Swine

Hog Production In North Carolina 1962

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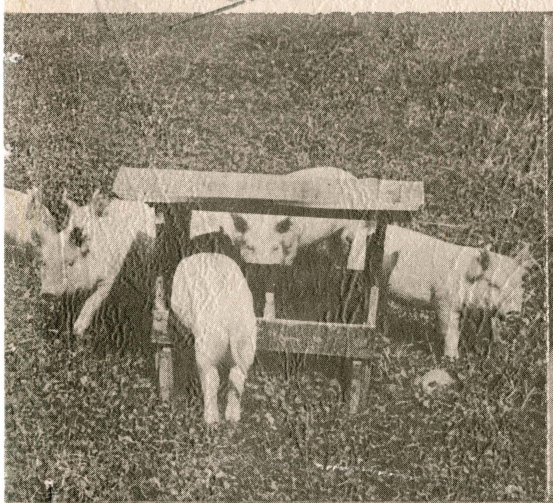

HOG PRODUCTION IN NORTH CAROLINA--1962

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SUMMARY

The purpose of this bulletin is to present and analyze some of the general characteristics of hog production in North Carolina. Data used were obtained through a mail questionnaire to county extension chairmen and county agricultural extension agents and through personal interviews of a statewide sample of sow-pig producers.

County agents provided information about the size and type of operation of commercial producers in their county and whether or not the producers owned farrowing houses and feeding floors. The types of operations considered were: feeder-pig operations in which pigs were sold to someone else for finishing; sow-pig operations in which pigs were both produced and finished; and finishing-pig operations in which feeder pigs were purchased and finished. Commercial producers were defined as producers who farrowed 30 or more litters or fed out 200 or more pigs annually.

Information obtained from county agents in the questionnaire indicated:

1. In 1962 there were 676 commercial sow-pig and feeder-pig producers farrowing 45,767 litters and 160 commercial finishing-pig producers finishing 98,880 pigs.
2. Producers with 80 or more litters represented less than one-fourth of the total number of sow-pig and feeder-pig producers reported but farrowed almost half of the litters reported.
3. More than 70 percent of all the sow-pig and feeder-pig producers had some type of farrowing house, and the percentage of producers with houses increased as the size of operation increased.

4. Both hog and feed grain production are concentrated in the eastern region (Coastal Plain and Sandhills) of North Carolina. Of the three types of hog operations, the eastern and western regions of North Carolina are most nearly equal in feeder-pig production.
5. Production per producer was larger in the eastern region, because a higher proportion of producers were in the largest size group (80 or more litters farrowed or 600 or more pigs finished annually).

A two-stage procedure was used to select sow-pig producers for personal interviews. First, a sample of 105 commercial producers was drawn from the list provided by county agents. Every third commercial producer interviewed was asked to provide the name of the nearest sow-pig producer farrowing 10 to 29 litters annually. These smaller producers also were interviewed.

Data obtained from personal interviews of sow-pig producers suggested:

1. Few producers in the smallest size group (10-29 litters annually) had feed processing equipment, while about 40 percent of the producers in the three larger size groups (30-49, 50-79 and 80 or more litters annually) owned and used such equipment.
2. Almost half of the producers with feeding floors had lagoons.
3. Larger producers were more likely to specialize in hog production than were the smaller producers.

4. All producers farrowed each sow twice per year, and more than three-fourths of the commercial producers farrowed four or more times per year.
5. Most of the producers fed their hogs some form of corn together with some type of protein supplement, and the percentage of producers feeding a more highly processed ration increased as size of enterprise increased.
6. Larger producers were less likely to use hogs for gleaning fields after harvest or for hogging-off crops than were the smaller producers.
7. The majority of producers in all size groups either allowed pigs out of farrowing houses or moved pigs out of farrowing houses within four weeks after farrowing. In the largest operations, many of the sows and pigs were moved to nursing barns where they were kept in confinement for an additional time.
8. Larger producers were more likely to use farrowing crates, clip needle teeth, vaccinate for cholera and castrate at an earlier age.

HOG PRODUCTION IN NORTH CAROLINA--1962

INTRODUCTION

The purpose of this bulletin is to present and analyze some of the general characteristics of hog production in North Carolina. This study is part of a larger study being made by the Department of Agricultural Economics, North Carolina State of the University of North Carolina at Raleigh, to determine physical characteristics, costs, returns and profitability of selected hog production systems within the state.

Hog production in North Carolina is an important industry which has undergone and is experiencing substantial change. North Carolina ranks among the top 15 states in the United States in hog production (U. S. Dep. Agr., 1963). Within the state, cash receipts from hogs are approximately 20 percent of cash receipts from sale of livestock and products and 5 percent of receipts from all agricultural commodities sold (N. C. Dep. Agr., 1962).

Hog production is rapidly becoming a more specialized and commercial farm enterprise. The average number of hogs marketed annually in North Carolina increased from 519,000 during the period 1946-50 to 1,432,000 during the 1957-61 period. During the same period, the number of hogs on farms remained relatively constant, indicating a shift from non-commercial producers, who slaughtered and consumed their production on the farm, to commercial producers, who marketed their production through regular market channels.

Continued changes in hog production in North Carolina are likely to occur. Relative to other states, North Carolina still has a high proportion of hogs slaughtered on farms. In 1961, almost 30 percent

(415,000 head) of the hogs slaughtered in North Carolina were slaughtered on farms (N. C. Dep. Agr., 1962). The size of the hog production unit in North Carolina is relatively small. In 1959, farms reporting farrowings in North Carolina had an average of 4 litters farrowed per year, while farms reporting farrowings in Iowa had an average of 25 litters farrowed per year (U. S. Bureau of the Census, 1961a, 1961b).

Forces which have caused changes in hog production are: increases in production efficiency, shifts in seasonal patterns of production and the availability of many new methods of mechanization and automation. Changing freight rates, growing and shifting population and increasing per capita income have also affected the structure and size of hog production in North Carolina. Many of the forces cited above will continue to cause changes in hog production in North Carolina, thereby making it an important area for investigation.

Data used in this publication came from two major sources. The first source was mail questionnaires sent to county extension chairmen and county agricultural extension agents in all 100 counties in North Carolina. The agents were asked to provide the names and addresses of all commercial producers in their county, together with size and type of operation and whether or not the producer possessed farrowing houses and feeding floors. The number of farms reporting litters farrowed, December 1, 1958, to November 30, 1959, ranged from only a few in some counties to more than 3,000 in Johnston County (U. S. Bureau of the Census, 1961b). To make the reporting task manageable for county agents, the scope of the questionnaire was limited to commercial producers, that is, producers farrowing 30 or more litters per year or feeding out as many as 200 head per year (the approximate equivalent of 30 litters).

Responses were obtained from county agents in 98 counties, and a total of 836 producers farrowing 30 or more litters or feeding out 200 or more head of hogs in 1962 were reported. These producers were classified by county agents into three specific types or classes of operation. The types of operations and numbers of producers associated with each were: (a) feeder-pig operations in which the pigs were sold to someone else for finishing, 155; (b) sow-pig operations in which pigs were both produced and finished, 521; and (c) finishing-pig operations in which feeder pigs were purchased and finished, 160.

Data obtained from the mail questionnaire provided a general description of hog production in North Carolina. To provide more detailed information about hog production, a sample of sow-pig producers drawn from the list supplied by county agents were contacted and interviewed. The sow-pig producers reported by county agents were divided into three size groups: 30 to 49 litters per year, 50 to 79 litters per year and 80 or more litters per year. A random sample of 35 producers from each size group was selected, and producers were interviewed during the summer months of 1963. In addition, every third producer interviewed was asked to provide the name of the nearest sow-pig producer farrowing 10 to 29 litters per year. These smaller producers also were interviewed to obtain detailed information about smaller hog operations. Only sow-pig producers were interviewed because it was possible to obtain information about both phases of hog production, feeder-pig production and finishing-pig production, with a single interview from this type of producer.

Usable questionnaires were obtained from 120 of the 140 sow-pig producers contacted. The information obtained from these producers included: management programs followed with sows, pigs, boars and finishing hogs;

listings of buildings, facilities, machinery and equipment used in hog production; and as much other information related to hog production as could be readily obtained from the producer.

COMMERCIAL HOG PRODUCTION

Size of Operation

County agents reported 45,767 litters farrowed by 676 commercial hog producers (producers farrowing at least 30 litters per year) in North Carolina during 1962. Of these litters, 10,387 were farrowed by feeder-pig producers and 35,380 by sow-pig producers. In 1959, there were 59,231 farms in North Carolina which reported 261,376 litters farrowed (U. S. Bureau of the Census, 1961b). The 676 commercial producers reported by county agents represented less than 1 percent of the producers reporting farrowings in 1959, but these commercial producers farrowed nearly 18 percent of the litters reported in 1959.

To provide information regarding the size distribution of producers, the sow-pig and feeder-pig producers were divided into three size groups. For each type of operation, producers in the largest size group represented less than one-fourth of the total number of producers reported, but these large producers farrowed almost half of the total litters reported (Tables 1 and 2).

Table 1. Feeder-pig producers and litters farrowed by size group, 1962

Size group in litters per year	Producers		Litters farrowed		Avg.-production in litters
	(number)	(percent)	(number)	(percent)	(number)
30-49	82	53	3,502	34	43
50-79	40	26	2,058	20	51
80 or more	33	21	4,827	46	146
Total	155	100	10,387	100	70

Table 2. Sow-pig producers and litters farrowed by size group, 1962

Size group in litters per year	Producers		Litters farrowed		Avg.-production in litters
	(number)	(percent)	(number)	(percent)	(number)
30-49	308	59	10,768	30	35
50-79	116	22	6,967	20	60
80 or more	97	19	17,645	50	182
Total	521	100	35,380	100	68

Commercial producers with finishing hog operations (200 or more feeder-pigs finished annually) fed 98,880 head according to county agents. These producers also were classified into three size groups comparable to the size groups selected for the feeder-pig and sow-pig producers. Producers in the largest size group represented less than one-third of the total number of producers, but they fed more than two-thirds of the pigs produced in finishing operations (Table 3).

Table 3. Producers finishing pigs and pigs finished by size groups, 1962

Size group in head per year	Producers		Pigs finished		Avg.-production in pigs
	(number)	(percent)	(number)	(percent)	(number)
200-399	82	51	19,395	20	237
400-599	27	17	12,360	12	458
600 or more	51	32	67,125	68	1,316
Total	160	100	98,880	100	618

Investments

All Producers

County agents were asked to indicate the presence or absence of farrowing houses and feeding floors for each producer reported. No other data on investments in buildings, facilities, machinery and equipment

were obtained from county agents. A high proportion, more than 70 percent, of all the sow-pig and feeder-pig producers had some type of farrowing house (Table 4). In each size class, the proportion of sow-pig producers

Table 4. Producers using specified production facilities by size group and type of operation

Size group	Farrowing house				Feeding floor			
	Feeder-pig		Sow-pig		Sow-pig		Finishing-pig	
	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)
30-49 litters or 200-399 head per year	60	73	205	67	112	36	39	48
50-79 litters or 400-599 head per year	26	65	88	76	55	47	16	59
80 or more litters or 600 or more head per year	29	88	81	84	63	65	44	86
All	115	74	374	72	230	44	99	62

with feeding floors was smaller than the proportion with farrowing houses. Producers finishing pigs were more likely to have feeding floors than sow-pig producers. Finally, as expected, producers in the largest size class were more likely to have these buildings and facilities than were smaller producers.

Sow-pig Producers

A more complete listing of investment items was obtained through personal interviews with sow-pig producers. In each size group, the percentage of sow-pig producers with farrowing houses and feeding floors was nearly the same for those interviewed and those reported by county agents.

Many small pieces of equipment (investment items) such as heat lamps, loading chutes and small tools were owned by almost all producers in all size groups and can, therefore, be considered standard equipment. Other pieces of equipment, such as steam cleaners and market hog scales, were owned by very few producers, and these producers generally were found in the largest size group.

Feed Processing and Handling Equipment. An attempt was made to classify feed processing and handling equipment owned by the sow-pig producers interviewed in terms of amount of investment required, amount of labor required per ton of feed processed, speed of processing and capacity. The variation in capacity, age and degree of automation within types of equipment was so great, however, that it was not possible to rank specific types of equipment according to these characteristics. Hence, only a general description of the feed processing and handling systems owned and used by the sow-pig producers interviewed is presented.

The hammermill-with-mixer-trailer system of feed processing and handling consists of a stationary hammermill and a self-unloading trailer. The hammermill is used to grind the grain and blow it into the trailer where the supplement is added. Augers in the floor of the trailer mix the grain and supplement.

The portable-hammermill-and-mixer system consists of a hammermill and batch-type mixer mounted on a trailer and powered by the tractor power-take-off. These units also have the self-unloading feature.

The grinder-blender system utilizes metering devices to blend the ingredients as they flow into the system's special hammermill. A continuous flow of materials is utilized in this system, and most systems

of this type are equipped with controls enabling the system to process feed without any personnel in attendance.

The hammermill-and-mixer system consists of a stationary hammermill and a stationary batch-type mixer. This system was used by more producers than any other system.

Producers in the business of processing feed were classified as commercial feed processors. These producers generally utilized a large stationary hammermill and a large stationary batch-type mixer.

Feed processing and handling equipment generally is a major investment item and, as expected, was found more often on farms in the larger size group than on farms in the smaller size group (Table 5). Only 5.8 percent of the sow-pig producers interviewed were classified as commercial feed processors. In a study of beef cattle feeding in North Carolina, Gilliam (1963) found a substantially larger proportion of cattle feeders (more than 20 percent) were commercial feed processors. Perhaps the percentage of commercial feed processors among producers finishing pigs would be more consistent with Gilliam's findings.

Manure Disposal. Disposal of manure is a serious problem for producers finishing hogs in confinement. Many disposal systems are available and have been tried. The use of septic tanks for storing liquid waste, subsequently used as fertilizer, has been discussed frequently in farm magazines and other popular publications. Of the sow-pig producers interviewed, however, only three were still using this system of waste disposal, and two of the three were planning to change to lagoons in the near future. Lagoons appear, at present, to be the most widely used means to solve waste-disposal problems. Of the sow-pig producers with feeding floors interviewed, almost half of those in the largest size group

Table 5. Producers owning and using different types of feed processing and handling equipment by size group

Size group in litters per year	Type of equipment											
	Hammermill with mixer-trailer		Portable hammermill and mixer		Grinder-blender		Hammermill and mixer		Commercial feed processing equipment		All[a]	
	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)	(no.)	(percent)
10-29	0	0.0	0	0.0	0	0.0	1	2.6	0	0.0	1	2.6
30-49	3	10.0	2	6.7	2	6.7	3	10.0	1	3.3	11	36.7
50-79	2	9.1	2	9.1	0	0.0	3	13.6	2	9.1	9	40.9
80 or more	0	0.0	3	10.0	1	3.3	5	16.7	4	13.3	13	43.3
Total	5		7		3		12		7		34	

[a]Other producers interviewed either did not process feed, had feed custom ground and mixed or purchased processed feed.

had lagoons (Table 6). Many other producers utilized drainage ditches, small streams and natural depressions to substitute partially for lagoons, thereby, providing for the disposal of manure without hauling.

Table 6. Sow-pig producers, with feeding floors, using lagoons by size groups

Size group in litters per year	Producers	
	(number)	(percent)
10-29	2	14
30-49	5	38
50-79	2	17
80 or more	9	47
All	18	31

LOCATION OF HOG PRODUCTION

Type of Operation

The location of commercial hog production by type of operation and county can be seen in Figures 1, 2 and 3. To facilitate further examination of the data, the state has been divided into an eastern region and a western region. The dividing line is the eastern edge of the Piedmont or the western edge of the Coastal Plain with the Sandhills included in the eastern region.

Historically, hog production has been located in areas of relatively heavy feed grain production. Both hog and feed grain production in North Carolina are concentrated in the eastern region (Tables 7 and 8). Corn is the principal feed grain in the state, and the eastern region is the major

Table 7. Producers, production in litters farrowed or head finished and average production per producer by region and type of operation

Type of operation and unit	Eastern region		Western region		Total	
	(number)	(percent)	(number)	(percent)	(number)	(percent)
Feeder-pig						
Producers	84	54	71	46	155	100
Litters farrowed	6,849	66	3,538	34	10,387	100
Litters per producer	82		50		70	
Sow-pig						
Producers	446	86	75	14	521	100
Litters farrowed	31,229	88	4,151	12	35,380	100
Litters per producer	70		55		68	
Finishing-pig						
Producers	118	74	42	26	160	100
Head finished	72,670	74	26,210	26	98,880	100
Head per producer	616		624		618	

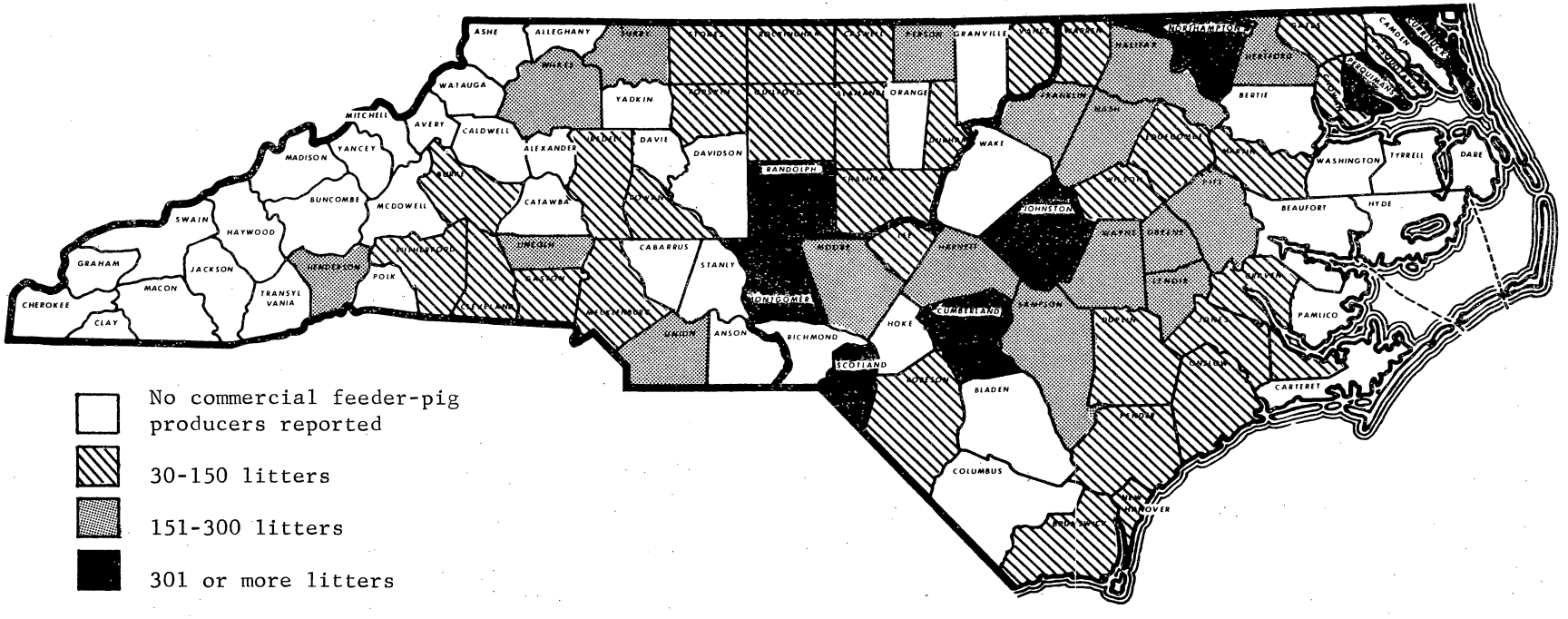

Figure 1. Production in litters by commercial feeder-pig producers, 1962

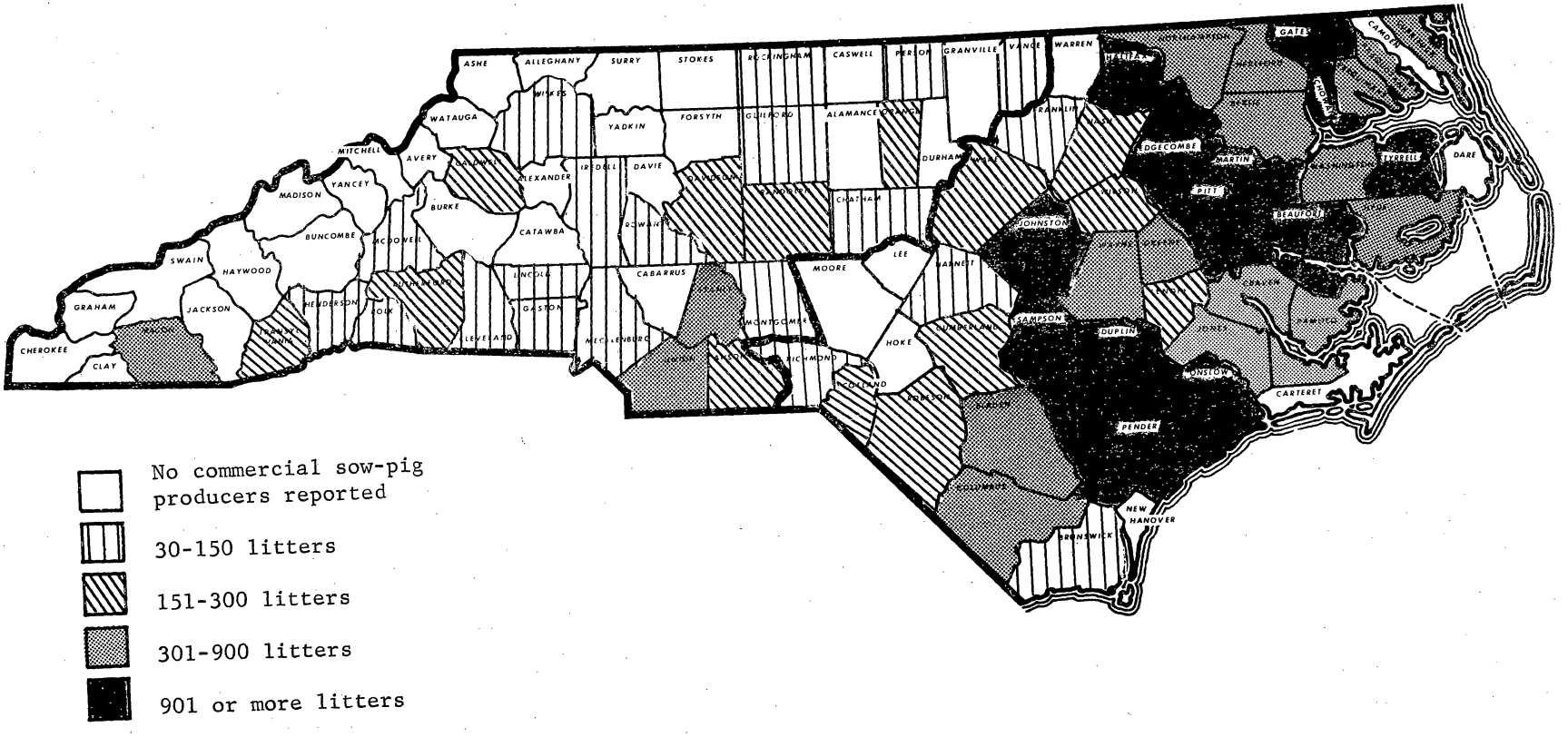

Figure 2. Production in litters by commercial sow-pig producers, 1962

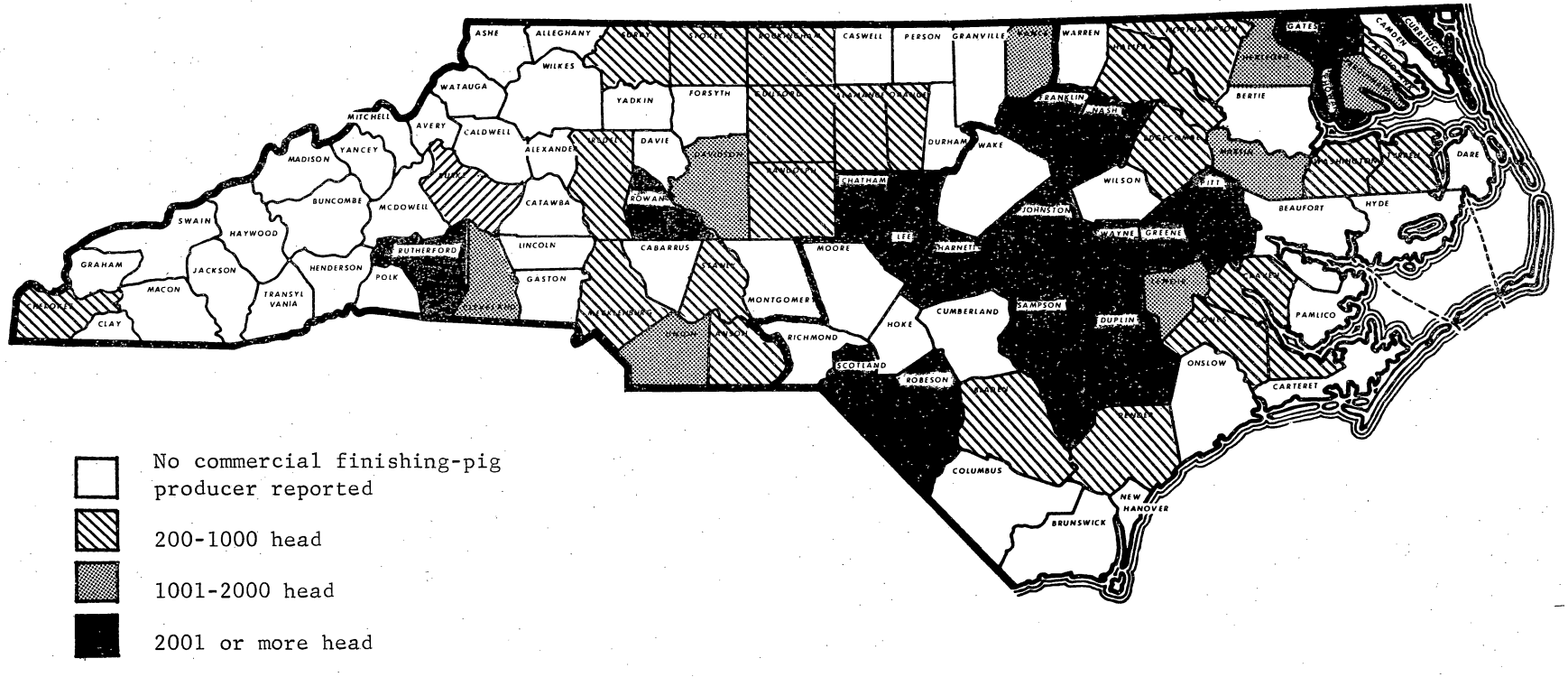

Figure 3. Production in head by commercial finishing-pig producers, 1962

Table 8. Feed grain production by region, 1959 and 1960

Type of feed grain	1959			1960		
	Eastern region	Western region	Total	Eastern region	Western region	Total
	(thousand pounds)					
Corn[a]	3,488,544	791,392	4,279,936	3,793,092	910,907	4,703,999
Oats[a]	132,182	269,866	402,048	104,318	157,314	261,632
All other small grains[b]	46,668	151,918	198,586	25,218	107,508	132,726
Grain sorghum[b]	32,755	136,670	169,425	36,665	162,249	198,914
Total	3,700,149	1,349,846	5,049,995	3,959,293	1,337,978	5,297,271

[a]Source: N. C. Dep. Agr., 1962.

[b]Adapted from: N. C. Dep. Agr., 1960; N. C. Dep. Agr., 1961 and N. C. Dep. Agr., 1962.

corn production area. The western region produces more of the other feed grains, but total production of these grains is small relative to corn production. The concentration of feed grains, other than corn, in the western region is consistent with the relatively greater importance of feeder-pig operations in that area. The two regions are most nearly equal in feeder-pig production, with about one-third of the litters farrowed in the West.

Size of Operation

Production per producer was larger in the eastern region, particularly for sow-pig and feeder-pig operations (Table 7). Classification of producers by size group in each region points out some of the regional differences in production per producer (Tables 9-11). The proportion of producers in the smallest size group was similar for the two regions for each type of operation. A higher proportion of the producers in the eastern region were in the largest size group, and accordingly a smaller percentage of the producers in the eastern region were in the medium size group. These size differences between regions existed for each type of operation but were smallest for finishing-pig operations.

Table 9. Feeder-pig producers and litters farrowed by size group and region

Size group in litters per year	Producers				Litters farrowed			
	Eastern region		Western region		Eastern region		Western region	
	(number)	(percent)	(number)	(percent)	(number)	(percent)	(number)	(percent)
30-49	42	50	40	56	2,146	31	1,356	38
50-79	16	19	24	34	746	11	1,312	37
80 or more	26	31	7	10	3,957	58	870	25
Total	84	100	71	100	6,849	100	3,538	100

Table 10. Sow-pig producers and litters farrowed by size group and region

Size group in litters per year	Producers				Litters farrowed			
	Eastern region		Western region		Eastern region		Western region	
	(number)	(percent)	(number)	(percent)	(number)	(percent)	(number)	(percent)
30-49	266	60	42	56	9,236	30	1,532	37
50-79	92	20	24	32	5,622	18	1,345	32
80 or more	88	20	9	12	16,371	52	1,274	31
Total	446	100	75	100	31,229	100	4,151	100

Table 11. Producers finishing pigs and pigs finished by size group and region

Size group in head per year	Producers				Pigs finished			
	Eastern region		Western region		Eastern region		Western region	
	(number)	(percent)	(number)	(percent)	(number)	(percent)	(number)	(percent)
200-399	59	50	23	55	13,475	19	5,920	23
400-599	19	16	8	19	8,670	12	3,690	14
600 or more	40	34	11	26	50,525	69	16,600	63
Total	118	100	42	100	72,670	100	26,210	100

ADDITIONAL CHARACTERISTICS

The following discussion of additional characteristics applies only to sow-pig operations. The data were obtained through personal interviews of sow-pig producers farrowing 10 or more litters in 1962.

Percentage of Net Farm Income from Hogs

Producers interviewed were asked to estimate the percentage of their net farm income which they received from their hog enterprise (Table 12). Larger hog producers generally received a larger percentage of their net farm income from hogs than smaller producers. Hence, the larger hog producers were more likely to be specializing in hog production than were the smaller producers.

Table 12. Sow-pig producers by size group and percentage of net farm income from hogs[a]

Size group in litters per year	Percentage of net income from hog enterprise				Total
	0-25	26-50	51-75	76-100	
	(percent)				
10-29	54	41	5	0	100
30-49	55	28	17	0	100
50-79	54	23	15	8	100
80 or more	17	53	18	12	100

[a]Producers are those who chose to answer the question regarding percentage of net farm income from hogs, approximately 60 percent of producers interviewed.

Farrowing Systems

All the producers interviewed farrowed each sow twice per year (Table 13). Many producers had two groups of sows farrowing at different times, thereby giving them a total of 4 farrowings per year. Other

producers had three groups of sows, or 6 farrowings per year. Still others were farrowing 8, 10 and even 12 times per year.

Table 13. Sow-pig producers farrowing at specified frequencies by size group

Size group in litters per year	Number of farrowings per year								Total
	2[a]	2[b]	4	6	8	10	12	Unclassifiable[c]	
	(percent)								
10-29	13	26	40	5	0	0	0	16	100
30-49	0	20	43	34	0	0	0	3	100
50-79	0	4	36	23	23	9	5	0	100
80 or more	0	0	10	34	20	13	23	0	100

[a]Producers farrowing in the fall and winter.

[b]Producers farrowing in the spring and fall.

[c]Producers farrowing an unknown number of times per year.

As expected, number of farrowings per year increased as size of operation increased. Ninety percent of the producers in the largest size group farrowed six or more times per year while only 5 percent of the producers in the smallest size group farrowed as many as six times per year.

Rations

Sows and Weanling Pigs

Most of the producers interviewed were using some form of corn together with some type of protein supplement to feed their sows and weanling pigs. As size of enterprise increased, the percentage of producers feeding more highly processed rations increased (Table 14).

Finishing Hogs

The general statements that were made about the sow and weanling pig rations apply also to finishing rations; i.e., they consisted principally

Table 14. Sow-pig producers by size group and ration fed to sows and weanling pigs

Ration[a]	Size group in litters per year			
	10-29	30-49	50-79	80 or more
	(percent)			
Ear corn	13	10	9	0
Shelled corn	42	7	14	17
Shelled corn, ground only during farrowing and lactation periods	19	30	14	17
Ground shelled corn	13	30	36	60
Ground shelled corn and small grains	18	13	14	6
Other	5	10	13	0
Total	100	100	100	100

[a]All with protein supplement.

of some form of corn together with some type of protein supplement, and the larger producers fed more highly processed rations (Table 15). Of sow-pig producers, a higher percentage in the finishing-pig producing stage than in the sow-and-weanling-pig producing stage were feeding the most highly processed ration, a complete feed. The majority of producers in every size group, except the smallest, were feeding a complete feed.

Gleaning and Hogging-off

The percentage of producers using hogs for gleaning fields after harvest or for hogging-off crops appears to be declining. Many producers interviewed were reducing their use of this practice. Two reasons suggested most frequently for the decline of this practice were development of more effective harvesting machinery and damages to valuable cropland from compaction and rooting by hogs.

Table 15. Sow-pig producers by ration fed to finishing pigs and size group

Size group in litters per year	Ration[a]					Total
	Ear corn	Shelled corn	Shelled soaked corn	Ground shelled corn	Other	
	(percent)					
10-29	8	49	0	37	6	100
30-49	7	17	3	59	14	100
50-79	5	20	0	55	20	100
80 or more	0	18	7	71	4	100

[a]All with protein supplement.

In spite of declining interest in gleaning and hogging-off, a considerable percentage of producers are still using these practices, at least to some degree (Table 16). The percentage of producers engaged in these activities in each producing stage generally decreased as size of enterprise increased.

Table 16. Sow-pig producers gleaning crops or hogging-off corn by size group and stage of production

Size group in litters per year	Stage of production	
	Sow and weanling pigs	Finishing pigs
	(percent)	
10-29	37	40
30-49	47	40
50-79	23	36
80 or more	20	13
All	32	32

Other Practices

Farrowing Crates

Very few of the producers interviewed were using permanent-type farrowing crates. The majority of the crates were of the type that can be converted into farrowing pens with the removal of one side of the crate. Use of farrowing crates (all types) does appear to be greater among larger producers than smaller ones and also among producers with farrowing houses (Table 17).

Table 17. Sow-pig producers using farrowing crates by size group

Size group in litters per year	Producers	
	All	With farrowing house
	(percent)	
10-29	21	32
30-49	18	32
50-79	46	56
80 or more	47	58
All	32	44

Clipping Needle Teeth

Routine clipping of baby pigs' needle teeth to prevent damage to the udder of the sow is a practice followed by the majority of producers interviewed (Table 18). An additional number of the producers interviewed clipped the needle teeth if they noticed any damage being done to the udder of the sow.

Table 18. Sow-pig producers clipping needle teeth by size group and frequency

Size group in litters per year	Frequency	
	Always	Sometimes
	(percent)	
10-29	55	8
30-49	57	10
50-79	54	18
80 or more	70	7
All	59	10

Cholera Vaccination

Producers interviewed were asked if they always, sometimes or never vaccinated for cholera. The majority of producers always vaccinated for cholera, with the percentage of producers vaccinating increasing as size of operation increased (Table 19).

Table 19. Sow-pig producers vaccinating for cholera by size group and frequency

Size group in litters per year	Frequency	
	Always	Sometimes
	(percent)	
10-29	58	8
30-49	57	3
50-79	73	4
80 or more	70	3
All	64	5

Castration Age

It was difficult to obtain estimates of castration age as many producers follow a very flexible castration schedule ranging from a few days after birth to 8 weeks or more. However, from the information obtained, it appears that smaller producers tend to castrate later (Table 20).

Table 20. Sow-pig producers castrating at different ages by size group

Size group in litters per year	Age in weeks			Total
	0-3	4-6	7 or more	
	(percent)			
10-29	18	45	37	100
30-49	40	30	30	100
50-79	50	32	18	100
80 or more	43	30	27	100

Utilization of Farrowing House

The length of time after farrowing before pigs were allowed out of the farrowing house seemed to depend considerably upon climatic conditions. Many producers allowed pigs to get out into clean pasture within a week or so after farrowing if weather conditions were favorable. Most of these producers still allowed the pigs to return to the farrowing house for several more weeks. The majority of producers in all size groups either removed their pigs from the farrowing house or allowed them to run outside within four weeks after farrowing (Table 21).

In the largest operations, many of the sows and pigs are moved to nursing barns where they are kept in confinement for an additional time (Table 22). This practice partially accounts for the large percentage of producers in the largest size group who move or allowed sows and pigs to be out of the farrowing house within four weeks.

Table 21. Sow-pig producers by length of time period after farrowing before pigs were moved or allowed out of the farrowing house

Size group in litters per year	Time in weeks				Total
	0-2	3-4	5-6	7 or more	
	(percent)				
10-29	48	20	12	20	100
30-49	59	21	0	20	100
50-79	47	14	14	25	100
80 or more	19	52	17	12	100

Table 22. Sow-pig producers using both farrowing houses and nursing barns by size group

Size group in litters per year	Producers
	(percent)
10-29	4
30-49	4
50-79	11
80 or more	38
All	15

With a multiple farrowing hog operation, 6 farrowings per year generally is considered a miximum for one farrowing house if pigs are weaned between 5 and 8 weeks of age and adequate time for cleanup between farrowings is provided. When the pigs are not weaned until they are 8 weeks old, the maximum number of farrowings per house may be less than 6 per year. In other words, increasing farrowing frequency beyond 6 farrowings per year would not usually reduce the fixed cost of farrowing facilities.

Many larger producers are farrowing 8, 10 and even 12 times per year, but they are doing so for reasons other than reducing fixed cost of

farrowing facilities. For example, a producer with 48 sows would utilize fully a 16-stall farrowing house by farrowing three groups of 16 sows twice annually if pigs were weaned between 5 and 8 weeks of age. If he increased his number of sows to 96 and farrowed 12 times per year, he would add three more groups of 16 sows each to farrow twice a year. He would have to build 16 more farrowing stalls to handle these additional sows if pigs were weaned between 5 and 8 weeks of age. By farrowing 12 times per year instead of 6, he would not have reduced the fixed cost of farrowing facilities, but he may have gained other advantages. The most common advantage suggested by producers interviewed was specialization of labor. A producer farrowing every month, for example, might well be able to employ workers who worked only in the farrowing house.

As an alternative to a farrowing house with capacity to care for pigs until weaning age, the producer can build a nursing barn. If the producer usually moves weaned pigs from the farrowing house at 8 weeks, he can effectively double the capacity of his farrowing house by moving unweaned pigs from the farrowing house to the nursing barn at 4 weeks. Nursing barns generally cost less than farrowing houses of equal capacity, and less labor will be required to care for the sows and pigs in the nursing barn. However, added stress will be placed on the pigs by the additional move, and added labor will be required for this move and clean-up. Some producers suggested that the increased investment and labor required to build an additional farrowing house, instead of a nursing barn, were justified through the elimination of problems associated with the extra moving of sows and pigs. Other producers indicated that the amounts of labor saved by using a nursing barn more than offset any disadvantages of extra moving of sows and pigs.

Type of Market Outlet

Only minor differences in type of market outlet among size groups were observed (Table 23). Few hogs were sold on auction markets, with the smallest proportion being sold by the largest producers.

Table 23. Sow-pig producers by size group and type of market outlet[a]

Size group in litters per year	Type of market outlet			Total
	Packer	Buying station	Auction	
	(percent)			
10-29	32	55	13	100
30-49	46	36	18	100
50-79	50	38	12	100
80 or more	46	45	9	100

[a]Producers are those who answered this question, approximately 75 percent of all producers interviewed.

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