

# Quick-Frozen Foods

industry of increasing importance although per capita consumption percentages still low

H. E. Erdman and W. E. Adams

**Consumption of frozen fruits and vegetables** is still small by comparison with quantities used in other forms. It is estimated that consumption per capita in 1948 was 2.9 pounds of fruit and three pounds of vegetables, including both household and institutional usage.

The natural weights of products used per frozen pound differ widely because of the variations in the amount of trimming required. At a rough estimate this may mean that some four pounds of fresh fruit and perhaps six pounds of fresh vegetables were used in the frozen form, out of per capita totals of about 211 pounds of fruit and 346 pounds of vegetables other than potatoes.

Putting the figures into percentages would mean that about 2% of fruit consumed is in frozen form as compared with about 66% in the fresh form. For vegetables, not including potatoes, the figure would be less than 2% for the frozen as compared with about 75% in the fresh form and about 23% canned.

The development of the frozen food industry is of especial interest to the fruit and vegetable growers of the West because that area meets one of the important requirements of the industry, namely, groups of crops available to any freezer so as to give him a long operating season. Thus the West is credited with 70% of the 1946 asparagus pack, 65% of the cut corn, 64% of the peas, 48% of the spinach, and 40% of the lima beans.

In the case of frozen meats, sales through retail stores have been small. The biggest development has been through frozen food locker plants. No data on quantities are available, but estimates may be made on the basis of the number of lockers in use and the amounts processed in sample groups of locker plants. On that basis, estimates put consumption of frozen meats through locker plants at something like 8% of the national beef consumption and about 6% of the pork consumption.

## Utilization

Not all products are equally satisfactory for freezing purposes. Among fruits the most popular with consumers, as well as with institutional users, are strawberries, with red raspberries and peaches trailing far behind. Among vegetables

peas are far in the lead with a whole group trailing—lima beans, snap beans, spinach, and asparagus. Frozen fruit juices are late-comers, with orange juice concentrate the most spectacular of all in that group.

An interesting difference between fruits and vegetables is that frozen fruits are used mainly in the institutional trade—hotels, restaurants, hospitals—and by reproducers, such as manufacturers of jams, pies, and ice cream. Vegetables, on the other hand, go largely to the household trade. Of the 1948 pack, only 21% of the fruit was in family size packages—one pound or less—as compared with 63.7% in the case of vegetables.

A sales point for most frozen foods is the fact that they are partially or fully prepared for the consumers' use. Fruits and vegetables are cleaned and carefully trimmed. Vegetables are scaled, meats trimmed and cut into consumer portions, and poultry is dressed ready for the kettle. This transfer of drudgery from household kitchen to factory costs money. It is a godsend to institutions or households which have to hire help. It is, likewise, a welcome change for households in which the housekeeper works outside the home at a job.

## Factors in Development

One of the serious hurdles the new industry had to face was the fact that the product had to be kept at extremely low temperatures at all stages of the distribution process.

Moderate thawing and even temperature fluctuations below the thawing point led to trouble with quality. Therefore, little progress could be made until an entirely new or remodeled set of physical equipment could be provided. The product had to be frozen near producing centers within a few hours after harvesting.

New types of refrigerated space had to be provided near freezers at 0° F or less; new railway refrigerator cars and motor truck boxes had to be developed which would keep the products at these extremely low temperatures while they were being moved to cold storage warehouses in metropolitan areas equipped to maintain zero temperatures. A new class of distributors had to grow up to service retail stores from refrigerator trucks,

while finally, these retail stores had to be equipped with refrigerated display cabinets.

Today a large part of the population is served by such a new distribution system. As a final link in the system of low temperature facilities, many new types of household refrigerators are offered with special deep-freeze spaces, and special deep-freeze cabinets are being offered to consumers to supplement the ordinary household refrigerators.

How important frozen fruits and vegetables are to become in comparison with fresh, canned, or dried products will depend upon a number of factors such as:

1. The cost of frozen foods as compared with foods in other forms;
2. Continuance of a relatively high income level with fairly full employment;
3. Extent to which frozen foods are available through retail stores and locker plants;
4. Extent to which homes are equipped with low temperature refrigerators or deep-freeze cabinets.

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