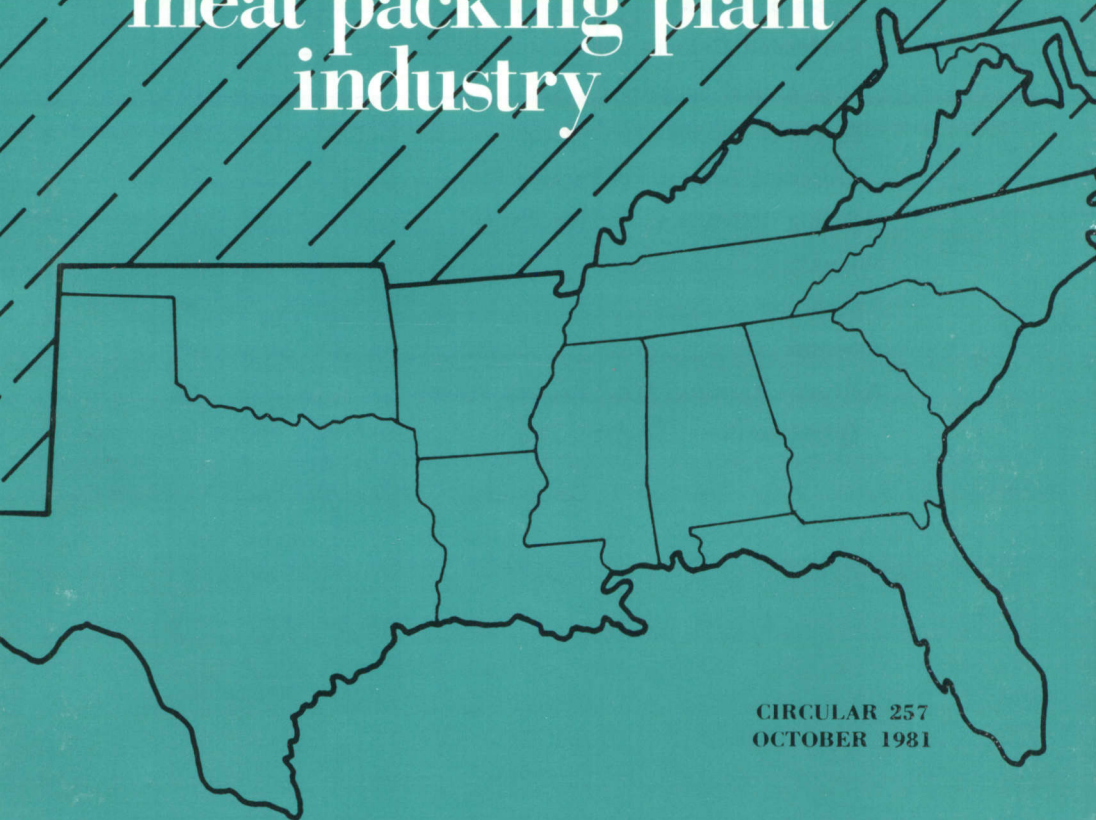


**A benchmark study
of the
Southern
United States
meat packing plant
industry**



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AUBURN UNIVERSITY
GALE A. BUCHANAN, DIRECTOR AUBURN UNIVERSITY, ALABAMA**

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Information contained herein is available to all without regard to race, color, sex, or national origin.

A benchmark study of the Southern United States meat packing plant industry*

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JAMES R. SIMPSON**

THE UNITED STATES' meat packing industry has undergone considerable structural change in the past two decades due to demographic shifts of consumers, development of a large scale cattle-feeding industry, changes in government legislation, growth of new packing firms, and fluctuations in livestock inventories (Ward, 1980). There is, however, relatively little information published about how the industry functions. There is recognition that the industry is undergoing a relatively rapid transition and, as such, there are demands from researchers, the industry itself, and legislators for more data which can be used in the decision-making process. This publication is designed to help meet that need.

INTRODUCTION

The number of packing plants in the United States has declined over the past 20 years while the number of livestock slaughtered has increased. For example, there were about 1,500 plants filing

*This research was conducted under the Southern Regional Livestock Project S-116.

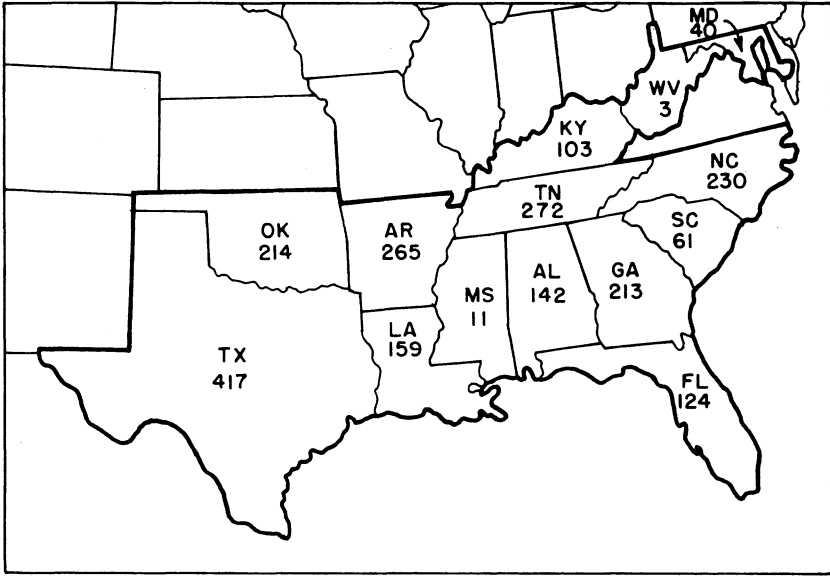
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annual reports with the Packers and Stockyards Administration in the early 1960's. By the late 1970's the number had dropped to under 1,000 plants (Packers and Stockyards). A reduction in the number of cattle on feed, and a decline in cow slaughter in the late 1970's, have also been responsible for the accelerated closings of plants, or their integration into other activities, such as hog slaughtering and/or further processing of carcasses.

The southern United States is a beef and pork deficit region (Liu and West, 1973). A decline in packing plant numbers in that region is seen as a deterrent to an expanded feedlot industry as competition for slaughter animals can be expected to decline, thus discouraging potential feedlot investors. Many conflicts about the industry are difficult to resolve due to a lack of knowledge about its structure. There have been no recent studies which describe either the national or regional meat packing industries (Richards and Biaggi, 1963; Logan, 1968; Stout, 1970; Martin and Danner, 1966; Dietrich and Williams, 1963; Stout, Purcell, and Fishel, 1961; and Dietrich, 1966). There are several state-wide studies, some of which are recent, but they are so scattered that it is not possible to draw a composite picture of the southern meat packing industry (Connor, Couvillion, and Hawkins, n.d.; Kuehn, 1974; Dietrich and Farris, 1976; and Schupp and Killen, 1979).

The southern United States is undergoing, and is expected to continue to undergo, considerable economic and demographic change which has a wide bearing on the slaughter industry. For example, while the population of the United States is expected to increase from 215 million people in 1970 to 246 million in 1985, the southern population is projected to grow from 29 million to 36 million (20.25 and 22.35 percent changes, respectively) (Boyd, n.d.). Population in some states, such as Florida, are projected to grow more rapidly (42.47 percent from 1970 to 1985) while others, such as Tennessee, will experience much more modest growth (14.47 percent).

This study was prompted by the recognition of considerable structural change in the meat packing and livestock industry, continued demographic changes in the U.S. population, and the need to better understand the meat packing industry as policy decisions are made. The main objective was to describe the current industry situation and establish a benchmark for further studies.



The respective states and plants surveyed in the Southern United States for 1979.

METHODOLOGY

Fourteen Southern States were included in the survey which covers the calendar year 1979. These are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and West Virginia, see figure. Packing plants in Virginia were not surveyed. This omission does not affect the results in the aggregate for the 14 states. Because plants in Texas and Oklahoma are larger in size, these two states were reported separately as the Southwest and the other 12 states as the Southeast.

There were 2,240 plants identified in the 14 states. The list was compiled from state agencies and *The Meat and Poultry Inspection Directory* (USDA, 1980). As a result, the survey population included federally inspected plants, state inspected plants, and small custom-type operations (which fall under state jurisdiction, but do not have a full-time inspector). An initial mail questionnaire was sent to the 2,240 plants in June of 1980, and a follow-up sent in October, 1980 to the plants which did not respond. The questionnaire is provided as Appendix I.

TABLE 1. TYPES OF PLANTS RESPONDING TO THE MEAT PACKING QUESTIONNAIRE, 1979

Type of response	Respondents	
	No.	Pct.
Commercial packing plants	320 ^a	45
Custom plants	152	20
Plants out of business	63	9
No response to questions	39	6
Did not slaughter — processing only	139	20
Total response	709	100

^a Only results from commercial packing plants were analyzed. Responses from custom plants were unreliable.

RESULTS

Types of Plants

A breakdown of plants responding to the questionnaire is provided in table 1. Total response to the mail out questionnaire was 32 percent. Approximately 65 percent of the responses were from commercial packing and custom plants. The other respondents were either not in operation, did not slaughter, or returned unusable questionnaires.

Approximately 9 percent of the respondents replied that they had gone out of business, primarily because of the owner's death or because enforced government regulations made it unprofitable to stay in business. Also included in this percentage were plant operators whose questionnaires were returned because of unknown address, implying a closed plant. Approximately 20 percent of the plants did not slaughter and were thus excluded.

The commercial plants were divided into three types: plants slaughtering only cattle, slaughtering only hogs, or slaughtering both cattle and hogs. The majority of commercial packing plants (67 percent) had dual slaughter facilities for both cattle and hogs, table 2. The predominance of plants with facilities for handling two animal products is an indication of management's need for flexibility. Dual slaughter plants are better able to utilize their available plant capacity given these seasonality and cyclical trends in supplies of livestock. Furthermore, commercial packing plants can spread their fixed costs by having a higher throughput of animals. Texas had the greatest response to the survey, with 18 percent of its 472 plants replying, table 2. The next largest responses came from Tennessee, North Carolina, and Georgia. There were no responses from cattle slaughter only plants in Georgia, West Virginia, or South Carolina.

TABLE 2. NUMBER OF SLAUGHTER PLANTS RESPONDING BY STATES IN THE SOUTHERN UNITED STATES, 1979

State	Cattle only	Hogs only	Cattle and hogs	Custom plant	Total plants	
	No.	No.	No.	No.	No.	Pct.
Alabama	1	6	15	14	36	8
Arkansas	3	1	20	14	38	8
Florida	3	4	12	6	25	5
Georgia	0	7	21	23	51	10
Kentucky	1	5	4	2	12	3
Louisiana	4	2	25	10	41	9
Maryland	7	1	8	1	17	4
Mississippi	1	3	1	1	6	1
North Carolina	1	9	23	21	54	11
Oklahoma	4	2	22	13	41	9
South Carolina	0	2	11	1	14	4
Tennessee	4	14	14	20	52	11
Texas	16	6	36	26	84	18
West Virginia	0	0	1	0	1	
TOTAL	45	62	213	152	472	100 ^a

^a Total exceeds 100 percent due to rounding.

Production Capacity

For the Southeastern States, total annual production, production per hour, and use of capacity by type of plant are given in table 3. The 25 plants which handled only cattle slaughtered an average of 17,192 head annually per plant. The average kill for cattle slaughter only plants was 15 head per hour. These plants operated at 74 percent of their estimated capacity in 1979. For the Texas and Oklahoma region, average annual production increased to 38,199 head, over twice the amount slaughtered in the twelve Southeastern States, table 4. Production per hour increased to 144 head with capacity used about the same as the Southeast's plants.

Average annual production of hog kill only plants in the Southeast was 72,270 head per year. These plants slaughtered 55 head per hour, and operated at 81 percent of capacity. Hog slaughter plants in the Southwest were larger than the Southeast's plants killing 142,216 head per year. Production per hour was 96 head, but the Southwest's plant had lower used capacity in 1979.

The dual purpose plants in the Southeast comprising the largest segment of the responses, slaughtered on the average 17,288 hogs and 3,138 cattle annually. Their production averaged 26 and 7 head per hour of hogs and cattle, respectively. In the Southwest, dual slaughter plants were smaller in number and size compared to the Southeast. Average annual production was 1,232 hogs and

TABLE 3. PRODUCTION CHARACTERISTICS FOR PACKING PLANTS IN THE SOUTHEASTERN UNITED STATES, 1979 AND IN SOUTHERN REGION

Item	Southeastern plants slaughtering							
	Cattle only		Hogs only		Cattle and hogs		Southern region	
	Number responding	Average production	Number responding	Average production	Number responding	Average production	Number responding	Average production
Hogs								
Annual production (number or head)	—	—	53	72,270	156	17,288	272	27,691
Production per hour (number of head)	—	—	50	55	146	26	252	23
Use of capacity (number or percent)	—	—	41	81	118	58	205	61
Cattle								
Annual production (number or head)	25	17,192	—	—	156	3,138	258	7,161
Production per hour (number or head)	24	15	—	—	147	7	238	15
Use of capacity (number or percent)	19	74	—	—	120	49	196	55

^a Includes packing plants in Texas and Oklahoma.

TABLE 4. PRODUCTION CHARACTERISTICS FOR PACKING PLANTS IN TEXAS AND OKLAHOMA, 1979

Item	Plants slaughtering					
	Cattle only		Hogs only		Cattle and hogs	
	Number responding	Average production	Number responding	Average production	Number responding	Average production
Hogs						
Annual production (number per head)	—	—	9	142,216	57	1,232
Production per hour (number or head)	—	—	7	96	49	6
Use of capacity (number or percent)	—	—	6	74	40	50
Cattle						
Annual production (number or head)	20	38,199	—	—	57	2,540
Production per hour (number or head)	17	144	—	—	50	4
Use of capacity (number or percent)	14	69	—	—	43	60

2,540 cattle. Production per hour for hogs was only 6 head in the Southwest compared to 26 head in the Southeast. Production per hour for cattle was low in both regions for cattle. The Southeast's plants which are dual plants rely primarily on hog slaughter.

Average annual production for the 14 Southern States with plants in the survey was 27,691 hogs and 7,161 cattle. Hourly average production was 23 hogs and 15 cattle. Overall, plants slaughtering hogs operated at 61 percent of capacity while facilities slaughtering cattle operated at 55 percent of capacity.

The average size of dual purpose plants in both Southeast and Southwest was much smaller than single purpose operations. In addition, single purpose plants operated at a much higher percent of capacity than dual product plants in both regions. The data show that plants in the South, to the extent that the survey is representative of the region, operated on the average between 50 and 60 percent of capacity in 1979.

Live Animal Supplies

Plant survey data are presented in tables 5 and 6 for the types of animal reported slaughtered. Slaughter of the cattle only plants in the Southeast consisted of 65 percent cows, 10 percent heavy steers, 10 percent heifers, and 15 percent lightweight cattle. Their average annual slaughter was 16,317 head. The large percent of cows slaughtered is indicative of the size of the cow inventory in the region. Plants processing both cattle and hogs slaughtered also a larger percentage of cows (51 percent). Other types of cattle slaughtered were similar to the single purpose plants, but plants did report twice the percent of heavy heifers slaughtered (20 percent versus 10). Their annual kill (2,615 head) was only about one-sixth that of the single purpose plants. For the Southwest, heavy steers were 56 percent of the slaughter in cattle only plants. Cows represented only 15 percent of the slaughter. In the dual product plants in the Southwest cow slaughter was 59 percent, similar to that reported by plants in the Southeast. In the Southern region, cows and heavy steers were the predominate types of cattle slaughtered.

The results in tables 5 and 6 provide information on the average slaughter of each type of cattle for the region whether the plants actually slaughtered that type of cattle or not. Only results from plants which actually slaughtered a particular type of cattle are included in table 7. For example, of the 25 cattle slaughter

TABLE 5. TYPES AND AVERAGE NUMBERS OF CATTLE SLAUGHTERED BY PACKING PLANTS RESPONDING TO THE SURVEY, SOUTHEASTERN UNITED STATES, 1979^a AND IN SOUTHERN REGION

Type	Plants slaughtering						Southern region		
	Cattle only			Cattle and hogs			No. of plants	Average annual slaughter	Percent of total
	No. of plants	Average annual slaughter	Percent of total	No. of plants	Average annual slaughter	Percent of total			
Cows	25	10,639	65	156	1,335	51	258	2,577	39
Heavy steers	25	1,666	10	156	334	13	258	2,058	31
Heavy heifers	25	1,599	10	156	538	20	258	778	12
Lightweight cattle	25	2,413	15	156	408	16	258	1,208	18
Total	25	16,317	100	156	2,615	100	258	6,621	100

^a Includes all commercial packing plants in the survey. Total average annual slaughter does not equal total production in Table 3 because not all plants slaughtered a particular category of animals.

TABLE 6. TYPES AND AVERAGE NUMBER OF CATTLE SLAUGHTERED BY PACKING PLANTS IN TEXAS AND OKLAHOMA, 1979^a

Type	Plants slaughtering					
	Cattle only			Cattle and hogs		
	Number of plants	Av. annual slaughter	Percent of total	Number of plants	Av. annual slaughter	Percent of total
Cows	20	5,753	15	57	1,325	59
Heavy steers	20	21,600	56	57	90	4
Heavy heifers	20	3,280	9	57	199	9
Lightweight cattle	20	7,565	20	57	641	28
Total	20	38,197	100	57	2,255	100

^a Includes all commercial packing plants in the survey. Total average annual slaughter does not equal total production in table 3 because not all plants slaughtered a particular category of animals.

only plants in the Southeast, 17 plants slaughtered cows and 10 slaughtered heavy steers. Because table 7 only includes the plants which actually processed the type of animal listed, annual throughput averages for each type are higher than in tables 5 and 6.

The majority of both single and dual plants in the Southeast reported slaughtering cows. Lightweight cattle were reported by 48 percent of the cattle only slaughter plants. In the Southwest, more dual product plants slaughtered cows (60 percent) than any other type of cattle. Cattle only slaughter plants reported killing an average of 72,000 heavy steers annually. This was larger than any other type of cattle being slaughtered in either region because of the concentration of feedlots in the Southwest. Dual purpose plants in the Southeast slaughtered more annually of each type of cattle except lightweights than did Southwestern plants. Just the opposite was true for cattle only slaughtering plants except for cows.

Source of Supplies

Percentages of live animal supplies obtained within 300 miles of the packing plants are given in table 8. For all categories of packing plants except cattle only slaughtering in the Southwest, more than 80 percent of the livestock was purchased within 300 miles of the plant. In the case of cattle only slaughtering plants, plants reported receiving approximately 65 percent within 300 miles. Because of the large size of packing plants in the Southwest, the requirements for regular supplies of heavy steers and heifers are high. For plants in the Southeast, 100 percent of cattle

TABLE 7. TYPES AND AVERAGE NUMBERS OF CATTLE SLAUGHTERED BY PLANTS SPECIALIZING IN ONE TYPE OF CATTLE, SOUTHEASTERN UNITED STATES, 1979^a

Type of cattle	Southeast plants slaughtering						
	Cattle only			Cattle and hogs			
	No. of plants	Percent of total plants	Average annual slaughter	No. of plants	Percent of total plants	Average annual slaughter	
Cows	17	68	15,646	86	55	2,422	
Heavy steers	10	40	4,166	66	42	789	
Heavy heifers	8	32	4,997	59	38	1,421	
Lightweight cattle	12	48	5,027	55	35	1,156	
			Southwest plants slaughtering				
Cows	8	40	14,382	34	60	2,222	
Heavy steers	6	30	72,000	27	47	191	
Heavy heifers	5	25	13,120	23	40	493	
Lightweight cattle	11	55	13,755	27	47	1,353	

^a Only includes plants specializing in the type of cattle shown.

[8]

TABLE 8. PERCENT OF LIVE ANIMAL SUPPLIES WITHIN 300 MILES OF PACKING PLANTS IN SOUTHEASTERN AND SOUTHWESTERN UNITED STATES, 1979

Live animal type	Southeast plants slaughtering			Southwest plants slaughtering		
	Cattle only	Hogs only	Cattle and hogs	Cattle only	Hogs only	Cattle and hogs
	<i>Pct.</i>					
Hogs	—	87	93	—	80	96
Cows	94	—	96	95	—	98
Heavy steers	100	—	94	63	—	94
Heavy heifers	100	—	93	67	—	86
Lightweights	98	—	92	88	—	94

only slaughtering plants reported receiving heavy steers and heifers within 300 miles. The percentages of all types of cattle slaughtered were similar for dual purpose plants in both the Southeast and Southwest. The results indicate that slaughter cattle and hogs do not move long distances to be killed because of the high transportation costs.

Processing Activities of Packing Plants

All groups of packing plants reported selling a majority of their products in processed form, table 9. Most plants specializing in hogs did further processing of the carcass in the Southeast and Southwest (94 and 99 percent). In contrast, about 66 and 55 percent respectively of the Southeast's and Southwest's cattle slaughter only plants were engaged in further processing. Dual purpose plants in the Southeast and Southwest are in the intermediate range between the two types of specialized plants with 84 and 89 percent, respectively, of the dual purpose plants processing hogs with 79 and 71 percent respectively processing cattle. Processing as an additional activity in a plant allows for greater value-added to the product before its distribution.

Selling Activities of Packing Plants

Plant managers indicated the type of selling activities they performed, table 10. A higher proportion of dual product plants sold box beef than did single purpose plants in both regions: in the Southeast (38 versus 33 percent) and in the Southwest (44 versus 33 percent). Dual product plants in both regions sold more processed products than did cattle only plants. In contrast, cattle only slaughter plants sold a larger percentage of beef as primals and subprimals than did the dual purpose plants.

TABLE 9. FORM OF PRODUCT SOLD BY PACKING PLANTS IN THE SOUTHEASTERN UNITED STATES, 1979

Animal type	Southeast plants slaughtering							
	Cattle only		Hogs only		Cattle and hogs		Southern region	
	Carcass	Process ^a	Carcass	Process ^a	Carcass	Process ^a	Carcass	Process ^a
Hogs	—	—	6	94	16	84	14	86
Cattle	34	66	—	—	21	79	27	73
	Southwest plants slaughtering							
Hogs	—	—	1	99	11	89		
Cattle	45	55	—	—	29	71		

TABLE 10. ACTIVITIES PERFORMED BY PACKING PLANTS IN THE SOUTHEASTERN AND SOUTHWESTERN UNITED STATES, 1979

	Southeast plants slaughtering								Southwest plants slaughtering							
	Cattle only		Hogs only		Cattle and hogs				Cattle only		Hogs only		Cattle and hogs			
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	%															
Sell carcasses	71	29	29	71	64	36	58	42	79	21	50	50	73	27	56	44
Sell primals	43	57	55	45	34	66	42	58	58	42	67	33	46	54	41	59
Sell sub-primals	43	57	54	56	34	66	37	63	36	67	67	33	32	68	38	62
Sell processed	72	28	100	0	93	7	96	4	73	27	100	0	92	8	89	11
Sell box beef ^a	33	67	N/A	N/A	38	62	N/A	N/A	33	67	N/A	N/A	44	56	N/A	N/A

^a Includes only the purchasing, processing, and reselling of box beef.

Plants specializing in hog slaughter also sold more processed product than did dual purpose plants. For example, 71 percent of the hog slaughter only plants did not sell carcasses versus 42 percent of the dual purpose plants in the Southeast. All of the single purpose hog plants in both regions sold processed products compared with 96 and 89 percent respectively in the Southeast and Southwest for the dual purpose plants. A much higher percentage of the single purpose hog plants also sold a greater percentage of primals and subprimals in both regions than dual purpose plants. Processing has become an important additional activity for packing plants specially for hog slaughter plants. The purchase of box beef for cattle only slaughter plants is approximately the same in both regions; however, multi-product plants have a slightly higher proportion of purchases for either resell or use in their processing activities.

SUMMARY

A mail questionnaire was sent to 2,240 meat packing plants in 14 Southern States in 1980. The survey was for the period of 1979. There were 709 responses of which 320 were identified as commercial meat packing plants, and provided usable responses. These slaughter plants were broken down into three classes by type of slaughter: single purpose cattle, single purpose hogs, and dual purpose (i.e., plants slaughtering both cattle and hogs).

The survey revealed considerable unused capacity in 1979 in the Southern region, with only 61 percent of hog capacity and 55 percent of cattle capacity being used. A weighted average of all plants of used capacity for cattle was higher in the Southwest (62 percent) compared to the Southeast (52 percent). The situation was reversed for hog slaughter with a weighted average of 64 percent of used capacity in the Southeast and 53 percent in the Southwest. Relative numbers of cattle and hogs in the inventory within these two regions would explain differences in used capacity in 1979.

Cattle only slaughter plants in the Southeast slaughtered more cows than any other plants in the Southern region. Heavy steers were the predominate type of cattle slaughtered in the Southwest. For dual purpose plants, composition of slaughter cattle was similar with plants in the southern United States killing an average of approximately 2,400 head annually.

The majority of all plants in the Southern region obtained their supply of livestock within 300 miles of the plant. In the Southwest, a slightly higher percentage of hog only slaughter plants went further than 300 miles. This is because the Southwest is more deficit in hog production than the Southeast. A larger percentage of the Southwest's plants also obtained their supplies of heavy steers and heifers further than 300 miles.

Virtually all plants in the Southern region specializing in hogs further processed their products. In contrast, only 60 percent of cattle slaughter only plants processed their products. Dual purpose plants in the Southern region reported a higher percentage of hogs processed than cattle, but all percentages were higher than the cattle only slaughter plants.

Boxed beef was sold by one-third of the cattle only slaughter plants in the Southern region. Dual purpose plants purchased a higher percentage of boxed beef possibly because of the higher incidence of processing by these plants compared to cattle only slaughter plants. Single purpose cattle and hog plants sold a larger proportion of their output as primals and subprimals than did dual purpose plants.

A major implication of this benchmark study is that slaughter capacity is not a constraint if more cattle feeding should occur in the region in the future. With rising transportation costs and higher prices for grain, the opportunities for finishing cattle in the Southeast in feedlots or on forage could increase. Slaughter capacity is available if and when this adjustment should take place. With possible adjustments in demand for beef to more lean meat and hamburger, plants in the Southern region have access to a large supply of cows for processed beef. The large number of dual purpose plants in the Southeast is an indication of the need to minimize risks due to supply fluctuations and meet processing requirements.

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APPENDIX

Identification No. _____

SOUTHERN REGIONAL MEAT PACKING SURVEY

Questionnaire

Plant name _____

Address _____

Telephone number _____

Manager _____

Plant capacity (slaughter rate)

Number of hogs per hour _____, or hogs per day. _____

Number of cattle per hour _____, or cattle per day. _____

Percentage of capacity at which Hogs _____ Cattle _____

The plant operated in 1979

Number of days in week the plant normally operated in 1979 _____

Quantity and type of livestock slaughtered in 1979 (Fill in either quantity, percent or both but, *fill in total quantity.*)

	Quantity (head)	Percent
Total	_____	_____
Total	_____	_____
Cows	_____	_____
Heavy steers (greater than 800 lb.)	_____	_____
Heavy heifers (greater than 800 lb.)	_____	_____
Lightweight cattle	_____	_____
Total (hogs & cattle)	_____	_____

Source of live animal supply	Less than 300 miles away	More than 300 miles away	Total
	Percent		
Hogs	_____	_____	=100
Cows	_____	_____	=100
Heavy steers (greater than 800 lb.)	_____	_____	=100
Heavy heifers (greater than 800 lb.)	_____	_____	=100
Lightweight	_____	_____	=100
Total	100	100	

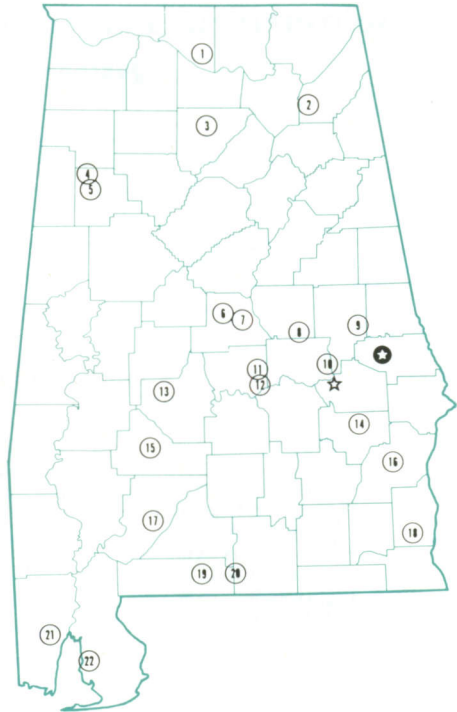
Percentage of animal sold as:	Cattle	Percent	Hogs
Carcass	_____		_____
Further processed	_____		_____
Total	100		100

Packing plant activities (Mark those items that apply with [Y] for yes and [N] for no)

	Cattle	Hogs
Slaughter only	_____	_____
Carcass	_____	_____
Primals	_____	_____
Subprimals	_____	_____
Processed	_____	_____
Further processing of purchased boxed beef	_____	_____

Alabama's Agricultural Experiment Station System AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

- ★ Main Agricultural Experiment Station, Auburn.
- ☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Foundation Seed Stocks Farm, Thorsby.
7. Chilton Area Horticulture Substation, Clanton.
8. Forestry Unit, Coosa County.
9. Piedmont Substation, Camp Hill.
10. Plant Breeding Unit, Tallassee.
11. Forestry Unit, Autauga County.
12. Prattville Experiment Field, Prattville.
13. Black Belt Substation, Marion Junction.
14. The Turnipseed-Ikenberry Place, Union Springs.
15. Lower Coastal Plain Substation, Camden.
16. Forestry Unit, Barbour County.
17. Monroeville Experiment Field, Monroeville.
18. Wiregrass Substation, Headland.
19. Brewton Experiment Field, Brewton.
20. Solon Dixon Forestry Education Center,
Covington and Escambia counties.
21. Ornamental Horticulture Field Station, Spring Hill.
22. Gulf Coast Substation, Fairhope.