

## METHODS COMMITTEE REPORTS

## Committee on Natural Toxins and Food Allergens

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## Committee Actions

During the past year, the following 3 methods were approved as Official First Action: **2001.01** *Determination of Ochratoxin A in Wine by Immunoaffinity Column Cleanup and LC*, A. Visconti, V. le L. Einaudi, 51-70125, Bari, Italy;

**2001.04** *Determination of Fumonisin B1 and B2 in Corn and Cornflakes by LC and Immunoaffinity Cleanup*, A. Visconti, V. le L. Einaudi, 51-70125, Bari, Italy; and **2001.06** *Veratox for Fumonisin*, Chuck Bird, Neogen Corp., MI.

The Committee had 12 on-going studies. Since all methods in the Official Methods program are not being processed or tracked through the program due to lack of resources and other priorities set for AOAC staff, the Official Methods Board recommended development of an interim system, at the option of individual Methods Committee, to handle the program without AOAC staff assistance, until AOAC becomes financially stable and able to process these methods again. After discussion during the break-out session held in Kansas City, Sept. 9, 2001, the Committee took this option for some studies.

There are 5 collaborative study protocols in review: **D-4**, **D-5**, **D-8**, **D-9**, and **D-21** on hold; one collaborative study protocol approved (**D-2**); 3 collaborative study reports in review (**D-15** on hold, **D-16**, **D-17**); and 3 methods studies discontinued (**D-7**, **D-19**, and **D-22**).

The Committee has initiated a "Task Force on Antibody Characterization," which is a critical aspect for reviewing method protocols using (proprietary) antibody test kit techniques. Several scientists outside the Committee volunteered to contribute to this Task Force: Fun S. Chu, University of Wisconsin, Madison, WI; Ian Garthwaite, AgResearch, Hamilton, New Zealand; Alice Lee, University of Sidney, Australia; Chris Maragos, U.S. Department of Agriculture, Peoria, IL; and George Ware, U.S. Food and Drug Administration, Atlanta, GA.

A draft document has been prepared and submitted to the Task Force members and to the Committee members for comments. Following these comments and the OMB recommendation, a second version of the first draft document will be prepared and focused only on antibody characterization requirements.

## *Mycotoxins, Mary Trucksess*

(1) *Sampling and Subsampling for Mycotoxins*: Topic Advisor Thomas B. Whitaker, U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), PO Box 7625, North Carolina State University, Raleigh, NC 27695-7625, Tel: +1-919-515-6731, Fax: +1-919-515-7760, E-mail: thomas\_whitaker@ncsu.edu. This subject is under discussion in several international organizations. Continue topic.

(2) *Aflatoxin M*: Topic Advisor Hans P. van Egmond, National Institute of Public Health and the Environment, Laboratory for Residue Analysis, PO Box 1, 3720 BA Bilthoven, The Netherlands, Tel: +31-30-2742440, Fax: +31-30-2744403, E-mail: hp.van.egmond@rivm.nl. Many papers on methodology and survey data are currently published. Continue topic.

(3) *Aflatoxin*: Topic Advisor David M. Wilson, University of Georgia, Department of Plant Pathology, Coastal Plain Section, Tifton, GA 31793, Tel: +1-912-386-3368, Fax: +1-912-386-7285, E-mail: dwilson@tifton.cpes.peachnet.edu. A tremendous amount

of data are issued currently. Further studies on detection methods and assay are recommended. Continue topic.

(4) *Alternaria Toxins*: Topic Advisor Michele Solfrizzo, Istituto Tossine e Micotossine da Parassiti, Vegetali, Consiglio Nazionale delle Ricerche, Viale L. Inaudi 51, Bari 70125, Italy, Tel: +390-80-33-8968, Fax: +390-80-54-6073. The subject remains interesting since the occurrence of alternariol, alternariol methyl ester, and tenuazonic acid is confirmed. Continue topic.

(5) *Citrinin*: Topic advisor David Abramson, Agriculture and Agri-Food Canada, Cereal Research Center, 195 Dafoe Rd, Winnipeg MB R3T 2M9, Canada, Tel: +1-204-984-5536, Fax: +1-204-983-4604, E-mail: dabramson@em.agr.ca. More information are needed since the toxicological impact is a growing concern. Continue topic.

(6) *Cyclopiazonic Acid*: Topic Advisor Joe W. Dorner, USDA, ARS, National Peanut Research Laboratory, PO Box 509, 1011 Forrester Dr SE, Dawson, GA 31742, Tel: +1-912-995-7408, Fax: +1-912-995-7416, E-mail: jdorner@nprl.usda.gov. Toxicological studies have been performed and some assays are developed. Continue study.

(7) *Ergot Alkaloids*: Topic Advisor George M. Ware, U.S. Food and Drug Administration (FDA), 60 8th St, Atlanta, GA 30309, Tel: +1-404-347-2131 ext. 5215, Fax: +1-404-347-4225, E-mail: gware@ora.fda.gov. The subject still remains an important issue especially regarding the development of reliable determination methods. Continue topic.

(8) *Fumonisin*s: Topic Advisor Chris Maragos, USDA, ARS National Centre for Agricultural Utilization and Research, 1815 N. University St, Peoria, IL 61604, Tel: +1-309-684-6266, Fax: +1-309-681-6267, E-mail: maragocm@mail.ncaur.usda.gov. These toxins are in active areas of research particularly toxicology, mode of action, and method development. Continue study.

(9) *Ochratoxin*s: Topic Advisor Benedicte Hald, Royal Veterinary and Agricultural University, Department of Veterinary Microbiology, 13 Bulowsvej, Friedriksberg C, Copenhagen 1870-DK, Denmark, Tel: +45-3528-2760, Fax: +45-3528-2757, E-mail: vetmi@kvl.dk. A large panel of analytical procedures have been published, including rapid screening assays (ELISA), determination methods (liquid chromatography), and confirmation based on mass spectrometry. Continue topic.

(10) *Patulin*: Topic Advisor Myrna Sabino, Instituto Adolfo Lutz, Dr Arnaldo 355, 355-CEP, São Paulo 01246-902, Brazil, Tel: +55-11-3068-2921, Fax: +55-11-853-3505, E-mail: mysabino@ial.sp.gov.br. Validated methods are now available and can be used for performing reliable surveys on occurrence of this toxin in apple juice. Continue topic.

(11) *Trichothecenes*: Topic Advisor Robert M. Eppley, FDA, 200 C St SW, Washington, DC 20204, Tel: +1-202-205-4551, Fax: +1-202-205-4422, E-mail: Reppley@cfsan.fda.gov. Improvements in methodology have been noticed and validation procedures have been performed. Continue topic.

(12) *Zearalenone*: Topic Advisor Winston M. Hagler, Jr, North Carolina State University, College of Agriculture and Life Sciences, Department of Poultry Science, Mycotoxin Laboratory, Box 7608, Raleigh, NC 27695-7608, Tel: +1-919-515-3228, Fax: +1-919-515-2625, E-mail: winston\_hagler@ncsu.edu. Since this toxin production, occurrence and concern have some similarities to that of trichothecenes, maybe these 2 topics could be combined in the near future. Continue topic.

(13) *Determination of Veratox for Aflatoxins in Corn and Whole Cottonseed*: Study Director Chuck Bird, Neogen Corp., 620 Leshner Pl, Lansing, MI 48912-1595, Tel: +1-517-372-9200, Fax: +1-517-372-0108, E-mail: cbird@neogen.com. On hold.

(14) *Determination of Ochratoxin A in Green Coffee by Immunoaffinity Column Cleanup and LC*: Study Director Eugenia Vargas, Laboratory for Mycotoxin Analysis, Avenida Raja Gabaglia, 245 Cidade Jardim, Belo Horizonte 30380-090, Brazil, Tel: +55-31-250-0398, Fax: +55-31-250-0399, E-mail: gena@cldnet.com.br. Protocol approved, and the collaborative study is ready to be performed. Continue study.

(15) *Determination of Fumonisin*s in Corn and Sorghum by Immunoaffinity Column Cleanup and Fluorometric Method: Study Director Mary W. Trucksess. No progress. Discontinue study.

(16) *Aflatoxin B1 in Baby Food by Immunoaffinity Column and LC*: Study Director Elke Anklam, Joint Research Centre of the European Commission, 21020, Ispra, Italy, Tel: +39-332-78-5390, Fax: +39-332-78-5930, E-mail: elke.anklam@jrc.it. Study completed. Approved as First Action **2000.16**. Publication in *J. AOAC Int.*

(17) *Determination of Fumonisin*s B1 and B2 in Corn and Cornflakes by LC: Study Director Angelo Visconti, National Research Council, Institute of Toxins and Mycotoxins, Viale Einaudi 51, Bari 70125, Italy, Tel: +39-080-548-6013, Fax: +39-080-548-6063, E-mail: visconti@area.ba.cnr.it. Study completed. Approved as First Action **2001.04**.

(18) *Determination of Ochratoxin A in Baby Food by Immunoaffinity Column Cleanup and LC*: Study Director John Gilbert, Central Science Laboratory, Sand Hutton, York, YO4-1LZ, UK, Tel: +44-1904-46-2424, Fax: +44-1904-46-2426, E-mail: j.gilbert@csl.gov.uk. The collaborative study was performed and data will be published in the *J. AOAC Int.* but will not be processed through the Official Methods Program. Discontinue study.

(19) *Determination of Aflatoxin B1 in Animal Feed by Immunoaffinity Column Cleanup and LC with Post-Column Derivatization*: Study Director Elke Anklam (see 16). Continue study.

(20) *Veratox for Fumonisin*s: Study Director Chuck Bird (see 13). Study completed. Approved as First Action **2001.06**.

(21) *Determination of Ochratoxin A in Wine and Beer by Immunoaffinity Column Cleanup and LC*: Study Director Angelo Visconti (see 17). Study completed. Approved as First Action **2001.01**.

(22) *Determination of Patulin in Clear and Cloudy Apple Juices and Apple Puree by LC*: Study Director Susan McDonald, MAFF, Food Safety Directorate, CSL, Food Science Laboratory, Colney Ln, Norwich NR4 7UQ, UK. Study completed. Approved as First Action **2000.02**.

(23) *Determination of Ochratoxin in Barley by LC*: Study Director Catherine Entwisle, Leatherhead Food RA, Randalls Rd, Surrey KT22 7RY, UK, Tel: +44-137-28-2205, Fax: +44-137-23-86228. Study completed. Approved as First Action **2000.03**.

(24) *Aflatoxin M1 in Liquid Milk by Immunoaffinity Column Cleanup and LC with Fluorescence Detection*: Study Director Sylviane Dragacci, AFSSA, Maison-Alfort Cedex, 94704 France, Tel: +33-1-4877-2742, Fax: +33-1-4977-2695. Study completed. Approved as First Action **2000.08**.

(25) *Determination of Ochratoxin in Roasted Coffee by LC*: Study Director Catherine Entwisle, Leatherhead Foods RA, Randalls Rd, Surrey, KT22 7RY, UK, Tel: +44-137-28-22205, Fax: +44-137-23-86228. Study completed. Approved as First Action **2000.09**.

(26) **989.06** *Aflatoxin B1 in Cottonseed Products and Mixed Feed, Enzyme-Linked Immunosorbent Screening Method*: AOAC-IUPAC method adopted First Action in 1989. (Note: Not Final Action). Recommended for repeal because the manufacturer is no longer producing the kit. On hold.

(27) *Determination of Deoxynivalenol in Corn, Wheat, Barley, and Malted Barley, ELISA*: Study Director Chuck Bird (see 13). On hold.

(28) *Total Aflatoxins in Corn, Poultry Feed, and Pet Food*: Study Director Chuck Bird (see 13). On hold.

(29) *Total Aflatoxins in Almonds and Raw and Roasted Peanuts*: Study Director Chuck Bird (see 13). On hold.

(30) **999.07** *Determination of Aflatoxin in Peanut Butter, Pistachios, Figs, and Paprika*: Study Director Elke Anklam (see 16). Adopted First Action in 1999.

(31) *NutraSure AflaQuant (Aflatoxin Quantitation Assay)*: Study Directors Jack B. Bookout and Srinand Sreevatsan, ClinCyte, 12268 Ragweed St, San Diego, CA 92129, Tel: +1-858-457-9669, Fax: +1-858-457-1827, E-mail: bookout8@hotmail.com. No progress. Discontinue study.

(32) *Patulin*: Study Director Avenida Arnaldo, University de São Paulo, School of Public Health, Occupational Health Branch 715-2 Andar, São Paulo 01255, Brazil. No progress. Discontinue study.

(33) *Aflatoxin of Spices by Aflatest Kit*: Study Director Mike Jackson, Pert Labs, PO Box 267, 145 Peanut Dr, Edenton, NC 27932, Tel: +1-252-482-4456, Fax: +1-252-482-5370, E-mail: mike.jackson@pert\_labs.com. A collaborative study is planned. Continue study.

(34) *Mycotoxins in Botanicals*: Topic Advisor Bruce Malone, Trilogy Analytical Lab, 111 West 4th St, Washington, MO 63090, Tel: +1-636-239-1521, Fax: +1-636-239-1531, E-mail: bruce@trilogylab.com. Surveying botanicals for mycotoxins and method development are needed. Continue topic.

### **Plant Toxins, Tam Garland**

(1) *Aristolochic Acid in Traditional Chinese Medicines*: Study Director Catharina Y.W. Ang, FDA/NCTR, HFT-230, 3900 NCTR Rd, Jefferson, AR 72079-9502, Tel: +1-870-543-7400, Fax: +1-870-543-7686, E-mail: cang@nctr.fda.gov. The work regarding aristolochic acid is critical and important to the health and safety of individuals. Continue study.

(2) *Glucosinolates*: Vacant. The position remains vacant, but glucosinolates remain an important issue and an active area of research.

(3) *Hypoglycine*: Study Director William G. Chase, FDA, 22201 23rd Dr, SE, Bothell, WA 98021-4434, Tel: +1-425-483-4990, Fax: +1-425-483-4996, E-mail: wchase@ora.fda.gov. Continue study.

(4) *Phytoestrogens*: Study Director Patricia A. Murphy, Iowa State University, Department Food Science and Human Nutrition, 2312 Food Science Bldg, Ames, IA 50011, Fax: +1-515-294-8181, E-mail: pmurphy@iastate.edu. Continue study.

(5) *Pyrrolizidine Alkaloids*: Study Director Helmut Wiedenfeld, Pharmazeutische Institut der Universität Bonn Endenich, An der Immenburg 4, Bonn, D-53121, Germany, Tel: +49-228-735225, Fax: +49-228-737929, wiedenfeld@uni-bonn.de. Continue study.

(6) **997.13** *Glycoalkaloids in Potato Tubers*: Study Director Karl Erik Hellenas, Livsmedels Verket, Box 622, Hammesplanaden 5, Uppsala, S-757-26, Sweden, Tel: +46-18-175500, Fax: +46-18-105848, E-mail: kahe@msmail.slv.se. Research was completed in this area. The human health indications reflect its importance. Continue study.

### **Phycotoxins, Michael Quilliam**

(1) *Amnesic Shellfish Poisoning Toxins*: Study Director Michael A. Quilliam, National Research Council of Canada, Institute for Marine Biosciences, 1411 Oxford St, Halifax, NS B3H3Z1, Canada, Tel: +1-902-426-9736, Fax: +1-902-426-9413, E-mail: michael.quilliam@nrc.ca. Some improvements have been noticed in the recent published papers on analytical procedures. Continue study.

(2) *Anatoxins*: Topic Advisor Kevin James, Cork Institute of Technology, Department of Chemistry, Bishopstown, Cork, Ireland, Tel: +353-21-326317, Fax: +353-21-345191, E-mail: kjames@cit.ie. Continue study.

(3) *Bioassays for Phycotoxins*: Co-Study Directors Donald Richard and Edmond Arsenaault, Canadian Food Inspection Agency, Biotoxins Unit, PO Box 5030, Moncton, NB E1C9B6, Canada, Tel: +1-506-851-7831, Fax: +1-506-851-3315, E-mail: richarddj@em.agr.ca. Continue study.

(4) *Cell Bioassays for Phycotoxins*: Topic Advisor Ronald Manger, Fred Hutchinson Cancer Research Center, PO Box 19024, Seattle, WA 98109-1024, Tel: +1-206-667-5838, Fax: +1-206-667-4182, E-mail: rmanger@fhcrc.org. This type of tool is very promising in terms of providing information on toxicological impact. Continue topic.

(5) *Ciguatoxins, Instrumental Methods*: Topic Advisor Robert W. Dickey, Gulf Coast Seafood Laboratory, FDA, PO

Box 158, Dauphin Island, AL 36528, Tel: +1-334-694-4480, Fax: +1-334-694-4477, E-mail: rdickey@cfsan.fda.gov. Reliable determination methods are still needed. Continue topic.

(6) *Ciguatoxins in Fish, Membrane Immunobead Assay*: Study Director Yoshitsugi Hokama, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Rd, Honolulu, HI 96822, Tel: +1-808-956-8682, Fax: +1-808-956-5506, E-mail: hokamay@jabsom.biomed.hawaii.edu. Data from the study cannot be submitted for statistical evaluation. On hold.

(7) *Diarrhetic Shellfish Poisoning Toxins, Assay Methods*: Topic Advisor J. Marc Fremy, AFSSA, Laboratoire d'Etude et de Recherche sur l'Hygiène et la Qualité des Aliments, 10 Rue Pierre Curie, Maisons Alfort F-94704, France, Tel: +33-1-4977-2751, Fax: +33-1-4977-2695, E-mail: j.fremy@paris.afssa.fr. Most progress has been noticed in the use of the protein phosphatase inhibition assay which seems very promising as a screening tool. Continue topic.

(8) *Diarrhetic Shellfish Poisoning Toxins, Instrumental Methods*: Topic Advisor Kevin James, Cork Institute of Technology, Department of Chemistry, Bishopstown, Cork, Ireland, Tel: +353-21-326317, Fax: +353-21-345191, E-mail: kjames@cit.ie. Some interesting suggestions have been published for improvement of liquid chromatographic methodology. Continue topic.

(9) *Microcystins*: Topic Advisor Geoffrey A. Codd, University of Dundee, Department of Biological Sciences, Dundee DD1 4HN, Scotland, UK, Tel: +44-1382-344272, Fax: +44-1382-344275, E-mail: g.a.codd@dundee.ac.uk. Despite no progress being reported, continue topic.

(10) *Neurotoxic Shellfish Poisoning Toxins*: Topic Advisor Steve Musser, FDA, Center for Food Safety and Applied Nutrition, 200 C St SW, Washington, DC 20204, Tel: +1-202-205-4371, Fax: +1-202-205-4428, E-mail: smm@vm.cfsan.fda.gov. Continue topic.

(11) *Paralytic Shellfish Poisoning Toxins, Immunological Methods*: Vacant. No progress. Discontinue study.

(12) *Paralytic Shellfish Poisoning Toxins, Instrumental Methods*: Study Director James F. Lawrence, Health Canada, Food Research Division, Banting Bldg, 2203D, Ottawa, ON

K1A 0L2, Canada, Tel: +1-613-957-0947, Fax: +1-613-941-4775, E-mail: jim\_lawrence@hc-sc.gc.ca. Improvement on simplification of LC separation is in progress. Continue study.

(13) *Paralytic Shellfish Poisoning Toxins in Mussels, Neuroblastoma Cell Bioassay*: Study Director Joanne Jellett, Jellett Biotek Ltd., 101 Research Dr, Dartmouth, NS B0J 1K0, Canada, Tel: +1-902-424-8670 ext. 147, Fax: +1-902-424-4679, E-mail: jjellett@innovacorp.ns.ca. Many difficulties occurred with the collaborative study performance. Discontinue study.

(14) *Pfiesteria Toxins*: Topic Advisor John Ramsdell, NOAA, National Ocean Service, Center for Coastal Environmental Health & Biomolecular Research, 219 Fort Johnson Rd, Charleston, SC 29412, Tel: +1-843-762-8510, Fax: +1-843-762-8700, E-mail: john.ramsdell@noaa.gov. More information to evaluate importance of subject is needed. Continue topic.

(15) *Receptor Assays for Phycotoxins*: Topic Advisor Frances Van Dolah, NOAA, National Ocean Service, Center for Coastal Environmental Health & Biomolecular Research, 219 Fort Johnson Rd, Charleston, SC 29412, Tel: +1-843-762-8529, Fax: +1-843-762-8700, E-mail: Fran.Vandolah@noaa.gov. This subject is very promising. Continue study.

(16) *Histamine Determination by Flow Injection Analysis*: Study Director James Hungerford, FDA, Seafood Product Research Center, 22201 23rd Dr SE, Bothell, WA 98021, Tel: +1-206-483-4849, Fax: +1-206-483-4996. This study does not really belong to this Committee's activities because the analyte is not a phycotoxin.

#### **Allergens, Kristina Williams**

*Determination of Peanut Material in Food by a Sandwich Enzyme-Linked Immunosorbent Assay*: Study Director Chuck Bird, Neogen Corp., 620 Leshar Pl, Lansing, MI 48912, Tel: +1-517-372-9200, Fax: +1-503-985-5412, E-mail: cbird@neogen.com. Validation of a reliable screening tool is needed and will be helpful in solving the critical situation. Continue study.