

## FRUITS AND VEGETABLES

Marketing of fruit and vegetable crops has been modernized by the use of new techniques in packaging, transportation, refrigeration and processing, particularly by freezing. Rapid movement by rail and truck and occasionally by air, plus temperature control, have enabled highly perishable fresh fruits and vegetables to move from one end of the continent to another at any season of the year. With this development the seasonal supply nature of many crops has virtually disappeared and consumers in the more northerly sections are no longer limited to short local seasonal production. Modern storage and transport facilities also tend to assist in distribution and thus aid in maintaining a balance of supply. This directly benefits the consumer by preventing abnormally high prices in areas or at times when local shortages occur.

The railway refrigerator car has long been important in moving fresh fruits and vegetables to market. Besides icing the bunkers for cool air circulation around the shipment it had been the practice to 'top ice' lettuce and other crops that wilt quickly. A new 'vacuum pack' process now rapidly cools lettuce packed in cartons instead of wooden crates, after which it is promptly placed in refrigerated cars or trucks and requires only regular bunker ice to its destination. In the car that previously took 24,000 lb. of crate lettuce, 30,000 lb. of carton vacuum-packed lettuce may now be carried. Washing and sometimes waxing of fruits and vegetables now contribute to good appearance and keeping qualities.

The most recent and dramatic development in processing has been in fast frozen foods. By this method fruits and vegetables, the latter after a two minute steam blanching, are subjected to temperatures of  $-30^{\circ}\text{F}$ . to  $-40^{\circ}\text{F}$ . until hard frozen and then immediately placed in storage at  $0^{\circ}\text{F}$ . to  $-10^{\circ}\text{F}$ . Fruit may be frozen in its natural state but sugar is usually added to enhance the flavour. This process has gained considerable impetus in recent years with the development of home freezers and food plants together with increased frozen food capacity in newer models of home refrigerators. Frozen products require low temperatures at all stages of distribution, a limiting factor in distribution at the retail level which is rapidly being overcome. Frozen food cabinet space in retail outlets, particularly in the new supermarket type of stores in urban areas, has greatly expanded. Smaller retail stores and those in smaller communities are gradually installing the necessary equipment and the difficulties of delivery in small lots to serve such stores are gradually being overcome. The choice in frozen foods is also being constantly enlarged.

Another aspect of the frozen food industry of indirect concern to the consumer is the extent to which quick freezing is being utilized to store products for eventual use in manufacture. For instance in the manufacture of strawberry and raspberry jams, the use of fruit preserved by the former  $\text{SO}_2$  process is no longer permitted; this chemical preservation process has been replaced to a large extent by freezing. In the manufacture of soups, frozen vegetables have entirely replaced vegetables in brine. Production of frozen fruits and vegetables in 1954 for all purposes, plus imports, approximated 20,000 tons or seven times the volume of ten years ago.

Constant improvements are being made in the long established preservation technique of canning. The time lag between harvesting and processing is being steadily reduced by improved mechanical devices and methods. This results in retention of flavour and improvement in appearance of the finished product. The vacuum pack method for corn is typical; the process is quicker and hotter and the product tastier and more attractive to the eye. High temperature flash pasteurization of tomato juice has improved flavour and keeping qualities.

The baby food section of the canning industry has expanded greatly and a wide variety of such products is now available. Production of 26,462 tons of canned infant foods in 1954 was nearly six times the output of ten years earlier. Another interesting development in canning is the increase in production of canned pet foods. The output of canned dog and cat food in 1954 amounted to 42,881 tons compared with only 59 tons ten years ago.

Dehydration, employed quite extensively during the war years for the Armed Forces to reduce bulk, is no longer used to the same extent as a method of preservation for fruits and vegetables. Dehydrated onions, usually in the form of powder, and apples are the