | 43,253 | 50,233 | 10,340 | 11,631 | 82,954 | 82,596 |

Huntingdon sold 31,205 grade 2 pigs compared to 17,801 sold at Lexington and 4,255 sold at Brownsville. Forty-one percent of the feeder pigs were graded number 2 both in the Lexington sale and the Brownsville sale compared to almost 38 percent at Huntingdon in 1985. In comparing the three west Tennessee feeder pigs sales as to number and percent of the grade 2 pigs sold, Huntingdon reported selling the largest number but the least percent compared to Lexington selling the second highest number and tied with Brownsville in the percent (41) of grade 2 pigs sold. Brownsville sold the least number of grade 2 pigs in 1985.

Lexington sold 23,677 grade 3 pigs compared to 6,786 sold at Huntingdon and 1,711 sold at Brownsville. Almost 55 percent of the feeder pigs were graded number 3 at the Lexington sale compared to 16 percent at Brownsville and 8 percent at Huntingdon. In comparing the three west Tennessee feeder pig sales, Lexington tended to have the largest number and percent of pigs that were graded number 3 compared to Brownsville with the second highest percent but the smallest number, while Huntingdon had the second highest number and sold the least percent of grade 3 pigs in 1985.

Average weight of grades 1, 2 and 3 pigs sold in 1985. Fifty-nine pounds was the average weight of the pigs that were graded number 1 in the Lexington sale compared to 51 pounds at Brownsville and 50 pounds at Huntingdon. The average weight of the pigs that were graded number 2 at the Lexington sale was 55 pounds compared to 47 pounds at Brownsville and 46 pounds at Huntingdon. The average weight of the pigs that were graded number 3 at the Lexingdon sale was 52 pounds

compared to 42 pounds in Brownsville and 47 pounds in Huntingdon. In comparing the three west Tennessee feeder pig sales, Lexington sold the heaviest weight of grades 1, 2 and 3 feeder pigs compared to Brownsville which sold the second heaviest grades 1 and 2 and lightest grade 3 and Huntingdon selling the lightest grades 1 and 2 and second heaviest grade 3 pig in 1985.

Price per pound of grades 1, 2 and 3 pigs sold in 1985. Grade 1 feeder pigs sold for 91 cents per pound at the Lexington sale compared to 95 cents per pound at Brownsville and 82 cents per pound at Huntingdon. Grade 2 feeder pigs sold for 94 cents per pounds at the Lexington sale compared to 93 cents per pound at Brownsville and 80 cents per pound at Huntingdon. Grade 3 feeder pigs sold for 89 cents per pound at the Lexington sale compared to 77 cents per pound at Brownsville and 66 cents per pound at Huntingdon sale in 1985. In comparing the three west Tennessee feeder pig sales, Brownsville sale tended to receive a higher price per pound for grade 1 compared to Lexington which received the highest price per pound for grade 2 and grade 3 in 1985.

## Comparison of Three West Tennessee Feeder Pig Sales in 1986

Variables included in this subsection were: (1) number and percent of grades 1, 2 and 3 pigs sold, (2) average weight of grades 1, 2 and 3 pigs sold, and (3) average price per pound of grades 1, 2 and 3 pigs sold in 1986.

Number and percent of grades 1, 2 and 3 pigs sold in 1986.

Huntingdon sold 40,271 grade 1 pigs compared to 4,905 at Brownsville and 3,684 at Lexington. Almost 49 percent of the feeder pigs in 1986 were graded number 1 at the Huntingdon sale compared to 42 percent at Brownsville and 4 percent at Lexington. In comparing the three west Tennessee feeder pig sales as to number and percent of grade 1 pigs sold, Huntingdon sold the largest number and percent of pigs compared to Brownsville with the second largest number and percent and Lexington selling the smallest number and percent of grade 1 pigs in 1986.

In 1986 Huntingdon sold 36,335 grade 2 pigs compared to 18,440 at Lexington and 4,408 in Brownsville. Almost 37 percent of the feeder pigs were graded number 2 at the Lexington sale compared to nearly 38 percent in Brownsville and 44 percent at Huntingdon. In comparing the three west Tennessee feeder pig sales as to number and percent of grade 2 pigs sold in 1986, Huntingdon sold the largest number and percent while Lexington sold the second highest number but the least percent of feeder pigs. Brownsville had the least number and the second highest percent of grade 2 pigs sold in 1986.

Lexington sold 28,109 grade 3 pigs compared to 5,990 at Huntingdon and 2,318 at Brownsville. Fifty-six percent of the feeder pigs were graded number 3 at the Lexington sale compared to almost 20 percent at Brownsville and 7 percent at Huntingdon. In comparing the three west Tennessee feeder pig sales in 1986, to number and percent of the grade 3 pigs sold, Lexington sold the largest number and percent of pigs compared to Huntingdon with the second largest number but

least percent and Brownsville with the least number but second largest percent of grade 3 feeder pigs sold.

Average weight of grades 1, 2 and 3 pigs sold in 1986. Fifty-seven pounds was the average weight of the grade 1 feeder pigs sold at the Lexington sale compared to 51 pounds at Brownsville and 50 pounds at Huntingdon. The average weight of grade 2 feeder pigs sold in 1986 at the Lexington sale was 55 pounds compared to 47 pounds at Brownsville and 46 pounds at Huntingdon. The average weight of the grade 3 feeder pigs in the Lexington sale was 54 pounds compared to 42 pounds at Brownsville and 41 pounds at Huntingdon. In comparing the three west Tennessee feeder pig sales, to average weight of grades 1, 2 and 3 feeder pigs sold, Lexington sold the heaviest weight of grades 1, 2 and 3 feeder pigs compared to Brownsville selling the second heaviest and Huntingdon selling the lightest weight grades 1, 2 and 3 pigs in 1986.

Average price per pound of grades 1, 2 and 3 pigs sold in 1986. Grade 1 feeder pigs sold for 71 cents per pound at the Lexington sale compared to 95 cents per pound at Brownsville and 97 cents per pound at Huntingdon in 1986. Grade 2 feeder pigs sold for 75 cents per pound at the Lexington sale compared to 93 cents per pound at Brownsville and 99 cents per pound at Huntingdon. Grade 3 feeder pigs sold for 73 cents per pound at the Lexington sale compared to 77 cents per pound at Brownsville and 86 cents per pound at Huntingdon in 1986. In comparing the three west Tennessee feeder pig sales, to average

price received per pound of grades 1, 2 and 3, Huntingdon sales tended to receive a higher price per pound for grades 1, 2 and 3 compared to Brownsville and Lexington sales in 1986.

Table Summary

This section (Table I) indicates that the Huntingdon sale had the largest number (44,963) and percentage (54 percent) of grade 1 pigs in 1985, also the largest number (40,271) and percentage (48 percent) in 1986. The Brownsville sale had the second largest number (4,374) and percentage (42 percent) in 1985, also the second largest number (4,905) and percentage (42 percent) in 1986. The Lexington sale had the least number (1,775) and percentage (4.1 percent) in 1985, and also the least number (3,684) and percentage (7.3 percent) in 1986 of grade 1 feeder pigs sold. In 1985 Huntingdon sale had the highest number (36,335) and percentage (44) of grade number 2 pigs sold than either Lexington and Brownsville, while Lexington reported the largest number and percentage of grade 3 pigs sold in 1985 and 1986 compared to Brownsville and Huntingdon.

Lexington producers sold heavier feeder pigs (over 55 pounds) of all grades than either Brownsville or Huntingdon in both 1985 and 1986. Data also revealed that producers in the Brownsville sale received a higher price per pound in 1985 and Huntingdon in 1986, however pigs were a lighter weight. Lexington and Brownsville producers received the highest price per pound for grade 2 in 1985 and in 1986 Huntingdon and Brownsville received the highest price per pound.

# II. CHARACTERISTIC OF FEEDER PIG PRODUCERS IN EXTENSION DISTRICT I

The purpose of this section was to present findings regarding the characteristics of feeder pig producers in Extension District I. The section was organized into subsections regarding producer characteristics, farm characteristics, health practices, feeding practices, and Extension contacts.

## Producers Characteristics

Findings presented in this subsection (Table II) characterize feeder pig producers in Extension District I as to age, education and employment.

Age of producers. Seventeen percent of the feeder pig producers in District I were 35 and under, 59 percent were 36 to 59, and 24 percent were 60 and over. The mean age was 48.8 years.

Education. Eighty percent of the feeder pig producers in District I had a high school or less education, while 20 percent had a college education.

Employment. Thirty-six percent of the feeder pig producers were full-time farmers while 64 percent were part-time farmers.

## Farm Characteristics

Findings regarding feeder pig producers five farm characteristics were presented in this subsection. Farm characteristics studied were

Table II. Characteristics of Feeder Pig Producers in Extension District I

| Name of Variable | Number Responses | Percent Responses |
|---|---|---|
| PRODUCER CHARACTERISTICS | | |
| Age of Producer | | |
| 35-under | 54 | 17.0 |
| 36 to 59 | 187 | 58.8 |
| 60-over | 77 | 24.2 |
| Total | 318 | 100.0 |
| Mean = 48.8 N = 310 | | |
| Education | | |
| High school or less | 250 | 80.4 |
| College | 61 | 19.6 |
| No response | 7 | 0.0 |
| Total | 318 | 100.0 |
| Employment | | |
| Full-time farmer | 113 | 35.5 |
| Part-time farmer | 205 | 64.5 |
| Total | 318 | 100.0 |
| FARM CHARACTERISTICS | | |
| Number of Sows | | |
| 42-less | 262 | 82.4 |
| 43-60 | 21 | 6.6 |
| 61-over | 35 | 11.0 |
| Total | 318 | 100.0 |
| Mean = 26.0 N = 312 | | |
| Number of Litters Farrowed | | |
| Less than 20 | 116 | 36.6 |
| 20 to 49 | 117 | 36.9 |
| 50 to 99 | 45 | 14.2 |
| 100-over | 39 | 12.3 |
| No response | 1 | 0.0 |
| Total | 318 | 100.0 |
| Mean = 49.9 N = 312 | | |
| Number of Pigs Raised to Weaning | | |
| Under 100 | 68 | 21.4 |
| 100-199 | 91 | 28.6 |
| 200-299 | 46 | 14.5 |
| 300-998 | 77 | 24.2 |
| 1,000-over | 36 | 11.3 |
| Total | 318 | 100.0 |
| Mean = 396.3 N = 312 | | |
| Number of Pigs Sold as Feeders | | |
| Under 100 | 84 | 26.4 |
| 100-199 | 102 | 32.1 |
| 200-299 | 51 | 16.0 |
| 300-over | 81 | 25.5 |
| Total | 318 | 100.0 |
| Mean = 237.2 N = 312 | | |
| Average Weight of Feeder Pigs Sold | | |
| 30-40 | 5 | 1.6 |
| 41-50 | 164 | 51.9 |
| 51-over | 147 | 46.5 |
| None sold or no response | 2 | 0.0 |
| Total | 318 | 100.0 |
| Mean = 45.7 N = 310 | | |
| HEALTH PRACTICES | | |
| Times Per Year Sows Vaccinated for Leptospirosis | | |
| Not any | 156 | 49.7 |
| Once | 54 | 17.2 |
| Twice | 104 | 33.1 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |
| Mean = .835 N = 310 | | |

Table II (Continued)

| Name of Variable | Number Responses | Percent Responses |
|---|---|---|
| Times Per Year Sows Vaccinated for Rhinitis | | |
| Not any | 180 | 57.1 |
| One | 51 | 16.2 |
| Twice | 84 | 26.7 |
| No response | 3 | 0.0 |
| Total | 318 | 100.0 |
| Mean = .687 N = 310 | | |
| Times Per Year Sows Vaccinated for Parvovirus | | |
| None | 156 | 49.7 |
| Once | 54 | 17.2 |
| Twice | 104 | 33.1 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |
| Mean = .835 N = 309 | | |
| Times Per Year Boars Vaccinated for Parvovirus | | |
| None | 174 | 56.2 |
| Once | 63 | 20.3 |
| Twice | 73 | 23.5 |
| No response | 8 | 0.0 |
| Total | 318 | 100.0 |
| Mean = .676 N = 306 | | |
| Times Per Year Sows Wormed | | |
| Not any | 7 | 2.2 |
| Once | 30 | 9.5 |
| Twice | 228 | 72.4 |
| Three | 29 | 9.2 |
| Four | 21 | 6.7 |
| No response | 3 | 0.0 |
| Total | 318 | 100.0 |
| Mean = 2.0 N = 310 | | |
| Times Per Year Sows Treated for Lice | | |
| Not any | 13 | 4.1 |
| Once | 35 | 11.0 |
| 2-4 | 230 | 72.3 |
| 5-over | 40 | 12.6 |
| Total | 318 | 100.0 |
| Mean = 2.7 N = 308 | | |
| Use of Medicated Water | | |
| No | 252 | 79.2 |
| Yes | 66 | 20.8 |
| Total | 318 | 100.0 |
| Use Sulfa in Water | | |
| No medication used in water | 171 | 53.9 |
| No | 125 | 39.4 |
| Yes | 21 | 6.7 |
| No response | 1 | 0.0 |
| Total | 318 | 100.0 |
| Use Antibiotics in Water | | |
| Not any | 170 | 53.5 |
| No | 74 | 23.3 |
| Yes | 74 | 23.2 |
| Total | 318 | 100.0 |
| Disinfect Farrowing Quarters | | |
| No | 128 | 44.0 |
| Yes | 163 | 56.0 |
| Not housed or rinsed | 27 | 0.0 |
| Total | 318 | 100.0 |

Table II (Continued)

| Name of Variable | Number Response | Percent Response |
|---|---|---|
| Frequency of Iron Shots to Pigs | | |
| Never | 75 | 25.6 |
| Sometimes | 63 | 21.5 |
| Always | 155 | 52.9 |
| Not needed | 25 | 0.0 |
| Total | 318 | 100.0 |
| Age Iron Shots Given | | |
| 3 days after birth | 193 | 88.9 |
| Later | 24 | 11.1 |
| Not needed | 101 | 0.0 |
| Total | 318 | 100.0 |
| Clip Needle Teeth | | |
| Never | 38 | 12.0 |
| Sometimes | 83 | 26.3 |
| Always | 195 | 61.7 |
| No response | 2 | 0.0 |
| Total | 318 | 100.0 |
| Most Serious Problem in Raising Pigs | | |
| Scours | 118 | 37.6 |
| Small litters | 50 | 15.9 |
| Uneven birth weight | 40 | 12.7 |
| Sows fail to milk | 23 | 7.3 |
| Sows fail to breed | 31 | 9.9 |
| Other | 52 | 16.6 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |
| FEEDING PRACTICES | | |
| Increase Feed to Pregnant Sows | | |
| No | 46 | 14.6 |
| Yes | 270 | 85.4 |
| No response | 2 | 0.0 |
| Total | 318 | 100.0 |
| Pounds Fed to Pregnant Sows | | |
| Under 6 pounds | 176 | 64.7 |
| 7-12 pounds | 96 | 35.3 |
| No response | 46 | 0.0 |
| Total | 318 | 100.0 |
| Mean = 6.1 N = 270 | | |
| Pounds Fed to Nursing Sows | | |
| Under 9 pounds | 58 | 18.5 |
| 10-12 pounds | 133 | 42.4 |
| 13-20 pounds | 123 | 39.1 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |
| Mean = 11.7 N = 310 | | |
| How did Creep Feed Pigs | | |
| Creep feed only | 221 | 71.5 |
| Pigs ate with sow | 46 | 14.9 |
| Creep plus corn | 42 | 13.6 |
| No response | 9 | 0.0 |
| Total | 318 | 100.0 |
| Medication Used in Gestation Ration | | |
| None | 119 | 37.9 |
| Antibiotic | 116 | 36.9 |
| Sulfa | 15 | 4.8 |
| Both | 64 | 20.4 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |

Table II (Continued)

| Name of Variable | Number Response | Percent Response |
|---|---|---|
| Medication Used in Pigs Weaning Ration | | |
| None | 91 | 29.0 |
| Antibiotic | 139 | 44.3 |
| Sulfa | 11 | 3.5 |
| Both | 73 | 23.2 |
| No response | 4 | 0.0 |
| Total | 318 | 100.0 |
| EXTENSION CONTACTS | | |
| Swine Meetings Attended | | |
| Not any | 103 | 32.4 |
| One-over | 215 | 67.6 |
| Total | 318 | 100.0 |
| Mean = 1.07 N = 310 | | |
| Office Visits Made | | |
| Not any | 45 | 14.2 |
| One-over | 273 | 85.8 |
| Total | 318 | 100.0 |
| Mean = 2.7 N = 302 | | |
| Telephone Calls Made | | |
| Not any | 65 | 20.4 |
| One-over | 253 | 79.6 |
| Total | 318 | 100.0 |
| Mean = 3.3 N = 310 | | |
| Farm Visits Received | | |
| Not any | 63 | 19.8 |
| One-over | 255 | 80.2 |
| Total | 318 | 100.0 |
| Mean = 3.1 N = 310 | | |
| VETERINARIAN CONTACTS | | |
| Farm Visits Received from Veterinarian | | |
| Not any | 117 | 36.8 |
| One-over | 201 | 63.2 |
| Total | 318 | 100.0 |
| Mean = 1.3 N = 310 | | |

number of sows owned, number of litters farrowed, number of pigs raised to weaning, number of pigs sold as feeders and average weight of feeder pigs sold.

Number of sows. Eighty-two percent of the feeder pig producers in District I had 42 or less sows, 7 percent had 43 to 60, and 11 percent had 61 or more. The mean number of sows was 26.0

Number of litters farrowed. Thirty-seven percent of the feeder pig producers in District I farrowed less than 20 litters, 37 percent farrowed 20 to 49 litters, 14 percent farrowed 50 to 90 litters, and 12 percent farrowed over 100 litters. The mean number of litters farrowed was 49.9.

Number of pigs raised to weaning. Twenty-one percent of the feeder pig producers weaned under 100 pigs, 29 percent weaned 100 to 199, 15 percent weaned 200 to 299, 24 percent weaned 300 to 999, and 11 percent weaned 1,000 or more. The mean number of pigs raised to weaning was 396.3.

Number of pigs sold as feeders. Twenty-six percent of the feeder pig producers in District I sold under 100 feeder pigs, 32 percent sold 100 to 199, 16 percent sold 200 to 299 and 26 percent sold over 300. The mean number of pigs sold as feeders was 237.2.

Average weight of feeder pigs sold. One percent of the feeder pig producers in District I sold pigs with an average weight of 30-40 pounds, 52 percent weighed 41 to 50 pounds, and 47 percent weighed over 51 pounds. The mean weight of feeder pigs sold was 45.7 pounds.

Health Practices

Findings regarding feeder pig producers use of 14 health practices were presented in this subsection.

Times per year sows vaccinated for leptospirosis. Fifty percent of the feeder pig producers in District I did not vaccinate sows for leptospirosis, 17 percent vaccinated once, and 33 percent vaccinated twice. The mean number of times per year sows were vaccinated for leptospirosis was 0.84.

Times per year sows vaccinated for rhinitis. Fifty-seven percent of the feeder pig producers in District I did not vaccinate sows for parvovirus, 17 percent vaccinated once, and 33 percent vaccinated twice. The mean number of times sows were vaccinated for parvovirus was 0.84.

Times per year boars vaccinated for parvovirus. Fifty-six percent of the feeder pig producers did not vaccinate boars for parvovirus, 20 vaccinated once, 24 percent vaccinated twice. The mean number of times boars were vaccinated for parvovirus was 0.68.

Times per year sows wormed. Two percent of the feeder pig producers in District I did not worm sows, 10 percent wormed once, 72 percent wormed twice, 9 percent wormed three times, and 7 percent wormed four times. The mean number of times sows were wormed was 2.0.

Times per year sows treated for lice. Four percent of the feeder pig producers in District I did not treat sows for lice, 11 percent treated once, 72 percent treated two to four times, and 12 percent

terated five or more times. The mean number of times per year sows were treated for lice was 2.7.

Use of medicated water. Seventy-nine percent of the feeder pig producers in District I did not use medication in drinking water, while 21 percent did use medication.

Use of sulfa in water. Fifty-four percent of the feeder pig producers in District I did not use medication in drinking water, 39 percent use no sulfa, and 7 percent did use sulfa in drinking water.

Use antibiotics in water. Fifty four percent of the feeder pig producers in District I did not use any antibiotics in drinking water, while 23 percent did use antibiotics.

Disinfect farrowing quarters. Forty-four percent of the feeder pig producers in District I did not disinfect farrowing quarters, while 56 percent did disinfect.

Frequnecy of iron shots to pigs. Twenty-six percent of the feeder pig producers in District I never gave iron shots to pigs, 21 percent gave iron shots sometimes, and 53 percent always gave iron shots to pigs.

Age iron shots given. Eighty-nine percent of the feeder pig producers in District I gave iron shots to pigs three days after birth, while 11 percent gave iron shots later.

Clip needle teeth. Twelve percent of the feeder pig producers in District I never clipped pigs needle teeth, 26 percent clipped sometimes, and 62 percent always clipped pigs needle teeth.

Most serious problem in raising pigs. Thirty-eight percent of the feeder pig producers in District I indicated that the most serious problem in raising pigs was scours, 16 percent reported small litters, 13 percent reported uneven birth weight, 7 percent reported sows fail to milk, 10 percent reported sows fail to breed and 17 percent reported others as the most serious problem in raising pigs.

## Feeding Practices

Findings regarding feeder pig producers use of six feeding practices were included in this subsection.

Increase feed to pregnant sows. Fifteen percent of the feeder pig producers in District I did not increase feed to pregnant sows while 85 percent did increase feed.

Pounds fed to pregnant sows. Sixty-five percent of the feeder pig producers in District I fed under 6 pounds of feed per day to pregnant sows while 35 percent fed 7 to 12 pounds. The mean pounds of feed fed per day to pregnant sows was 6.1.

Pounds fed to nursing sows. Nineteen percent of the feeder pig producers in District I fed under 9 pounds of feed per day to nursing sows, 42 percent fed 10 to 12 pounds and 39 percent fed 13 to 20 pounds. The mean pounds of feed fed per day to nursing sows was 11.7.

How did creep feed pigs. Seventy-two percent of the feeder pig producers in District I creep fed pigs only, 15 percent let pigs eat with sows and 14 percent creep fed plus fed corn.

Medication used in gestation ration. Thirty-eight percent of the feeder pig producers in District I did not use any medication in gestation ration, 37 percent used antibiotic, 5 percent used sulfa and 20 percent used both antibiotics and sulfa.

Medication used in pigs weaning ration. Twenty-nine percent of the feeder pig producers in District I did not use any medication in the pig weaning ration, 44 percent used antibiotics, 4 percent used sulfa and 23 percent used both antibiotic and sulfa.

Extension Contacts

Findings regarding feeder pig producers contacts with Extension and veterinarian were included in this subsection.

Swine meetings attended. Thirty-two percent of the feeder pig producers in District I did not attend any swine meetings during the previous 12 months while 68 percent attended one or more. The mean number of Extension swine meetings attended was 1.07.

Office visits made. Fourteen percent of the feeder pig producers in District I did not make any office visits while 86 percent made one or more visits to the Extension office. The mean number of office visits made during the past year to the Extension office was 2.7.

Telephone calls made. Twenty percent of the feeder pig producers in District I did not make any telephone calls during the previous year to the Extension office while 80 percent made one or more calls. The mean number of telephone calls made last year was 3.3.

Farm visits received. Twenty percent of the feeder pig producers in District I did not receive any farm visits from Extension agents during the past year while 80 percent received one or more farm visit. The mean number of farm visits received from Extension agents during the past year was 3.1.

Farm visits received from veterinarian. Thirty-seven percent of the feeder pig producers in District I did not receive any farm visits from a veterinarian while 63 percent did receive one or more farm visits. The mean number of farm visits received from a veterinarian during the past 12 months was 1.3.

## Table Summary

Eighty-three percent of the producers in Extension District I were over the age of 35 with just 17 percent of the 310 feeder pig producers responding being young producers less than 36 years of age. Over 80 percent had only a high school education or less and nearly 65 percent of the producers farmed on a part-time basis.

Eighty-two percent of the farmers surveyed averaged less than 42 sows. Almost 74 percent of the producers farrowed less than 50 litters per year. Fifty percent of the producers raised less than 200 pigs to weaning. Almost 58 percent sold less than 200 pigs as feeders and 98 percent sold feeder pigs that weighed over 41 pounds.

One-half or 7 of the 14 feeder pig management practices recommended by the Extension service were not used by about 50 percent of the producers. These were vaccinating sows for leptospirosis, vaccinating sows for rhinitis, vaccinating sows for parvovirus, vaccinating boars for parvovirus, use of medicated water, use of sulfa in water and use of antibiotics in water. Over 70 percent of the producers wormed their sows twice and treated sows for lice two or more times. Over 50 percent of the producers disinfected farrowing quarters and always gave iron shots to pigs. Almost 89 percent gave iron shots three days after birth and 38 percent of producers reported scours the problem in raising pigs.

The majority (over 50 percent) of the producers in District I tended to increase feed fed to pregnant sows, fed pregnant sows just over 6 pounds of feed, creep fed their pigs, fed about 12 pounds of feed to nursing sows, used medication in gestation rations and in pigs weaning ration.

Over 67 percent of the feeder pig producers attended one or more swine meetings. Over 80 percent made one or more office visits and telephone calls to the Extension office and 63 percent received visits from the veterinarian.

# III. COMPARISON OF FEEDER PIG PRODUCERS IN THE THREE SALE COUNTIES AS TO THEIR PERSONAL AND FARM CHARACTERISTICS, USE OF RECOMMENDED PIG PRODUCTION PRACTICES AND CONTACTS WITH EXTENSION AGENTS

The purpose of this section was to present findings regarding the comparison of feeder pig producers in the three sale counties (Table III). This section was divided into four subsections. The first subsection presents findings concerning producers personal characteristics. The second subsection presents findings concerning producers farm characteristics. The third subsection presents findings concerning use of recommended pig production practices and the fourth subsection presents findings concerning contacts producers had with Extension agents.

## Producer Characteristics

Findings included in this subsection deal with age, education and employment of feeder pig producers in the sale counties.

Age of producer. Findings presented in Table III indicated that the majority of producers in each of three sale counties, who were 36 to 59 years of age, ranged from a low of 36 percent in Henderson County to 68 percent in Carrol and 65 percent in Haywood. Although producers under age 35 ranged from 10 percent in Haywood compared to 36 percent in Henderson and 20 percent in Carrol, differences were not significant at the .05 level as tested by the $x^2$ test.

Education. Ninety-five percent of the Haywood County producers had a high school or less education while only 72 percent did in Carrol

Table III. Comparison of Feeder Pig Producers in the Three Sale Counties as to Their Personal and Farm Characteristics, Use of Recommended Pig Production Practices and Contacts with Extension Agents

| Name of Variable | Counties Where Feeder Pig Producers Located | | | | | |
|---|---|---|---|---|---|---|
| | Carrol | | Haywood | | Henderson | |
| | No. Response | Percent Response | No. Response | Percent Response | No. Response | Percent Response |
| **PRODUCER CHARACTERISTICS** | | | | | | |
| **Age of Producer** | | | | | | |
| 35-under | 5 | 20.0 | 2 | 10.0 | 5 | 35.7 |
| 36-59 | 17 | 68.0 | 13 | 65.0 | 5 | 35.7 |
| 60-over | 3 | 12.0 | 5 | 25.0 | 4 | 28.6 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 5.95$ | $p = 0.20$ | | | | |
| **Education** | | | | | | |
| High school or less | 18 | 72.0 | 19 | 95.0 | 10 | 71.4 |
| College | 7 | 28.0 | 1 | 5.0 | 4 | 28.6 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 4.39$ | $p = 0.11$ | | | | |
| **Employment** | | | | | | |
| Full-time farmer | 14 | 56.0 | 13 | 65.0 | 8 | 57.1 |
| Part-time farmer | 11 | 44.0 | 7 | 35.0 | 6 | 42.9 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square text | $X^2 = 0.40$ | $p = 0.81$ | | | | |
| **FARM CHARACTERISTICS** | | | | | | |
| **Average Number of Sows** | | | | | | |
| 42-less | 25 | 100.0 | 15 | 75.0 | 9 | 64.3 |
| 43-60 | 0 | 0 | 2 | 10.0 | 0 | 0 |
| 61-over | 0 | 0 | 3 | 15.0 | 5 | 35.7 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 14.0$ | $p = 0.00$ | | | | |
| **Number of Litters Farrowed** | | | | | | |
| Under 20 | 14 | 56.0 | 8 | 40.0 | 3 | 21.4 |
| 20 to 49 | 9 | 36.0 | 5 | 25.0 | 4 | 28.6 |
| 50 to 99 | 2 | 8.0 | 3 | 15.0 | 2 | 14.0 |
| 100-over | 0 | 0 | 4 | 20.0 | 5 | 5.0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 11.5$ | $p = 0.07$ | | | | |
| **Number of Pigs Raised to Weaning** | | | | | | |
| Less than 100 | 6 | 24.0 | 7 | 35.0 | 3 | 21.4 |
| 100-199 | 11 | 44.0 | 3 | 15.0 | 1 | 7.1 |
| 200-299 | 4 | 16.0 | 2 | 10.0 | 1 | 7.1 |
| 300-998 | 4 | 16.0 | 5 | 25.0 | 4 | 28.6 |
| 1,000-over | 0 | 0 | 3 | 15.0 | 5 | 35.8 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 16.7$ | $p = 0.03$ | | | | |
| **Number of Pigs Sold as Feeders** | | | | | | |
| Under 100 | 8 | 32.0 | 8 | 40.0 | 4 | 28.6 |
| 100 to 199 | 11 | 44.0 | 4 | 20.0 | 1 | 7.1 |
| 200-299 | 4 | 16.0 | 3 | 15.0 | 2 | 14.3 |
| 300-over | 2 | 8.0 | 5 | 25.0 | 7 | 50.0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 12.1$ | $p = 0.05$ | | | | |
| **Average Weight of Feeder Pigs Sold** | | | | | | |
| 30 to 40 pounds | 1 | 4.0 | 1 | 5.0 | 0 | 0 |
| 40 to 50 pounds | 4 | 16.0 | 17 | 85.0 | 6 | 42.9 |
| 51 pounds-over | 20 | 80.0 | 2 | 10.0 | 8 | 57.1 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 23.0$ | $p = 0.00$ | | | | |

Table III (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located | | | | | |
|---|---|---|---|---|---|---|
| | Carrol | | Haywood | | Henderson | |
| | No. Response | Percent Response | No. Response | Percent Response | No. Response | Percent Response |
| HEALTH PRACTICES | | | | | | |
| Times Per Year Sows Vaccinated for Leptospirosis | | | | | | |
| Not any | 16 | 64.0 | 5 | 26.3 | 4 | 28.6 |
| Once | 1 | 4.0 | 5 | 26.3 | 0 | 0 |
| Twice | 8 | 32.0 | 9 | 47.4 | 10 | 71.4 |
| Total | 25 | 100.0 | 19 | 100.0 | 14 | 100.0 |
| Chi-square Test $X^2 = 14.5$ $p = 0.00$ | | | | | | |
| Times Per Year Sows Vaccinated for Rhinitis | | | | | | |
| None | 18 | 72.0 | 10 | 50.0 | 5 | 35.7 |
| One | 1 | 4.0 | 5 | 25.0 | 0 | 0 |
| Twice | 6 | 24.0 | 5 | 25.0 | 9 | 64.3 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 13.9$ $p = 0.00$ | | | | | | |
| Times Per Year Sows Vaccinated for Parvovirus | | | | | | |
| Not any | 17 | 68.0 | 6 | 31.6 | 4 | 28.6 |
| Once | 0 | 0 | 5 | 26.3 | 0 | 0 |
| Twice | 8 | 32.0 | 8 | 42.1 | 10 | 71.4 |
| Total | 25 | 100.0 | 19 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 17.7$ $p = 0.00$ | | | | | | |
| Times Per Year Boars Vaccinated for Parvovirus | | | | | | |
| Not any | 17 | 68.0 | 7 | 36.8 | 5 | 35.7 |
| Once | 2 | 8.0 | 6 | 31.6 | 0 | 0 |
| Twice | 6 | 24.0 | 6 | 31.6 | 9 | 64.3 |
| Total | 25 | 100.0 | 19 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 13.9$ $p = 0.00$ | | | | | | |
| Times Per Year Sows Wormed | | | | | | |
| Once | 3 | 12.0 | 3 | 15.0 | 1 | 7.7 |
| Twice | 21 | 84.0 | 9 | 45.0 | 4 | 30.8 |
| Three | 0 | 0 | 3 | 15.0 | 1 | 7.7 |
| Four | 1 | 4.0 | 5 | 25.0 | 7 | 53.8 |
| Total | 25 | 100.0 | 20 | 100.0 | 13 | 100.0 |
| Chi-square test $X^2 = 18.6$ $p = 0.00$ | | | | | | |
| Times Per Year Sows Treated for Lice | | | | | | |
| Not any | 1 | 4.0 | 0 | 0 | 0 | 0 |
| Once | 3 | 12.0 | 2 | 10.0 | 0 | 0 |
| 2 to 4 | 21 | 84.0 | 11 | 55.0 | 11 | 78.6 |
| 5-over | 0 | 0 | 7 | 35.0 | 3 | 21.4 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 12.5$ $p = 0.05$ | | | | | | |
| Used Medication in Water | | | | | | |
| No | 19 | 76.0 | 12 | 60.0 | 9 | 64.3 |
| Yes | 6 | 24.0 | 8 | 40.0 | 5 | 35.7 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 3.65$ $p = 0.45$ | | | | | | |
| Used Sulfa in Water | | | | | | |
| No medication in water | 12 | 48.0 | 4 | 20.0 | 5 | 35.7 |
| No | 11 | 44.0 | 13 | 65.0 | 9 | 64.3 |
| Yes | 2 | 8.0 | 3 | 15.0 | 0 | 0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 5.75$ $p = 0.21$ | | | | | | |
| Used Antibiotic in Water | | | | | | |
| Did not treat | 12 | 48.0 | 4 | 20.0 | 5 | 35.7 |
| No | 8 | 32.0 | 7 | 35.0 | 4 | 28.6 |
| Yes | 5 | 20.0 | 9 | 45.0 | 5 | 35.7 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test $X^2 = 4.78$ $p = 0.31$ | | | | | | |

Table III (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located | | | | | |
|---|---|---|---|---|---|---|
| | Carrol | | Haywood | | Henderson | |
| | No. Response | Percent Response | No. Response | Percent Response | No. Response | Percent Response |
| Disinfect Farrowing Quarters | | | | | | |
| No | 3 | 12.0 | 8 | 44.4 | 4 | 28.6 |
| Yes | 22 | 88.0 | 10 | 55.6 | 10 | 71.4 |
| Total | 25 | 100.0 | 18 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 5.72$ | $p = 0.05$ | | | | |
| Frequency of Iron Shots to Pigs | | | | | | |
| Never | 3 | 12.0 | 5 | 26.3 | 2 | 14.3 |
| Sometimes | 2 | 8.0 | 4 | 21.1 | 0 | 0 |
| Always | 20 | 80.0 | 10 | 52.6 | 12 | 85.7 |
| Total | 25 | 100.0 | 19 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 6.63$ | $p = 0.15$ | | | | |
| Age Pigs Received Iron Shots | | | | | | |
| 3 days after birth | 21 | 95.5 | 13 | 92.9 | 12 | 100.0 |
| Later | 1 | 4.5 | 1 | 7.1 | 0 | 0 |
| Total | 22 | 100.0 | 14 | 100.0 | 12 | 100.0 |
| Chi-square test | $X^2 = 0.84$ | $p = 0.65$ | | | | |
| Clip Needle Teeth | | | | | | |
| Never | 1 | 4.0 | 2 | 10.0 | 1 | 7.1 |
| Sometimes | 2 | 8.0 | 4 | 20.0 | 2 | 14.3 |
| Always | 22 | 88.0 | 14 | 70.0 | 11 | 78.6 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 2.23$ | $p = 0.69$ | | | | |
| Main Pig Production Problem | | | | | | |
| Scours | 8 | 32.0 | 7 | 35.0 | 1 | 7.2 |
| Small litters | 4 | 16.0 | 3 | 15.0 | 3 | 21.4 |
| Uneven birth weight | 5 | 20.0 | 2 | 10.0 | 4 | 28.6 |
| Sows fail to milk | 2 | 8.0 | 2 | 10.0 | 0 | 0 |
| Sows fail to breed | 3 | 12.0 | 3 | 15.0 | 3 | 21.4 |
| Other | 3 | 12.0 | 3 | 15.0 | 3 | 21.4 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 6.88$ | $p = 0.73$ | | | | |
| FEEDING PRACTICES | | | | | | |
| Increase Feed to Pregnant Sows | | | | | | |
| No | 3 | 12.0 | 3 | 15.0 | 0 | 0 |
| Yes | 22 | 88.0 | 17 | 85.0 | 14 | 100.0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 2.18$ | $p = 0.33$ | | | | |
| Pounds Fed to Pregnant Sows | | | | | | |
| 4-6 pounds | 21 | 95.5 | 13 | 65.0 | 11 | 78.6 |
| 7 pounds over | 1 | 4.5 | 7 | 35.0 | 3 | 21.4 |
| Total | 22 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 6.19$ | $p = 0.04$ | | | | |
| Pounds Fed to Nursing Sows | | | | | | |
| 9 pounds-less | 0 | 0 | 6 | 30.0 | o | 0 |
| 10 to 12 pounds | 2 | 8.0 | 7 | 35.0 | 4 | 28.6 |
| 13 to 20 pounds | 23 | 92.0 | 7 | 35.0 | 10 | 71.4 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 21.0$ | $p = 0.00$ | | | | |
| How Did Creep Feed Pigs | | | | | | |
| Creep feed only | 20 | 87.0 | 16 | 80.0 | 11 | 78.6 |
| Pigs ate with sows | 3 | 13.0 | 3 | 15.0 | 2 | 14.3 |
| Creep plus corn | 0 | 0 | 1 | 5.0 | 1 | 7.1 |
| Total | 23 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 1.58$ | $p = 0.81$ | | | | |

Table III (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located | | | | | |
|---|---|---|---|---|---|---|
| | Carroll | | Haywood | | Henderson | |
| | No. Response | Percent Response | No. Response | Percent Response | No. Response | Percent Response |
| Medication Used in Gestation/ Lactation Ration | | | | | | |
| None | 9 | 36.0 | 3 | 15.0 | 4 | 28.6 |
| Antibiotic | 2 | 8.0 | 11 | 55.0 | 6 | 42.8 |
| Both antibiotic and sulfa | 14 | 56.0 | 6 | 30.0 | 4 | 28.6 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 12.5$ | $p = 0.01$ | | | | |
| Medication Used Pigs Weaning Ration | | | | | | |
| None | 10 | 40.0 | 2 | 10.0 | 1 | 7.2 |
| Antibiotic | 0 | 0 | 12 | 60.0 | 10 | 71.4 |
| Both antibiotic and sulfa | 15 | 60.0 | 6 | 30.0 | 3 | 21.4 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 26.9$ | $p = 0.00$ | | | | |
| EXTENSION CONTACTS | | | | | | |
| Swine Meetings Attended | | | | | | |
| Not any | 1 | 4.0 | 5 | 25.0 | 4 | 28.6 |
| One-over | 24 | 96.0 | 15 | 75.0 | 10 | 71.4 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 5.24$ | $p = 0.07$ | | | | |
| Extension Office Visits Made | | | | | | |
| Not any | 7 | 28.0 | 0 | 0 | 0 | 0 |
| One-over | 18 | 72.0 | 20 | 100.0 | 14 | 100.0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 10.8$ | $p = 0.00$ | | | | |
| Extension Telephone Calls Made | | | | | | |
| Not any | 5 | 20.0 | 6 | 30.0 | 2 | 14.3 |
| One-over | 20 | 80.0 | 14 | 70.0 | 12 | 85.7 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 1.28$ | $p = 0.52$ | | | | |
| Extension Farm Visits Received | | | | | | |
| Not any | 6 | 24.0 | 0 | 0 | 0 | 0 |
| One-over | 19 | 76.0 | 20 | 100.0 | 14 | 100.0 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi square test | $X^2 = 9.08$ | $p = 0.01$ | | | | |
| Farm Visits Received from Veterinarian | | | | | | |
| Not any | 3 | 12.0 | 5 | 25.0 | 6 | 42.9 |
| One-over | 22 | 88.0 | 15 | 75.0 | 8 | 57.1 |
| Total | 25 | 100.0 | 20 | 100.0 | 14 | 100.0 |
| Chi-square test | $X^2 = 4.74$ | $p = 0.09$ | | | | |

and 71 percent in Henderson. As tested by $x^2$ test, the differences in education were not significant at the .05 level.

Employment. Sixty-five percent of the Haywood County producers were full-time farmers, while Henderson had only 57 percent and Carrol had 56 percent. These differences in employment status were not significant at the .05 level.

## Farm Characteristics

Findings regarding the five farm characteristics of feeder pig producers in the sale counties are presented in this subsection. The five farm characteristics are number of sows owned, number of litters farrowed, number of pigs raised to weaning, number of pigs sold as feeders, and average weight of feeder pigs sold.

Number of sows owned. One hundred percent of Carrol County producers had 42 or less sows during the past 12 months compared to 75 percent in Haywood and 64 percent in Henderson. Thirty-six percent of Henderson County producers had over 61 sows compared to 15 percent in Haywood and not any in Carrol County. When tested by the $x^2$ test, these differences were significant at the .05 level. Carrol producers owned fewer sows than producers in either Haywood or Henderson. However, Henderson producers tended to have larger sow herds than either of the other counties studied.

Number of litters farrowed. Carrol County had the largest percentage (56 percent) of producers that farrowed less than 20 litters

in the past 12 months compared to 40 percent in Haywood and 21 percent in Henderson. Although Haywood had 20 percent of the producers that farrowed over 100 litters per year compared to 50 percent in Henderson and not any in Carrol, no significant differences existed at the .05 level as tested by the $x^2$ test.

Number of pigs raised to weaning. Sixty-eight percent of the producers in Carrol County weaned under 200 pigs per year compared to 50 percent in Haywood and 28 percent in Henderson. Sixty-four percent of the producers in Henderson County weaned over 300 pigs compared to 40 percent in Haywood and 16 percent in Carrol. These differences were significant at the .05 level when tested by the $x^2$ test. Carrol County producers weaned fewer pigs than either Haywood or Henderson while Henderson County producers weaned the highest number of pigs.

Number of pigs sold as feeders. Seventy-six percent of the producers in Carrol County sold under 200 pigs, compared to 60 percent in Haywood and 36 percent in Henderson County. Fifty percent of the Henderson County producers sold over 300 pigs compared to 25 percent in Haywood and 8 percent in Carrol. As tested by the $x^2$ test, differences in number of pigs sold as feeders were significant at the .05 level. Carrol County producers sold fewer pigs than producers in either Haywood or Henderson County, while Henderson County producers tended to sell a larger number than either Haywood or Carrol Counties.

Average weight of feeder pigs sold. Ninety percent of the producers in Haywood County sold pigs that weighed less than 50 pounds

compared to 43 percent in Henderson and 20 percent in Carrol County. Eighty percent of the producers in Carrol County sold pigs that weighed over 51 pounds compared to 57 percent in Henderson and 10 percent in Haywood. These differences were significant at the .05 level when tested by the $x^2$ test. A higher percentage of Haywood County producers sold lighter weight feeder pigs than either Carrol or Henderson Counties.

Health Practices

Findings regarding the use of 14 herd health practices by feeder pig producers in sale counties are presented in this subsection.

Times per year sows vaccinated for leptospirosis. Seventy-one percent of the producers in Henderson County following the University of Tennessee recommended practice by vaccinating sows twice each year for leptospirosis compared to 47 percent in Haywood and 32 percent in Carrol County. Sixty-four percent of the producers in Carrol County did not vaccinate compared to 26 percent in Haywood and 29 percent in Henderson County. Significant differences existed at the .05 level when tested by the $x^2$ test. Henderson County had a higher percent of producers vaccinating twice than either Haywood or Carrol County, while Carrol County had a larger percentage of producers that did not vaccinate.

Twice per year sows vaccinated for rhinitis. Sixty-four percent of the Henderson County producers followed the recommended practices and vaccinated sows twice per year for rhinitis compared to 25 percent in Haywood and 24 percent of producers in Carrol County. Seventy-two

percent of the producers in Carrol County did not vaccinate sows for rhinitis compared to 50 percent in Haywood and 36 percent in Henderson. As tested by the chi square $x^2$ test, these differences were significant at the .05 level in times per year sows were vaccinated for rhinitis. Henderson County producers were more likely to vaccinate for rhinitis than either Haywood or Carrol County.

Times per year sows vaccinated for parvovirus. Seventy-one percent of the Henderson County producers vaccinated sows twice for parvovirus compared to 42 percent in Haywood and 32 percent in Carrol County that vaccinated sows twice. Sixty-eight percent of Carrol County producers did not vaccinate sows for parvovirus compared to 32 percent in Haywood County and 28 percent in Henderson County that did not vaccinate. Significant differences existed at the .05 level in times per year sows vaccinated for parvovirus. Henderson County producers were more likely than either Haywood or Carrol County to vaccinate sows for parvovirus, while Carrol County producers were the least likely to vaccinate.

Times per year boars vaccinated for parvovirus. Sixty-four percent of Henderson County producers vaccinated boars twice for parvovirus compared to 32 percent in Haywood and 24 percent in Carrol County. Sixty-eight percent of Carrol County producers did not vaccinate boars for parvovirus compared to 37 percent in Haywood and 36 percent in Henderson County. Significant differences existed at the .05 level in times per year boars were vaccinated for parvovirus. Henderson County producers were more likely to vaccinate boars for parvovirus than either Haywood

County or Carrol County, while Carrol County had the highest percentage of producers not vaccinating boars for parvovirus.

Times per year sows wormed. Carrol County had 84 percent of the producers that wormed their sows twice per year compared to 45 percent in Haywood and 31 percent in Henderson County. Fifty-four percent of the Henderson County producers wormed sows four times per year compared to 25 percent in Haywood County and 4 percent in Carrol County. When tested by the $x^2$ test, these differences were significant at the .05 level. Carrol County producers tended to have the highest percent of producers worming sows twice per year, while Henderson County had the highest percent worming four times per year.

Times per year sows treated for lice. Eighty-four percent of Carrol County producers treated sows for lice 2 to 4 times per year compared to 79 percent in Henderson County and 55 percent in Haywood County. The differences in the number of times sows were treated for lice were significant at the .05 level. Carrol County producers tended to have the largest percentage (84 percent) of producers that treated sows for lice 2 to 4 times per year, compared to Haywood or Henderson County.

Use of medication in water. There were little differences in the percent of producers in the sale counties using medicaiton in drinking water. Forty percent of Haywood County producers used medication compared to 36 percent in Henderson and 24 percent in Carrol County.

When tested by the $x^2$ test, the differences were not significant at the .05 level.

Used sulfa in water. Fifteen percent of Haywood County producers used sulfa in drinking water compared to 8 percent in Carrol County and not any in Henderson County. However, these differences in uses of sulfa in water were not significant.

Used antibiotic in water. Forty-five percent of Haywood County used antibiotic in drinking water compared to almost 36 percent in Henderson and 20 percent in Carrol County. The differences in use of antibiotic in water were not significant at the .05 level.

Disinfect farrowing quarters. Eighty-eight percent of Carrol County producers disinfected farrowing quarters compared to 71 percent in Henderson County and almost 56 percent in Haywood County. Haywood County had the largest percent (44) that did not disinfect compared to 28 percent in Henderson County and 12 percent in Carrol County. As tested by the chi square test, differences among counties that disinfected farrowing quarters were significant at the .05 level. Carrol County had a greater percent of producers that disinfected farrowing quarters than either Haywood County or Henderson County.

Frequency of iron shots to baby pigs. Nearly 86 percent of Henderson County producers always gave iron shots to pigs, compared to 80 percent of Carrol and almost 53 percent of Haywood County producers. When tested by the $x^2$ test, these differences were not significant at the .05 level.

Age pigs received iron shots. One hundred percent of Henderson County producers gave iron shots to pigs 3 days after birth compared to 95 percent in Carrol and almost 93 percent in Haywood County. However, when tested by $x^2$ these differences in age pigs received iron shots were not significant.

Clip needle teeth of baby pigs. Eighty-eight percent of Carrol County producers always clipped pigs needle teeth compared to 79 percent of Henderson County and 70 percent of Haywood County producers. As tested by the chi square ($x^2$) test, differences in clipping needle teeth were not significant at the .05 level.

Main pig production problem. There was little differences between the three feeder pig sale counties as to the main pig production problem although the occurrence of scours tended to be the biggest difference. Thirty-five percent of Haywood County producers main production problems was scours compared to 32 percent of Carrol County and only 7 percent of Henderson County. These differences were not significant at the .05 level.

## Feeding Practices

Findings regarding the use of six feeding practices by feeder pig producers in sale counties are presented in this subsection.

Increase feed to pregnant sows. One hundred percent of Henderson County producers increased the amount of feed given to pregnant sows compared to 85 percent in Haywood County and 88 percent in Carrol

County. These differences were not significant at the .05 level when tested by the $x^2$ test.

Pounds fed to pregnant sows. The greatest percentage of producers fed 4 to 6 pounds of feed per day to pregnant sows as compared to a small percent feeding over 7 pounds. Ninety-five percent of Carrol County producers fed 4 to 6 pounds compared to 79 percent in Henderson County and 65 percent in Haywood County. These differences in pounds fed to pregnant sows were significant at the .05 level. Carrol County tended to have a larger percentage of producers feeding 4-6 pounds of feed to pregnant sows than either Haywood or Henderson County.

Pounds fed to nursing sows. Ninety-two percent of Carrol County producers fed 13 to 20 pounds of feed per day to nursing sows compared to 71 percent in Henderson County and 35 percent in Haywood County. These differences were significant at the .05 level. All of the Henderson and Carrol County producers were feeding nursing sows 10 or more pounds of feed per day, whereas 30 percent of Haywood County producers were feeding under 10 pounds per day.

How were pigs creep fed. The greatest percentage of producers fed a complete creep ration to sucking pigs. Eighty-seven percent of Carrol County producers fed a complete creep ration compared to 80 percent in Haywood County and 79 percent in Henderson County. A small percentage (15 percent of Haywood County compared to 14 percent of Henderson County and 13 percent of Carrol County) of the producers

reported pigs eating with sows. However, these differences were not significant at the .05 level.

Medication used in gestation lactation ration. Fifty-five percent of the producers in Haywood County used antibiotic in the gestation ration compared to 43 percent in Henderson County and only 8 percent in Carrol County. However, 56 percent of the producers in Carrol County were adding both antibiotics and sulfa to gestation/laction ration compared to 30 percent in Haywood County and 29 percent in Henderson County. Significant differences existed at the .05 level when tested by the $x^2$ test. Carrol County had a significantly higher percentage of producers using both antibiotics and sulfa in gestation/lactation rations than either Haywood or Henderson Counties while Haywood County had the higher percentage of producers only using antibiotics.

Medication used in pigs weaning ration. Seventy-one percent of the Henderson County producers used antibiotic compared to 60 percent in Haywood County and not any in Carrol County. However, Carrol County had a higher percentage (60 percent) using both antibiotics and sulfa compared to 30 percent in Haywood County and 21 percent in Henderson County. As tested by the $x^2$ test, significant differences existed at the .05 level. Carrol County had a higher percentage of producers using both antibiotic and sulfa in pigs weaning ration than either Haywood or Henderson Counties.

Extension Contacts

Findings regarding contacts feeder pig producers in the three sale counties had with Extension and with veterinarians during the past 12 months were included in this subsection.

Swine meetings attended. Ninety-six percent of Carrol County producers attended 1 or more swine meetings during the past 12 months compared to 75 percent in Haywood County and 71 percent in Henderson County. As tested by the chi square test, these differences were not significant at the .05 level.

Extension office visits made. One hundred percent of both Haywood and Henderson County producers made 1 or more Extension office visits compared to 72 percent in Carrol County. As tested by the chi square test, significant differences existed in the number of visits made to the Extension office by producers in the sale counties. Haywood and Henderson County producers made more Extension office visits during the past 12 months than Carrol County producers.

Extension telephone calls made. Eighty-six percent of Henderson County producers made 1 or more Extension telephone calls during the past 12 months compared to 80 percent in Carrol County and 70 percent in Haywood County. As tested by the chi square test, these differences were not significant at the .05 level.

Extension farm visits received. One hundred percent of both Henderson and Haywood County producers received 1 or more farm visits

from Extension agents during the past 12 months compared to 76 percent in Carrol County. Significant differences existed in the number of Extension farm visits producers in the sale counties received. Henderson and Haywood County producers both received more Extension farm visits than Carrol County producers.

Farm visits received from veterinarian. Eighty-eight percent of Carrol County producers received 1 or more farm visits during the past 12 months from a veterinarian compared to 75 percent in Haywood County and 57 percent in Henderson County. As tested by the chi square test, these differences were not significant at the .05 level.

Table Suumary

In comparing feeder pig producers in the three sale counties, the highest percentage of Carrol, Haywood and Henderson Counties producers were between 36 and 59 years of age, with a high school education or less and were full-time farmers. However, there were no significant differences in the three sale counties age, education and farming status of pig producers.

Among feeder pig producers in sale counties, Carrol County had the largest percent of producers with less than 42 sows and weaning and selling less than 200 feeder pigs. Haywood County producers sold lighter weight feeder pigs than either Henderson or Carrol County.

Compared to producers in other sale counties, Henderson County had the highest percent of producers that vaccinated sows twice for leptospirosis, vaccinated sows twice for rhinitis, vaccinated sows

twice for parvovirus, and vaccinated boars twice for parvovirus in a 12 month period. Carrol County had the highest percentage of producers that wormed sows twice, treating sows for lice two or more times and disinfecting farrowing quarters in a 12 month period.

Compared to producers in other sale counties, Carrol County had the highest percentage of producers feeding the recommended amounts of feed to pregnant sows (4 to 6 pounds) and nursing sows (13 to 20 pounds) and using both antibiotics and sulfa medication in sows gestation and pigs weaning ration. However, producers in all three sale counties tended to increase feed fed to pregnant sows and to feed pigs creep feed only, however, use of these two practices did not differ significantly among producers in sale counties.

Compared to producers in other sale counties Haywood and Henderson Counties had the highest percentage of producers making one or more visits to the Extension office, and receiving one or more farm visits from the Extension agents during the past 12 months. Although all three sale counties had high percentages of producers attending one or more swine meetings, making one or more telephone calls to the Extension office and receiving one or more farm visits from the veterinarina no significant differences existed among producers in the sale counties.

# CHAPTER IV

## ANALYSIS OF FEEDER PIG PRODUCERS LOCATED IN SALE COUNTIES COMPARED TO PRODUCERS IN OTHER FEEDER PIG SALE COUNTIES

This chapter was organized into two sections dealing with the last two tables of this study. Selected variables were discussed under subheadings within each section.

Section I presents findings comparing feeder pig producers located in sale counties (Lexington, Brownsville, Huntingdon) with those producers in other feeder pig sale counties. These sales were located at Cookeville, Dickson, Lawrenceburg, Manchester, McMinnville, Savannah, Sevierville and Woodbury, Tennessee. Producers were compared as to personal and farm characteristics, use of recommended pig production practices and contacts made with Extension agents.

Section II presents findings comparing feeder pig producers located in sale counties with other feeder pig producers in District I as to personal and farm characteristics, use of recommended pig production practices and contacts made with Extension agents.

### I. COMPARISON OF FEEDER PIG PRODUCERS LOCATED IN SALE COUNTIES WITH PRODUCERS LOCATED IN OTHER FEEDER PIG SALE COUNTIES AS TO PERSONAL AND FARM CHARACTERISTICS, USE OF RECOMMENDED PIG PRODUCTION PRACTICES AND CONTACTS MADE WITH EXTENSION AGENTS

The purpose of the section was to present findings (Table IV) regarding feeder pig producers located in sale counties compared to

Table IV. Comparison of Feeder Pig Producers Located in Sale Counties and Producers Located in Other Feeder Pig Sale Counties as to Personal and Farm Characteristics, Use of Recommended Pig Production Practices and Contacts Made With Extension Agents

| Name of Variable | Producers in Counties Where Feeder Pig Sales Were located | | | |
|---|---|---|---|---|
| | Feeder Pig Sale Counties | | Other Feeder Pig Sale Counties | |
| | No. Response | Percent Response | No. Response | Percent Response |
| **PRODUCER CHARACTERISTICS** | | | | |
| **Age of Producer** | | | | |
| 35-under | 12 | 20.4 | 42 | 16.2 |
| 36-59 | 35 | 59.3 | 152 | 58.7 |
| 60-over | 12 | 20.3 | 65 | 25.1 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test | $X^2 = 0.93$ | $p = 0.62$ | | |
| **Education** | | | | |
| High school or less | 47 | 79.7 | 203 | 80.6 |
| College | 12 | 20.3 | 49 | 19.4 |
| Total | 59 | 100.0 | 252 | 100.0 |
| Chi-square test | $X^2 = 0.00$ | $p = 1.00$ | | |
| **Employment** | | | | |
| Full-time farmer | 35 | 59.3 | 78 | 30.1 |
| Part-time farmer | 24 | 40.7 | 181 | 69.9 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test | $X^2 = 16.6$ | $p = 0.00$ | | |
| **FARM CHARACTERISTICS** | | | | |
| **Number of Sows** | | | | |
| 42-less | 49 | 83.0 | 213 | 82.2 |
| 43-60 | 2 | 3.4 | 19 | 7.3 |
| 61-over | 8 | 13.6 | 27 | 10.5 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test | $X^2 = 1.56$ | $p = 0.45$ | | |
| **Number of Litters Farrowed** | | | | |
| Under 20 | 25 | 42.4 | 91 | 35.3 |
| 20-49 | 18 | 30.5 | 99 | 38.4 |
| 50-99 | 7 | 11.9 | 38 | 14.7 |
| 100-over | 9 | 15.2 | 30 | 11.6 |
| Total | 59 | 100.0 | 258 | 100.0 |
| Chi-square test | $X^2 = 2.25$ | $p = 0.52$ | | |
| **Number of Pigs Raised to Weaning** | | | | |
| Under 100 | 16 | 27.1 | 52 | 20.1 |
| 100 to 199 | 15 | 25.4 | 76 | 29.3 |
| 200 to 299 | 7 | 11.9 | 39 | 15.1 |
| 300 to 998 | 13 | 22.0 | 64 | 24.7 |
| 1,000-over | 8 | 13.6 | 28 | 10.8 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test | $X^2 = 2.17$ | $p = 0.70$ | | |
| **Number Pigs Sold as Feeders** | | | | |
| Under 100 | 20 | 33.9 | 64 | 24.7 |
| 100 to 199 | 16 | 27.1 | 86 | 33.2 |
| 200 to 299 | 9 | 15.3 | 42 | 16.2 |
| 300-over | 14 | 23.7 | 67 | 25.9 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test | $X^2 = 2.20$ | $p = 0.53$ | | |
| **Average Weight of Feeder Pigs Sold** | | | | |
| 30 to 40 pounds | 2 | 3.4 | 3 | 1.2 |
| 41-50 pounds | 27 | 45.8 | 137 | 53.3 |
| 51 pounds-over | 30 | 50.8 | 117 | 45.5 |
| Total | 59 | 100.0 | 257 | 100.0 |
| Chi-square test | $X^2 = 2.31$ | $p = 0.31$ | | |

Table IV (Continued)

| Name of Variable | Producers in Counties Where Feeder Pig Sales Were Located: Feeder Pig Sale Counties, No. Response | Feeder Pig Sale Counties, Percent Response | Other Feeder Pig Sale Counties, No. Response | Other Feeder Pig Sale Counties, Percent Response |
|---|---|---|---|---|
| HEALTH PRACTICES | | | | |
| Times Per Year Sows Vaccinated for Leptospirosis | | | | |
| None | 25 | 43.1 | 70 | 27.3 |
| One | 6 | 10.3 | 60 | 23.4 |
| Two | 27 | 46.6 | 126 | 49.3 |
| Total | 58 | 100.0 | 256 | 100.0 |
| Chi-square test $X^2 = 7.80$ $p = 0.02$ | | | | |
| Times Per Year Sows Vaccinated for Rhinitis | | | | |
| None | 33 | 55.9 | 147 | 57.4 |
| One | 6 | 10.2 | 45 | 17.6 |
| Two | 20 | 33.9 | 64 | 25.0 |
| Total | 59 | 100.0 | 256 | 100.0 |
| Chi-square test $X^2 = 3.06$ $p = 0.21$ | | | | |
| Times Per Year Sows Vaccinated for Parvovirus | | | | |
| None | 27 | 46.6 | 129 | 50.4 |
| One | 5 | 8.6 | 49 | 19.1 |
| Two | 26 | 44.8 | 78 | 30.5 |
| Total | 58 | 100.0 | 256 | 100.0 |
| Chi-square test $X^2 = 6.12$ $p = 0.04$ | | | | |
| Times Per Year Boars Vaccinated for Parvovirus | | | | |
| None | 29 | 50.0 | 145 | 57.5 |
| One | 8 | 13.8 | 55 | 21.8 |
| Two | 21 | 36.2 | 52 | 20.7 |
| Total | 58 | 100.0 | 252 | 100.0 |
| Chi-square test $X^2 = 6.82$ $p = 0.03$ | | | | |
| Times Per Year Sows Wormed | | | | |
| Not any | 0 | 0 | 7 | 2.7 |
| One | 7 | 12.1 | 23 | 8.9 |
| Two | 34 | 58.6 | 194 | 75.5 |
| Three | 4 | 6.9 | 25 | 9.7 |
| Four | 13 | 22.4 | 8 | 3.2 |
| Total | 58 | 100.0 | 257 | 100.0 |
| Chi-square test $X^2 = 30.7$ $p = 0.00$ | | | | |
| Times Per Year Sows Treated Lice | | | | |
| Not any | 1 | 1.7 | 12 | 4.6 |
| One | 5 | 8.5 | 30 | 11.6 |
| 2 to 4 | 43 | 72.9 | 187 | 72.2 |
| 5-over | 10 | 16.9 | 30 | 11.6 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 2.53$ $p = 0.46$ | | | | |
| Use of Medicated Water | | | | |
| No | 40 | 67.8 | 212 | 71.8 |
| Yes | 19 | 32.2 | 47 | 18.2 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 6.38$ $p = 0.04$ | | | | |
| Use of Sulfa in Water | | | | |
| No medication used in water | 21 | 35.6 | 150 | 58.1 |
| No | 33 | 55.9 | 92 | 35.7 |
| Yes | 5 | 8.5 | 16 | 6.2 |
| Total | 59 | 100.0 | 258 | 100.0 |
| Chi-square test $X^2 = 9.90$ $p = 0.00$ | | | | |
| Use of Antibiotics in Water | | | | |
| Not any | 21 | 35.6 | 149 | 57.5 |
| No | 19 | 32.2 | 55 | 21.2 |
| Yes | 19 | 32.2 | 55 | 21.3 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 9.29$ $p = 0.00$ | | | | |

Table IV (Continued)

| Name of Variable | Producers in Counties Where Feeder Pig Sales Were Located: Feeder Pig Sale Counties, No. Response | Feeder Pig Sale Counties, Percent Response | Other Feeder Pig Sale Counties, No. Response | Other Feeder Pig Sale Counties, Percent Response |
|---|---|---|---|---|
| Disinfect Farrowing Quarters | | | | |
| No | 15 | 26.3 | 113 | 48.3 |
| Yes | 42 | 73.7 | 121 | 51.7 |
| Total | 57 | 100.0 | 234 | 100.0 |
| Chi-square test $X^2 = 8.11$ $p = 0.00$ | | | | |
| Frequency of Iron Shots to Pigs | | | | |
| Never | 10 | 17.3 | 65 | 27.7 |
| Sometimes | 6 | 10.3 | 57 | 24.3 |
| Always | 42 | 72.4 | 113 | 48.0 |
| Total | 58 | 100.0 | 235 | 100.0 |
| Chi-square test $X^2 = 11.3$ $p = 0.00$ | | | | |
| Age Iron Shots Given | | | | |
| 3 days after birth | 46 | 95.8 | 147 | 87.0 |
| Later | 2 | 4.2 | 22 | 13.0 |
| Total | 48 | 100.0 | 169 | 100.0 |
| Chi-square test $X^2 = 2.14$ $p = 0.14$ | | | | |
| Clip Needle Teeth | | | | |
| Never | 4 | 6.8 | 34 | 13.2 |
| Sometimes | 8 | 13.6 | 75 | 29.2 |
| Always | 47 | 79.6 | 148 | 57.6 |
| Total | 59 | 100.0 | 257 | 100.0 |
| Chi-square test $X^2 = 9.90$ $p = 0.00$ | | | | |
| Most Serious Problems in Raising Pigs | | | | |
| Scours | 16 | 27.1 | 102 | 40.0 |
| Small litters | 10 | 16.9 | 40 | 15.6 |
| Uneven birth weight | 11 | 18.6 | 29 | 11.4 |
| Sows fail to milk | 4 | 6.8 | 19 | 7.5 |
| Sows fail to breed | 9 | 15.3 | 22 | 8.6 |
| Other | 9 | 15.3 | 43 | 16.9 |
| Total | 59 | 100.0 | 255 | 100.0 |
| Chi-square test $X^2 = 6.38$ $p = 0.27$ | | | | |
| FEEDING PRACTICES | | | | |
| Increase Feed to Pregnant Sows | | | | |
| No | 6 | 10.2 | 40 | 15.6 |
| Yes | 53 | 89.8 | 217 | 84.4 |
| Total | 59 | 100.0 | 257 | 100.0 |
| Chi-square test $X^2 = 0.73$ $p = 0.39$ | | | | |
| Pounds Fed to Pregnant Sows | | | | |
| Under 6 pounds | 45 | 80.4 | 131 | 60.6 |
| 7-12 pounds | 11 | 19.6 | 85 | 39.4 |
| Total | 56 | 100.0 | 216 | 100.0 |
| Chi-square test $X^2 = 6.72$ $p = 0.00$ | | | | |
| Pounds Fed to Nursing Sows | | | | |
| Under 9 pounds | 6 | 10.2 | 52 | 20.4 |
| 10 to 12 pounds | 13 | 22.0 | 120 | 47.1 |
| 13 to 20 pounds | 40 | 67.8 | 83 | 32.5 |
| Total | 59 | 100.0 | 255 | 100.0 |
| Chi-square test $X^2 = 24.9$ $p = 0.00$ | | | | |
| How Did Creep Feed Pigs | | | | |
| Creep feed only | 47 | 82.5 | 174 | 69.0 |
| Pigs ate with sows | 8 | 14.0 | 38 | 15.1 |
| Creep plus corn | 2 | 3.5 | 40 | 15.9 |
| Total | 57 | 100.0 | 252 | 100.0 |
| Chi-square test $X^2 = 6.43$ $p = 0.04$ | | | | |

Table IV (Continued)

| Name of Variable | Producers in Counties Where Feeder Pig Sales Were Located: Feeder Pig Sale Counties, No. Response | Feeder Pig Sale Counties, Percent Response | Other Feeder Pig Sale Counties, No. Response | Other Feeder Pig Sale Counties, Percent Response |
|---|---|---|---|---|
| Medication Used in Gestation Ration | | | | |
| None | 16 | 27.1 | 103 | 40.4 |
| Antibiotic | 19 | 32.2 | 97 | 38.0 |
| Sulfa | 0 | 0 | 15 | 5.9 |
| Both | 24 | 40.7 | 40 | 15.7 |
| Total | 59 | 100.0 | 255 | 100.0 |
| Chi-square test $X^2 = 20.8$ $p = 0.00$ | | | | |
| Medication Used in Pigs Weaning Ration | | | | |
| None | 13 | 22.0 | 78 | 30.6 |
| Antibiotic | 22 | 37.3 | 117 | 45.9 |
| Sulfa | 0 | 0 | 11 | 4.3 |
| Both | 24 | 40.7 | 49 | 19.2 |
| Total | 59 | 100.0 | 255 | 100.0 |
| Chi-square test $X^2 = 14.0$ $p = 0.00$ | | | | |
| EXTENSION CONTACTS | | | | |
| Swine Meetings Attended | | | | |
| None | 10 | 16.9 | 93 | 35.9 |
| One-over | 49 | 83.1 | 166 | 64.1 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 7.04$ $p = 0.00$ | | | | |
| Office Visits Made | | | | |
| None | 7 | 11.9 | 38 | 14.7 |
| One-over | 52 | 88.1 | 221 | 85.3 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 0.12$ $p = 0.72$ | | | | |
| Telephone Calls Made | | | | |
| None | 13 | 22.0 | 52 | 20.1 |
| One-over | 46 | 78.0 | 207 | 79.9 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 0.02$ $p = 0.87$ | | | | |
| Farm Visits Received | | | | |
| None | 6 | 10.2 | 57 | 22.0 |
| One-over | 53 | 89.8 | 202 | 78.0 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 3.52$ $p = 0.06$ | | | | |
| VETERINARIAN CONTACTS | | | | |
| Farm Visits Received From Veterinarian | | | | |
| None | 14 | 23.7 | 103 | 39.8 |
| One-over | 45 | 76.3 | 156 | 60.2 |
| Total | 59 | 100.0 | 259 | 100.0 |
| Chi-square test $X^2 = 5.31$ $p = 0.02$ | | | | |

producers in other feeder pig sale counties. This section was divided into four subsections. The first subsection presents findings concerning producers personal characteristics. The second subsection presents findings concerning producers farm characteristics. The third subsection presents findings concerning use of recommended pig production practices, and the fourth subsection presents findings concerning contacts producers had with Extension agents.

## Producer Characteristics

Findings included in this subsection were regarding age, education and employment of swine producers in sales counties compared to producers in other feeder pig sale counties.

Age of producer. Findings presented in Table IV indicate that 20 percent of the producers in feeder pig sale counties were under age 35 compared to 16 percent of producers in other feeder pig sale counties. Data also indicated that 25 percent of the producers in other feeder pig sale counties were over age 60 compared to 20 percent of producers in sale counties. These differences in age of producers were not significant at the .05 level.

Education. Eighty-one percent of the feeder pig producers in other feeder pig sale counties had a high school or less education compared to 80 percent of the producers in sale counties. Although a small percentage attended college, the differences in education were not significant at the .05 level as tested by the $x^2$ test.

Employment. Seventy percent of the feeder pig producers in other feeder pig sale counties were part-time farmers compared to 41 percent of producers in sale counties. Only 30 percent of producers in other feeder pig sale counties were full-time farmers compared to 59 percent in sale counties. Significant differences in employment status existed at the .05 level as tested by the $x^2$ test. Other feeder pig sale counties tended to have a higher percent of producers who were part-time farmers than producers in the sale counties.

## Farm Characteristics

Findings regarding feeder pig producers five farm characteristics in the feeder pig sales counties compared to producers in other feeder pig sale counties are presented in this subsection.

Number of sows owned. Eighty-three percent of the feeder pig producers in sale counties had 42 or less sows compared to 82 percent in other feeder pig sale counties. These differences were not significant.

Number of litters farrowed. Forty-two percent of the producers in sale counties farrowed less than 20 litters in the past 12 months compared to 35 percent in other feeder pig sale counties. Fifteen percent of the producers in other feeder pig sale counties farrowed over 100 litters per year compared to 15 percent of those in sale counties. As tested by the $x^2$ test, these differences were not significant at the .05 level.

Number of pigs raised to weaning. There were little differences in the number of pigs raised to weaning age. However, 27 percent of the feeder pig producers in sale counties weaned under 100 pigs compared to 20 percent in other feeder pig sale counties. These differences were not significant at the .05 level.

Number pigs sold as feeders. Thirty-four percent of the producers in sale counties sold less than 100 pigs as feeders compared to 25 percent in other feeder pig sale counties. Other feeder pig sale counties tended to sell more pigs as feeders per producer, however, these differences were not significant at the .05 level.

Average weight of feeder pigs sold. Feeder pig producers in sale counties tended to sell pigs weighing over 51 pounds compared to producers selling pigs weighing 45 pounds in other feeder pig sale counties. As tested by the $x^2$ test, these differences were not significant.

## Health Practices

Findings regarding the use of 14 herd health practices by feeder pig producers in sale counties compared to producers in other feeder pig sale counties are presented in this subsection.

Times per year sows vaccinated for leptospirosis. Forty-three percent of the producers in sale counties did not vaccinate sows for leptospirosis compared to 27 percent in other feeder pig sale counties. Forty-nine percent of the producers in other feeder pig

sale counties vaccinated sows twice compared to 47 percent of those in sale counties. These differences in times per year sows were vaccinated for leptospirosis were significant. Producers in other feeder pig sale counties were more likely than those in feeder pig sale counties to vaccinate for leptospirosis.

Times per year sows vaccinated for rhinitis. Thirty-four percent of the feeder pig producers in sale counties vaccinated sows twice for rhinitis compared to 25 percent in other feeder pig sale counties. However, these differences were not significant at the .05 level.

Times per year sows vaccinated for parvovirus. Forty-five percent of the feeder pig producers in sale counties vaccinated sows twice for parvovirus compared to 31 percent in other feeder pig sale counties. As tested by the $x^2$ test, significant differences existed at the .05 level. Producers in sale counties were more likely to have vaccinated sows for parvovirus than producers in other feeder pig sale counties.

Times per year boars vaccinated for parvovirus. Thirty-six percent of the producers in other feeder pig sale counties vaccinated boars for parvovirus compared to 21 percent that did not vaccinate in sale counties. The differences in times per year boars were vaccinated for parvovirus were significant at the .05 level. Producers in sale counties were more likely to vaccinate boars two times per year for parvovirus than producers in other feeder pig sale counties.

Times per year sows wormed. Twenty-nine percent of the producers in sale counties reported worming their sows three or four times compared to 13 percent in other feeder pig sale counties. As tested by the chi square $x^2$ test, these differences were significant. Producers in the sale counties were more likely to worm sows three or four times per year than producers in other feeder pig sale counties.

Times per year sows treated for lice. Nearly 90 percent of the producers in sale counties treated sows for lice two or more times per year compared to 84 percent in other feeder pig sale counties. However, these differences were not significant at the .05 level.

Use medication in water to treat disease. Eighteen percent of the producers in other feeder pig sale counties used medication in water for disease treatment compared to 32 percent in sale counties. These differences in use of medication in water were significant at the .05 level. Producers in sale counties were more likely than those in other feeder pig sale counties to use medication in water to treat for disease.

Use sulfa in the water. Ninety-one percent of the feeder pig producers in sale counties did not use sulfa in water compared to 94 percent in other feeder pig sale counties. These differences were significant at the .05 level. Although producers in both sale counties and other feeder pig sale counties had a large percentage of producers not using sulfa in water other feeder pig sale counties had the greatest percentages.

Use of antibiotics in water. Twenty-one percent of the feeder pig producers in other feeder pig sale counties used antibiotics in the water compared to 21 percent in sale counties. Significant differences existed in use of antibiotics in water at the .05 level. A higher percentage of the sale county producers than other feeder pig sale counties producers used antibiotics in the water.

Disinfect farrowing quarters. Feeder pig producers in sale counties reported that 74 percent were disinfecting sows farrowing quarters compared to 52 percent in other feeder pig sale counties. The differences in disinfecting sows farrowing quarters were significant at the .05 level. Sale county producers were more likely to disinfect sows farrowing quarters than were producers in other feeder pig sale counties.

How frequent were iron shots given to pigs. Seventy-two percent of the producers in sale counties always gave pigs iron shots compared to 48 percent of producers in other feeder pig sale counties. Seventeen percent in sale counties never gave iron shots compared to 28 percent in other feeder pig sale counties. Significant differences in times pigs were given iron shots existed at the .05 level. Sale counties had the largest percentage of producers always giving pigs iron shots compared to other feeder pig sale counties.

Age pigs received iron shots. Ninety-six percent of the feeder pig producers in sale counties gave iron shots to pigs 3 days after birth compared to 87 percent in other feeder pig sale counties. Even though a small percentage of producers gave iron shots to pigs

later than 3 days after birth, no significant differences existed between producers in sale counties compared to those in other feeder pig sale counties.

Clip needle teeth. Just over 79 percent of the feeder pig producers in sale counties reported always clipping pigs needle teeth compared to 57 percent of producers in other feeder pig sale counties. Seven percent of producers in sale counties never clipped needle teeth compared to 13 percent in other feeder pig sale counties. These differences were significant at the .05 level as tested by the $x^2$ test. Sale county producers were more likely to always clip their pigs needle teeth than were producers in other feeder pig sale counties.

Most serious problems in raising pigs. Forty percent of the producers in other feeder pig sale counties reported scours as their most serious problem in raising pigs compared to 27 percent in sale counties. However, 15 percent of sale county producers reported other problems in raising pigs compared to 17 percent in other feeder pig sale counties. These differences were not significant at the .05 level.

## Feeding Practices

Findings regarding feeder pig producers use of six feeding practices in sale counties compared to producers in other feeder pig sale counties are included in this subsection.

Increase feed to pregnant sows. Ninety percent of the producers in sale counties followed the recommended practices of increasing the

amount of feed fed to their pregnant sows compared to 84 percent in other feeder pig sale counties. These differences were not significant at the .05 level.

Pounds of feed fed to pregnant sows. Feeder pig producer from sale counties reported the highest percentage (80 percent) feeding less than 6 pounds of feed to pregnant sows compared to 61 percent in other feeder pig sale counties. Almost 20 percent of sale county producers fed 7 to 12 pounds compared to 39 percent in other feeder pig sale counties. These differences were significant at the .05 level. Sale county producers were more likely to feed pregnant sows less than 6 pounds than were producers in other feeder pig sale counties.

Pounds of feed fed to nursing sows. Almost 68 percent of the feeder pig producers in sale counties fed 13 to 20 pounds of feed to nursing sows compared to 33 percent in other feeder pig sale counties. Significant differences in pounds of feed fed to nursing sows existed at the .05 level. Producers in sale counties were more likely to feed the recommended amount (13 to 20 pounds) of feed to nursing sows than were producers in other feeder pig sale counties.

Creep feeding of pigs. Almost 83 percent of the feeder pig producers in sale counties fed creep feed only to their pigs compared to 69 percent in other feeder pig sale counties. However, only 4 percent of the producers in sale counties fed creep plus corn to their pigs. The differences in how producers creep fed their pigs were significant at the .05 level. Sale county producers were more likely

to feed creep feed only to their pigs than were producers in other feeder pig sale counties.

Medication used in sows gestation ration. Twenty-seven percent of the feeder pig producers in sale counties did not use medication in sows gestation ration compared to 40 percent in other feeder pig sale counties. But in comparison, 41 percent of sale county producers used both sulfa and antibiotic in sows ration while only 16 percent used both in other feeder pig sale counties. These differences in medication used in sows gestation ration were significant at the .05 level. Producers in sale counties were more likely to use both antibiotics and sulfa in gestation ration than were producers in other feeder pig sale counties.

Medication used in pigs weaning rations. Nearly 31 percent of the producers in other feeder pig sale counties use no medication in pigs weaning ration compared to 22 percent in sale counties. However, 41 percent of the producers in sale counties use both antibiotic and sulfa in pigs weaning ration compared to 19 percent in other feeder pig sale counties. These differences in the use of medication in pigs weaning ration were significant at the .05 level. Sale counties were more likely to use both antibiotic and sulfa medication in pig weaning ration than were producers in other feeder pig sale counties.

## Extension Contacts

Findings are presented in this subsection comparing producers in three sale counties with those in other feeder pig sale counties as to the number of contacts of various types they had with Extension agents.

Extension swine meetings attended. Eighty-three percent of the producers in sale counties attended one or more Extension swine meetings compared to 64 percent in other feeder pig sale counties. The differences in swine meetings attended were significant at the .05 level. Sale county producers were more likely to have attended swine meetings than producers in other feeder pig sale counties.

Extension office visits made. Eighty-eight percent of the feeder pig producers in sale counties made one or more visits to the Extension office compared to 85 percent of the producers in other feeder pig sale counties. Only a small percent of both did not make any visits; however, these differences were not significant as tested by the $x^2$ test.

Extension telephone calls made. Almost 80 percent of the feeder pig producers in other feeder pig sale counties made one or more telephone calls compared to 78 percent in sale counties. These differences were not significant at the .05 level.

Extension farm visits received. Nearly 90 percent of the feeder pig producers in sale counties received one or more farm visits from Extension agents compared to 78 percent in other feeder pig sale counties. The differences in farm visits received were not significant at the .05 level.

Farm visits received from veterinarian. Seventy-six percent of the feeder pig producers in sale counties received one or more visits from the veterinarian compared to 60 percent in other feeder pig sale

counties. These differences were significant as tested by the $x^2$ test. Sale county producers were more likely to receive visits from the veterinarian than were producers in other feeder pig sale counties.

Table Summary

Other feeder pig sale counties had a higher percentage of producers that were part-time farmers compared to producers in feeder pig sale counties. However, producers in sale counties did not differ significantly from producers in other feeder pig sale counties as to age and education.

Feeder pig producers in sale counties did not differ from those in other feeder pig sale counties as to the number of sows farrowed, number of pigs raised to weaning, number of pigs sold as feeders and average weight of feeder pigs sold.

A larger percentage of other feeder pig sale counties producers vaccinated their sows for leptospirosis, wormed their sows two or more times; however, producers in sale counties were more likely than those in other feeder pig sale counties to vaccinate sows and boars for parvovirus, to worm sows three or four times per year, to use medication in drinking water, to use sulfa in water, to use antibiotics in water, to disinfect farrowing quarters, to give iron shots, and to clip pigs needle teeth.

Producers in sale counties as compared to those in other feeder pig sale counties were more likely to be feeding pregnant sows 6 pounds or less of feed, feeding nursing sows 13 to 20 pounds of feed, feeding creep feed only to pigs, and use both antibiotic and sulfa medication in sows gestation and pigs weaning ration.

Sale counties had a higher percentage of producers attending one or more swine meeting and receiving one or more visits from the veterinarian than other feeder pig sale counties. Both sale counties and other feeder pig sale counties had a high percentage of their producers making one or more Extension office visits, making one or more telephone calls, and receiving one or more farm visits from the Extension agent; however, these differences in Extension contacts were not significant.

## II. COMPARISON OF FEEDER PIG PRODUCERS LOCATED IN SALE COUNTIES TO OTHER FEEDER PIG PRODUCERS IN DISTRICT I AS TO PERSONAL AND FARM CHARACTERISTICS, USE OF RECOMMENDED PIG PRODUCTION PRACTICES, AND CONTACTS MADE WITH EXTENSION AGENTS

The purpose of this section was to present findings (Table V) comparing feeder pig producers located in sale counties and producers located in other District I counties. This section was divided into four subsections. The first subsection presents findings concerning producers personal characteristics. The second subsection presents findings concerning producers farm characteristics. The third subsection presents findings concerning use of recommended pig production practices and the fourth subsection presents findings concerning contacts producers had with Extension agents.

### Producer Characteristics

Findings included in this subsection were age, education and employment of swine producers in sale counties compared to other counties in Extension District I.

Table V. Comparison of Feeder Pig Producers Located in Sale Counties to Other Feeder Pig Producers in District I as to Personal and Farm Characteristics, Use of Recommended Pig Production Practices and Contacts Made With Extension Agents

| Name of Variable | Counties Where Feeder Pig Producers Located: Feeder Pig Sale Counties No. Response | Feeder Pig Sale Counties Percent Response | Other District 1 Counties No. Response | Other District 1 Counties Percent Response |
|---|---|---|---|---|
| PRODUCER CHARACTERISTICS | | | | |
| Age of Producer | | | | |
| 35-under | 12 | 20.3 | 30 | 17.5 |
| 36-59 | 35 | 59.3 | 88 | 51.5 |
| 60-over | 12 | 20.4 | 53 | 31.0 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test | $X^2 = 2.45$ | $p = 0.29$ | | |
| Education | | | | |
| High school or less | 47 | 79.7 | 140 | 83.9 |
| College | 12 | 20.3 | 27 | 16.1 |
| Total | 59 | 100.0 | 167 | 100.0 |
| Chi-square test | $X^2 = 0.27$ | $p = 0.59$ | | |
| Employment | | | | |
| Full-time farmer | 35 | 59.3 | 81 | 47.6 |
| Part-time farmer | 24 | 40.7 | 89 | 52.4 |
| Total | 59 | 100.0 | 170 | 100.0 |
| Chi-square test | $X^2 = 1.94$ | $p = 0.16$ | | |
| FARM CHARACTERISTICS | | | | |
| Average Number of Sows | | | | |
| 42-less | 49 | 83.1 | 148 | 86.5 |
| 43-60 | 2 | 3.4 | 9 | 5.3 |
| 61-over | 8 | 13.6 | 14 | 8.2 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test | $X^2 = 1.70$ | $p = 0.42$ | | |
| Number of Litters Farrowed | | | | |
| Under 20 | 25 | 42.4 | 63 | 37.0 |
| 20 to 49 | 18 | 30.5 | 70 | 41.2 |
| 50 to 99 | 7 | 11.9 | 20 | 11.8 |
| 100-over | 9 | 15.2 | 17 | 10.0 |
| Total | 59 | 100.0 | 170 | 100.0 |
| Chi-square test | $X^2 = 2.68$ | $p = 0.44$ | | |
| Number of Pigs Raised to Weaning | | | | |
| Less than 100 | 16 | 27.1 | 34 | 19.9 |
| 100 to 199 | 15 | 25.4 | 53 | 31.0 |
| 200 to 299 | 7 | 11.9 | 26 | 15.2 |
| 300 to 998 | 13 | 22.0 | 42 | 24.6 |
| 1,000-over | 8 | 13.6 | 16 | 9.3 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test | $X^2 = 2.71$ | $p = 0.60$ | | |
| Number of Pigs Sold as Feeders | | | | |
| Under 100 | 20 | 33.9 | 39 | 22.8 |
| 100 to 199 | 16 | 27.1 | 61 | 35.7 |
| 200 to 299 | 9 | 15.3 | 23 | 13.5 |
| 300-over | 14 | 23.7 | 48 | 28.0 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test | $X^2 = 3.47$ | $p = 0.32$ | | |
| Weight of Feeder Pigs Sold | | | | |
| 30 to 40 pounds | 2 | 3.4 | 0 | 0 |
| 41 to 50 pounds | 27 | 45.8 | 45 | 26.3 |
| 51 pounds-over | 30 | 50.8 | 126 | 73.7 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test | $X^2 = 14.4$ | $p = 0.00$ | | |

Table V (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located: Feeder Pig Sale Counties No. Response | Feeder Pig Sale Counties Percent Response | Other District 1 Counties No. Response | Other District 1 Counties Percent Response |
|---|---|---|---|---|
| HEALTH PRACTICES | | | | |
| Times Per Year Sows Vaccinated for Leptospirosis | | | | |
| None | 25 | 43.1 | 46 | 27.4 |
| One | 6 | 10.3 | 48 | 28.6 |
| Two | 27 | 46.6 | 74 | 44.0 |
| Total | 58 | 100.0 | 168 | 100.0 |
| Chi-square test $X^2 = 9.44$ $p = 0.00$ | | | | |
| Times Per Year Sows Vaccinated for Rhinitis | | | | |
| None | 33 | 55.9 | 113 | 68.0 |
| One | 6 | 10.2 | 21 | 12.7 |
| Two | 20 | 33.9 | 32 | 19.3 |
| Total | 59 | 100.0 | 166 | 100.0 |
| Chi-square test $X^2 = 5.23$ $p = 0.07$ | | | | |
| Times Per Year Sows Vaccinated for Parvovirus | | | | |
| None | 27 | 46.6 | 105 | 63.3 |
| One | 5 | 8.6 | 26 | 15.7 |
| Two | 26 | 44.8 | 35 | 21.0 |
| Total | 58 | 100.0 | 166 | 100.0 |
| Chi-square test $X^2 = 12.47$ $p = 0.00$ | | | | |
| Times Per Year Boars Vaccinated for Parvovirus | | | | |
| None | 29 | 50.0 | 116 | 70.7 |
| One | 8 | 13.8 | 20 | 12.2 |
| Two | 21 | 36.2 | 28 | 17.1 |
| Total | 58 | 100.0 | 164 | 100.0 |
| Chi-square test $X^2 = 10.01$ $p = 0.00$ | | | | |
| Times Per Year Sows Wormed | | | | |
| None | 0 | 0 | 7 | 4.1 |
| One | 7 | 12.1 | 31 | 18.2 |
| Two | 34 | 58.6 | 113 | 66.5 |
| Three | 4 | 6.9 | 10 | 5.9 |
| Four | 13 | 22.4 | 9 | 5.3 |
| Total | 58 | 100.0 | 170 | 100.0 |
| Chi-square test $X^2 = 16.9$ $p = 0.00$ | | | | |
| Times Per Year Sows Treated Lice | | | | |
| None | 1 | 1.7 | 4 | 2.3 |
| One | 5 | 8.5 | 28 | 16.4 |
| 2 to 4 | 43 | 72.9 | 119 | 69.6 |
| 5-over | 10 | 16.9 | 20 | 11.7 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 2.98$ $p = 0.39$ | | | | |
| Use of Medicated Water | | | | |
| No | 40 | 67.8 | 151 | 88.3 |
| Yes | 19 | 32.2 | 20 | 11.7 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 20.7$ $p = 0.00$ | | | | |
| Use Sulfa in Water | | | | |
| No medication used in water | 21 | 35.6 | 150 | 87.7 |
| No | 33 | 55.9 | 11 | 6.5 |
| Yes | 5 | 8.5 | 10 | 5.8 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 72.6$ $p = 0.00$ | | | | |

Table V (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located: Feeder Pig Sale Counties, No. Response | Feeder Pig Sale Counties, Percent Response | Other District 1 Counties, No. Response | Other District 1 Counties, Percent Response |
|---|---|---|---|---|
| Used Antibiotics in Water | | | | |
| None | 21 | 35.6 | 151 | 88.3 |
| No | 19 | 32.2 | 1 | .6 |
| Yes | 19 | 32.2 | 19 | 11.1 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 78.54$ $p = 0.00$ | | | | |
| Disinfect Farrowing Quarters | | | | |
| No | 15 | 26.3 | 61 | 40.4 |
| Yes | 42 | 73.7 | 90 | 59.6 |
| Total | 57 | 100.0 | 151 | 100.0 |
| Chi-square test $X^2 = 2.95$ $p = 0.08$ | | | | |
| Frequency of Iron Shots to Pigs | | | | |
| Never | 10 | 17.3 | 49 | 31.8 |
| Sometimes | 6 | 10.3 | 41 | 26.6 |
| Always | 42 | 72.4 | 64 | 41.6 |
| Total | 58 | 100.0 | 154 | 100.0 |
| Chi-square test $X^2 = 16.27$ $p = 0.00$ | | | | |
| Age Iron Shots Given | | | | |
| 3 days after birth | 46 | 95.8 | 95 | 91.3 |
| Later | 2 | 4.2 | 9 | 8.7 |
| Total | 48 | 100.0 | 104 | 100.0 |
| Chi-square test $X^2 = 0.43$ $p = 0.51$ | | | | |
| Clip Needle Teeth | | | | |
| Never | 4 | 6.8 | 27 | 16.0 |
| Sometimes | 8 | 13.5 | 68 | 40.5 |
| Always | 47 | 76.7 | 73 | 43.5 |
| Total | 59 | 100.0 | 168 | 100.0 |
| Chi-square test $X^2 = 23.03$ $p = 0.00$ | | | | |
| Most Serious Problems in Raising Pigs | | | | |
| Scours | 16 | 27.1 | 43 | 25.6 |
| Small litters | 10 | 16.9 | 14 | 8.4 |
| Uneven birth weight | 11 | 18.6 | 26 | 15.6 |
| Sows fail to milk | 4 | 6.8 | 24 | 14.4 |
| Sows fail to breed | 9 | 15.3 | 20 | 12.0 |
| Other | 9 | 15.3 | 40 | 24.0 |
| Total | 59 | 100.0 | 167 | 100.0 |
| Chi-square test $X^2 = 7.20$ $p = 0.20$ | | | | |
| FEEDING PRACTICES | | | | |
| Increase Feed to Pregnant Sows | | | | |
| No | 6 | 10.2 | 46 | 27.2 |
| Yes | 53 | 89.8 | 123 | 72.8 |
| Total | 59 | 100.0 | 169 | 100.0 |
| Chi-square test $X^2 = 6.28$ $p = 0.01$ | | | | |
| Pounds Fed to Pregnant Sows | | | | |
| 6 pounds or less | 45 | 80.4 | 80 | 65.0 |
| 7 to 12 pounds | 11 | 19.6 | 43 | 35.0 |
| Total | 56 | 100.0 | 123 | 100.0 |
| Chi-square test $X^2 = 3.58$ $p = 0.05$ | | | | |
| Pounds Fed to Nursing Sows | | | | |
| 9 pounds or less | 6 | 10.2 | 23 | 13.9 |
| 10-12 pounds | 13 | 22.0 | 81 | 49.1 |
| 13-20 pounds | 40 | 67.8 | 61 | 37.0 |
| Total | 56 | 100.0 | 165 | 100.0 |
| Chi-square test $X^2 = 17.2$ $p = 0.00$ | | | | |
| How Did Creep Feed Pigs | | | | |
| Creep feed only | 47 | 82.5 | 122 | 73.5 |
| Pigs ate with sows | 8 | 14.0 | 19 | 11.4 |
| Creep plus corn | 2 | 3.5 | 25 | 15.1 |
| Total | 57 | 100.0 | 166 | 100.0 |
| Chi-square test $X^2 = 5.36$ $p = 0.06$ | | | | |

Table V (Continued)

| Name of Variable | Counties Where Feeder Pig Producers Located: Feeder Pig Sale Counties — No. Response | Feeder Pig Sale Counties — Percent Response | Other District 1 Counties — No. Response | Other District 1 Counties — Percent Response |
|---|---|---|---|---|
| Medication Used in Gestation Ration | | | | |
| None | 16 | 27.1 | 70 | 42.7 |
| Antibiotic | 19 | 32.2 | 65 | 39.6 |
| Sulfa | 0 | 0 | 3 | 1.8 |
| Both | 24 | 40.7 | 26 | 15.9 |
| Total | 59 | 100.0 | 164 | 100.0 |
| Chi-square test $X^2 = 16.3$ $p = 0.00$ | | | | |
| Medication Used in Pigs Weaning Ration | | | | |
| None | 13 | 22.0 | 32 | 21.0 |
| Antibiotic | 22 | 37.3 | 78 | 49.1 |
| Sulfa | 0 | 0 | 2 | 1.3 |
| Both | 24 | 40.7 | 47 | 29.6 |
| Total | 59 | 100.0 | 159 | 100.0 |
| Chi-square test $X^2 = 3.75$ $p = 0.28$ | | | | |
| EXTENSION CONTACTS | | | | |
| Swine Meetings Attended | | | | |
| None | 10 | 16.9 | 76 | 44.4 |
| One-over | 49 | 83.1 | 95 | 55.6 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 13.01$ $p = 0.00$ | | | | |
| Office Visits Made | | | | |
| None | 7 | 11.9 | 23 | 13.5 |
| One-over | 52 | 88.1 | 148 | 86.5 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 0.00$ $p = 0.93$ | | | | |
| Telephone Calls Made | | | | |
| None | 13 | 22.0 | 66 | 38.6 |
| One-over | 46 | 78.0 | 105 | 61.4 |
| Total | 56 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 4.62$ $p = 0.03$ | | | | |
| Farm Visits Received | | | | |
| None | 6 | 10.2 | 67 | 39.2 |
| One-over | 53 | 89.8 | 104 | 60.8 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 15.72$ $p = 0.00$ | | | | |
| VETERINARIAN CONTACTS | | | | |
| Farm Visits Received From Veterinarian | | | | |
| None | 14 | 23.7 | 65 | 38.0 |
| One-over | 45 | 76.3 | 106 | 62.0 |
| Total | 59 | 100.0 | 171 | 100.0 |
| Chi-square test $X^2 = 3.36$ $p = 0.06$ | | | | |

Age of producers. Data presented in Table V indicated that 20 percent of the feeder pig producers in sale counties were under age 35 compared to 18 percent in other District I counties. Thirty-one percent of the producers in other District I counties were over age 60 compared to 20 percent in sale counties. However, these differences in age of producers were not significant at the .05 level.

Education. Almost 80 percent of the feeder pig producers in sale counties had a high school or less education compared to 84 percent in other District I counties. Even though a small percentage of all counties had a college education producers in sale counties did not differ significantly from those in other district I counties.

Employment. Fifty-nine percent of the feeder pig producers in sale counties were full-time farmers compared to 48 percent in other District I counties. However these differences in employment status among sale counties and other District I counties were not significant at the .05 level.

Farm Characteristics

Findings regarding feeder pig producers five farm characteristics in sale counties compared to other District I counties are presented in this subsection.

Number of sows owned. Almost 87 percent of the feeder pig producers in other District I counties owned less than 42 sows compared to 83 percent in sale counties. However only 14 percent of sale county

producers owned 61 or more sows compared to 8 percent of other District I counties. These differences in number of sows owned were not significant at the .05 level.

Number of litters farrowed. Forty-two percent of the feeder pig producers in sale counties farrowed under 20 litters compared to 37 percent in other District I counties. Fifteen percent of producers in sale counties farrowed over 100 litters compared to 10 percent in other District I counties. However, these differences in number of litters farrowed were not significant as tested by the $x^2$ test.

Number of pigs raised to weaning. Data in Table V indicate little differences in the percentages of pigs raised to weaning. However, 27 percent of feeder pig producers in sale counties weaned less than 100 pigs compared to 20 percent in other District I counties. No significant differences in pigs raised to weaning existed at the .05 level.

Number of pigs sold as feeders. Thirty-four percent of the feeder pig producers in sale counties sold under 100 pigs compared to 23 percent in other District I counties. Sale county data also indicated 24 percent of producers sold 300 or more pigs compared to 28 percent in other District I counties. However no differences in number of pigs sold as feeders existed among producers in sale counties compared to those in other District I counties.

Weight of feeder pigs sold. Seventy-four percent of the feeder pig producers in other District I counties sold pigs with an average weight of 51 pounds and over compared to 51 percent in sale counties. These differences were significant at the .05 level. Producers in sale counties tended to sell pigs at lighter weight than producers in other District I counties.

## Health Practices

Findings regarding feeder pig producers use of 14 health practices in sale counties compared to counties in other District I counties are presented in this subsection.

Times per year sows vaccinated for leptospirosis. Almost 47 percent of the feeder pig producers in sale counties vaccinated sows twice during the 12 month time period compared to 44 percent in other District I counties. However, 43 percent of the producers in sale counties did not vaccinate for leptospirosis compared to 27 percent in other District I counties. These differences in times per year sows vaccinated for leptospirosis were significant at the .05 level. Sale county producers were less likely to vaccinate sows for leptospirosis than producers in other District I counties.

Times per year sows vaccinated for rhinitis. Sixty-eight percent of the feeder pig producers in other District I counties did not vaccinate sows for rhinitis during the 12 month period compared to 56 percent in sale counties. These differences in times per year sows were vaccinated for rhinitis were not significant at the .05 level as tested by the $x^2$ test.

Times per year sows vaccinated for parvovirus. Sixty-three percent of the producers in other District I counties reported not vaccinating sows for parvovirus during the 12 month period compared to 47 percent in sale counties. Almost 45 percent of the producers in sale counties vaccinated sows twice compared to 21 percent in other District I counties. These differences in times per year sows vaccinated for parvovirus were significant at the .05 level. Producers in sale counties were more likely than those in other District I counties to vaccinate sows for parvovirus.

Times per year boars vaccinated for parvovirus. Almost 71 percent of the producers in other District I counties reported not vaccinating boars for parvovirus during the 12 month period compared to 50 percent in sale counties. Only 17 percent of the producers in other District I counties vaccinated boars twice for parvovirus compared to 36 percent of producers in sale counties. These differences in times per year boars were vaccinated for parvovirus were significant as tested by the $x^2$ test. Producers in sale counties were more likely than those in other District I counties to vaccinate boars for parvovirus.

Times per year sows wormed. Eighty-eight percent of the feeder pig producers in sale counties wormed their sows two or more times per year compared to 78 percent of the producers in other District I counties. These differences in times per year sows wormed were significant at the .05 level. Producers in sale counties tended to worm sows more frequently than producers in other District I counties.

Times per year sows treated for lice. Almost 17 percent of the feeder pig producers in sale counties treated sows for lice five or more times per year compared to 12 percent in other District I counties. These differences in times per year sows treated for lice were not significant at the .05 level.

Use of medication in water. Almost 88 percent of the feeder pig producers in other District I counties used no medication in water compared to 68 percent in sale counties. Thirty-two percent of the producers in sale counties used medication in water compared to 12 percent in other District I counties. These differences in use of medicated water were significant at the .05 level. Producers in sale counties were more likely than those in other District I counties to use medication in water.

Use sulfa in water. Almost 6 percent of the feeder pig producers in other District I counties use sulfa in drinking water compared to 8 percent in sale counties. These differences in use of sulfa in water were significant as tested by the $x^2$ test. Producers in sale counties were more likely than those in other District I counties to use sulfa in sows drinking water.

Use antibiotics in water. Eleven percent of the feeder pig producers in other District I counties reported using antibiotics in the water compared to 32 percent in sale counties. These differences in use of antibiotics in the water were significant at the .05 level.

Producers in sale counties were more likely than those in other District I counties to use antibiotics in the water.

Disinfect farrowing quarters. Seventy-four percent of the producers in sale counties disinfected sows farrowing quarters compared to 60 percent in other District I counties. These differences in disinfecting farrowing quarters were not significant.

How frequent were iron shots given to pigs. Almost 32 percent of the feeder pig producers in other District I counties never gave iron shots to pigs compared to 17 percent in sale counties. However, 72 percent of the producers in sale counties always gave iron shots to pigs compared to 42 percent in other District I counties. Significant differences in frequency of iron shots given to pigs existed at the .05 level. Producers in sale counties were more likely to always give iron shots to pigs compared to producers in other District I counties.

Age iron shots given. Almost 96 percent of sale county producers gave iron shots 3 days after birth compared to 91 percent in other District I counties. These differences were not significant at the .05 level.

Clip needle teeth. Forty-four percent of the feeder pig producers in other District I counties always clipped pigs needle teeth compared to almost 77 percent in sale counties. These differences in clipping pigs needle teeth were significant at the .05 level. Producers in sale counties were more likely to always clip pigs needle teeth compared to producers in other District I counties.

Most serious problems in raising pigs. There were very little percentage differences in problems of producers in raising pigs. However, scours was reported most frequently as their most serious problem. Over 27 percent of the producers in sale counties reported scours compared to 26 percent in other District I counties. These differences in problems in raising pigs were not significant as tested by the $x^2$ test.

## Feeding Practices

Findings regarding feeder pig producers use of six feeding practices in sale counties compared to producers in other District I counties were included in this subsection.

Increase feed to pregnant sows. Almost 90 percent of the feeder pig producers in sale counties increased feed fed to pregnant sows compared to 73 percent in other District I counties. Only 10 percent of the producers in sale counties reported not increasing feed compared to 27 percent in other District I counties. These differences in increasing feed fed to pregnant sows were significant as tested by the $x^2$ test. Producers in sale counties were more likely to increase feed fed to pregnant sows than were producers in other District I counties.

Pounds fed to pregnant sows. Eighty percent of the feeder pig producers in sale counties fed 6 pounds or less feed to pregnant sows compared to 65 percent in other District I counties. Only a small percentage of producers reported feeding 7 to 12 pounds. These

differences in pounds of feed fed to pregnant sows were significant at the .05 level. Producers in sale counties were more likely to feed pregnant sows 6 or less pounds of feed but less likely to feed from 7 to 12 pounds as compared to producers in other District I counties.

Pounds fed to nursing sows. Almost 68 percent of the feeder pig producers in sale counties fed 13 to 20 pounds of feed to nursing sows compared to 37 percent in other District I counties. Significant differences in poundsof feed fed to nursing sows existed at the .05 level. Producers in sale counties were more likely than those in other District I counties to feed nursing sows over 12 pounds of feed per day.

How were pigs creep fed. Eighty-three percent of the feeder pig producers in sale counties fed creep feed only compared to 74 percent in other District I counties. However, these differences were not significant at the .05 level.

Medication used in gestation ration. Nearly 41 percent of the feeder pig producers in sale counties used both sulfa and antibiotics in sows gestation ration compared to 16 percent in other District I counties. However, 43 percent of the producers in other District I counties did not use any medication compared to 27 percent in sale counties. These differences in medication used in sow gestation ration were significant as tested by the $x^2$ test. Producers in sale counties were more likely to use medication in sow gestation ration than producers in other District I counties.

Medication used in pigs weaning ration. Forty-one percent of the feeder pig producers in sale counties used both sulfa and antibiotics in pigs weaning ration compared to 30 percent in other District I counties. These differences in the use of medication in pigs weaning ration among sale counties as compared to those in other District I counties were not significant at the .05 level.

## Extension Contacts

Findings comparing producers in sale counties with those in other District I counties regarding feeder pig producers contacts with Extension are included in this subsection.

Swine meetings attended. Eighty-three percent of the feeder pig producers in sale counties attended one or more Extension swine meetings compared to 56 percent in other District I counties. Only 17 percent of the producers in sale counties reported not attending any meetings compared to 44 percent in other District I counties. These differences in swine meetings attended were significant at the .05 level. A higher percentage of producers in sale counties attended one or more swine meetings than those in other District I counties.

Office visits made. Eighty-eight percent of the feeder pig producers in sale counties made one or more visits to the Extension office compared to 87 percent in other District I counties. These differences in office visits made were not significant as tested by the $x^2$ test.

Telephone calls made. Seventy-eight percent of the producers in sale counties made one or more telephone calls to the Extension office compared to 61 percent in other District I counties. However, 22 percent of the feeder pig producers in sale counties did not make any telephone calls compared to 39 percent in other District I counties. These differences in telephone calls made were significant at the .05 level. Sale counties had a higher percentage of their producers that made one or more calls to the Extension office than other District I counties.

Farm visits received. Almost 90 percent of the feeder pig producers in sale counties received one or more farm visits from Extension agents compared to 61 percent in other District I counties. These differences in farm visits received were significant as tested by the $x^2$ test. Producers in sale counties were more likely to receive farm visits from the Extension agents than producers in other District I counties.

Farm visits received from veterinarian. Seventy-six percent of the feeder pig producers in sale counties received one or more farm visits from the veterinarian compared to 62 percent in other District I counties. However, these differences in farm visits received from the veterinarian were not significant at the .05 level.

Table Summary

In both sale counties and other District I counties the highest percentage of producers were between 36 and 59 years of age and had a high school education or less. These differences

in producers characteristics among those in sale counties compared to other District I counties were not significant at the .05 level.

Producers in other District I counties sold heavier weight feeder pigs than those producers in sale counties. This variable was the only farm characteristic where producers differed significantly. Both in sale counties and in other District I counties, the highest percentage of producers had less than 42 sows, farrowed less than 49 litters, weaned less than 200 pigs and sold less than 200 feeder pigs. However, these differences in farm characteristics were not significant at the .05 level.

Producers in sale counties compared to those in other District I counties were more likely to vaccinate sows twice per year for leptospirosis and parvovirus, use medication in water, use sulfa in water, use antibiotics in water, always give iron shots, and always clip needle teeth.

Although not significantly different, both the sale counties and other District I counties had a high percent of producers not vaccinating for rhinitis, treating sows for lice two to four times, disinfecting farrowing quarters, giving iron shots to pigs three days after birth, and reporting scours as the most serious problem in raising pigs.

Producers in sale counties compared to those in other District I counties were more likely to increase feed fed to pregnant sows, feed the recommended pounds of feed per day to both pregnant sows

(6 pounds or less) and nursing sows (13 to 20 pounds) and use both antibiotic and sulfa medication in sows gestation ration. Although not significantly different, producers in both sale counties and other District I counties had a high percentage of their producers feeding creep feed only to their pigs and using both antibiotic and sulfa in pigs weaning ration.

Producers in sale counties as compared to those in other District I counties were more likely to have attended one or more swine meetings, made one or more telephone calls to the Extension office and received one or more visits from the Extension agent during the past 12 months. Although producers in both sale counties and other District I counties had a high percent of producers making one or more telephone calls to the Extension office and receiving one or more visits from the veterinarian these differences were not significant as tested by the $x^2$ test.

# CHAPTER V

## SUMMARY OF MAJOR FINDINGS

This chapter presents a summary of the major findings of this study. The chapter was divided into five sections relating to the purpose and objectives, methods of investigation, major findings, implications and recommendations for further study.

## I. PURPOSE AND SPECIFIC OBJECTIVES

### Purpose

The purpose of this study were to compare feeder pig producers in three west Tennessee counties having feeder pig sales with producers in other Extension District I counties and producers in other feeder pig sale counties as to their personal and farm operation characteristics, use of production practices and number of contacts made with Extension.

### Specific Objectives

1. To compare Lexington, Brownsville and Huntingdon feeder pig sales as to grade, weight and price received for pigs sold in 1985 and 1986.

2. To characterize feeder pig producers in Extension District I.

3. To compare feeder pig producers in the three sale counties (Brownsville, Henderson, Huntingdon) as to personal and farm characteristics, use of recommended pig production practices and contacts with Extension agents.

4. Compare feeder pig producers located in sale counties and producers in other feeder pig sale counties (Carthage, Cookeville, Dickson, Lawrenceburg, Manchester, McMinnville, Savannah, Sevierville, Woodburn, Tennessee) as to personal and farm characteristics, use of recommended pig production practices and contacts made with Extension agents.

5. Compare feeder pig producers located in sale counties to other feeder pig producers in District I as to personal and farm characteristics, use of recommended pig practices and contacts made with Extension agents.

## II. METHOD OF INVESTIGATION

County Extension agents collected data using personal interview surveys developed by the University of Tennessee Agriculture Extension Service Swine Specialist. Completed surveys were returned to the Agriculture Extension Education office for analysis. The survey population consisted of all Tennessee swine producers having at least five sows. Data were collected from feeder pig producers and farrow-to-finish producers located in 77 Tennessee counties. Counties with less than 50 producers interviewed 15 persons, counties with 50 to 100 producers interviewed 20 persons, and counties with over 100 producers interviewed 25 persons.

The survey data were processed for computer analysis. Computations were made using facilities at the University of Tennessee Computing Center. The chi square test was used to determine probability levels and strengths of the relationship between dependent and independent variables. The .05 probability level was accepted as significant.

# III. MAJOR FINDINGS

Major findings were organized and presented under headings related to the objective of the study.

## Comparison of Lexington, Brownsville, and Huntingdon Feeder Pig Sale as to Grade, Weight and Price Received in 1985 and 1986

In 1985 Huntingdon sold a higher percentage of grade 1 feeder pigs than either Brownsville or Lexington, while Lexington sold a higher percent of pigs that graded number 2 and number 3. Lexington producers sold heavier weight (over 55 pounds) feeder pigs in 1985 and 1986 while Brownsville and Huntingdon sold lighter weights. Brownsville producers received a higher price per pound (95 cents) for grade 1 feeder pigs in 1985 and Huntingdon in 1986. Lexington and Brownsville producers received the highest price per pound (over 93 cents) in 1985 for grade 2 while Huntingdon and Brownsville received the highest price in 1986. Lexington producers received the highest price per pound (89 cents) in 1985 for grade 3 and Huntingdon received the highest in 1986.

## Characteristics of Feeder Pig Producers in Extension District I

Producer and farm characteristic. Eighty-three percent of the producers in District I were over 36 years of age. Over 80 percent had a high school education or less and nearly 65 percent of the producers farmed on a part-time basis. Eighty-two percent of District

I producers owned less than 42 sows, 74 percent farrowed less than 50 litters per year, 50 percent raised and weaned less than 200 feeder pigs, and 98 percent sold feeder pigs that weighed over 41 pounds.

Health practices. One half of (7 of the 14) feeder pig management practices recommended by the Extension service were not used by about 50 percent of the producers. These were vaccinating sows for leptospirosis, vaccinating sows for rhinitis, vaccinating sows for parvovirus, vaccinating boars for parvovirus, use of medicated water, use of sulfa in water and use of antibiotics in water. Over 70 percent of the producers wormed their sows twice and treated sows for lice two or more times. Over 50 percent of District I producers disinfected farrowing quarters and always gave iron shots to pigs. Almost 89 percent gave iron shots to pigs 3 days after birth, 62 percent always clipped pigs needle teeth and almost 38 percent reported scours as most serious problems in raising pigs.

Feeding practices. Eighty-five percent of District I feeder pig producers increased feed fed to pregnant sows, 65 percent fed under 6 pounds of feed to pregnant sows, 42 percent fed 10-12 pounds of feed to nursing sows, 72 percent creep fed pigs only, 38 percent used no medication in sows gestation ration, and 44 percent used antibiotics in pigs weaning ration.

Extension contacts. Sixty-seven percent of District I producers attended one or more swine meetings, 86 percent made one or more office visits, 70 percent made one or more telephone calls to the Extension

office, 80 percent received one or more farm visits and 63 percent received one or more farm visits from the veterinarian.

## Comparison of Feeder Pig Producers in the Three Sale Counties as to Their Personal and Farm Characteristics, Use of Recommended Pig Production Practices and Contacts with Extension Agents

Producer characteristics. Feeder pig producers in the three sale counties did not differ as to age, education or employment.

Farm characteristics. There were significant differences in the number of sows owned, number of pigs raised to weaning, number of pigs sold as feeders and average weight of feeder pigs sold in the three sale counties. Carrol County had a higher percent of producers with less than 42 sows and those weaning and selling less than 200 pigs than either Haywood or Henderson Counties. Haywood County had the highest percent of producers selling lighter weight (less than 50 pounds) pigs while Henderson and Carrol Counties sold heavier weight pigs. Differences in number of litters farrowed were not significant at the .05 level.

Health practices. The three sale counties differed significantly in the use of the 14 health practices. Henderson County had a higher percent of producers vaccinating sows for leptospirosis, vaccinating sows for rhinitis, vaccinating sows for parvovirus and vaccinating boars for parvovirus than Carrol or Haywood County. Carrol County

had a higher percentage of producers that wormed sows twice, treated sows for lice two or more times and disinfected sows farrowing quarters than either Haywood or Henderson County. However, there were no significant differences among producers in the sale counties as to use of medication in water, use of sulfa in water, use of antibiotic in water, frequency of iron shots given to pigs, age iron shots given to pigs, clipping of needle teeth and pig production problems.

Feeding Practices

Significant differences existed in the use of 4 of the 6 feeding practices. Carrol County had a higher percentage of producers feeding 4 to 6 pounds of feed to pregnant sows, feeding 13 to 20 pounds of feed to nursing sows, and using both antibiotics and sulfa in sow gestation/lactation and pigs weaning rations than either Haywood or Henderson Counties. The sale counties did not differ significantly as to pounds of feed fed to pregnant sows and how pigs were creep fed.

Extension Contacts

There were significant differences in Extension office visits made and Extension farm visits received in the three sale counties. Haywood and Henderson Counties had a higher percent of their producers making one or more office visits and receiving one or more farm visits from Extension agents than Carrol County. However, differences among producers in the sale counties as to swine meetings attended, Extension telephone calls made and farm visits received from a veterinarian were not significant.

## Comparison of Feeder Pig Producers Located in Sale Counties to Producers Located in Other Feeder Pig Sale Counties as to Personal and Farm Characteristics, Use of Recommended Pig Production Practices and Contacts Made With Extension Agents

Producer characteristics. Other feeder pig sale counties had a higher percentage of producers that were part-time farmers compared to producers in feeder pig sale counties. The variables age and education of producers did not differ significantly between producers in the sale counties and those in other feeder pig sale counties.

Farm characteristics. Feeder pig producers in sale counties and other feeder pig sale counties did not differ in number of sows owned, number of litters farrowed, number of pigs raised to weaning, number of pigs sold as feeders, and average weight of feeder pigs sold.

Health practices. A significantly larger percent of producers in other feeder pig sale counties than in sale counties vaccinated sows twice for leptospirosis and wormed sows two or more times; however, the largest percent also tended not to vaccinate boars for parvovirus and not use medication, sulfa or antibiotics in sows drinking water. Sale counties had a significantly higher percentage of producers than did other feeder pig sale counties vaccinating sows twice for parvovirus, disinfecting sows farrowing quarters, always clipping pigs needle teeth and worming sows four or more times. Producers in other feeder pig sale counties did not differ from those in sale counties as to times per year sows

vaccinated for rhinitis, times per year sows treated for lice, age iron shots were given and most serious problems in raising pigs.

Feeding practices. Producers in the sale counties differed significantly from those in other feeder pig sale counties as to four of the six feeding practices. Sale counties had a significantly larger percent of producers feeding under 6 pounds of feed to pregnant sows, feeding 13 to 20 pounds of feed to nursing sows, creep feeding pigs only and using both antibiotics and sulfa in sow gestation and pig weaning rations compared to other feeder pig sale counties.

Extension contacts. Sale counties had a significantly higher percentage of producers attending one or more swine meetings and receiving one or more farm visits from the veterinarian compared to other feeder pig sale counties. Producers did not differ significantly as to office visits made, telephone calls made and farm visits received.

## Comparison of Feeder Pig Producers Located in Sale Counties to Other Feeder Pig Producers in District I as to Personal and Farm Characteristics, Use of Recommended Pig Production Practices, and Contacts Made With Extension Agents

Producer characteristics. Feeder pig producers in sale counties and other feeder pig producers in District I did not differ as to age, education or employment.

Farm characteristics. Other District I counties had a significantly higher percentage of producers that sold pigs that weighed 51 pounds and over compared to feeder pig sale counties. Producers did not differ significantly as to number of sows owned, number of litters farrowed, number of pigs raised to weaning and number of pigs sold as feeders.

Health practices. Sale counties had a significantly higher percentage of producers vaccinating for leptospirosis, worming sows four or more times, always giving iron shots to pigs and always clipping pigs needle teeth compared to other District I counties. Other district counties had higher percentages of producers not vaccinating sows or boars for parvovirus and not using medication, sulfa or antibiotics in sows water than sale counties. Producers in sale counties did not differ significantly from those in other District I counties as to the number of times per year sows were vaccinated for rhinitis, times per year sows treated for lice, disinfecting farrowing quarters, age iron shots given and most serious problems in raising pigs.

Feeding practices. Feeder pig sale counties had a higher percent of producers that increased feed to pregnant sows, fed pregnant sows 6 pounds or less feed, fed nursing sows 13 to 20 pounds of feed, and used both antibiotics and sulfa in sow gestation ration compared to other District I counties. However, differences in how pigs were creep fed and use of medication in pigs weaning ration were not signifcant.

Extension contacts. Sale counties had the largest percentage of producers attending one or more swine meetings, making one or more telephone calls and receiving one or more farm visits compared to other District I counties. The differences in office visits made and farm visits received from the veterinarian were not significant.

## IV. IMPLICATIONS AND RECOMMENDATIONS

Based upon the findings of this study, the implications and recommendations below are drawn:

1. It was found that the Huntingdon feeder pig sale sold the highest percent of grade number 1 pigs in 1985 while the Lexington sale sold the highest percent of grade number 2 and grade number 3 pigs. This finding implies that producers marketing their pigs at the Huntingdon sale were producing a higher quality feeder pig than Lexington or Brownsville. Therefore, additional teaching and efforts should be made by Extension to feeder pig producers that market their pigs in Brownsville and Lexington, to inform them of the importance of raising and selling high quality feeder pigs.

2. The average weight of pigs marketed at the Huntingdon sale were 50 pounds, 51 pounds at Brownsville compared to almost 60 pounds at Lexington. These data indicate that feeder pig producers marketing their pigs at the Brownsville and Huntingdon sales were selling lighter weight pigs compared to producers marketing at the Lexington sale who sold heavier weight pigs. Therefore, educational teaching should be

directed to all producers as to the weight to market number 1 feeder pigs to receive a higher net profit.

3. It was found that a higher percentage of feeder pig producers who were surveyed in this study were not using 7 of the 14 recommended health practices. These were vaccinating sows for leptospirosis, rhinitis, parvovirus, vaccinating boars for parvovirus, use of medicated water, use of sulfa and use of antibiotic in water. This finding implies that a higher percentage of the swine producers were not using the recommended swine health practices. For this reason, it seems important that Extension make every possible effort to reach feeder pig producers to inform them of the importance of following the recommended health practices in their swine operation.

4. Sale counties had the higher percentage of producers using recommended feeding practices than either District I or other feeder pig sale counties. Again this finding implies that a higher percentage of the swine producers in District I and other feeder pig sale counties compared to feeder pig sale counties were not following the recommended swine feeding practices. Therefore, Extension should make extra efforts to contact and inform producers in District I and other feeder pig sale counties of the differences it would make in their swine operation by following the recommended feeding practices.

5. The total number of producers Extension contacts were significantly higher in sale counties than either District I or other feeder pig sale counties. Implications are that producers in sale counties were more likely to make contact with the Extension service. Extension

should increase their efforts to encourage producers in District I and other feeder pig sale counties to attend Extension swine meetings and to make Extension office visits and telephone calls.

## V. RECOMMENDATIONS FOR FURTHER STUDY

Similar studies should routinely be conducted in all swine production areas to determine the impact that Extension contacts and education teachings had on producers to evaluate the program for future planning, implementation and reporting purposes.

# BIBLIOGRAPHY

# BIBLIOGRAPHY


1. Blair, Ronald E. "Selected Farm Characteristics of Tennessee Farrow-to-Finish Swine Producers and Their Use of Selected Production Practices in Relationship to Extension Contacts and Farmer Employment Status." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1987.

2. Chadwell, James Scott. "Selected Characteristics of Tennessee Feeder Pig Producers and Their Use of Recommended Swine Management Practices in Relation to the Number of Contacts Producers Had With County Extension Agents." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1987.

3. Gordon, Micheal. "Relationships Between Number of Contacts Haywood County, Tennessee Feeder Pig Producers Had With the Agricultural Extension Service and the Management of Their Feeder Pig Operations." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1977.

4. McLemore, Marcus F. "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." Unpbublished Master's Thesis, The University of Tennessee, Knoxville, 1979.

5. Osikonobia, George. "A Comparative Analysis of Recommended Production Practices Used by Tennessee Swine Producers Surveyed in 1979, Extension Contacts Reported and Review of Selected Characteristics." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1982.

6. Perry, James Dewayne. "Relationship Between Characteristics of Tennessee Swine Producers, Number of Contacts They Had With County Agriculture Extension Agents and the Number of Recommended Swine Production Practices Adopted." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1980.

7. Rawls, Emmit L. Professor, Extension Agricultural Economics and Resource Development. The University of Tennessee Agriculture Extension Service. "Summary of 1985 and 1986 Tennessee Feeder Pig Sale."

# APPENDIX

AEE INFO-36

UNIVERSITY OF TENNESSEE
AGRICULTURAL EXTENSION SERVICE

1987 SWINE SURVEY*
(See Instructions on Last Page)

Feeder Pig and Slaughter Hog Production County (1) (2) (3)

Part I: Pig Production: (NOTE: Parts I and II are to be completed for both the feeder pig producers and the farrow-to-finish producers. Complete Part III for slaughter hog producers only.)

A. General Production and Marketing Information

1. During the past 12-months:*

(4-6) ___ ___ ___ a. Average number of sows maintained on farm during past 12-months? (sows)

(7-9) ___ ___ ___ b. Number of litters farrowed during past 12-months? (litters)

(10-13) ___ ___ ___ ___ c. Number of pigs raised to weaning? (pigs weaned)

(14-17) ___ ___ ___ ___ d. Number of pigs sold as feeders? (feeder pigs)

(18-21) ___ ___ ___ ___ e. Number hogs sold for slaughter? (slaughter hogs)

(22-23) ___ ___ 2. Average weight of feeder pigs sold? (pounds)

B. Health Practices (during past 12-months)

1. Vaccination

a. Number times sows were vaccinated for:

(24) ___ 1. Leptospirosis? (times/year)

(25) ___ 2. Athropic Rhinitis? (times/year)

(26) ___ 3. Parvovirus? (times/year)

(27) ___ b. Number times boars vaccinated for Parvovirus? (times/year)

(28) ___ 2. Number times sows were wormed? (times/year)

(29) ___ 3. Number times sows were treated for lice and mange? (times/year)

(30) ___ 4. Medication used in drinking water as an emergency treatment of swine diseases? (1 = no; 2 = yes; 9 = DNA)

(31) ___ a. Did you use sulfa? (1 = no; 2 = yes; 9 = DNA)

(32) ___ b. Did you use antibiotic? (1 = no; 2 = yes; 9 = DNA)

5. Medication used in sow and pig rations

(33) ___ a. Sows' gestation/lactation ration? (1 = none; 2 = antibiotic; 3 = sulfa; 4 = both)

(34) ___ b. Pigs' weaning ration? (1 = none; 2 = antibiotic; 3 = sulfa; 4 = both)

6. Giving iron shots to baby pigs farrowed in confinement

(35) ___ a. Extent done? (1 = never; 2 = sometimes; 3 = always; 9 = DNA)

(36) ___ b. Age of pigs? (1 = during first 3 days after birth; 2 = later; 9 = DNA)

*Coding Instructions
1. All entries are right justified.
2. Fill each blank column.
3. A zero (0) in each column = none.
4. A nine (9) in each column = DNA (does not apply) or don't know.

7. Clipping needle teeth:

(37) ____ a. Extent done? (1 = never; 2 = sometimes; 3 = always;)

(38) ____ b. Age of pigs? (1 = during first 3 days; 2 = later; 9 = DNA)

(39) ____ 8. Sanitation: Scrub farrowing quarters with water and a disinfectant between farrowing? (1 = no; 2 = yes; 9 = DNA)

C. Feeding (during past 12-months)

(40) ____ 1. Did you buy the majority of your feed as a complete feed or did you mix feed on your farm? (1 = bought commercial mixed feed; 2 = mixed feed on the farm)

2. Pregnant sows

(41) ____ a. Did you increase the amount feed fed pregnant sows 2 to 3 weeks before farrowing? (1 = no; 2 = yes)

(42-43) ____ ____ b. How many pounds of feed were fed per sow per day? (pounds/day)

3. Nursing sows:

(44-45) ____ ____ How many pounds of feed were fed per sow per day? (pounds/day)

4. Pigs:

(46) ____ How did you creep feed? (1 = used complete creep feed only; 2 = pigs ate with sow; 3 = used complete creep feed plus shelled corn; 9 = DNA)

D. Pig Production Problem

(47) ____ During the past 12-months, what has been your most serious problem in raising pigs? (1 = pig scours; 2 = small litters; 3 = uneven weight of pigs at birth; 4 = sows fail to milk; 5 = downer sows; 6 = sows fail to breed; 7 = weak legs; 8 = other)

Part II: General Information About the Farmer:

(48-49) ____ ____ 1. Approximate age? (years

(50) ____ 2. Approximate education? (1 = 8 grades or less; 2 = between 9-12 grades; 3 = some college; 4 = college graduate: NOTE: Agent estimate

(51) ____ 3. Employment? (1 = full-time farmer; 2 = part-time job off farm; 3 = full-time job off farm; 4 = retired; 5 = other)

4. Extension contacts:
(NOTE: Agent and/or farmer should estimate the number of contacts the producers had with Extension over the past 12-months)

(52) ____ a. Swine meetings?

(53) ____ b. Office visits?

(54-55) ____ ____ c. Telephone calls?

(56-57) ____ ____ d. Farm visits?

(58-59) ____ ____ 5. Estimated number of farm visits producer received during the past 12-months from a veterinarian? (farm visits) NOTE: Agent and/or farmer estimate

**Part III: Slaughter Hog Production - from Weaning to Market**
**NOTE: Part III is to be completed for the farrow-to-finish producers only (e.g. this excludes producers who finish purchased pigs only and those who produce feeder pigs only)**

A. General

(60) ____ 1. Place where slaughter hogs are fed? (1 = in a building; 2 = on the ground; 3 = both)

(61-63) ____ ____ ____ 2. Percent of hogs fed in building? (percent)

(64) ____ 3. If some hogs are fed in building, type of flooring used? (1 = slats; 2 = flush alley; 3 = solid concrete-no flush; 9 = DNA)

(65) ____ 4. Marketing method? (1 = packer; 2 = hog buying station; 3 = stock yard; 4 = other)

(66) ____ 5. Have you ever forward priced market hogs using the futures market? (1 = no; 2 = yes)

(67) ____ 6. Have you ever forward priced market hogs using a contract with a buying station or packer? (1 = no; 2 = yes)

B. Production Practices

(68) ____ 1. Worm pigs during finishing period? (1 = no; 2 = yes)

(69) ____ 2. Treat pigs for lice after weaning? (1 = no; 2 = yes)

(70-71) ____ ____ 3. Percent protein fed pigs from weaning to 125 pounds? (percent/protein)

(72) ____ 4. Medication used in growing/finishing ration? (1 = none; 2 = antibiotic; 3 = sulfa; 4 = both)

(73) ____ 5. Withdraw sulfa from feed before selling hogs for slaughter? (1 = do not feed sulfa; 2 = no, do not withdraw; 3 = yes, sulfa is withdrawn)

(74) ____ If yes, how many days before selling? (1 = 1-7 days; 2 = 8-14 days; 3 = at least 15 days before selling; 9 = DNA)

(75) ____ 6. Withdraw antibiotic from feed before selling hogs for slaughter? (1 = do not feed antibiotic; 2 = no, do not withdraw; 3 = yes, antibiotic is withdrawn)

(76) ____ If yes, how many days before selling? (1 = 1-7 days; 2 = 8-14 days; 3 = at least 15 days before selling; 9 = DNA)

(77-78) 8 7 7. Year?

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GENERAL INSTRUCTIONS

1. Date due: December 1987 2. Disposition: Associate Supervisor
3. Survey population: Feeder pig and market hog producers having at least five (5) sows.
4. Counties to be surveyed All counties.
5. Sample size:
   a. Counties with less than 50 producers interview 15.
   b. Counties with 50 to 100 producers interview 20.
   c. Counties with over 100 producers interview 25.
6. Sampling procedure: Nth number.

# VITA

James Edward Reaves was born December 9, 1957 to Mr. and Mrs. William M. Reaves of Saulsbury, Hardeman County, Tennessee. He began his formal education at Grand Junction South Side Elementary then attended Grand Junction North Side Junior High and then graduated from Middleton Central High in 1975.

He attended Tennessee State University in 1975 and completed the requirements for a Bachelor of Science degree in Rural Development in 1979.

He was employed by the University of Tennessee Agriculture Extension Service as an Assistant Extension Agent in Haywood County, Tennessee in March 1980. In April 1988 he resigned from the University of Tennessee and joined Tennessee State University Agriculture Extension Service in Shelby County, Tennessee as an Associate Extension Agent.

He is married to the former Regina Harris of Somerville, Tennessee and has three children, Jason, Ebonie and Latonya.

He is a honorary member of Epsilon Sigma Phi, President of Haywood County TSU Alumi Association and an active member of Bowden Chapel Methodist Church.