

"Food Aesthetics" and Efficiency Stimulate Food Processing Advances

Precooked frozen foods industry expands rapidly as a result of restaurant, airline, railroad, and consumer demand

LOS ANGELES.—Efficiency for the food processor as well as efficiency for the housewife has been the driving force behind many advances in food processing during the past 15 years, according to E. M. Mrak, University of California. Speaking before the American Dietetic Association, meeting here from Aug. 25 to 29, Dr. Mrak reviewed advances during this period, noting that, bewildering as may be the speed with which new developments hit the market, there is every reason to believe new developments will come at an ever increasing pace. High in importance in determining consumer acceptance of foods is what Mrak calls "aesthetics of foods"—general appearance, cleanliness, and freedom from contamination. Here is where Food and Drug Administration plays such an important role, Mrak noted, although budget cuts for FDA this year are going to make its job less nearly complete in the future. Of course, he said, many processors recognize the importance of cleanliness and go to great lengths to assure the highest standards in their plants.

Here are some of the advances Mrak singled out for special mention:

Apparently a simple accomplishment on the surface but one requiring much engineering and technological study was frozen citrus concentrate, now a heartily accepted consumer item. The extent to which processors have investigated citrus concentrates is shown by the fact that evidence has been gathered which indicates that even the root stock of the tree may have a marked effect on taste.

Another more recent development is a citrus fruit juice powder recently announced by USDA's Western Regional Research Laboratory. A tricky part of the process, Mrak noted, was reintroduction of the essential oil removed during drying. This was done

by including the oil in sorbose, granulating the resultant product, and adding it to the powder. The very low moisture content of the final citrus powders gives it unusual stability—several months at 90° to 100° F. without flavor loss or turning brown.

Not neglected have been vegetable standbys, particularly peas, corn, and tomatoes. Significant are the Martin aseptic canning technique and the continuous, short time, high temperature cream style corn canning process. And

On The Cover

Ag Chemicals Have Seen Remarkable Growth

THE TREMENDOUS GROWTH in sales and rapid expansion of the agricultural chemicals industry is one of the accomplishments of the Chemical Age. This growth has been paralleled by the increased membership and influence of the National Agricultural Chemicals Association, presidents of which are shown on the cover:

Lea S. Hitchner—president from 1934 to 1940 and now executive secretary.

Warren H. Moyer, president of Chipman Chemical—NAC president 1940-42

Joseph B. Cary, vice president of Food Machinery—NAC president 1942-46

George F. Leonard, recently retired president of Tobacco By-Products and Chemical Corp.—NAC president 1946-49

Ernest Hart, vice president of Food Machinery—NAC president 1949-51

Arthur W. Mohr, president of Calspray—NAC president 1951 to date

Mrak expects there is going to be increased demand for a new stewed tomato, consisting of tomatoes, onions, celery, peppers, and similar foods.

What about new processes, such as electronic sterilization? Certainly possible for expensive items, such as medicinals, but many years in the future (if at all) where foods are concerned. Sterilization of canned meats Mrak sees as the most likely prospect for an electronic method.

Precooked frozen foods, waffles, soups, sandwiches, hors d'oeuvres, bakery products, meats, and vegetables are among the precooked frozen foods now being marketed. Restaurants, airlines, and railroads, as well as the home consumer, are responsible for the increasing demand. Of special interest to dietitians are special diets that can be prepared in quantity and frozen for later use, resulting in considerable saving in time, according to Helen L. Hanson, Western Regional Research Laboratory. Here are two recent advances in the field she noted:

Ordinary flour has been found to be responsible for the liquid separation and curdled appearance of sauces and gravies used with frozen cooked poultry and other meat dishes. Sauces thickened with starch or flour from waxy cereals have better stability, with waxy rice flour the best of those tried. Use of waxy rice flour gives products which are stable for nearly a year under commercial conditions. The higher proportion of branched amylopectin molecules in the starch fraction is believed to account for the increased stability.

Preparation of relatively inexpensive precooked and frozen poultry products is a possibility now that rancidity problems have been overcome. Using turkeys, it has been determined that antioxidants added during cooking and, in some cases, to the cooked product give adequate storage stability. Such poultry products are likely to be inexpensive, according to Dr. Hanson, since it will be possible to use malformed birds (malformations are unimportant where the meat is removed from the bone) and older birds (proper cooking gives tender meat). Pork, another meat with unstable fat, has also been studied, indicating that antioxidants may also find use in meats other than poultry.