



MINNESOTA farm business NOTES



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Locker Plant Profit-Loss Picture Studied

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Locker plants like other businesses must be sufficiently profitable to continue in business. Many of the more than 650 locker plants in Minnesota are losing money today although business generally is prosperous. Why, where, and how do locker plants lose money?

Revenue Comes from Various Sources

A quick study was made in the spring of 1951 of audit statements of 68 locker plants in Iowa, North Dakota, Wisconsin, and Minnesota. Of these, 41 or 60 per cent were operating at a profit, and 27 or 40 per cent at a loss.

These plants were separated into three groups. **Group 1** consisted of 40 complete plants which slaughtered livestock, rented lockers, processed food, and sold meat and other products. Of these, 22 or 55 per cent were making money and 18 or 45 per cent losing.

The 15 plants in **Group 2** slaughtered livestock, rented lockers, and processed food. Ten or 67 per cent were making money and five or 33 per cent were losing money.

In **Group 3**, made up of nine plants that rented lockers only, six or 67 per cent were making money and three or 33 per cent were losing money. More plants were making money in the groups that performed fewer services suggesting that processing may be less profitable than renting lockers only (table 1).

The average gross income of plants operating at a profit in **Group 1** was \$26,508, while gross income from those operating at a loss in the same group was \$20,855. This suggests that plants

with more volume and large gross income stand a better chance of operating at a profit.

Sales of meats and other products in plants operating at a profit in **Group 1** made up 39.7 per cent of the revenue, while in plants losing money in this group 41.1 per cent of the revenue came from these sources.

Slaughtering and processing in **Group 1** plants making money accounted for 35.7 per cent of income and 33.2 per cent in plants losing money. Locker rental yielded 24.6 per cent of the revenue of plants making money and 25.7 per cent of those losing money.

Cost of sales in **Group 1** plants operating at a profit was 32.9 per cent and 35.5 per cent in those operating at a loss. Gross margin in plants operating at a profit in this group amounted to 67.1 per cent and 64.5 per cent among those losing money. Operating expenses were lower in the **Group 1** plants that were making money—64 per cent as against 69 per cent for those losing money. Net operating gain for plants operating at a profit was 3.1 per cent and net loss was 4.5 per cent among those losing money. After including other revenue, net savings for plants making money was 3.2 per cent as

against 3.7 per cent loss in plants losing money.

Of the 15 plants in **Group 2**, 10 operated at a profit and five at a loss.

The gross income of the profitable plants averaged \$4,382 and \$6,739 for unprofitable plants.

Slaughtering and processing revenue averaged 30.6 per cent of total revenue for plants making money and 51.1 per cent for plants losing money. Locker rentals yielded 69.4 per cent of the total income in plants making money and 48.9 per cent in plants losing money. Operating expenses for plants making money were 96.4 per cent of total income and 112.6 per cent of total income for plants losing money. Net operating gains for plants making money was 3.6 per cent of total income. (After adding other income it was 4.3 per cent.) Loss in plants losing money was 12.6 per cent of the gross income. (After adding other revenue, this was reduced to a net loss of 11.9 per cent.)

Of the plants furnishing locker service only (**Group 3**), six operated at a profit and three at a loss. The average gross income of plants operating at a profit was \$2,828 and \$1,800 for those operating at a loss. The average operating expense of plants making money

Table 1. Average Incomes, Expenses, and Margins of 64 Minnesota Locker Plants

	Group 1		Group 2		Group 3	
	Plants making money	Plants losing money	Plants making money	Plants losing money	Plants making money	Plants losing money
Number of plants analyzed	22	18	10	5	6	3
Gross income	26,508	20,855	4,382	6,739	2,828	1,800
			dollars			
			per cent			
Slaughtering and processing	35.7	33.2	30.6	51.1		
Locker rentals	24.6	25.7	69.4	48.9	100.0	100.0
Meat and other sales	39.7	41.1				
Total	100.0	100.0	100.0	100.0	100.0	100.0
Cost of sales	32.9	35.5				
Gross margin	67.1	64.5				
Operating expenses	64.0	69.0	96.4	112.6	94.1	106.5
Net margin	3.1	-4.5	3.6	-12.6	5.9	-6.5

The cooperation of the Cooperative Auditing Service and the operators of local locker plants interviewed made this study possible.

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was 94.1 per cent of the total revenue and 106.5 per cent for those losing money. Taking into account other revenue, the net savings were 5.9 per cent of total income for plants making money and net losses were 6.5 per cent for those losing money.

Those results suggest that while processing incomes may be reasonably satisfactory, processing expenses may be high in proportion to income. Possibly, processing rates may be low in a relation to costs and may necessitate increased rental and processing rates.

Seventeen plants were studied in detail. Because of the difficulty in obtaining complete information, the averages presented are rough approximations at best (table 2).

Table 2. Average Incomes, Expenses, and Net Margins of 17 Minnesota Locker Plants

	Plants making money	Plants losing money
	dollars per locker	
Gross income		
Locker rentals	11.04	11.47
Slaughtering and processing	16.86	14.77
Other income	.82	
Total	28.72	31.83
Expenses	27.12	33.20
Net margin	1.60	-1.37

Of the 17 plants studied, 10 were operating at a profit and seven at a loss. Locker rentals of profitable plants accounted for \$4,528 on the average per plant or \$11.04 per locker. Locker rentals of the seven plants operating at a loss brought \$4,275 or \$11.47 per locker. Processing accounted for \$5,505 or \$14.77 per locker of plants losing money and \$6,075 or \$16.85 for those making money. The total revenue for plants operating at a profit averaged \$11,781.62 or \$28.52 per locker. Plants operating at a loss had a total revenue amounting to \$11,985.16 or \$31.83 per locker.

Total expenses for plants operating at profit amounted to \$11,124 or \$27.12 per locker. Expenses for plants operating at a loss were \$12,501.76 or \$33.20 per locker. Average loss per plant was \$516.16 or \$1.37 per locker. Average gain

of plants operating at a profit was \$657.51 or \$1.60 per locker. However, more detailed information must be obtained if reasons and remedies for profit and loss are to be discovered.

Rental, Service Rates Compared

Locker rentals were slightly higher in plants operating at a loss than those operating at a profit. Plants operating at a loss received \$12.75 for a drawer-type locker and \$10.75 for door type. Plants making profit received \$12.68 for drawer-type lockers and \$10.25 for door type. For information on service charges, see table 3.

Although volume handled may be a very important factor in determining cost or efficiency of operation, data on volume were incomplete. Data available indicated that plants operating at a profit slaughtered an average of 172 head of cattle in 1950 as compared with 94 head of cattle slaughtered in plants operating at a loss. Average pounds of beef was 59,833 as against 28,415 pounds for those operating at a loss.

Hogs were perhaps the most important single item handled, with beef second. Plants operating at a profit slaughtered 491 hogs, on an average, as against an average of 404 for those operating at a loss. An average of 81,342 pounds of pork was processed in plants operating at a profit as against 50,968 pounds in plants operating at a loss.

Total figures were not complete on meat ground. Figures that were available indicated that 23,768 pounds of meat were ground in plants operating

at a profit and 16,140 pounds in plants operating at a loss. Profitable plants ground 25,361 pounds of lard and unprofitable ones, 811 pounds. Little sausage was made and only eight plants reported smoking and curing. Plants operating at a profit smoked and cured an average of 20,636 pounds of meat and those operating at a loss, 17,818 pounds.

These figures, though sketchy and admittedly inadequate, indicate that volume of physical product handled is important in determining whether a plant operates at a profit or loss.

An attempt was made to get some comparative data on the cost of plants and equipment with the locker as the basis for locker rentals. The depreciated value of plants operating at a profit ranged from a low of \$1,511.32 to a high of \$48,231.73. Cost of plants and equipment per locker ranged from \$5.96 to \$103.75. Among plants operating at a loss the depreciated value of plant and equipment ranged from \$3,750.34 to \$50,768.20. Range in cost of equipment and plant per locker was from \$15.03 to \$110.37. The number of lockers rented averaged 375 out of 460 installed. Among the 10 plants operating for profit, the average depreciated value of the plant was \$19,563.64. The average number of lockers rented was 410 out of 454 installed. Average cost per locker rented was \$47.71 or \$43.14 per locker installed. Among losing plants, the depreciated value averaged \$27,850.65. Average cost per locker rented was \$72.75 or \$65.97 for lockers installed. The data were incomplete, but led to these conclusions:

Table 3. Comparative Rental and Service Charges

	1937	1939	1947	1950 Range	1950 Usual
Locker rental					
Annual	Range, 6.00-12.00	Usually 10.00	dollars Usually 12.00(drawer) 10.00(door)	Range, 8.00-15.00	Usually 12.50
Monthly	.50	1.00		.75-1.50	1.00
Service Charges					
Slaughtering, per head					
Beef, picked up	2.50				
Slaughtering only	1.50	1.50	2.00	1.50-4.00	3.00
Hogs to 300 pounds, picked up					
Slaughtering only	1.00	1.00	1.50	1.25-3.50	2.00
Calves to 250 pounds	1.50	1.00	1.50	1.00-3.00	2.00
Lambs	1.50	1.00	1.50	1.00-3.00	1.50
Cutting, wrapping meat		1.00	2.00	2.00-2.50	2.50
Grinding, per hundredweight	1.00	1.00	1.00	1.00-2.00	2.00
Grinding and seasoning sausage, per pound	.025	.02	.075	.05 -.08	.08
Rendering lard, per pound	.025	.025	.03	.025-.05	.03
Curing meat, per pound	.03	.02	.03	.02 -.04	.03
Smoking, per pound	.01	.01	.02	.01 -.03	.02
Freezing fruits and vegetables..	.01	.02	.03	.01 -.03	.02
	(pound)	(pound)	(quart)	(pint)	(pint)
				.02 -.05 (quart)	.03 (quart)

Plan Use of Your Home Freezer

Eleanor Loomis

A good manager knows what is in her home freezer or community locker at all times. She plans how much of each food to freeze so that the storage space will not be filled with too much of some foods and too little of others. Overprocessing of one kind of food means a lack of variety, overstorage, and eventual loss of quality. A complete plan for freezing should include a production schedule, with a list of the varieties best suited to freezing, a guide for using the food, and a running inventory.

Plan Ahead; Rotate Load

A list of foods should be prepared which will permit the family to have on hand at all times the amounts and varieties of foods they want. As foods are used, they may be replaced immediately.

Fresh fruits and vegetables should not be used from the freezer as long as they are available in the family garden or local market. The supply of frozen meat should be kept low while garden produce is being harvested.

Conclusions from the Study

- About 40 per cent of plants studied were operating at a loss. Others were operating on a narrow margin.
- Rates charged for services were generally lower in Minnesota than in other states.
- Rates charged have not advanced as rapidly as have costs of operation and building.
- Volume of food handled in plants operating at a loss was generally lower than in plants operating at a profit.
- Better use is made of such variable costs as labor and such fixed costs as buildings and equipment when large volume of food is handled.
- Low volume is a serious problem in small plants equipped to give complete service including slaughtering and processing.
- Some plants are missing revenue by not offering curing and smoking, lard-rendering, and sausage-making services.
- Plants operated as a sideline to other related business such as meat markets, creameries, and stores have some advantages if they use labor and equipment more completely.

Select Varieties at Peak Supply When Prices Are Best

According to the University of Minnesota Frozen Foods Laboratory, a variety should retain desirable flavor, attractive color, bright appearance, good shape, and texture after freezing and preparation for use. In University of Minnesota Agricultural Extension Bulletin 244, *Freezing Foods for Home Use*, are listed the best freezing varieties.

To save on the cost of the products frozen, food should be purchased at the time of peak supply. From June 1 to November 1 best buys in fruits and vegetables are featured in daily newspapers, over the radio and television. Table 1 shows the price range for fresh, commercially frozen, and home frozen beans on July 13, 1951.

Table 1. Cost Comparison on July 13, 1951

Style	Purchase Unit	Cost
Fresh	12 ounces	\$.08
Commercially frozen, retail	10 ounces	.23
Home frozen	10 ounces	.08

The beans were bought at the Farmers' Market for \$1.50 a bushel. Twelve ounces of fresh beans equal 10 ounces

- Locker plants operated with other business have difficulty in segregating profit and loss to each activity.
- Most plants have lockers that are not rented and not bringing income.
- Home freezers reduce rental income but should continue to bring in processing income.
- Locker plants generally do not keep complete records on physical volume of food handled that can be broken down to show a picture of business.
- Revenue from the various services are likewise not available in sufficient detail to make possible an accurate analysis of source of profit or loss.
- Locker operators cannot be expected to keep records in more detail than they could use in the efficient management of their business.
- Occasional study by the operator of the various services with special attention to saving time might lead to saving steps and movements by rearrangement of work.

16. Arranging for visiting days with home agents from the County Agricultural Extension Office, home economics teachers in local schools, and home-maker clubs and classes offer means of cultivating relations with patrons.

commercially frozen or home frozen. The cost of the home-frozen package did not include the cost of the carton and the cost of the operation of the freezer.

Amounts to Freeze

First, decide what foods the family prefers frozen. Freeze a variety of foods the first year to learn family preferences. Precooked or commercially frozen foods can be used as fillers. In the following table, foods checked indicate peak supply time for freezing and the number of pints to freeze. The allowance assumes that ample amounts of fresh food will be eaten in season, and that some food will be preserved by methods other than freezing. Table 3 gives number of pints from a given unit of purchase. Table 4 gives approximate operating costs and table 5, number of packages per cubic foot of storage space.

Table 2. Months of Peak Supply in Minnesota and Suggested Amounts to be Frozen for Family of Four

	Availability and amount frozen during:				
	May	June	July	Aug.	Sept. Oct.
Vegetables					
Asparagus	x	x			
Beans, lima					x
Beans, snap			x	x	
Broccoli					x x
Brussels sprouts.....					x
Cauliflower					x
Corn				x	x
Peas			x		
Spinach					x x
Greens				x	x x
Squash					x x
Amount of all vegetables frozen during month for four persons (pints)	10	20	50	70	75 24
Fruits					
Apricots		x	x		
Blueberries				x	x
Boysenberries		x	x		
Cantaloupe				x	x
Cherries, sour				x	
Cherries, sweet				x	
Peaches				x	x
Plums					x
Raspberries			x		
Rhubarb	x		x	x	x
Strawberries		x	x		
Amount of all fruit frozen during month for four persons (pints)	10	50	25	100	25
Meat*					
Beef.....	200 lbs.	Jan.			
Lamb.....	30 lbs.	Aug.			
Pork.....	90 lbs.	Jan.;	90 lbs.	Dec.	
Chicken.....	15 lbs.	June;	15 lbs.	Aug.;	15 lbs.
		Sept.;	15 lbs.	Oct.;	15 lbs.

* Source: Wiant, D. E., Griswold, Ruth M., Barrons, Keith C., and Blakeslee, Leonard H. *Planning for Frozen Foods*. Mich. State Agr. Expt. Sta. Circ. Bul. 198. 40 pp. Revised March 1947.

Table 3. Estimated Amount of Raw Product for a Given Number of Pint Packages*†

Purchase unit	Number of packages (pint)
Fruit	
Apricots 14-pound crate	24
Apples 1 bushel, 42-44 pounds	40
Berries 24-quart case	30
Cherries 25-pound lug	22
Sweet cherries 15-pound crate	24
Cranberries 1 peck, 8 pounds	12
Grapes 1 bushel	35
Peaches 1 bushel, 48 pounds	40
16-pound crate	24
Plums 1 bushel, 50 pounds	40
Raspberries 24-pint crate	28
Rhubarb 1 pound	1
Strawberries 24-quart case	38
Vegetables	
Asparagus 10 pounds	8
Beans, snap 25 pounds	25
Beans, lima 10 pounds, in pod	4
Broccoli 25 pounds	20
Cauliflower 1 pound	1
Corn 6 ears, cut	1
Greens 1 pound	1
Peas 30 pounds, in pod	12
Squash 10 pounds	10

* Under some conditions the yields may be less than indicated.

† Source: Levine, J. H., and Gaston, H. P., *Fruit and vegetable processing kitchens for locker plants*. Mich. State Agr. Expt. Sta. Spec. Bul. 364. 40 pp. June, 1950.

Table 4. Home Freezer Costs for a 12-Cubic Foot Locker According to the Food Load

Costs	Food load in pounds		
	420	840	1,200
Interest, repairs, depreciation	\$47.71	\$47.71	\$47.71
Power consumption	30.95	33.87	36.78
Freezing and pre-freezing	11.80	23.60	35.41
Total cost	\$90.46	\$105.18	\$119.90
Cents per pound	21.5	12.5	9.5

Table 5. Approximate Number of Packages Needed to Fill One Cubic Foot of Freezer Storage Space

Type of container	Freezer dimensions	Number per cubic foot
Pint packages		
Round tub		16
Waxed rectangular without liner	3¼x3¼x3	44
Rectangular carton with liner	5¼x1¾	38
Rectangular carton with liner	4.3¼x2	37
Quart packages		
Round tub		8
Waxed rectangular without liner	3¼x3¼x5¼	22
Rectangular carton with liner	5¼x5¼x2¼	20
Rectangular carton with liner	4.7¼x2	24

"Quick Freezing" Term Defined

J. D. Winter

Few people understand what "quick" freezing really means. Before reaching a conclusion, let's review some of the basic facts about freezing and storage.

The popular belief is that the large ice crystals formed during slow freezing rupture the cells. Research results do not support this view. In fact, very rapid freezing of meat is much more likely to cause rupture of the cell structure than slow freezing.

It is true that small ice crystals are formed during very rapid freezing, and larger ice crystals are formed when the freezing rate is slow. However, after the first formation of ice has taken place, further formation during storage continues as the crystals grow.

Actually, the *rate* of freezing is one of the least important factors in the preservation of frozen foods. With almost all foods, it makes little if any difference in palatability whether the food temperature is reduced to about 20° F. (i.e. through the freezing zone) within an hour or within 10 to 15 hours. It is important, however, to lower the food temperature below 40° F. as quickly as possible to reduce the growth rate of spoilage organisms.

Handling before Freezing

The way food is handled *before* it is frozen makes a big difference in the quality of "quick" frozen foods.

The proper handling of meat is essential. Deterioration in palatability of meats during storage is primarily due to oxidation of the fat. This oxidation proceeds, although at a reduced rate, while meats are held in freezer storage. Therefore, chilling and aging practices should be adjusted for freezing storage. For example, every day that pork is held after chilling but before freezing shortens storage life. Similarly, fish must be fresh at the time of freezing.

The prompt handling of vegetables from field to freezer is highly important for the retention of quality and nutritive value of "quick" frozen vegetables. Proper

handling and processing at the highest stage of maturity is the key to success with "quick" frozen fruits.

Packaging

The packaging material and the method are of major importance, especially with meats. A good wrapping material for meat should be relatively impermeable to oxygen and moisture vapor. The wrap should be tight and snug, and the product should be wrapped as compactly as possible to offer the least possible surface area.

Storage Temperature

Storage temperature must be suitable to maintain the quality of frozen foods. A temperature of 0° F. or lower is recommended. The storage life of pork and fatty fish may be greatly lengthened by storing at -10° F. instead of at 0° F.

The fat of these foods is especially susceptible to oxidation which is greatly retarded at the lower temperature. Changes in texture resulting from protein denaturation during storage also are retarded at -10° F.

"Quick" Freezing

Probably one of the best concepts of "quick" freezing is that this term implies the proper handling of the product all along the line until it is packaged, frozen, and placed in storage. The term is meaningless if applied only to the rate at which the food actually is frozen.

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