

# Soy Well Accepted in School Lunches

Childhood obesity is a national health concern and affects as many as 20 percent of school children. As part of the battle against obesity, the Illinois Center for Soy Foods at the U of I has completed a pilot program, called ISOY, to demonstrate the nutritional benefits of including soy in the state's school lunch programs.

The program is a joint effort with the Illinois Soybean Checkoff Board and Archer Daniels Midland.

"Many school lunches currently exceed the recommended fat and calorie content given in federal and state regulations," said Barbara Klein, co-director of the center and emeritus professor in the Department of Food Science and Human Nutrition. "The goal of the ISOY program was to show that products made from soy ingredients can help reduce fat, cholesterol, and calorie in the lunches and still be acceptable to the children."

A major focus of the pilot program was demonstrating consumer acceptability of soy and soy-enhanced foods and showing how they can be easily incorporated into school lunch programs.

"Asking whether a product is liked or disliked in a controlled situation does not always translate into acceptance in normal eating conditions," Klein said. "In our study, we used plate waste or the percentage of a product that was consumed during the usual lunch programs as a proxy for acceptance. If students consumed the same amount or more of the test product than the usual one, then we can conclude that the products were at least equally acceptable."

The pilot studies were carried out in four school districts. The test included four different entrees: spaghetti with sauce, chili, ravioli, and nuggets.

The results showed that the percentage consumed of the soy products versus the meat versions was the same for the chili and spaghetti dishes used in the study.

"Equal amounts of these foods were eaten, indicating that children did not

notice appreciable differences," Klein said. "Fat, calories, and cholesterol in the soy versions were reduced by at least one half."

Soy-enhanced ravioli and a meat version prepared for the study were not as well liked, but there was no difference between the amounts consumed of each.

"Children ate less of the meatless nuggets, because the students had strong preconceived notions of the flavor, shape, and size of chicken nuggets," Klein said. "However, the percentage consumed was at least 75 percent for both types. This indicates that soy-based nuggets could be served and achieve acceptance."

She points out that reformulation and testing with children could also result in development of more satisfactory products for both nuggets and ravioli.

"From a nutritional standpoint, the spaghetti made with soy products had 22 percent fewer calories and 43 percent less fat than the meat version," Klein said. "The chili made with soy had 32 percent fewer calories and 20 percent less fat than the meat version. The percent of calories from fat was also reduced from 54 percent to 14 percent."

Based on the U.S. Department of Agriculture's values for fast-food chicken nuggets, the soy nuggets had more protein and slightly less total fat. They also had about half the saturated fat and no cholesterol. All the soy products were about two-thirds the price of the same item made with meat.

"Our youth are becoming increasingly overweight," she said. "Many school lunch programs inadvertently contribute to this problem by offering high-fat lunches. Working together on this and other projects, we hope to become part of the solution for overcoming this increasingly important health issue."



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