

North Dakota Slaughter Plant Survey

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This report is based on data obtained in a survey of small to medium capacity slaughter plants in North Dakota. The survey was taken in September, 1976 at the request of the North Dakota Freezer and Meat Processors Association. Questionnaires were mailed to 175 plants, with 66 managers completing and returning the information. Data collected dealt with general slaughter information, charges for various services, receipts for by-products, and problems faced by small slaughter plants. The survey is part of a larger study on costs and returns associated with small to medium size North Dakota slaughter plants being conducted under a special Research and Extension Rural Development Project at North Dakota State University.

Introduction

The United States meat packing industry is dominated by a very small number of giant corporations which produce nearly 95 per cent of all meat products in this country. The remaining 5 per cent is produced by 18,000 small, independent meat plant operations. This report concerns these small independent firms.

The sale of livestock and livestock products in North Dakota accounted for \$452,808,000, or 23 per cent of the nearly \$2 billion annual cash farm income of farmers and ranchers in 1975. Cattle, wholesale milk and hogs made the largest contribution, with \$329.5, \$58.9, and \$38.1 million, respectively. State inventory totals were 2,235,000 cattle and 330,000 hogs at the end of 1976.

In 1975, 962,000 head of cattle and 469,000 hogs were marketed in North Dakota. During the same time, 283,200 cattle were commercially slaughtered and 12,000 slaughtered on the farm, for a total of 295,200 head. Total instate hog slaughter was 40,900, of which 21,900 was commercial slaughter and 19,000 farm slaughter. Thus, total instate slaughter accounted for only 31 per cent of the cattle and 9 per cent of the hogs marketed in North Dakota during 1975.

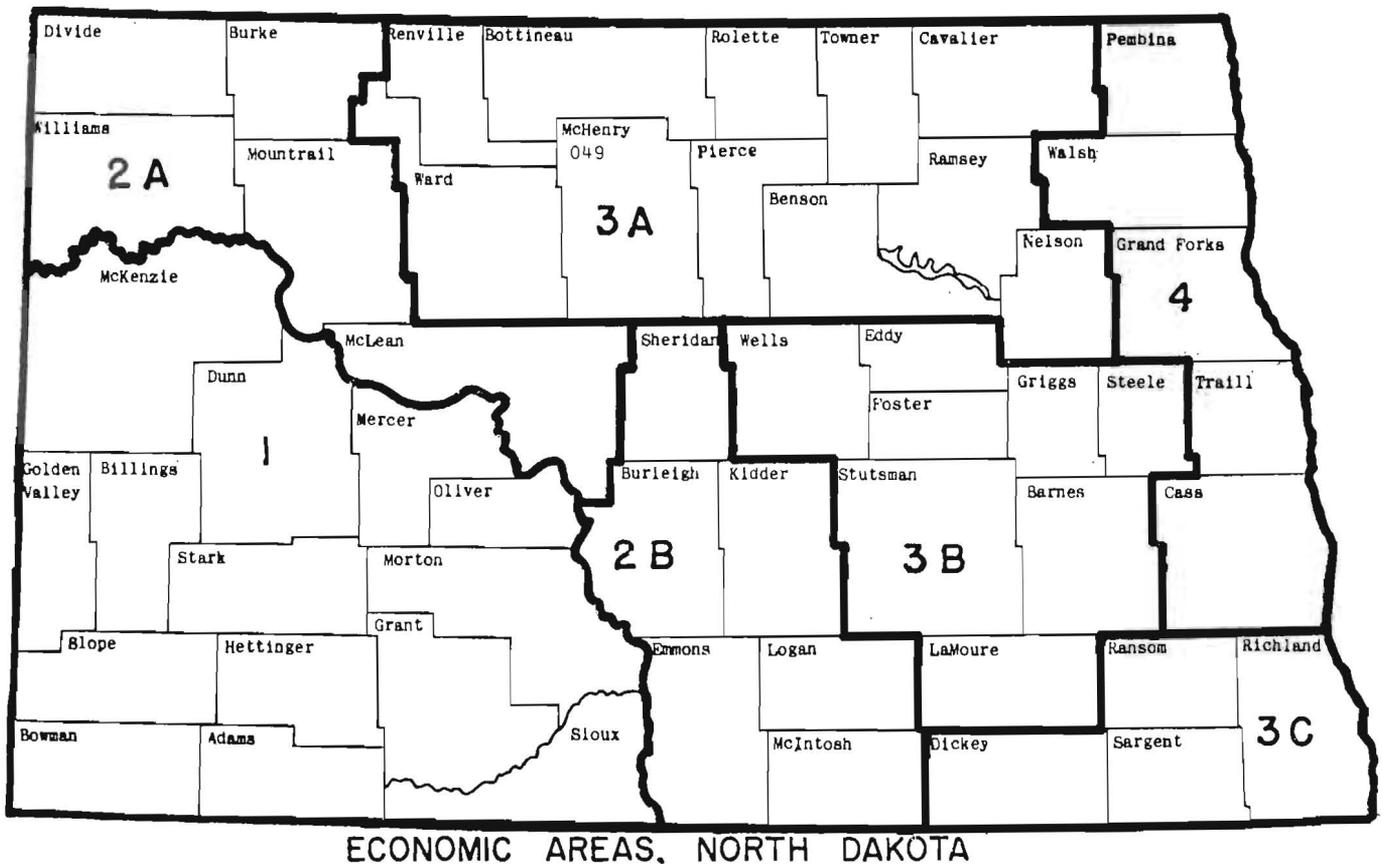
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General Information

Sixty-two of the 66 slaughter plant managers provided usable responses to the survey. Inspection statuses¹ of the 62 firms were as follows: 25 plants were federally inspected, 16 custom exempt, 1 retail exempt, 6 federally inspected and custom exempt, 3 federally inspected and retail exempt, 5 custom exempt and retail exempt, and 6 operated under all inspection statuses. Their organizational structure centered mainly in two

¹Inspection statuses:

- A. **FEDERALLY INSPECTED** — Meat and poultry products in a federally inspected plant are inspected and identified by inspectors appointed by the Secretary of Agriculture, and passed if found to be wholesome, not adulterated, and not mislabeled.
- B. **CUSTOM EXEMPT** — Allows the custom slaughter by any person, firm, or corporation of cattle, sheep, swine or goats delivered by the owner thereof for such slaughter, and the preparation by such slaughter, and transportation in commerce of the carcasses, parts thereof, meat and meat food products of such animals, exclusively for use in the household of such owner by him, and members of his household and his nonpaying guests and employees.
- C. **RETAIL EXEMPT** — The provisions of federal inspection do not apply to operations of types traditionally and usually conducted at retail stores and restaurants, when conducted at any retail store or restaurant or similar retail-type establishments for sale in normal retail quantities or service of such articles to consumers at such establishments.



ECONOMIC AREAS, NORTH DAKOTA

FIGURE 1, No. 1, Western ranch-wheat area; No. 2A, Northwestern wheat area; No. 2B, South-central livestock-grain area; No. 3A, Northern wheat area; No. 3B, East-central grain-livestock area; No. 3C, Wheat-corn transition area; No. 4, Red River Valley grain and specialty crops area.

areas: (1) 27 of the firms were strictly meat plants, and (2) 23 of the plants operated their slaughter and processing businesses in conjunction with a grocery store. The remaining firms offered slaughter or processing services while operating either a creamery, feed lot, farm or ranch, locker plant, or a sporting goods store. The replies indicate that most plant managers conduct the slaughter-processing operation as their main business and not as a sideline.

Four basic services were offered by the various operations: (1) provide custom slaughter services, (2) provide custom processing services, (3) sell meat retail, and (4) sell meat wholesale. The various service combinations offered are summarized in Table 1. The mixture of services most often offered by the meat firms was custom slaughtering and processing along with retail sales. This combination was available from 17 of

the respondents. Sixteen plants offered all four basic meat services.

Weekly slaughter capacities of the 62 plants surveyed are presented by State Economic Areas (SEA) in Table 2. Counties included in each economic area are shown in Figure 1. The maximum cattle slaughter capacity averaged 21.5 head per week for the entire state, and ranged from a high of 32 in the northern wheat area to the low of 10 head in the south-central livestock-grain area. The average number of cattle slaughtered per week was about 14 head, with the high and low of 21 and 6 in the same State Economic Area.

Maximum hog slaughter averaged 20.5 head for the 62 plants in 1976, with an average weekly slaughter of 11.3 head. The smallest average number of hogs in both categories was slaughtered in SEA 2B, with the largest number slaughtered in SEA 3A.

Table 1. Services offered by surveyed North Dakota slaughter plants, August, 1976.

Services provided	Number of firms offering services
	Number
CS (Custom Slaughter)	1
CP (Custom Processing)	1
SR (Sell Meat Retail)	2
SW (Sell Meat Wholesale)	2
CS, CP (Custom Slaughter and Custom Processing)	9
CS, SW (Custom Slaughter and Sell Meat Wholesale)	2
CP, SR (Custom Processing and Sell Meat Retail)	7
SR, SW (Sell Meat Retail and Sell Meat Whol.)	1
CS, CP, SR (Cust. Slaugh., Cust. Proc., and S. Ret.)	17
CS, CP, SW (Cust. Slaugh., Cust. Proc., and S. Whol.)	1
CP, SR, SW (Cust. Proc., Sell Ret., and Sell Whol.)	2
CS, CP, SR, SW (C. Slaugh., C. Proc., S. Ret., and S. Whol.)	16

A degree of plant efficiency is measured by the percentage of plant capacity utilized, which is calculated by dividing the average number of

animals slaughtered per week by maximum slaughter capacity. A utilization percentage of less than 100 per cent indicates that fewer animals than design capacity are handled, resulting in rising fixed costs on a per-head basis.

Annual slaughter capacity utilized in the North Dakota plants surveyed averaged 63.3 per cent for beef and 55.1 per cent for hogs. The U.S. average utilization rate for beef plants with an annual capacity of less than 9,500 head was 53.2 per cent, 26.2 per cent and 38.8 per cent for the years 1970, 1972 and 1973, respectively. U.S. hog utilization rates for plants with up to 47,800 animals slaughtered annually was 37.0 per cent, 54.5 per cent and 55.6 per cent for the same three years. Thus, while the North Dakota utilization percentages seem low, they are running close to the U.S. average.

The average number of employees in the survey plants was 5.4, and ranged from 1 to 70 people. Plants responding from State Economic Areas 2A, 2B, 3A and 3C averaged less than five employees.

Average Charges for Slaughter and Processing Services

Table 3 lists the average charges for processing and slaughter services by State Economic Area. The averages are as reported on the survey,

Table 2. Weekly slaughter capacities of small to medium-sized plants surveyed in North Dakota by State Economic Area, 1976.

Item	State Economic Area							State average
	1	2A	2B	3A	3B	3C	4	
Number of animals per week								
A. Cattle								
1. Maximum capacity	24	17	10	32	14	12	22	21.5
2. Average number slaughtered	12	12	6	21	11	8	12	13.6
3. Per cent of capacity utilized	51%	71%	61%	65%	76%	68%	55%	63.3%
B. Hogs								
1. Maximum capacity	17	9	7	38	9	14	23	20.5
2. Average number slaughtered	9	6	4	1	5	7	16	11.3
3. Per cent of capacity utilized	49%	61%	54%	54%	52%	50%	67%	55.1%
C. Sheep								
1. Maximum capacity	*	10	*	11	2	2	10	7.8
2. Average number slaughtered	*	3	*	2	1	0	2	1.7
3. Per cent of capacity utilized	*	30%	*	12%	43%	0	20%	21.7%

*No response

Table 3. Average charges for slaughter and processing services in the North Dakota slaughter plant survey by State Economic Area, 1976.

Services offered	State Economic Area							Range in charges	State average
	1	2A	2B	3A	3B	3C	4		
Dollars per head									
I. Killing and dressing:									
Beef	\$11.44	\$ 8.25	\$10.40	\$ 7.79	\$ 7.22	\$ 7.40	\$10.00	\$ 4.50-20.00	\$ 9.73
Hogs	7.50	5.50	6.50	5.17	5.17	5.15	10.00	3.50-20.00	6.01
Sheep	5.50	3.00	4.00	5.08	4.31	5.15	4.00	3.00- 8.00	4.78
Cents per pound									
II. Processing services:									
Grinding beef	7.0¢	11.0¢	11.3¢	3.7¢	6.8¢	5.0¢	15.0¢	2.0 -20.0¢	7.29¢
Tenderizing beef	5.0	7.5	7.0	4.5	8.9	8.3	*	1.0 -20.0	7.35
Aging beef	3.0	2.5	2.3	2.0	2.0	*	*	1.0 - 5.0	2.46
Grind & season pork sausage	14.0	8.0	14.4	8.9	18.0	16.7	7.0	1.0 -40.0	12.97
Cure & smoke sausage	16.0	10.0	15.0	17.8	18.5	21.0	10.0	8.0 -30.0	17.28
Custom specialty sausage	30.0	15.0	32.5	26.0	36.3	37.5	35.0	10.0 -40.0	30.36
Lard rendering	30.0	15.0	*	7.5	10.0	5.0	*	5.0 -30.0	12.50
Quick freeze	*	5.0	2.0	2.0	*	2.0	*	1.0 - 5.0	2.38
Dollars									
III. Locker rental:									
One year	\$22.88	\$15.00	\$20.00	\$18.94	\$22.00	\$19.75	\$22.67	\$12.00-36.00	\$20.48
Six months	13.67	*	11.83	12.40	11.30	11.17	10.00	8.00-18.00	11.93
One month	4.00	1.25	2.25	2.50	2.15	2.30	2.50	1.00- 7.00	2.54
Bulk storage/month	2.75	*	3.88	*	1.33	4.00	*	2.00- 5.00	3.75
Dollars per hide									
IV. Byproducts:									
Beef hides	\$ 9.30	\$ 7.50	\$ 6.67	\$ 9.02	\$ 8.25	\$11.00	\$ 8.67	\$ 2.50-17.50	\$ 8.71
Cents per pound									
Bone	2.0¢	*	1.5¢	1.8¢	1.3¢	4.0¢	4.0¢	1.0 - 4.0¢	1.93¢
Offal	1.5	*	2.0	1.3	1.3	*	1.0	1.0 - 2.0	1.40
Edible fat	*	*	2.0	1.5	*	1.0	*	1.0 - 4.0	1.86
Inedible fat	2.0	*	2.0	1.5	*	1.0	*	1.0 - 4.0	2.00

*No response

and may include a few high or low charges due to misinterpretation of the question.

Rates being charged in the northwestern and northern wheat areas (SEA 2A & SEA 3A) averaged lower than the rest of the state for many services. The two areas in which the charges averaged the highest were the western ranch-wheat area and the Red River Valley grain and specialty crops area (SEA 2 & SEA 4). The state averages are similar to other surveys conducted in the central United States.

Charges to cut, cool and wrap beef ranged from 8¢/lb. to 12¢/lb., and averaged 10½¢ for North Dakota. Reported receipts for cutting, cooling and wrapping pork ranged from 9-12¢/lb. and averaged 10.86¢/lb. for the state. These averages are also similar to those reported in the midwestern surveys.

The wide range in reported charges can be attributed to many factors. One example of these factors includes possible economies of size between plants that slaughter one or two animals a day as compared to operations slaughtering 30-40 head per day. Consumer preference for a particular slaughter plant can account for some difference, as well as the use of "loss-leaders" where a service such as killing and dressing is priced low to attract business with the loss in income made up in processing charges.

Problems Facing North Dakota

Small Meat Packing Plants

The manager of each meat plant surveyed was asked to indicate whether he viewed specific potential problems as being a major problem, minor problem, seldom a problem or no problem to his operation. He was asked to reply only to statements that applied to his particular operation. The problem statements are listed below, and the responses to each statement are summarized in Table 4.

Potential Problem Areas

- A. Seasonality in livestock production and marketing.
- B. Difficulty in obtaining necessary financing for remodeling or building new plant facilities.
- C. Difficulty in obtaining qualified labor for meat business.
- D. Difficulty in obtaining qualified labor to perform changes required by inspectors.
- E. The \$18,000 limitation for retail exempt business to nonhousehold consumers.
- F. Lack of uniformity in inspectors' interpretation of the law.

Table 4. Summary of respondents views to potential problems facing small meat packing plants, 1976.

Statement	Degree of problem				Total response to statement
	Major problem	Minor problem	Seldom a problem	No problem	
	Number of responses				
A. Seasonality	9	2	4	5	20
B. No financing	2	5	3	8	18
C. No qualified labor	23	7	2	6	38
D. No remodeling labor	4	5	4	10	23
E. \$18,000 limit	15	1	2	9	27
F. No uniformity in interpretation of the law	24	6	1	5	36
G. EPA	11	6	2	4	23
H. OSHA	9	7	4	5	25
I. Inspector's schedule	10	6	4	6	26
J. Declining demand	9	4	2	11	26
K. Stringent federal inspection requirements	20	4	4	4	32
L. Too many slaughter plants	7	1	1	16	25
M. FI and CE competition	16	2	4	5	27
N. Lack of information	5	3	4	7	19
O. Other problems not listed (please specify)	4	3	0	0	7

- G. Requirements of the Environmental Protection Act.
- H. Requirements of the Occupational Safety and Health Act.
- I. Inspector's schedule limits the capacity of other segments of your business.
- J. Declining demand for custom slaughtering and processing.
- K. Federal inspection requirements are too stringent for your particular operation.
- L. Too many slaughter plants.
- M. Federally inspected plants cannot compete with custom exempt plants when custom slaughtering.
- N. Lack of information available to assess how changes in plant location, size, and services offered could increase your net income.
- O. Other problems (specify):

The lack of uniformity in inspectors' interpretation of the Wholesome Meat Act was cited most often as a major problem by the slaughter and processing plant managers surveyed. Several managers complained that meat, cleanliness and general procedures that meet acceptable standards in a neighboring plant are rejected at their operation.

The second most important problem was difficulty in obtaining qualified labor for the meat business. Thirty-eight managers responded to this statement, with 23 citing it as a major problem,

seven as a minor problem, and the remaining eight as seldom or never a problem.

Managers claimed as the third major problem that inspection requirements were too stringent for their operation. Rating fourth as a problem area, 16 plant managers said that federally inspected plants often cannot compete with custom exempt plants when custom slaughtering. This may be due to the extra overhead costs for items required by inspection that must be passed on to the customer. The custom exempt plants can often charge a lower price because they are not required to meet all the standards of federal inspection.

The \$18,000 limitation for retail exempt sales to non-household customers was the fifth most often mentioned problem. Respondents reported turning customers away because of the limitation, and also claimed that they received poorer quality meat from federally inspected plants than they were able to offer when allowed to buy livestock, slaughter and process locally. Fifteen managers were of the opinion that the \$18,000 limitation was a major problem, and nine felt it was no problem. Managers of federally inspected plants as well as custom exempt plants listed this aspect of law as a problem. Although the limitation does not directly affect federally inspected plants, it may be as a result of this limitation that the plant managers adopted federal inspection even though they would prefer to operate under exempt status.

The item least affecting 16 managers was too many slaughter plants. Seven managers disagreed, listing it as a major problem. Declining demand for meat products was felt to be no problem by 11 managers and a major problem by nine.

Other problems listed by plant managers included high overhead, unable to afford wages for full time employees, problems in collecting from customers, and problems with the disposal of offal.

Thirteen of the 62 managers responding to the survey stated they had no problems at this time.

References

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3. American Association of Meat Processors. Feb. 3. 1977. **Capital Line-Up.** Elizabethtown, PA.
4. Wholesome Meat Act, Sections 1-10; Poultry Products Inspection Act, Sections 1-9; and Meat Inspection Regulations, Part 301.2.