

Food Packaging: A Futuristic Science

NEWARK, DE — You don't have to embark on the starship Enterprise to go places no one's ever been before, says University of Delaware food science researcher Dr. James Paik. His quest of fundamental chemical principles that apply to food packaging takes him to research territory still unexplored by the scientific community in its search for improved technology.

Paik, who has a biochemical and food engineering background, sees foods from a different perspective. An orange is just a group of chemicals, and milk is lipids suspended in a protein solution. His involvement in chemistry has led him to examine fundamental principles that can be applied to these groups of chemicals that we call food and their interaction with other chemicals we call packaging.

When defining his research goals at the department of food science, Paik tries to look to future needs.

Over the past four years, Paik has focused on the area of flavor scalping. For example, when tetra packs were first introduced, the

aroma from orange juice was scalped, or absorbed, by the plastics of the inner liner. Food scientists are now looking for inexpensive plastic linings that won't scalp the flavor from citrus juices.

The scientist is interested in exploring other research areas including smart packaging. Smart packages do more than just keep food in and elements out. A smart package could be made with material that kills microbes without adding harmful chemicals to foods, thus keeping spoilage organisms at bay in processed

foods such as bacon.

In the future, smart packages may be able to tell sellers and consumers when a product has gone bad. As technology progresses, a chemically sensitive patch on the package could indicate, perhaps with a color change, the presence of chemicals produced by spoiling food or bacteria.

"To meet future needs, we should be looking to keep refrigerated, ready-to-eat food products for at least a month from the manufacturing process to consumer use," Paik says.

Cook's Question

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Klobasy Sausage

5 pounds pork butts
2 pieces garlic, chopped fine
2 tablespoons salt
1 teaspoon pepper

Casing enough to use prepared meat

Grind meat in a coarse grinder and mix well with other ingredients. Stuff casings with meat mixture. Put in smoke house and smoke daily for about a week, using apple wood.

Jo Matenus
Dallas

German Bratwurst
4½ pounds pork butt or shoulder or deboned spareribs
½ pound lean veal
If necessary, enough fat to make the 2-to-1 ratio
½ teaspoon marjoram, crushed
½ teaspoon caraway seeds, crushed
½ teaspoon ground nutmeg
2 teaspoons salt
¾ teaspoon pepper
Cold water
Natural or cheesecloth casings

Cut the meats and fat into chunks; chill and grind them together twice, using the fine blade of a meat grinder; if hand chopping, make ¼-inch bits; if processor grinding, whirl until smooth but not pureed. Combine the marjoram, caraway, and nutmeg in a mortar and pestle or in a blender; crush them to a powder, then mix in the salt and pepper. Add the spice mixture to ½ cup cold water; knead the spiced water into the sausage meat, adding more water to make a soft sticky mixture. Stuff sausage meat into casings. Ripen the sausages, well wrapped, in your refrigerator for 1 to 2 days in order to blend the seasonings. To cook whole: prick them well with a fork and simmer in wine, broth, beer, or water for about 40 minutes. After simmering brown them under a broiler or on a grill or cut them into thick, diagonal slices and fry.

To freeze uncooked or simmered sausages for future use, skip the ripening period. Thaw before cooking. Never cook unfrozen sausages as they will burst.

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