STATEMENT OF THE SCIENTIFIC PANEL ON CONTAMINANTS IN THE FOOD CHAIN TO A SUMMARY REPORT ON ACRYLAMIDE IN FOOD OF THE 64TH MEETING OF THE JOINT FAO/WHO EXPERT COMMITTEE ON FOOD ADDITIVES

Adopted on 19 April 2005

The Scientific Panel on Contaminants in the Food Chain (CONTAM) discussed a summary report on acrylamide in food of the 64th meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA) released on 2 March 2005 (FAO/WHO, 2005).

Acrylamide (CH$_2$=CHCONH$_2$) may be formed in foods, typically carbohydrate-rich and protein-low plant commodities, during cooking or other thermal processing such as frying, baking or roasting at temperatures of 120 °C or higher.

The critical effects of acrylamide are its neurotoxicity and carcinogenicity. Acrylamide is considered to be both genotoxic and carcinogenic in laboratory animals.

Shortly after the Stockholm University and the Swedish National Food Administration released the new findings of acrylamide in food in April 2002, the EC Scientific Committee on Food (SCF) issued an opinion related to this topic (EC, 2002). The SCF expressed concerns about exposure levels and recommended that exposures should be as low as reasonably achievable (ALARA).

In its recent evaluation the JECFA applied a margin of exposure (MOE$^1$) approach for the risk assessment of acrylamide (FAO/WHO, 2005). This approach is also currently proposed by the EFSA Scientific Committee for compounds that have both genotoxic and carcinogenic properties (EFSA, 2005). JECFA noted that the calculated MOEs were low for a compound that is genotoxic and carcinogenic. The JECFA concluded that this may indicate a human health concern which is consistent with the previous SCF opinion.

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$^1$ The MOE is defined as the point of comparison on the dose-response curve (usually based on animal experiments in the absence of human data) divided by the estimated intake by humans.
Furthermore, JECFA cautioned that there are uncertainties in its conclusion as the toxicological database is incomplete and recommended that (FAO/WHO, 2005):

- acrylamide be re-evaluated when results of ongoing carcinogenicity and long-term neurotoxicity studies become available.
- work should be continued on using physiologically based pharmacokinetic (PBPK) modelling to better link human biomarker data with exposure assessments and toxicological effects in experimental animals.
- appropriate efforts to reduce acrylamide concentrations in food should continue.

The CONTAM Panel noted the use of the MOE approach that incorporated data from European countries, including information gathered under collaborative initiatives between the Commission and EFSA. The Panel agrees with the principal conclusions and recommendations of the JECFA and concludes that at present an additional evaluation by EFSA is not necessary.

REFERENCES

EC (European Commission), 2002. Opinion of the Scientific Committee on Food (SCF) on new findings regarding the presence of acrylamide in food. Available at http://europa.eu.int/comm/food/fs/sc/scf/out131_en.pdf

EFSA (European Food Safety Authority), 2005. Draft Opinion of the Scientific Committee on a harmonised approach for risk assessment of compounds which are both genotoxic and carcinogenic (in consultation process). Available at http://www.efsa.eu.int/science/sc_committee/sc_consultations/882_en.html


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