ACRYLAMIDE - EU Summary of Activities

STUDY AREA 10 - INTERNATIONAL ACTIVITIES

NEW/UPDATE since February 2005

Entry No.	DESCRIPTION OF ACTIVITIES	COMMENTS	REFERENCES/ INTERNET LINKS	CONTACTS
10.1	Joint FAO/WHO Consultation on Health Implications of Acrylamide in Food	On 25-27 June 2002, a Consultation was convened jointly by FAO and WHO 1) to review and evaluate new and existing data and research on acrylamide relevant to toxicology, especially carcinogenicity and neurotoxicity, epidemiology, exposure assessment, analytical methodology and formation, fate and bioavailability of acrylamide in cooked food, 2) to identify needs for further information and studies, and 3) to develop and suggest possible interim advice for governments, industry and consumers. The Consultation reviewed the health significance of the presence of acrylamide in foods on the basis of known international assessment reports, specific background papers prepared in advance by invited experts and on the available new data and publications.	http://www.who.int	For more information, contact Gregory Hartl, WHO, Geneva. Tel. (+41 22) 791 4458; E-mail: hartlg@who.int, or John Riddle, FAO Media Relations. Tel (+39) 0657053259; Fax (+39) 0657053699; Email: john.riddle@fao.org; FAO web site: http://www.fao.org. Other contacts: Dr. J. Schlundt, Dr. G. Moy or Ms. C. Vickers, WHO Headquarters, Geneva
10.2	The WHO/FAO Acrylamide in Food Network - Operated by the Joint Institute for Food Safety and Applied Nutrition (JIFSAN)	This network was established as a result of the June 2002 FAO/WHO Consultation on the Health Implications of Acrylamide in Food (see 10.01). The consultation recommended that an international network on acrylamide in food should be established inviting all interested parties to share relevant data as well as ongoing investigations. The focal point for the network is the website www.acrylamide-food.org where you find a database of researchers/data providers and references for research published elsewhere. In the future this website will also include: information updates about the status of research efforts; a database on the levels of acrylamide in food and dietary intakes; a comprehensive listing of related websites.	http://www.acrylamide-food.org/	acrylamide-food@umail.umd.edu

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10.3	64th meeting of the Joint FAO/WHO Expert Committee on Food Additives (and contaminants) - acrylamide risk assessment	review of all available data on occurrence, formation, bioavailability, toxicity, epidemiology, methods of analysis, dietary intake estimates, to perform an overall risk assessment	http://www.who.int/ipcs/food/jecfa/en/call64.pdf	Dr. Angelika Tritscher; WHO Joint Secretary to JECFA and JMI, International Programme on Chemical Safety World Health Organization 20, Avenue Appia, CH-1211 Geneva 27 Switzerland Ph: +41 22 791 3569 Pax: +41 22 791 4848 E-mail: tritscher@who.int
10.4	European Commission, DG Research Expected Activities on: Health risks from heat treated foods and food products – A call for proposals with an expected deadline on the 15th April 2003 generated one project abbreviated HEATOX.	Keywords/Key areas: (a) different hazardous compounds formed; (b) international collaboration; (c) communication issues; (d) mechanisms of formation; (e) development, improvement, validation and harmonisation of methods of analysis; (f) bio-availability; (g) toxicity; (h) biomarkers of exposure and effect; (i) exposure assessment; (j) reduction and elimination technologies; (k) milder processing conditions; (l) comparative risk assessment studies.	Web-site: http://www.cordis.lu/food/home.html .	Dr. Achim Boenke; EC, DG Research, Unit E.2 - Food Quality; Tel.:+32/2/296.07.56; FAX:+32/2/296.43.22; E-mail: achim.boenke@cec.eu.int
10.5	European Commission, DG Health and Consumer Protection (DG SANCO) - Scientific opinions and reports on acrylamide released by Scientific Committees	The SCF has evaluated acrylamide in 1991 as a monomer in food contact materials where it concluded that it is a genotoxic carcinogen. In 2001, its sister Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE, 2001) commented on an extensive risk assessment of acrylamide carried out in the framework of Council Regulation (EEC) 793/93 on the evaluation and control of the risk of “existing” substances (EC, 2000; see also 10.05). Acrylamide has also been examined by the Scientific Committee on Cosmetic Products and Non-Food Products (SCCNFP, 1999). The last evaluation was carried out by the SCF (SCF, 2002) following new findings released by the Swedish authorities in April 2002.	SCCNFP (1999): see http://europa.eu.int/comm/food/fs/sc/sccp/out95_en.html; CSTEE (2001): see http://europa.eu.int/comm/food/fs/sc/sct/out88_en.html; SCF (2002): see http://europa.eu.int/comm/food/fs/sc/scf/out131_en.pdf	Dr. T. Sateri; EC, DG SANCO; Tel: +32 2 2984698; Dr. D. Liem; EFSA, Tel.:+32 2 2954861; FAX: +32 2 2994891; E-mail: djien.liem@cec.eu.int

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10.6	European Commission, DG Health and Consumer Protection (DG SANCO) Acrylamide Stakeholder Meeting, Brussels, 20-21October 2003	A workshop with the Member States and stakeholder groups was held on 20-21 October 2003. A series of presentations were given with general updates on activities and with a specific focus on lowering levels of acrylamide in food. An outcome document from the meeting will be available on the DG SANCO website, with details of approaches found to lower the levels of acrylamide formed in found.	http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/acrylamide_en.htm	Dr M Slayne; EC, DG SANCO; Tel: +32 2 2956329; FAX: +32 2 2991856; E-mail: martin.slayne@cec.eu.int
10.7	European Commission, DG Health and Consumer Protection (DG SANCO) Acrylamide Stakeholder Meeting, Brussels, 14 January 2005	This meeting aimed to take stock of practical progress made across the different stakeholder sectors over the past 2 -3 years since acrylamide in food was highlighted. A series of presentations were given, including progress by the Commission, the HEATOX project, Joint Research Centre, European Food Safety Authority, Member States, ILSI Europe, different sectors of the food industry (production, processing, retail and catering) and consumer groups. Much information was presented, helping to give all stakeholder groups a broader and clearer picture of the progress made, in particular to investigate and control the presence of acrylamide in food. This will help in future EU discussions due to be held after the Joint FAO/WHO Expert Committee on Food Additives (JECFA) has prepared its anticipated risk assessment on acrylamide (February 2005).	http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/acrylamide_en.htm	Dr Martin Slayne, Office 4/65 B232, rue de la Loi 200, B-1040 Brussels, E-mail: martin.slayne@cec.eu.int
10.8	EC, Joint Research Center, IRMM, Geel, Belgium	* Overview on analytical methods used by EU Member States: completed, Review paper published: Wenzl et al. Food Add. Cont. 20 (2003) 885-902	http://www.irmm.jrc.be/ffu/acrylamide.l	Dr. T. Wenzl, Dr. O. Ostermann, Dr. E. Anklam; EC, DG JRC; Tel: +32 14 571 800/316; FAX: +32 2 571 783; E-mail: thomas.wenzl@cec.eu.int; ole.ostermann@cec.eu.int; elke.anklam@cec.eu.int

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10.8 (con´t)		* Database for acrylamide monitoring data: Establishment of a database sheet regarding levels of acrylamide in food in collaboration with CIAA (draft was discussed on 3-4 February 2003; Finalisation of database and initiation: April 2003; Setup of data assessment criteria jointly with CIAA: December 2003; First assessment of collected data: Mai 2004; Web-publication of database: June 2004; Update of database (containing ~3850 data): December 2004		
		* Proficiency tests: Organisation of proficiency tests (PT) with official food control laboratories at the EU level (Member States including Food Law Enforcement Practitioners (FLEP) group and Candidate Countries): First PT: July 2003 (crispbread, butter cookies, raw and spiked bread crumb extract samples); Results published: Wenzl et al. EUR 21007 EN and Wenzl et al. Anal. Bioanal. Chem. 379 (2004) 449-457; Second PT: February 2004 (3 crispbread samples plus crispbread extracts); Results published: Wenzl et al. EUR 21272 EN; Wenzl et al. JAOAC Int. 88 (2005) 292-298; Third PT: Sep. 2004 (3 coffee samples and one cocoa powder sample); Study evaluated, Report in preparation		
		* Invited editors of special section of J. AOAC Int.: 11 papers covering many aspects of the acrylamide topic: publication: Jan. 2005		
		* Method validation: Validation of the most suitable analytical methods for matrices such as bakery ware and pototo crisps in collaboration with HEATOX partners, NMKL and the Federal Research Centre for Nutrition and Food (Detmold, Germany) at the EU/global level: May-July 2005, Methods and method performance criteria were discussed with partners on 17 December 2004 at IRMM in Geel, Belgium; Collaborative trial will be started in Mai 2005;		
		* Task force on analytical methods: International task force on analytical methods set up in Mai 2003; first meeting in Oct. 2003, second meeting in Jun. 2004 (Minutes to be downloaded from: http://www.irmm.jrc.be/ffu/acrylamide.html)		

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10.8 (con´t)		* Certified Reference Material: Feasibility study regarding stability and homogeneity: finished; Certification campaign ongoing; Finalisation: Summer 2005		Dr. Franz Ulberth; EC, DG JRC; Tel: +32 14 571 600; E-mail: franz.ulberth@cec.eu.int
10.9	EC, Joint Research Centre	EC (2000). Risk Assessment of acrylamide (CAS No. 79-06-1, EINECS No. 201-173-7). Draft Risk Assessment Report prepared by the UK on behalf of the European Union in the framework of Council Regulation (EEC) 793/93 on the evaluation and control of the risks of "existing" substances. European Commission, Joint Research Centre, European Chemicals Bureau, Ispra, October 2000	EC (2000): see http://ecb.jrc.it/existing-chemicals/	
10.10	EC, Joint Resarch Centre	Workshop on analytical mathods held in IRMM Geel, Belgium: 28-29 April 2003	minutes available at: http://www.irmm.jrc.be/ffu/acrylamide.html)	Dr. T. Wenzl, Dr. O. Ostermann, Dr. E. Anklam; EC, DG JRC; Tel: +32 14 571 800/316; FAX: +32 2 571 783; E-mail: thomas.wenzl@cec.eu.int; ole.ostermann@cec.eu.int; elke.anklam@cec.eu.int
10.11	European Food Safety Authority (EFSA)	EFSA hosted an international workshop on acrylamide formation in food in Brussels on 17 November 2003. This workshop was organized on EFSA's behalf by the UK FSA, NL VWA with the assistance from CIAA. The workshop aims were: (i) to provide a forum for those conducting research on the formation of acrylamide in food to discuss the nature, scope and objectives of current research activity, both within and beyond the EU and thereby (ii) to stimulate and facilitate the exchange of ideas and finding s so as to enhance understanding of the mechanisms of formation in order to secure effective and sustainable means to reduce levels of acrylamide in food to protect consumer health.	http://www.efsa.eu.int/science/ahawdocuments/330/other_01_acrylamide_report_annex_en1.pdf	claudia.heppner@efsa.eu.int
10.12	Scandinavian seminar Uppsala November 2002	Coordination and information of Nordic activities (authorities). PLEASE ADD MORE INFORMATION		Mrs. Kit Granby, E-mail kgr@fdir.dk Phone +45 33 95 64 74, Institute of Food Safety and Nutrition

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Entry No.	DESCRIPTION OF ACTIVITIES	COMMENTS	REFERENCES/ INTERNET LINKS	CONTACTS
10.13	JIFSAN Workshop on Acrylamide in Food: Scientific issues, uncertainties and research strategies, 28-30 October 2002	On 28-30 October 2002, a workshop was organised by the Joint Institute for Food Safety and Applied Nutrition (JIFSAN) and the National Center for Food Safety and Technology (NCFST). ILSI organised the working group on Toxicology and metabolic consequences. The workshop concentrated on science and openly discussed the issues, identified apparent knowledge gaps and identified short- and long-term approaches to generate the required information/knowledge in the areas of: 1. Mechanisms of formation of acrylamide in food; 2. Analytical methodology; 3: Exposure and biomarkers; 4. Toxicology and metabolic consequences; 5. Risk communication. The workshop conclusions have been published on Internet.	http://www.jifsan.umd.edu/acrylamide2002.htm	Dr. David Lineback, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), 0220 Symons Hall, University of Maryland, College Park, MD 20742, E-mail: lineback@deans.umd.edu; Tel. +1-301-405-8382;Fax. +1-301-405-8390
10.14	Acrylamide in Food Workshop: Update - Scientific Issues, Uncertainties, and Research Strategies April 2004	Priority needs were identified in mechanisms of formation and methods of mitigation, methods of analysis, exposure and biomarkers, toxicology and metabolic consequences, risk communication, and risk characterization.	http://www.jifsan.umd.edu/acrylamide2004.htm	Dr. David R. Lineback; email:lineback@umd.edu; Tel. +1-301-405-8382;Fax. +1-301-405-8390
10.15	ILSI Europe brainstorming meeting on acrylamide in food, 10 December 2002	On 10 December 2002, ILSI Europe held a brainstorming meeting to review the priority research needs identified at the JIFSAN/ILSI meeting on Acrylamide in Foods (28-30 October 2002, Chicago, USA) and to discuss whether ILSI Europe could provide additional value to the work already undertaken by other organisations. As a result, an ILSI Europe Task Force on acrylamide has been set up. This Task Force will focus on the toxicological research needs.	See: http://europe.ilsi.org	Ir. Sandra Tuijtelaars, ILSI Europe, 83 Avenue E. Mounier, B-1200 Brussels, Belgium. Tel: +32/2.771.00.14, Fax: +32/2.762.00.44, E-mail: stuijtelaars@ilsieurope.be

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10.16	ILSI Europe Task Force on Acrylamide	The task force will develop a framework for the risk assessment of acrylamide in food including: - An inventory of identified data needs; - The systematic integration of relevant data to characterise the risk; - An identification of current sources of uncertainty in the risk assessment. On the longer term, the applicability of this model could be assessed for other substances generated during processing or domestic food preparation. The TF will hold its first meeting on 6 March 2003.	See: http://europe.ilsi.org	Ir. Sandra Tuijtelaars, ILSI Europe, 83 Avenue E. Mounier, B-1200 Brussels, Belgium. Tel: +32/2.771.00.14, Fax: +32/2.762.00.44, E-mail: stuijtelaars@ilsieurope.be
10.17	ILSI Europe brainstorming meeting on acrylamide in food, 10 December 2002	On 10 December 2002, ILSI Europe held a brainstorming meeting to review the priority research needs identified at the JIFSAN/ILSI meeting on Acrylamide in Foods (28-30 October 2002, Chicago, USA) and to discuss whether ILSI Europe could provide additional value to the work already undertaken by other organisations. As a result, an ILSI Europe Task Force on acrylamide has been set up. This Task Force will focus on the toxicological research needs.	See: http://europe.ilsi.org	Ir. Sandra Tuijtelaars, ILSI Europe, 83 Avenue E. Mounier, B-1200 Brussels, Belgium. Tel: +32/2.771.00.14, Fax: +32/2.762.00.44, E-mail: stuijtelaars@ilsieurope.be
10.18	ILSI Europe Task Force on Acrylamide - Development of a risk assessment framework for acrylamide in food	The task force will develop a framework for the risk assessment of acrylamide in food including: - An inventory of identified data needs; - The systematic integration of relevant data to characterise the risk; - An identification of current sources of uncertainty in the risk assessment. The framework will focus on exposure assessment and the internal dose part of risk assessment. The outcome of the project will be submitted to a scientific journal by June 2004. On the longer term, the applicability of this model could be assessed for other substances generated during processing or domestic food preparation.	See: http://europe.ilsi.org	Ir. Sandra Tuijtelaars, ILSI Europe, 83 Avenue E. Mounier, B-1200 Brussels, Belgium. Tel: +32/2.771.00.14, Fax: +32/2.762.00.44, E-mail: stuijtelaars@ilsieurope.be
10.19	Swiss Federal Office of Public Health: Analytical Methods & determination in various foods	Determination of acrylamide in food: Description of an the analytical method to measure the level of acrylamide in food	http://www.bag.admin.ch/verbrau/aktuell/d/AA_methode.pdf http://www.bag.admin.ch/verbrau/aktuell/d/Acrylamidgehalt_liste_3_D.pdf	Dr. Otmar Zoller; otmar.zoller@bag.admin.ch

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10.20	Swiss Federal Office of Public Health: Duplicate Diet Study	A duplicate diet study was performed to get a more accurate image of the acrylamide intake in the Swiss diet. The mean daily intake was measured at 0.28 µg/kg bw. The contribution of the different meals and beverages to the intake was as follows: breakfast 8%, lunch 21%, dinner 22%, snacks 13% and coffee 36%. Even if the consumption of baked, roasted, fried and deep fried potatoes is considered to be below Swiss average in this study, the survey leads to the conclusion that coffee is a significant source of acrylamide in a typical Swiss diet.	http://www.bag.admin.ch/verbrau/aktuell/d/DDS%20acrylamide%20preliminary%20communication.pdf http://www.bag.admin.ch/verbrau/lebensmi/Acrylamid/d/index.htm	Dr. Vincent Dudler; vincent.dudler@bag.damin.ch
10.21	Switzerland, Official Food Control Authority of the Canton of Zürich (KLZH)	In 2002, the Official Food Control Authority of the Canton of Zürich started a series of studies in collaboration with the Hotelfachschule in Zürich on the formation of acrylamide, some of which have already been completed and published and others that are expected to be finalised in March-April 2003. The studies comprised:	2 Papers dealing with acrylamide formation during preparation of potatoes in "Mittelungen Lebensm. Hyg., December 2002". For "Tipps for the preparation of french fries with minimized acrylamide content" (2 texts in German) and other results, see website of KLZH: http://www.klhz.ch.	Official Food Control Authority: konrad.grob@klzh.ch; Hotelfachschule Belvoirpark Zürich: Anton Pfefferle, anton.pfefferle@belvoirpark.ch
10.21 (con´t)		1. GC-MS-method for determining acrylamide Two GC-MS methods for the analysis of acrylamide in foods	M. Biedermann, S. Biedermann-Brem, A. Noti, K. Grob, P. Egli and H. Mändli Mitt. Lebensm. Hyg. 93 (2002) 638-652.	
		2. Determination of the potential of acrylamide formation and of acrylamide elimination Procedure to enable the determination how much acrylamide is formed from a given raw mate-rial; serves as a tool for the comparison of different potatoes (e.g. cultivars, methods of cultiva-tion) and different storage conditions (e.g. effect of cooling). Acrylamide is rapidly eliminated – at 160 °C easily to 90-98 % - and the actual concentration is the difference between formation and elimination. Elimination is extremely rapid in meat, but slow in purified starch. Methods for determining the potential of acrylamide formation and its elimination in raw materials for food preparation, such as potatoes.	M. Biedermann, S. Biedermann-Brem, A. Noti, and K. Grob Mitt. Lebensm. Hyg. 93 (2002) 653-667.	

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10.21 (con´t)		3. Comparison of different potatoes Comparison of potatoes regarding the potential of acrylamide formation, sugars and asparagine. Cooling to temperatures below about 10 °C drastically increases the potential of acrylamide for-mation. Verification of these findings by comparison of the acrylamide concentrations in potato chips, French fries, roast potatoes and hash browns prepared under standardized conditions from 5 strongly different types of potatoes. Experiments on acrylamide formation and possibilities to decrease the potential of acrylamide formation in potatoes.	M. Biedermann, A. Noti, S. Biedermann-Brem, V. Mozzetti and K. Grob Mitt. Lebensm. Hyg. 93 (2002) 668-687.	
		4. Preparation of French fries containing less than 100 µg/kg of acrylamide In collaboration with the School of Hotel Management (Hotelfachschule) Belvoirpark, Zürich, the preparation of French fries was studied from the selection of the potato (cultivar, storage) to pre-treatment and the frying process, concluding that products of optimum quality can be produced with clearly less than 100 µg/kg of acrylamide. Tips for the preparation of French fries with minimized acrylamide content (listed tips and a longer text explaining the background and providing the experimental data from which the conclusions were drawn)	www.klzh.ch; www.Belvoirpark.ch	
10.21 (con´t)		5. Preparation of pan fried potatoes (hash browns) and roast potatoes Collaboration of Official Food Control Authority of the Canton of Zürich and School of Hotel Management Belvoirpark, Zürich: optimization of preparation for best quality with minimized ac-rylamide content. On-going work to be completed in May 2003.		
		6. Kinetics of acrylamide formation Formation and elimination of acrylamide studied in various matrices (potato, flour, starch) and with various starting components at various temperatures. Task: prediction of acrylamide con-centrations. On-going work and to be completed in April 2003.		

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10.21 (con´t)		7. Comparison of potato cultivars and method of cultivation Collaboration of the Swiss College of Agriculture, Zollikofen, Official Food Control Authority of the Canton of Zürich and Institute for Food Science, ETH, Zürich. Some 70 samples of potatoes from known origin and with known method of cultivation were analyzed for potential of ac-rylamide formation, sugars and asparagine. Publication completed in March 2003. Task: initial data base for finding better cultivars or cultivating conditions.		
10.22	The HEATOX project (International collaboration)	The project will be carried out as a wide international collaboration and the integration of different and complementary research fields will assure a creative collaboration.	www.heatox.org	www.heatox.org