

# WHAT MISSOURIANS THINK OF FROZEN FOOD STORAGE

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## THIS BULLETIN AT A GLANCE

Most of the renters of frozen food lockers in Missouri are farmers. About three-fourths of the patrons rented one locker. Few rented more than two.

The chief advantage of frozen food locker storage, in the opinion of locker patrons, is that it provides meat, vegetables, and fruit throughout the entire year of a quality comparable to fresh products. Other advantages mentioned frequently related to convenience, labor saving, and economy.

Meat constitutes a major portion of the food products stored in locker plants. In Missouri, that meat is almost wholly beef and pork, with very little veal and lamb. Two thirds of the patrons in this study slaughtered meat animals or had them slaughtered to obtain this meat. Thirty five per cent purchased meat to put in a locker.<sup>1</sup>

About one-half of the patrons did all of their slaughtering. Almost one-fourth of them had all of their slaughtering<sup>2</sup> done at the locker plant.

Nearly three-fourths of the patrons who purchased meat for storage bought from farmers. More than one-fourth of them made purchases from the locker plant.

The use of frozen food storage has contributed to some shift from pork consumption to wider use of beef and poultry, especially among farmers.

About one-half of the locker patrons who purchased a home freezer continued to rent a locker. Only one-fourth of the farm patrons who purchased home units discontinued the use of their lockers.

Less than one in five patrons offered any criticism of the services of the locker plant they patronized. Only fifteen per cent suggested that additional services should be provided.

Evidence in this study suggests two particular advantages accruing especially to farmers from locker plant use. Apparently locker plant storage has permitted the farmer to introduce considerable variety into his yearly meat supply. The farmer who depends primarily upon curing as a means of meat preservation relies heavily upon pork for his year's supply of meat. Many farmers, finding freezing a satisfactory method of preserving both beef and poultry, have substituted these products for a part of the pork which formerly constituted the major portion of the year's meat supply.

And farmers have found another advantage. Frozen storage enables them to slaughter meat animals any time of the year rather than only during winter months when temperatures are low. It makes variety possible in the meat supply, meat does not have to be kept so long, and slaughtering can be done any time the animal is of proper weight and finish.

<sup>1</sup>Some patrons obtain a portion of their meat from slaughter and purchase the remainder.

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# WHAT MISSOURIANS THINK OF FROZEN FOOD STORAGE

J. WENDELL MCKINSEY

This report is based on a study of the experience and opinions stated in 1088 replies to survey questionnaires about the ownership and use of frozen food lockers and home freezers.\* Information was received from 578 locker patrons, 391 home freezer owners, and 119 former patrons of locker plants. The number of replies to individual questions may be less than these totals because some schedules were not completely filled out.

## MORE FARMERS USE LOCKERS

One questionnaire was distributed widely in seven selected trade areas. Of the 401 replies, 255 were from farmers and 156 from urban dwellers. Nearly three-fourths of the farmers rented frozen food lockers compared with only one-half of the city residents. Home freezers were owned by 177 farmers and 142 non-farmers. Of these, 116 families used both a locker and a home freezer. Three-fourths of the replies were from owners of farms or homes and there seemed to be no direct relationship between home or farm ownership and renting of lockers. The average size of families using lockers was 3.4 persons which was not significantly larger than those not using frozen food storage. Seventy-nine per cent of the farm families and 83 per cent of the non-farm families using frozen storage had from 2 to 4 members.

Most locker renters lived on farms and had rented lockers for less than 3 years. Of the 462 replies from renters of frozen food lockers, 70 per cent lived on farms. Although some had rented a locker for as long as 10 years, almost three-fourths of the locker users had rented them for 3 years or less and 82 per cent had rented them for less than 5 years. The majority of locker users had rented for relatively short periods of time because lockers had not been available in large numbers until more recently.<sup>1</sup>

\*This information was obtained on four different survey schedules. Copies of the schedule are on file in the Department of Agricultural Economics.

<sup>1</sup>This can be illustrated with the growth of 319 plants, which provided lockers during selected recent years as follows:

1935— 686 lockers	1946— 91,285 lockers
1940— 7,305 lockers	1947—131,250 lockers
1945—58,818 lockers	1948—138,128 lockers

The total number of lockers in the state in 1935 was 686 in 3 plants. The total number of lockers in the state in 1948 was 200,946, in 469 plants.

TABLE 1 - STATEMENT OF PREFERENCE FOR FRESH  
AND FROZEN MEATS, 878 FAMILIES, 1948

	No. of Replies	Per cent with each preference		
		Fresh	Frozen	No preference
Patrons of locker plants	443	20.4	20.5	59.1
Home Freezer Users	330	10.6	31.8	57.5
Former Locker Patrons	115	45.0	13.0	42.0
..... Total	878	19.0	24.0	57.0

Most patrons rent only one locker, and very few rent more than two. Of the 459 patrons supplying this information, 74 per cent rented only one locker, 22 per cent rented two, leaving 4 per cent renting more than two. Twenty-eight per cent of farm patrons rented more than one locker.

A preference for either frozen or fresh meats does not appear to be the most important factor in the use of lockers or home freezers. More than half of the families using frozen storage, either in the locker plant or as a home unit, indicated no preference for fresh or frozen meats. Of those who did indicate a preference, about 55 per cent preferred frozen meat over fresh meat. Locker plant patrons having preferences were equally divided in their preference between fresh and frozen meats. Of the 115 replies from former locker patrons however, 52 indicated a preference for fresh meat, 15 for frozen meat, and 48 had no preference. Among home freezer users, nearly 60 per cent had no preference but three-fourths of the remainder preferred frozen meats.

Some families may have expressed a preference in their replies to justify their situation with reference to lockers or freezers. For example, a larger portion of the former patrons of lockers expressed a preference for fresh meat. Also, three times as many home freezer users expressed a preference for frozen meat as for fresh meat.

#### ADVANTAGES AND DISADVANTAGES OF LOCKER STORAGE

Patrons listed a wide variety of advantages coming from locker plant use. Most of them are related to quality of food, economy, or convenience, in the following proportions:

Quality	255
Economy	208
Convenience	184

Those related to quality include the preservation of fresh qualities of food, an improved menu, and better tasting products. Those related to economy include less waste, lower cost at time of purchase, and cheaper processing. Con-

TABLE 2 - NUMBER OF PATRONS THAT LISTED SPECIFIED  
ADVANTAGES OF RENTING LOCKERS

The advantages that were given were grouped into twenty-one general statements of advantage. The number at the right indicates the number of times each advantage was given.

Supplies meat, vegetables and/or fruit throughout the year of quality comparable to fresh . . . . .	156
Less waste of food, especially meats . . . . .	68
Convenience. . . . .	61
Provides cheaper meat than buying at retail . . . . .	39
Enables quantity purchase when price is low . . . . .	54
Cheaper than other methods of preservation . . . . .	47
Improves quality of menu--taste, nutritious food. . . . .	41
Less work than other method of preservation . . . . .	40
Better quality and better tasting product . . . . .	29
Utilization of home-grown fruits, vegetables, and meats without canning . . . . .	28
Enables slaughter and preservation of meat at any time of the year . . . . .	16
Meat preserved in small package ready to cook. . . . .	15
Method of preserving beef . . . . .	14
Can slaughter and/or butcher meat yourself and pick quality desired; also cuts desired. . . . .	11
Food tastes fresher. . . . .	8
Takes care of excess food which home freezer cannot hold . . . . .	7
Gives greater variety for meal planning and greater variety of foods available . . . . .	5
Meat is better cut . . . . .	5
Saves time of canning fruits and vegetables. . . . .	1
Can freeze your own fresh fruit . . . . .	1
Processing food service . . . . .	1

venience includes less work in processing, as well as greater ease in preparation for serving when frozen storage is used as compared to canning or curing.

The advantages given are grouped into twenty-one different classes in Table 2. The one mentioned most frequently, by far, was that locker use provides meat, vegetables, and fruit throughout the entire year of a quality comparable to fresh products.

The advantage second in number of times listed was that the locker plant eliminated some waste of food, especially in the case of meats. Elimination of waste is possible in several ways. First, in farm slaughter, when a number of hogs or a large beef is slaughtered, a great deal of meat not easily cured or canned is wasted rather than eaten. With locker plant storage, this meat can be placed directly in the locker without loss. Second, when meat,

especially pork, is cured, a considerable amount of waste on the joints must be trimmed away before the meat is eaten. There is no such waste from meat stored in locker plants. Some additional elimination of waste may occur at the time the meat is consumed. For example, when a cured ham is cut at home, part may be spoiled before it can be used. With locker storage, this meat is put up in meal size packages without such waste.

This same condition may apply to a lesser degree with other foods. One expects some waste from almost all canned foods, though not so great as in cured meats.

Convenience ranks high in the advantages given by locker patrons. If the items "convenience" and "less work than other methods of preservation" are combined, they rank second in the number of times given. Convenience in this case, however, refers to the convenience to the housewife in preparing meals with food products from the locker plant as contrasted to those preserved in some other way or bought from the store. According to these housewives, to take meat from the locker, allow it to thaw, and prepare it is much more convenient than to trim and prepare cured meats.

The item "less work than other methods of preservation" is especially important in the case of meats. It was difficult to determine in every case whether the patron was comparing the convenience of taking his product to the locker plant for preparation with preparation at home, or whether he was thinking of the reduction in physical work required at home. For many fruits and vegetables, the actual amount of work necessary to prepare the product for storage is less when put in the food locker than when processed with heat, and canned.

Almost 25 per cent of the patrons who replied found an economy in using a locker to store their food supply, either because it provided meat at less than retail cost, or it enabled them to buy in quantity when the price was low. An additional ten per cent felt that this method was cheaper than curing or canning.

Although other advantages were not mentioned in large numbers, many are significant. About six per cent of the locker users mentioned that they felt they had better quality and better tasting food because they used frozen food storage. Some persons appreciated the fact that the meat was put away in small packages so that it was not necessary to consume an entire ham, for example, once it had been cut. Others felt there was advantage in preserving beef in lockers since it has been more difficult than pork to process on farms. Pork could be cured satisfactorily while most of the beef had to be canned.

Sixteen persons mentioned the advantage of being able to slaughter any time of the year when the animal was ready or the meat was needed, while slaughter for home canning or storage was largely limited to the winter months. Locker operators indicate that this is becoming more widely appre-

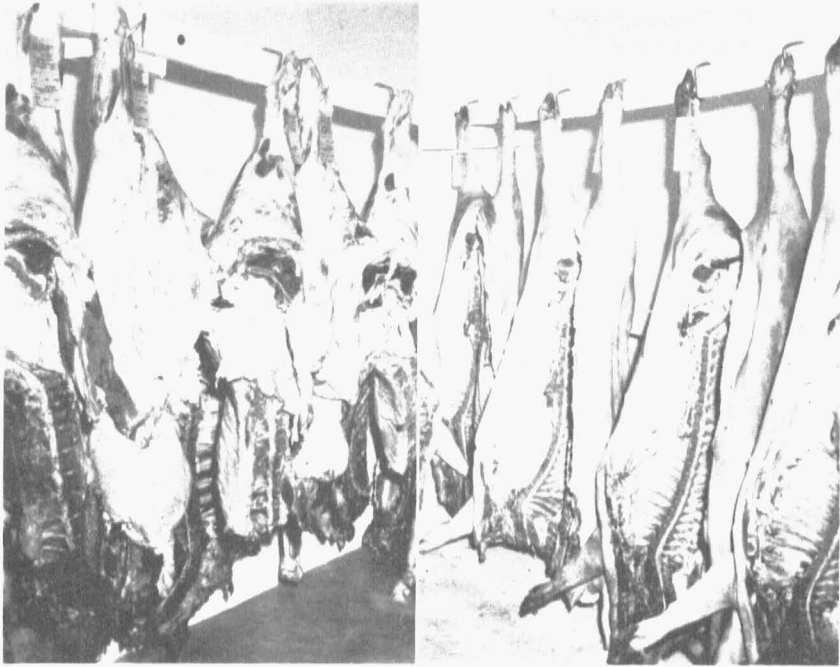


Fig. 1.—A portion of the six cattle and eleven hogs slaughtered for farm patrons by the locker plant operator at Middletown, Missouri, July 31, 1951. The carcasses were being cooled in the chill room of the plant. Farm slaughter in summer was virtually impossible before refrigeration for cooling the carcasses became available.

ciated by patrons. Through use of lockers, farmers have been able to extend their slaughtering season into April and May. Meat processing habits have been changed for many farm families from a single slaughtering of three or four animals to several slaughtering of one or a few animals.

Five families appreciated the way meat is cut at the locker plant compared to the way it is cut by inexperienced farm hands. This results from the greater experience and training of the meat cutter and from more efficient equipment.

An examination of the advantages listed suggests that locker operators should continue to strive for the very best quality in all the food products stored in their plants. After high quality is established, the patrons apparently look upon their locker plant as a service organization. The locker operator then will do well to strive constantly to improve his services, such as making available quantity purchases at discount prices, providing better processing and meat cutting service, making available slaughter service throughout the year, and providing a type of packaging which is acceptable to his patrons.

Less than 20 per cent of the patrons had complaints about locker plant

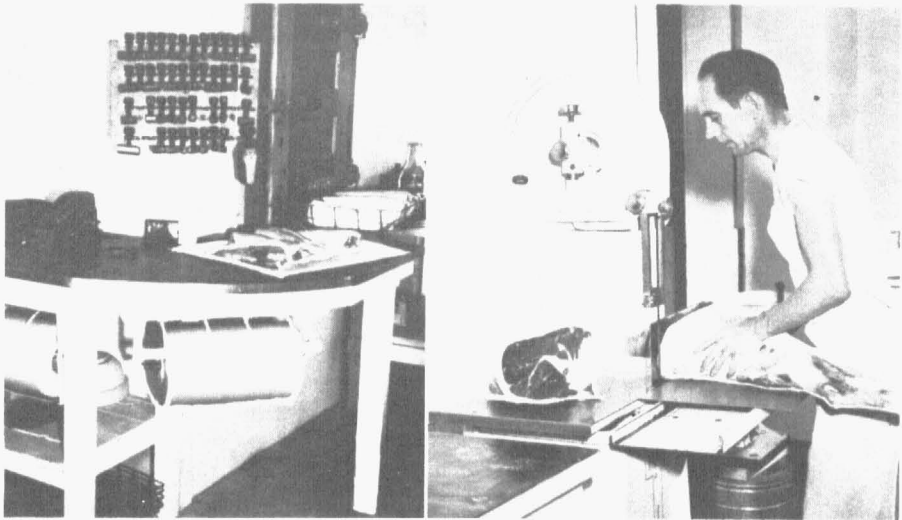


Fig. 2.—The locker plant has special equipment for cutting and packaging meat for frozen storage. In the hands of experienced personnel this service is appreciated by many farm families.

services, but the variety of criticisms was even greater than the list of advantages. Only three complaints were mentioned frequently. The objection most often listed was that the meat was not cut and packaged properly. Equally significant to locker operators, is the statement that food was often misplaced or put in the wrong locker. Fourteen of the 83 patrons who offered criticisms complained that the locker plant is closed many times when they want to get into their locker, such as during the noon hour, in the evening, and on Sunday.

Other criticisms offered, although in small number, still of significance to locker operators were as follows:

- Same processing charge for large packages, small packages or unpackaged product
- Technical services improperly performed
- Poor records or no records
- "High up" lockers are unhandy
- Discourteous employees
- Undesirable odors and flavors
- Lack of cleanliness
- No check on whether or not all meat actually is placed in locker
- Improper or fluctuating temperatures

Two hundred eight-three patrons were asked what additional services they desired from their locker plant. Only 122 answered the question and 80 stated that they felt no additional services were necessary. Thus, only 42, or about 15 per cent suggested that some additional services should be added. The three which ranked highest in number of mentions were that more



**TABLE 3 - ADDITIONAL SERVICES WHICH PATRONS WOULD  
LIKE THEIR LOCKER PLANTS TO PROVIDE**

Services Suggested	
Open on Sundays, holidays, and longer hours in summer	Provide bulk storage for meat
Provide slaughtering service	Provide supplies
Cure meat	Supply purchasing information (location, prices, etc.)
Render Lard	Record what goes in and is taken out of locker
Deliver	Process for home lockers
Sell beef wholesale	Dress Poultry
Warm room service	

open time should be provided by the locker plant on Sundays and holidays, and the plant should provide slaughtering services and cure meat. Some of the services suggested are being adopted rather rapidly by many locker plants. Such services include the sale of wholesale beef, the curing of meat and rendering of lard, the dressing of poultry, and the processing of food for home storage units. Three patrons suggested the locker plant should provide delivery service. Only one plant in the state was known to have delivery service at the time of the study.

#### MEAT STORAGE MOST IMPORTANT USE OF LOCKERS

Meat provides by far the greatest volume of business for frozen food lockers. In some plants, it is 90 per cent of the total storage volume.

Patrons used various methods for providing meat for their lockers. Some did their own slaughtering and took the meat to the locker plant for storage. Others had it done at the locker plant. Many had their animals slaughtered elsewhere, largely because the locker plant did not provide such facilities, and then took the meat to the plant for storage. Still others purchased meats at wholesale through the locker operator or other wholesaler, from a retailer or from farmers who do not want all of the meat produced from the animals they slaughter. Frequently, the locker plant serves as the agency for bringing buyer and seller together in this latter transaction. Some patrons used two or more of the above alternatives. For example, a farmer may do his own slaughtering in winter but have the locker plant do it during the summer. Such is especially desirable, for farmers frequently are too busy during the summer for slaughtering, and without refrigeration, farm slaughtering is virtually impossible in warm weather. The locker plant therefore, performs a real service in providing slaughter facilities and a cooling room where the carcass can be cooled out quickly before processing. Also, the patron may slaughter his hogs but have his beef animal handled at the locker plant where mechanical facilities for handling the heavier animals are available.



Fig. 3.—Curing room in the Uptown Locker Plant, Fayette, Missouri. Skilled personnel, special equipment, and controlled temperatures contribute to high quality cured meats. Meat curing was suggested as an additional service desired by many patrons.

Slaughter for locker storage was confined largely to cattle and hogs. Only 16 of the 462 patrons interviewed slaughtered calves and only 12 patrons slaughtered lambs and sheep. In contrast, 302 slaughtered cattle and 323 slaughtered hogs. Only 34 neither slaughtered meat animals nor had them slaughtered for storage.

Most of the patrons slaughtering cattle slaughtered only one head. Only nine per cent slaughtered more than one head, and none slaughtered more than three.

Seventy per cent of all patrons reported the slaughter of hogs, which was slightly more than those slaughtering cattle. The largest number of hogs slaughtered in one year by any patron was five and only one hog was butchered by 40 per cent of the patrons slaughtering hogs. Another 35 per cent of the patrons used two hogs.

Sixty-five per cent of the patrons killed poultry to put into the locker plant. Three-fourths of the patrons using poultry stored between ten and 40 chickens per year, and nearly one-tenth stored more than 50 per year.

The amount of slaughtering varied between farm and non-farm patrons. Only one-half of the non-farm patrons killed cattle compared with 71 per cent of farm patrons. Hogs were killed by one-half of the city residents compared to 78 per cent of the farmers.

Forty-eight per cent of the patrons did all of their slaughtering themselves. An additional ten per cent did some of their slaughtering, making a total of more than 50 per cent of all patrons who did some or all of their slaughtering for storage in locker plants. Twenty-two per cent had all of their slaughtering done at the locker plant, and seven per cent more had some done at the locker plant. This is a relatively high percentage because only about 43 per cent of the locker plants in the state in 1947 were offering slaughtering facilities. The demand for slaughtering service is evidenced not only by its present use, but also by the fact that slaughtering was the additional service most often suggested by the persons interviewed.

Even though there is marked seasonality in the production of hogs, it might be expected that the availability of locker storage, and of slaughtering facilities combined with refrigeration, would change the seasonal pattern of farm slaughter. It was surprising that of the 341 replies regarding this shift, 42 per cent stated there had been no such change since locker storage had been used. The changes indicated included slaughtering at any time of the year, either when meat is needed or when animals are ready, and slaughtering more than once per year.

#### WHOLESALE PURCHASES OF MEAT

Many patrons who do not grow meat animals for slaughter prefer to buy dressed meat rather than animals for slaughter. More patrons bought beef than any other kind of dressed meat, and more pounds of beef were bought than any other kind of dressed meat. There are several reasons for this. It is easier to find a suitable butcher hog for sale than to find a good slaughter steer. Also, the steer generally produces more meat than many patrons wish to put into their locker at one time, and more meat than most lockers will hold, especially if some other commodities are already stored there. Furthermore, a beef animal provides a greater variety of meat cuts and requires a larger cash outlay for meat than many patrons prefer.

Some patrons with good butcher steers sell them and buy the beef cuts they prefer for their lockers. In addition to the reasons mentioned above, there may be times when such a practice results in savings because of the high value of by-products which packers salvage.

Of the 462 persons included in this study, 164 or 35 per cent, purchased some meat. Twenty four per cent bought beef. The average yearly purchase of beef was one hundred sixty pounds (contrasted with four hundred fifty pounds obtained from the slaughter of a small beef animal).

Pork ranked second to beef among the meats bought. Eleven per cent of the patrons bought some pork. Purchases averaged 161 pounds per year, almost exactly the same as for beef.

Only seven per cent of the patrons reporting bought any poultry and their purchases averaged 69 pounds per year.

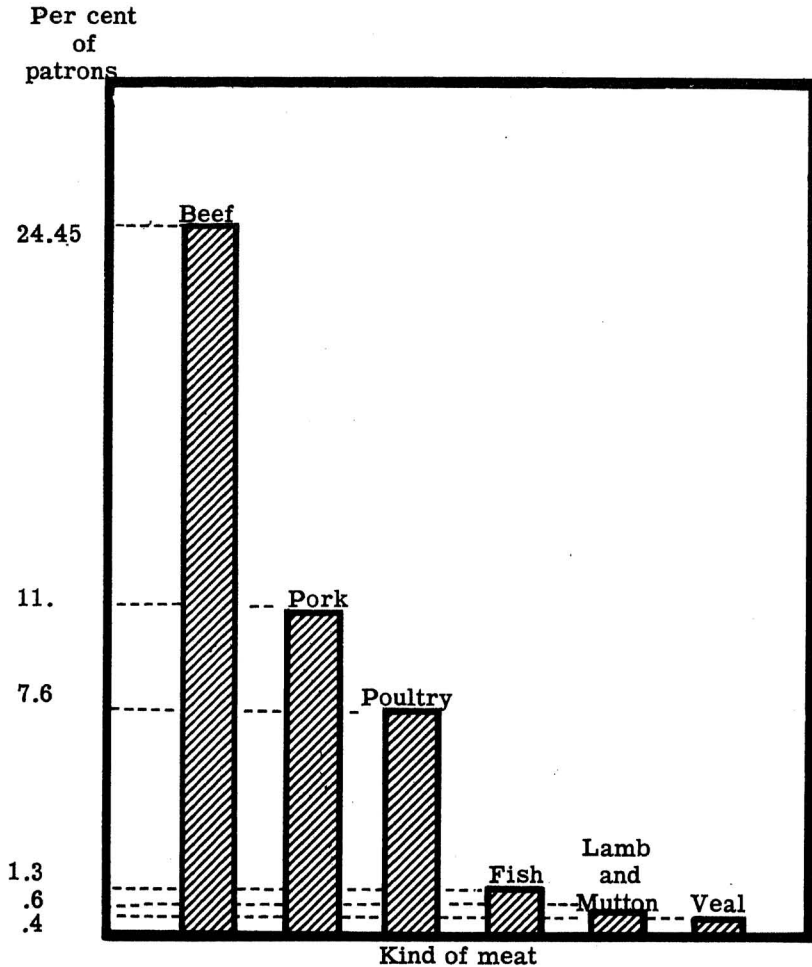


Fig. 4.—Per cent of patrons who purchased various kinds of meat for storage in frozen food locker plants.

There was very little difference between farm and non-farm patrons in the pounds of meat purchased. There was considerable difference, however, in the amount of each species purchased. Farm patrons purchased 20 per cent more beef and 35 per cent less pork than did non-farm patrons. Town patrons bought more than twice as much poultry as farm patrons. Veal, mutton, lamb and fish were purchased in very small quantities. It must be remembered that these data may not be representative of statewide conditions, because the study was not intended to measure differences in meat consumption between farm and non-farm patrons.

## SOURCES OF MEAT PURCHASED

Patrons who bought meat for locker storage obtained it from various sources. Seventy per cent of the 1421 patrons who reported sources purchased meat from farmers. In some cases, it was bought direct from the farmer who slaughtered more meat than he wanted to put in the locker himself. In many cases, the farmer either slaughtered the animals and brought the meat to the locker plant or had the plant slaughter the animals, with the locker operator acting as the agent to bring purchaser and farmer together. This latter method is common for beef and is a desirable practice. Many farmers do not need all the meat from a beef animal, while other patrons welcome the opportunity to buy it. In most cases, the locker operator made no charge for the selling service because he received the processing income from the meat handled for the purchaser.

Another 28 per cent purchased from the locker plant. Some locker plants

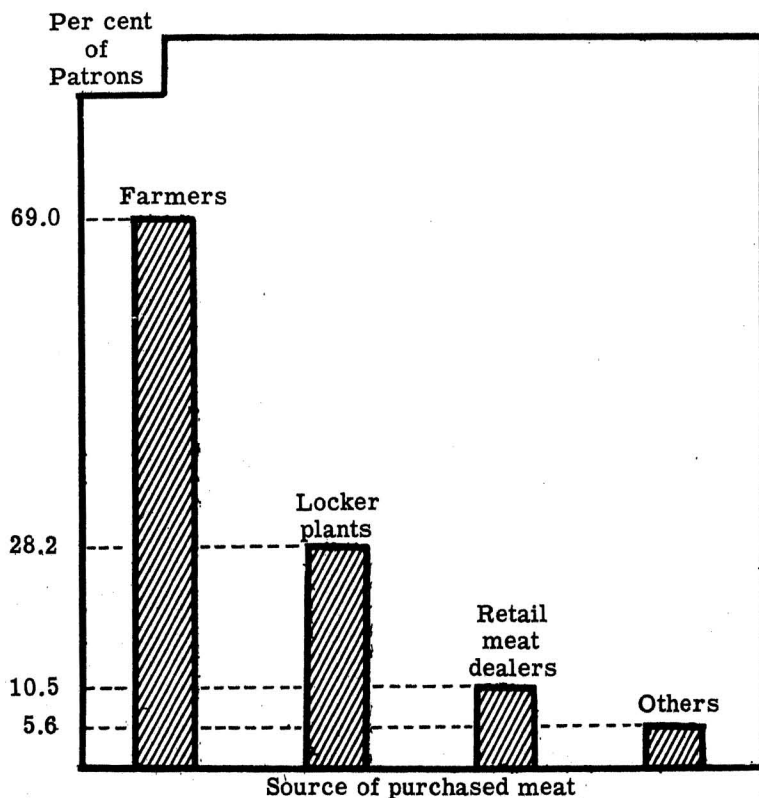


Fig. 5.—Relative importance of various sources of meat purchased for locker storage in 1947 by 164 patrons.

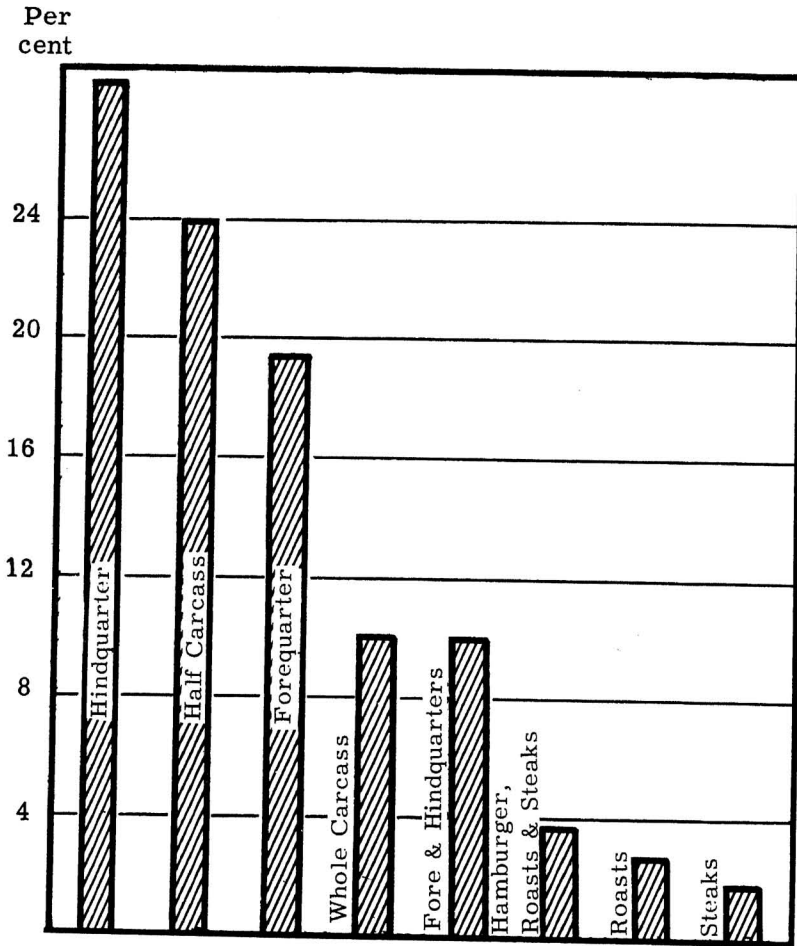


Fig. 6.—Per cent of patrons who purchased various cuts of beef for locker storage in 1947.

with slaughter facilities buy animals and sell meat, either at wholesale to be put in lockers, or at retail over a meat counter. Some locker plants purchase meat from farmers and expect to make a profit on the resale to their patrons. Still others buy meat from packers and wholesale dealers and sell it to their patrons on a brokerage basis. This latter practice is becoming more and more common.

Only ten per cent of the patrons bought meat from retail meat dealers for storage in lockers and only about five per cent bought meat direct from wholesale houses, packers, and other sources.\*

\*The percentages above total more than 100 because some patrons buy from more than one source.

The form in which this meat was purchased also varied widely. Most of the beef purchases were of less than a whole carcass and more than individual cuts. Only about ten per cent of the patrons buying beef took a whole carcass, and only eight per cent bought individual cuts. About half of them obtained either a forequarter or a hindquarter, with twice as many purchases of hinds as of fores. Of the 109 patrons reporting, 26 replied that they purchased half carcasses, and 11 stated they purchased fore and hind quarters.

Thus, more than one-third of the patrons purchased over the year the equivalent of a half carcass. The fact that patrons reported the purchase of hindquarters and forequarters rather than half carcasses is significant. Many patrons do not want to store a half carcass at one time, so they stagger their purchases with a hindquarter one time and a forequarter the next.

In contrast, about one-half of the patrons who purchased pork bought a whole carcass. Another one-fourth purchased a half carcass. The remainder was about equally divided between the purchase of pork loin and sausages, and the purchase of hams and shoulders.

#### FROZEN STORAGE AND MEAT CONSUMPTION

Does the use of frozen food locker storage have any effect upon the amount of beef, pork, veal, lamb and mutton, and poultry consumed by the locker patrons? Patrons were asked to state the direction and amount of change, if any, in the consumption of each of these products.

Almost all of the patrons who responded to this question indicated no change in the amount of veal and lamb consumed. Of those few who did report a change, about as many reported an increase as reported a decrease. Considerably more than half the patrons reported changes in beef, pork, and poultry are worth noting. The greatest number of reported changes were for beef, and almost all were increases in consumption. Forty-two per cent of those reporting stated that beef consumption had increased, and only two per cent reported a decrease.

Two-thirds of the patrons reported no change in amount of pork consumed. The other one-third was about equally divided between reported increases and reported decreases. Percentages were 18 and 16 per cent respectively.

Apparently there has been a tendency for patrons of locker plants to shift from pork as the major portion of the meat supply to beef since they have begun to use locker service.

This shift from pork to beef is further evidenced when individual cases are examined. Of the 72 patrons who reported a decrease in pork consumption, 62, or 85 per cent, reported an increase in beef consumption. This shift was more pronounced among farm patrons, wherein 92 per cent of the ones using less pork stated that they now use more beef, compared to only 74 per cent in the case of non-farm patrons.

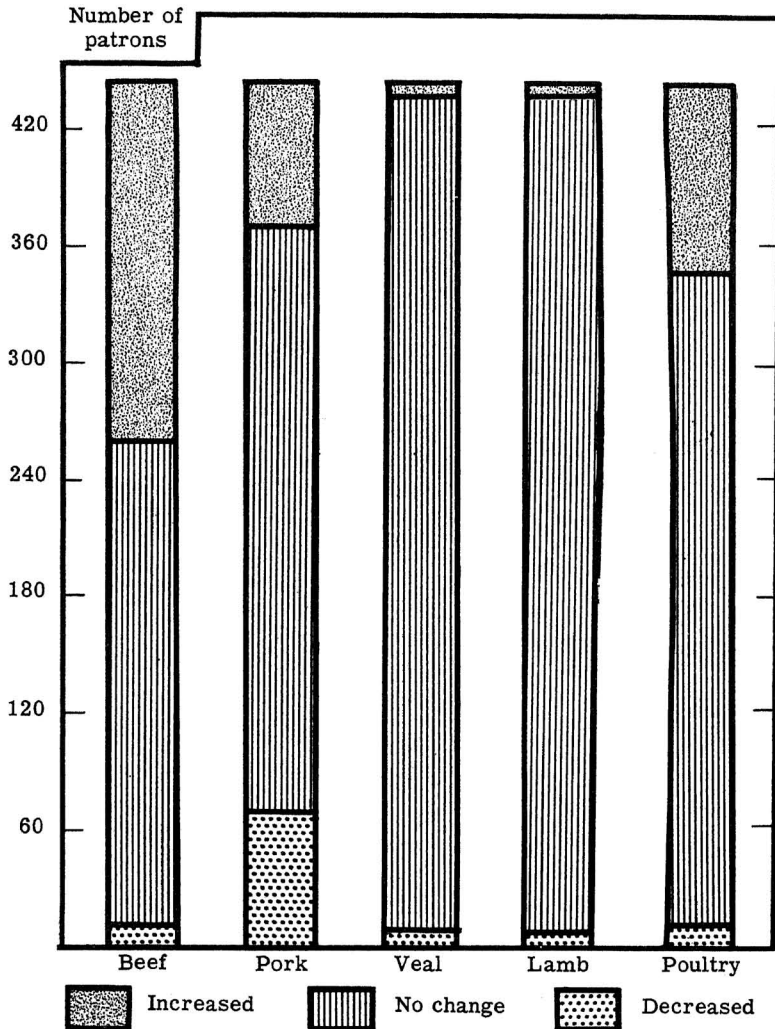


Fig. 7.—Effect of locker use on consumption of meats as reported by 448 patrons.

There is also evidence that some poultry has been substituted for pork in the year-around meat supply. Although three-fourths of the patrons reported no change in the amount of poultry consumed, the other one-fourth reported increases in almost every case. Again, the shift has been greater with farm patrons than with non-farm patrons. Seventy per cent of the reported increases were from farmers.

This increased variety in the meat supply is a major gain which frozen food locker storage has brought the farmer. Previously, he depended primarily



upon farm slaughtered and cured meats for his meat supply, while city consumers had the opportunity to choose between pork or beef each time meat was bought. With locker storage, beef is as easily stored as pork, and fried chicken can be made available any day of the year, rather than during only a few summer weeks.

### HOME FREEZER UNITS

Because of the possible effects of home freezer units on the use of frozen food locker plant facilities, information was obtained from 355 users of home units. Not all schedules were complete so the number of replies used will vary throughout this section.

Apparently a home freezer does not substitute entirely for a locker at a locker plant. The users of home freezer units interviewed in this study are divided into three approximately equal groups with reference to use of a locker in a locker plant. Roughly, one-third of the users of home freezer units had never rented a locker. Another third of these users once rented a locker, but discontinued after the purchase of their home unit, while another third rented a locker before the purchase of a home freezer unit and continued to use one afterwards.

Although some locker plant operators are fearful that their patrons will discontinue the use of lockers when they buy home freezer units, one-half of the locker patrons in this study continued their use after buying a home freezer. Furthermore, most of these patrons in their replies, stated that they plan to continue using lockers. Some home freezer owners were renting a locker even though they did not rent one before the purchase of the home unit.

A slightly higher percentage of the farmers used both a home unit and a locker than did non-farm users. Thirty-six per cent of the farm home freezer users also rented a locker, compared with 29 per cent of the non-farm users. Also, only 25 per cent of the farmers who previously used lockers discontinued their use when they bought home freezers while 38 per cent of the non-farmers quit using lockers.

The owner of a home freezer unit may be a patron of a locker plant, even though he does not rent a locker. He may have food products processed and frozen at the plant for storage in a home unit. About one-third of the owners included in this study were utilizing this locker plant service.

Home freezer units were very new to most users. Four-fifths of the owners interviewed had owned their home unit for one year or less. Another 11 per cent had theirs for two years. The greatest length of time that any user had owned his home freezer was ten years. Many of the manufacturers began making home freezer units only after the close of World War II. Probably the greatest reason for the heavy concentration of purchasers within the year just prior to the time the study was made (1947-48) is that these units were just then coming on the market. Almost all of the locker plants in the

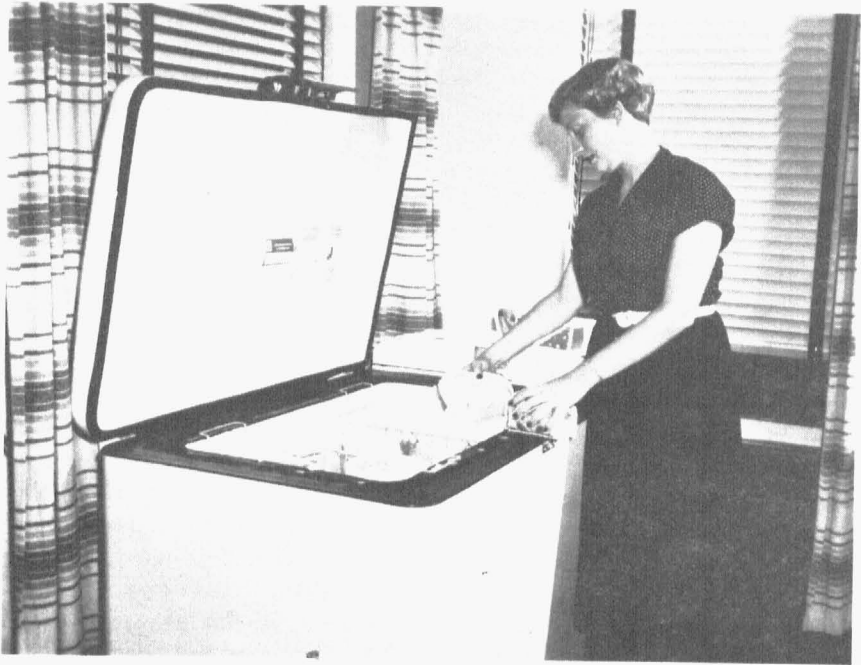


Fig. 8.—A home freezer unit provides additional convenience in storage for frozen foods.

state were fully rented and had waiting lists at that time. Many prospective patrons who could not get accommodations at the locker plant, obtained frozen storage space through the purchase of home freezer units.

Homemade home freezer units are of little significance in Missouri. Only 3 of the 355 users reported a homemade unit. As might be expected, these were on farms.

The size of the home freezer units being used ranged from three to seventy cubic feet of storage space. It is impossible to know whether or not the size of the units in use represents the preference of owners as to size. The extreme shortage during the time most of these units were purchased no doubt caused many to accept the one that was available, rather than the size preferred.

The most popular sizes apparently were six, eight, and eleven cubic feet. The eleven cubic foot size was most numerous and 51 per cent of the units were included in the three sizes mentioned above.

An interesting comparison can be made by classifying the home units into three groups. The first group would contain units of four to six cubic feet, the second group units of eight cubic feet, and the third group, units of ten to twelve cubic feet. The first group corresponds roughly to the size of

lockers found in locker plants, while the third group is twice as large with storage space equal to about two lockers. The middle group consists of units about half way between the two other groups in size and has been advertised as an attractive unit which fits the kitchen, holds more than the average locker, and sells at a lower price than the large units. There were 96 units of the small size, 92 of the large size, and only 42 in the middle group.

According to function, a frozen food unit may be designed to freeze and store food or it may be designed only to store frozen food. If it is designed to freeze and store, one compartment is insulated from the rest of the box and equipped with sufficient evaporator surface to prevent a rise in temperature when loaded to its rated freezing capacity. This compartment is usually relatively small. The remainder of the capacity is then used for storing the already frozen foods. Units designed merely for storage do not have the separate compartment and the entire area is used for storage of already frozen foods.

There has been considerable difference of opinion as to the advisability of including the separate freezing compartment. Some manufacturers have concluded that it is not wise to attempt to freeze large amounts of food products in the home unit, especially if facilities at a locker plant are available for freezing. Considerable price reduction is possible if this compartment is eliminated. The actual choice of type of unit up to the time of this study probably is not indicative of the true wishes of patrons, for they are probably influenced unduly by the type of box available. At any rate, 59 per cent of the home freezer owners had a box with only the storage compartment, while 41 per cent had boxes with both a sharp freezing and a storage compartment.

A larger percentage of owners of the home freezer units with only storage compartments might be expected to rent lockers than of those with sharp freezing units. This was not true, however, for almost exactly the same percentage of the owners in each group rent a locker.

Apparently, slightly more of the owners of units with storage compartments only have their quick freezing done at a locker plant. The evidence is not conclusive, however, and the difference is not great. Only about one-third of the home freezer owners did their own quick freezing of beef at home in the home freezer. Slightly more than 40 per cent of these owners did their own quick freezing of pork irrespective of the type of box they had. Owners of boxes with freezing compartments did 60 per cent of their own quick freezing of poultry, while owners with boxes for storage only did 40 per cent.