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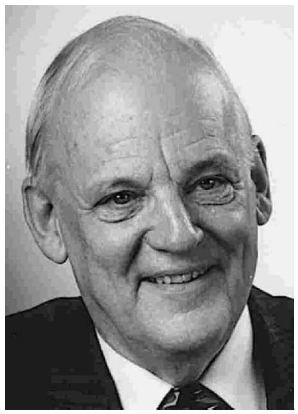

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Acrylamide in food–an update

Acrylamide, a carcinogenic compound, is formed during heating processes in preparation of starch-rich foods. These conditions were announced in April 2002 by scientists at the University of Stockholm together with toxicological scientists from the Swedish National Food Administration (NFA). A short time after the announcement, the Swedish Food Federation (LI) initiated a Scientific Expert Committee with a directive to evaluate the current knowledge about acrylamide formation in food cooking and heat processing.

The fundamental question is: what are the mechanisms behind the formation of acrylamide? In this issue of Scandinavian Journal of Nutrition the Scientific Expert Committee: Hans Lingnert, Spiros Grivas, Margaretha Jägerstad, Kerstin Skog, Margareta Törnqvist and Per Åman, presents in a review article what has recently become known about the formation of acrylamide.

Acrylamide: plausible formation mechanisms

In heated protein-rich foods, low contents of acrylamide are found, whereas in heated carbohydrate-rich foods high contents are detected. The Maillard reaction (MR) is the most important chemical reaction in food processing, and the reaction occurs in heat-treating of foods, e.g. roasting, baking, popping, pan-frying and barbecuing. Most unprocessed foods contain starter reactants, i.e. amino acids, proteins and reducing sugar. At a scientific meeting in Los Angeles in September 2002 the first reports were presented showing that acrylamide can be formed within the MR from the amino acid asparagine and sugar components.

The authors summarize that indications can be given on which factors are involved in the acrylamide formation, i.e. high temperatures are needed and, further, that acrylamide formation is mainly a surface phenomenon.

The food industries concerned have reacted rapidly to the alarm raised by the NFA. In crisp processing the heating temperatures have already been lowered, resulting in a reduction in the acrylamide level of about 75%. In the near future, the food industry, together with scientific institutions, will probably try to find other sorts of potatoes with changed contents of sugars and asparagine. Interesting recent reports indicate that the concentration of asparagine and sugar components in potatoes varies between plantations and with storage time.

Dairy products and oral health

In a review article in issue 3, 2002, of Scandinavian Journal of Nutrition, Ingegerd Johansson described the effects of milk and milk products on oral health. In a commentary on that article in the present issue, William H. Bowen, from the University of Rochester, New York, USA, suggests that milk is non-cariogenic and may have modest cariostatic properties. Futhermore many cheeses contain microorganisms that may exhibit cariostatic properties in the human mouth. Certainly this commentary and Ingegerd Johansson's article deserve attention. It is an exciting research field in caries research, not least today when children and young people have lowered their intake of dairy products. Instead, they have increased their intake of soft drinks.

Scandinavian News

Today's short reports and announcements of activities in the field of nutrition may be rapidly downloaded from the internet. We have therefore decided to cease publication of Scandinavian News as from issue 1, 2003. In future we intend to give our readers scientific, review and overview articles from the Nordic countries, as well as summing up reports by authors of dissertations.

I would like to express my heartfelt thanks to all authors of Scandinavian News for their extraordinary work on these appreciated pages. Thank you so much: you are welcome anytime to discuss and publish contributions in Scandinavian Journal of Nutrition.

 ISSN 1102-6480