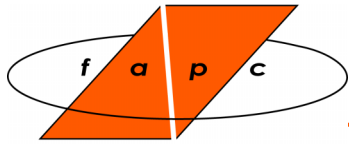


Food and Agricultural Products Center



FLASH!!

May 5, 2003

Acrylamide Present in Baked, Fried Foods

STILLWATER, Okla. – For years, the main danger from acrylamides was presumed to be from accidental exposure or environmental contamination. Now, there is new concern about the presence of acrylamide in foods.

The Swedish National Food Administration announced in May 2002 that they found acrylamide at higher-than-expected levels in starch-containing foods cooked at high temperatures, said William McGlynn, Food and Agricultural Products Research and Technology Center horticultural food scientist.

These findings have been confirmed by similar studies by the UK Food Standards Agency, the U.S. Food and Drug Administration and others.

“These studies have found the highest levels of acrylamides in fried and baked starchy foods such as French fried potatoes, roasted asparagus and banana chips,” McGlynn said. “Because of the potential health risks of these compounds, these reports have generated a great deal of interest and concern.”

Acrylamides are industrial chemicals used to create high-molecular weight polymers commonly employed for a variety of tasks including water treatment, paper-making, soil conditioning and thickeners in paints, cosmetics and soaps. These polymers made from acrylamides are stable and non-toxic.

The origin of acrylamides in foods is not entirely clear, but it appears the formation of these chemicals is linked to high temperature cooking, McGlynn said.

“Since acrylamides have not been detected in boiled foods or raw foods before cooking, their formation is

thought to result strictly from high-temperature cooking, not from environmental contamination,” he said.

Researchers around the world are working to define the exact mechanism through which acrylamides are formed during cooking, but no conclusive results have yet been presented.

“According to recent studies, scientists from a number of countries have found two ingredients naturally present in foods, the sugar glucose and the amino acid asparagine, that may play a role in acrylamide formation,” McGlynn said.

The unexpected discovery of acrylamides in everyday foods has created concern about potential long-term health effects. Previous studies on acrylamide toxicity have shown that, in addition to being a powerful toxin affecting nerve functions, acrylamide may cause cancer, damage reproductive systems and impair neural development.

Past studies have focused mainly on the neurotoxic and other effects of exposure to relatively high levels of acrylamide, such as might be expected to result from industrial contamination. Unfortunately, these studies tell little about any possible harmful effects of acrylamides in foods because even the highest levels detected in foods have been much lower than the doses typically found to cause acute toxicity in animals.

New studies are underway to address the possible harmful effects of chronic exposure to very low levels of acrylamide in the diet, but to date there is not enough data to draw firm conclusions, McGlynn said. The risks posed by acrylamides in foods, if any, are simply unknown at this time.

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“There is no doubt the discovery of acrylamides in foods has created concern and fear in consumers around the world,” he said. “While the true risks are not yet known, given what is known about acrylamides there is justifiable cause for concern. However, it is likely they have been present in the food supply as long as people have been baking, roasting or frying foods.”

The FDA is working in collaboration with other federal public health agencies, international partners, academia, consumers and the food-processing industry to answer questions and address the concerns raised by the discovery of acrylamides in food.

The FDA has developed an action plan intended to reduce potential risks from acrylamide in foods. An

outline of this action plan can be found on the FDA Web site at www.cfsan.fda.gov. The FDA will continue to study how acrylamides are formed in foods, investigate methods to avoid or limit acrylamide formation during cooking and determine potential health risks from consuming acrylamide in foods.

Levels of acrylamide found in specific foods and FDA educational materials and programs related to acrylamides in food also can be found at this Web site.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Sam E. Curl, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$114.75 for 225 copies. 0503 RLJ.