

## **Introduction**

### **Background**

In April 2002, Sweden's National Food Administration announced, at a press conference, the finding of a wide range of amounts (less than 30 ppb to approximately 2,300 ppb) of acrylamide in a select sample of foods. According to scientists at Stockholm University, acrylamide appeared to be formed during the heating (preparation) of several different foods. It had not previously been identified in foods at the levels reported. These findings were released prior to publication in order to alert the world that acrylamide could be an issue in food products.

The toxicological effects of acrylamide have been studied in animals where it has been observed to be carcinogenic. Carcinogenicity in humans has not been demonstrated in epidemiological studies, although it cannot be excluded. Acrylamide has been classified by the International Agency for Research on Cancer (IARC) as "probably carcinogenic to humans" (Group 2A). It is a neurotoxicant whose effects have been observed in humans in cases of occupational exposure.

A Joint FAO/WHO Expert Consultation was rapidly convened in June to undertake a preliminary review of new and existing data and research on acrylamide. The findings of that consultation call for further study of the levels and extent of acrylamide in food products, mechanisms of formation, bioavailability, exposure, and toxicological implications.

### **Workshop**

An ad hoc Acrylamide Working Group composed of food industry, trade association, academic and government representatives has been monitoring and discussing the issue of acrylamide in food since shortly after the first announcement in Sweden. It became apparent that a workshop, concentrating on science, was needed to openly discuss the issues, to identify apparent knowledge gaps, and to identify short- and long-term approaches to generating the required information/knowledge.

As a result, the workshop "Acrylamide in Food: Scientific Issues, Uncertainties, and Research Strategies" was held at the O'Hare Ramada Plaza, Chicago, October 28-30, 2002. The meeting was organized by the Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park and the National Center for Food Safety and Technology (NCFST), Illinois Institute of Technology, Argo-Summit. Funding for the workshop was provided by registration fees from its 170 participants from around the world.

Five Working Groups were established to lead the discussions of the experts:  
Mechanisms of formation of acrylamide in food; Analytical methodology; Exposure and

biomarkers; Toxicology and metabolic consequences; and Risk communication. Each was led by an organization involved in planning the meeting. A position paper was prepared for each of the Working Groups and was used as the basis to initiate discussions of that group during the workshop. Participants and observers were invited for each of the five Working Groups, as well as several “general” observers who circulated among the Working Groups. The workshop was not a consensus-building activity, but provided expert information to the Planning Committee for its further deliberations and distribution for others to use.

A list of seven questions was addressed by each Working Group. An additional list of questions was developed for each Working Group to guide the discussions in their particular subject matter area. Discussions occurred over three half-day sessions. Finally, a limited number of conclusions representing high priority research needs and data gaps were presented by each Working Group in a final plenary session for open discussion among all participants.

Following adjournment of the workshop, the Planning Committee met to review the high priority conclusions with a focus on identifying those that could be addressed through short-term research projects. Specific action projects, coordinated by the ad hoc Acrylamide Working Group, will be developed and initiated.

For each Working Group, the position papers, audiovisuals presented during the meeting, and summary presented at the closing plenary session emphasizing their high priority conclusions are presented. Also included are a listing of the general questions, high-priority conclusions from each Working Group, and the Planning Committee’s List of Short-term Action Items.