

# Food Freezing Studied

Since the middle of the last century, scientists have worked on perfecting food freezing. Today, only a few foods can't be bought in an easy-to-use frozen variety.

Even the Romans knew that ice could preserve food. The problem was preserving the ice.

So sun drying, salting, and smoking remained the most efficient ways to protect the food supply—until science stepped in about a century ago to prove the feasibility of freezing food.

Progress was slow at first, but in the past 25 years the frozen food industry has swelled its output from a mere 580 million pounds to over 11 billion pounds in 1966.

By 1976, some envisage a frozen food output of 24.6 billion pounds—a 124 percent gain over 1966.

Today, about the only important fresh products not being frozen commercially are bananas, pears, tomatoes, lettuce, and other salad greens. But it probably won't be long before food scientists solve the problems of freezing them, too. They're already working on tomatoes.

In recent years frozen cooked and prepared foods, to be reheated at home, have been rapidly winning consumer acceptance. These include full course dinners, casserole dishes, specialty foreign style foods, and bakery products.

Here's a brief look at the history and present situation of frozen foods in the U.S.

**Poultry.** Commercial freezing of poultry began around 1865, and in 1870 six carloads of chickens were frozen in Wisconsin and shipped to the New York market.

Today, about 25 percent of our total poultry production is frozen—mainly turkeys, ducks, and geese. This enables producers to cope with the more seasonal demand for these birds.

The year-round demand for fresh young chickens is such that only about 10 or 11 percent of them are frozen commercially.

Many homemakers still prefer to buy chicken fresh and store it in the freezer at home. But recent studies show that commercially frozen chickens are gaining in popularity.

Use of all classes of poultry has risen more rapidly in the last 20 years than that of any other food category—from 25.5 pounds per capita in 1945 to 44 pounds in 1966.

**Eggs.** In 1890 someone decided to try freezing eggs—removing cracked or soiled shells and freezing the contents. When bakers used them and found they worked as well as freshly broken eggs, their acceptance was assured.

Today preshelled frozen eggs are sold in quantity to manufacturers of food products. Eliminating the breakage step reduces the manufacturer's processing and labor costs.

**Red meats.** Trappers and early settlers and farmers froze red meat in cold climates to preserve it through the winter. Snow and pond ice came in handy.

In 1867 the first successful shipment of frozen beef was made in the United States—from Indianola, Tex., to New Orleans.

Production of frozen meats grew from 20 million pounds in 1945 to 450 million pounds in 1964 and it continues to climb. But it still makes up only a small part of annual per capita consumption—only 2 pounds in 1965, out of a total of 170 pounds.

Much of the frozen output goes to institutional users in the form of patties, cutlets, and oth-

er portion control cuts.

**Deciduous fruits and berries.** These include strawberries, cherries, peaches, apples, and other fruits and berries. Most of the frozen pack is used by the food manufacturing industry.

By the late 1920's many fruits and berries were being frozen during the peak of the season for later use in manufactured jams, jellies, ice cream, and bakery goods.

Per capita consumption of fruits and berries in all forms has changed little over the past 20 years—though canned use has risen while fresh use has dropped.

Rate of growth in consumer use of frozen fruits and berries has been relatively slow, partly because consumers have become accustomed to the high quality and convenience of canned products.

Research is underway on a new thaw pouch—similar to that already used for cooking some frozen vegetables—which should encourage wider home use of frozen fruits and berries.

**Vegetables.** Early efforts at freezing vegetables were not very successful. Discoloration and off-flavor presented problems to be overcome.

In 1929 it was found that blanching would stop the enzyme action that caused the deterioration, and now about 10 percent

of all the vegetables we eat are bought in frozen form.

Sales of prepared frozen vegetables continue to grow in value at a rate of about 20 percent annually.

Asparagus, lima beans, snap beans, broccoli, corn, green peas, and spinach make up over three-fourths of the frozen pack. Per capita consumption of fresh and processed vegetables has not changed much over the last 20 years—but frozen use has risen from 7 to 29 percent of the total.

**Potatoes.** In a class by themselves, frozen potato products—especially French fries—have grown in popularity to become one of the leading frozen foods.

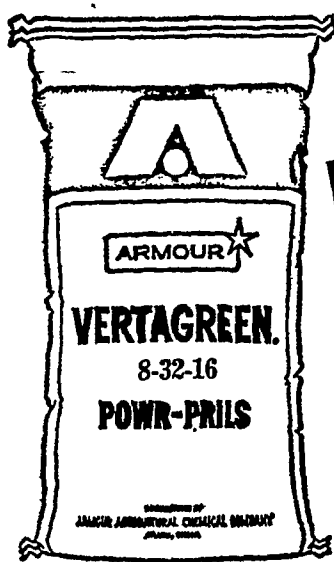
Production soared from 3 million pounds in 1947 to 1.2 billion pounds in 1965. Most of the sales are for institutional and restaurant use. Only 20 percent of the 1964 pack went to retail stores.

**Citrus fruits.** The newest products in the frozen food market, concentrated citrus juices did not attain any significant status until after 1945.

In recent years, however, nearly three-fourths of the frozen citrus pack has been concentrated orange juice. And another 15 percent, lemonade.

Use of frozen juices has more than doubled since 1950, reaching the equivalent of almost 30 pounds of fresh fruits per person in 1965.

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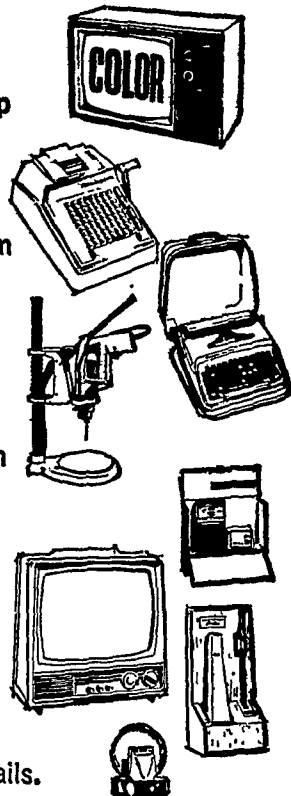
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