

## Edible Containers Look of the Future

Mothers admonishing their children to "eat all of your food," may some day add the startling comment, "and be sure to eat the platter, too!"

Eating such containers may be a common practice within the next 10 years or so, according to Dr. Manfred Kroger, food scientist at Pennsylvania State University.

Dr. Kroger predicts the next decade will find beverages sold in edible cans, candy bars dispensed in edible wrappers, and many other products marketed in containers which now add to waste and pollution.

At least one international airline has already introduced a beverage cup that may be eaten after the meal, Dr. Kroger says. Disposal problems on airplanes are particularly burdensome.

The Penn State food scientist says the age of edible films and coatings is already here—in the form of nutritious containers that dissolve in water while cooking.

Several such products are used by hotels and restaurants

For example, the restaurant trade is using poultry products coated with a nutritious, transparent film, he reports. Before the poultry is frozen, the material is applied in a hot dip or spray. The coating sets quickly to a thick, flexible, transparent film. The coating maintains the original fresh quality of poultry products during frozen storage.

The film reduces moisture losses or "drying out" of poultry meats by 85 per cent, Dr. Kroger says. Since it is nutritious, it can be left on during the cooking. The product is supplied to poultry plants by a national firm.

Another company has developed a similar coating to protect meats. This coating is an edible, water-in-oil emulsion. The film can be used as a carrier for flavors such as sugars, spices, and proteins. It is generally applied to frozen meats. Use on fresh meats is being investigated

Meat in this form is also being used by the restaurant trade

Its benefits include less loss of yield in cooking, better moisture retention, improved flavor and a chance to "innovate" on flavor, and greater tenderness

Dr. Kroger says there are developments using water-soluble films or containers such as cellulose and corn starch. Both are permitted on foods. There are at least three commercially available films, made in the U.S., that are approved for use with foods. One such product is soluble in either hot or cold water. It does not pick up moisture from the air. Only at high relative humidity, 80 per cent or greater, does it become sticky. It meets all requirements set by the Food and Drug Administration.

"Some people in the food industry feel this product will have a sizeable effect on the packaging of future frozen foods, especially with appropriate consumer

education," Dr. Kroger reports

Possible frozen items that can be packaged in this material are fish steaks, frozen concentrated sauces, vegetables, fruits, and such "leaker products" as liver. The film is applied first and then the product is frozen.

When used on meats, the product can be cooked without removing the film—which will dissolve. It might also be used in packaging of instant tea, powdered drinks, dehydrated soups, seasonings, and other products which are added to water.

As yet, edible containers have made no impact on the food market, Dr. Kroger admits.

There may be good reasons. A water-soluble container must be able to withstand touching and handling with moist hands, plus exposure to moist environments while being strong enough to hold the product.

"For sanitary and esthetic reasons, an outer disposable material will probably always be a packaging requirement," Dr. Kroger contends. "Also, cost of edible containers may not always justify the convenience factors."

He admits, at the same time, that the use of water-soluble films in the food industry may already be greater than expected. Very little information on the use of such films in the food industry has been made available.

## USDA Adopts Egg Products Amendments

The U.S. Department of Agriculture has announced it is adopting amendments to the Egg Products Inspection Act regulations which set forth requirements for shell egg handlers and make some changes in requirements for egg processing plants, including a labeling requirement for egg products with added water.

Handlers of shell eggs and hatchery operators come under the regulation of the Egg Products Inspection Act on July 1, 1972. After that date, only eggs equivalent to U.S. Grade B or better will be permitted to move into consumer channels.

Regulation of egg processing operations under the Act became effective July 1, 1971. Since that date, all egg processing plants have been required to operate under continuous USDA inspection.

USDA issued regulations on May 28, 1971 to implement enforcement of the Act. The new amendments to these regulations provide, among other things, more specific information on the disposition of "restricted" eggs. Restricted eggs, defined by the Act as checks, dirties, leakers, loss, inedibles, and incubator rejects, will be barred from consumer channels after July 1.

Packers will be permitted to send checks and dirties to USDA inspected egg products plants for proper segregation and handling. All other restricted eggs must be denatured at the packing plant or hatcheries, or shipped under official Government seal.

### Broiler Chicks Up

Placement of broiler chicks on Pennsylvania farms rebounded last week to 1,171,000, four per cent more than the previous week according to the Pennsylvania Crop Reporting Service, a joint service of the U.S. and Pennsylvania Departments of Agriculture.

This total is two per cent more than the corresponding period for last year while the current 10-week average of broiler placements is also up two per cent from last year.

The setting of eggs to be hatched for broiler-type chicks increased four per cent to 1,890,000 in a comparison of the two latest weekly report periods.

Although Pennsylvania ranks only 12th in the nation in broiler production its outshipment of broiler-type chicks to be fed and marketed in other states has been averaging 236,000 over the past ten weeks, 30 per cent higher than the same period last year.

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