

JIFSAN Acrylamide Workshop

April 13 – 15, 2004

Chicago, IL

Summary of Working Group 5 - Risk Communication

Chair: Dave Schmidt

Rapporteurs: Joan Rothenberg, Tony Flood

The 2nd meeting of the Joint Institute for Food Safety and Applied Nutrition (JIFSAN) Acrylamide Workshop met in Chicago, in April 2004 as a follow-up to the October 2002 acrylamide workshop. The meeting brought together leaders in acrylamide research from science, academia, international governments and industry to discuss progress over the past two years and to identify additional areas of research. The six working groups for the 2004 workshop included: 1.) mechanisms of formation and mitigation options; 2.) analytical methods of detection; 3.) exposure and biomarkers; 4.) toxicology and metabolic consequences; 5.) risk communication and 6.) risk characterization.

This workshop demonstrated much significant research has been initiated on a global basis and important facts and understandings were shared throughout this meeting. From a communication standpoint it is important to support an open dialogue and collaboration in acrylamide research efforts globally.

Researchers, institutions, scientists and risk managers are now often called on to report the research findings regarding acrylamide in food. Good risk communication strategy can be effective in providing context to complex scientific information for the technical community, opinion leaders, journalists and consumers.

Participants in the risk communication working group were asked to observe the first section of each of the other working groups in order to capture information reported that would be significant to risk communication. Although many of these points were mentioned in several working groups, the following are highlights from working group discussions.

Working Group I: Mechanisms of Formation and Methods of Mitigation:

- General agreement that the research indicated that the primary mechanisms for formation involved carbonyl group + asparagine in the presence of heat, leading to the formation to acrylamide.
- Several mitigation techniques including blanching, rinsing and the inclusion of asparaginase showed the potential to reduce or inhibit the formation or acrylamide, however, it is important to remember that further research and time will be required prior to any commercial options available (consumer acceptance, availability, commercial scalability and adjustments to processes).
- It is important to note that with all the techniques reported, further research may be required to address unintended effects.

Working Group II: Analytical Methods of Detection

- The analytical chemists expressed confidence that the analytical methods, which have been developed and proficiency tested are adequate and capture acrylamide levels in different food items.
- May be useful to establish certified reference materials for increased validation of acrylamide testing.

Working Group III: Exposure and Biomarkers

- Exposure analysis demonstrates that elimination of acrylamide from any one food category or the elimination of that food from the diet would not significantly reduce the overall exposure of acrylamide in an individual.
- Review of epidemiological data does not conclusively support the basis for a link between acrylamide in food and risk of cancer in humans.
- Modifications in food preparation in the home and storage of some foods may impact acrylamide formation.
- Differences in acrylamide formation in food may be the results of variability in agricultural products (seasonality, soil conditions, variety).
- Much progress has been made but still a lot of work is needed in the area of biomarkers.

Working Group IV: Toxicology and Metabolic Consequences

- From a communication standpoint, it is important to understand that the formation of glycidimide may be crucial for toxicological considerations.
- The establishment of good PB / PK models is critical for understanding acrylamide toxicology.
- In animal models the path of administration of acrylamide dose is an important consideration.
- Challenges may lie in finding the most sensitive endpoints; and their effects on “sensitive” populations.

Working Group V: Risk Communication

Questions surrounding risk communication were answered with input from participants floating to the other working groups. Questions to the working group and answers discussed are listed below

1. Does the current science on acrylamide in food require any new focus on public communication? What might be needed?
 - a. Provide context on current information
 - b. Polish existing messages and update appropriately
 - c. Keep it simple for consumers to understand
2. What new findings presented at the workshop are of potential interest to the lay public?
 - a. Risk characterization
 - b. Progress on mitigation – more needs to be done; potentially long term
 - c. Potential strategies in the home to avoid over-browning of foods. The importance of time- temperature in heating. More research is needed.
3. Do any findings present unique challenges for public communication?
 - a. No, but some general uncertainties may require forethought in future communication strategy
4. Does a risk communication analysis indicate any adjustment to public communication needs?
 - a. Generally no, but . . . opportunities to strengthen global collaboration and information sharing exist
 - b. Risk / Benefit messages need to be considered
5. Is additional consumer attitude research necessary to gauge public awareness of concern about acrylamide in food? Of the remaining research needs, which is the highest priority?
 - a. No additional consumer research is needed but it would be in our best interest to retain the option depending on trends in consumer awareness and media interest

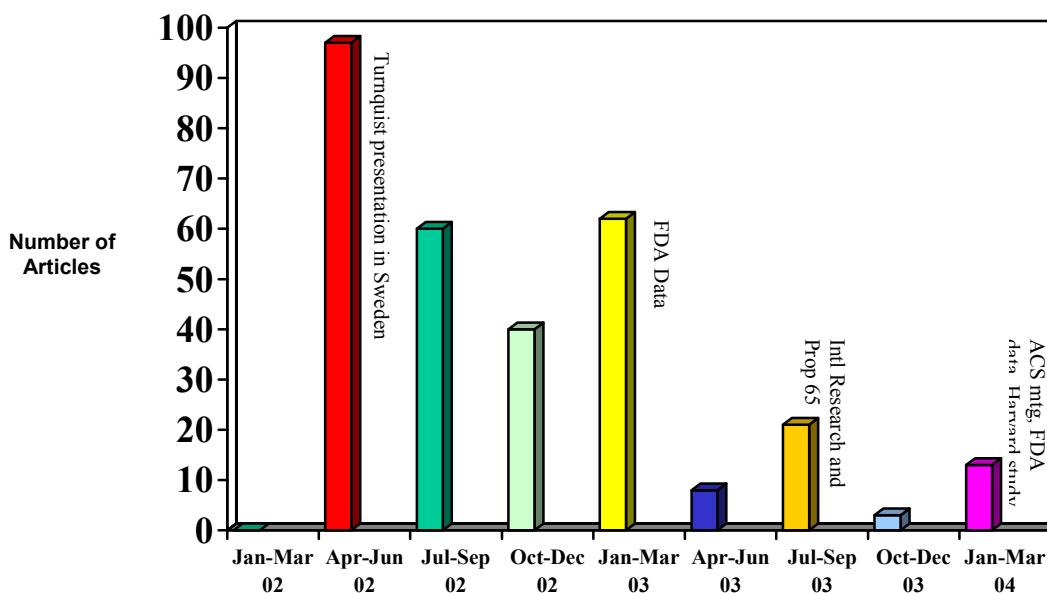
Working Group VI: Risk Characterization

- Risk characterization can be defined as the convergence of risk identification, risk quantification and understanding uncertainties / knowledge gaps
- Important for decision makers
- “If we fix the acrylamide problem is it better or worse for consumers?”
- The risk of neurotoxicity is negligible
- Challenges remain in identifying the most susceptible populations . . . other than age class
- Context is important to describe the impact of uncertainty (this is what we’ve learned, this is what we still need to know); progress – uncertainty

Working Group 5 – Risk Communication

*“There’s a kind of hush all over the world, but . .
we need to be prepared on all fronts”*

This statement characterizes the current climate of media response to acrylamide as evidenced by the IFIC media-monitoring chart below:



Recommendations from **Working Group 5** include:

- Develop and distribute transparent meeting summary to interested parties on a timely basis
- Ongoing monitoring of this issue will help avoid surprises
- Characterize the global (research and international collaboration) effort that has been put forth thus far and how it is likely to continue beyond the acrylamide issue. This will help reassure the public of a credible research agenda; such patience will yield solid scientific results.

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