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## News from IUPAC

### Japanese Version of IUPAC, IUPHAR, and IUTOX Report on Natural and Anthropogenic Environmental Oestrogens: The Scientific Basis for Risk Assessment

IUPAC's Division of Chemistry and the Environment (VI) has prepared a Japanese translation of the Special Issue of *Pure and Applied Chemistry* (Vol. 70, No. 9, 1998) that addressed the scientific underpinning for the controversial international concerns about endocrine disrupters. The translation effort was coordinated by Dr. Junshi Miyamoto, President of IUPAC Division VI. The Special Issue, resulting from the cooperation of three preeminent international scientific organizations, covers a wide range of scientific aspects and subjects relevant to the issue and provides the background information necessary for informed debate.

The 19-chapter report, *Natural and Anthropogenic Environmental Oestrogens: The Scientific Basis for Risk Assessment*, was prepared by IUPAC in collaboration with the International Unions of Pharmacology (IUPHAR) and of Toxicology (IUTOX), and with the support of the International Council for Science (ICSU). The subject, commonly known as *endocrine* or *hormone disrupters*, is a complex, emotional, and controversial issue for which many scientific questions remain. Several aspects related to human and environmental health are presented, and the conclusions and recommendations drafted by the presidents of the three Unions review the policy issues and how they relate to the science.

This publication is the result of continuous efforts to address issues of societal and industrial concern objectively, involving the chemical sciences. A similar report on oil spill countermeasures technologies and response methods was published in January 1999.

For further information, visit <http://www.iupac.org/publications/pac/special/0998/>, or contact Dr. Junshi Miyamoto, Sumitomo Chemical Company, Ltd., 5-33 Kitahama 4-Chome, Chuo-ku, Osaka 541-8550, Japan; E-mail: [yokonaga@ohprime.sumitomo-chem-co.jp](mailto:yokonaga@ohprime.sumitomo-chem-co.jp); Tel.: +81 (6) 6220 3152; Fax: +81 (6) 6220 3550.

### IUPAC Observer's Report on the Ninth Meeting of the IPCS Program Advisory Committee, Berlin, Germany, 5–8 October 1998

Dr. John H. Duffus (Edinburgh Centre for Toxicology, 43 Mansionhouse Road, Edinburgh EH9 2JD, Scotland, UK; E-mail: [J.H.Duffus@btinternet.com](mailto:J.H.Duffus@btinternet.com)), Chairman of the IUPAC Chemistry and Human Health Division's Commission on Toxicology (VII.C.2) has submitted the following report:

#### Introduction

The ninth meeting of the International Program on Chemical Safety (IPCS) Program Advisory Committee (PAC-9) was hosted in Berlin, Germany from 5–8 October 1998 by the German Ministry of Environment, Nature Conservation, and Nuclear Safety. Dr. M. Mercier, IPCS Director, noted that two of the three cooperating organizations had been going through a period of reformation and reconstruction. In particular, the World Health Organization (WHO), under its new Director General (Dr. Gro Harlem Brundtland) was developing a structure of "clusters", of which a new cluster on Sustainable Development and Healthy Environment would include the Program on Chemical Safety (PCS).

Dr. P. Toft, IPCS Associate Director, described activities undertaken by IPCS during this period. Presentations were also made by Mr. J. Willis, representing United Nations Environment Program (UNEP) Chemicals, and Dr. J. Takala, representing the International Labor Organization (ILO), to outline activities undertaken by each of their organizations.

Dr. Toft noted that close cooperation had continued with the Food and Agriculture Organization (FAO) in relation to the operations of the Joint Expert Committee on Food Additives (JECFA) and Joint Meeting on Pesticide Residues (JMPR), as well as with the Organization for Economic Cooperation and Development (OECD) on a number of risk assessment and risk management programs. Also noted was the strengthening of relationships with several nongovernmental organi-

zations, including IUPAC. Some concern was expressed that current WHO restructuring may indicate a subtle shift away from a focus on human health protection toward social health and sustainable development priorities. However, Mrs. Singh, the new Executive Director for Sustainable Development and Healthy Environments, had indicated her commitment to maintaining IPCS as the prime carrier of responsibilities for addressing human health issues arising from chemical use.

In his presentation, Mr. Willis noted that UNEP Chemicals completed negotiation of a legally binding instrument for the Prior Informed Consent (PIC) procedure and initiated negotiations for a legally binding instrument to control Persistent Organic Pollutants (POPs). The continuing strategy of UNEP Chemicals includes strengthening of national capacities for chemicals management, development of cleaner methods of production, and strengthening of partnerships with other stakeholders, including IPCS.

Dr. Takala referred to the strong interaction between ILO and WHO on occupational hygiene and chemical safety issues, with particular emphasis on a globalized approach to resolving issues of social justice and safe working conditions. He outlined some of the methods by which ILO disseminates information on chemical hazards in the workplace, including the availability and utility of CD-ROMs and internet-accessible databases. He noted that completion of the project on harmonization of chemicals classification and labeling (it is hoped by the year 2000) would have a significant impact on ILO programs.

### **Declarations of Interest**

There has been some criticism of IPCS for using experts from industry on working groups assessing certain substances. In order to ensure transparency and to eliminate any suggestion that IPCS assessments may be biased, a form has been developed for participants in IPCS activities to declare potential conflicts of interest. The PAC endorsed the Declaration of Interest form. It is important to ensure the greatest possible expertise on IPCS Expert Groups while safeguarding the objectivity of the process. As this effort may sometimes lead to perceived conflicts of interest, the principle of transparency is particularly important. It was accepted that the form should be used to disqualify experts only when they are being paid to advocate a particular position, or where their potential conflicts of interest are so severe as to call their objectivity into question.

In order to give this matter further consideration, the PAC recommended that a small working group be commissioned to liaise with the IPCS director, representatives of the three cooperating organizations, and their legal advisors where necessary, to report back to

the PAC Standing Committee within six months on issues relating to transparency and disclosure of conflict of interest. The PAC members recommended to constitute this subcommittee are Dr. W. Farland, Dr. R. Fielder, Mr. M. Wright, and, as an independent contributor, Dr. J. H. Duffus. The objective of these activities should be to attain a culture of transparency and objectivity both within IPCS and with outside clients, collaborators, and the interested public.

### **Interorganization Program for the Sound Management of Chemicals (IOMC)**

The IOMC was established in 1995 to serve as a mechanism for coordinating efforts of intergovernmental organizations in the field of chemical safety. The IOMC is designed to be a cooperative undertaking among intergovernmental organizations that, within the framework of their own respective constitutional mandates, work together as partners to promote international work. Scientific and technical work under the framework of the IOMC is carried out through the existing structures of the participating organizations, either individually or jointly. The original six participating organizations are UNEP, ILO, FAO, WHO, United Nations International Development Organization (UNIDO), and OECD. The United Nations Institute for Training and Research (UNITAR) formally joined the IOMC as a participating organization in January 1998.

Specific technical level coordinating groups have been established in relation to the following program or subprogram areas: harmonization of classification and labeling of chemicals, chemical information exchange, chemical accident prevention, preparedness and response, and pollutant release and transfer registers. These groups provide a regular means for all interested bodies working in the respective areas to consult with each other on program plans and activities, and to discuss ways and means of ensuring that the activities are mutually supportive. With agreement of the IOMC participating organizations, international organizations, regional organizations, governments, and interested industry, labor, and public interest groups that have significant activities in the respective areas can be invited to participate in the coordinating groups. The Terms of Reference and Secretariat contact for each of the IOMC coordinating groups is available on the IOMC web site (<http://www.who.int/iomc/cg.html>).

IOMC publishes biannually a calendar of events to inform governments, intergovernmental organizations, and nongovernmental organizations about forthcoming events of the participating organizations in the area of chemical safety related to the programs and work of Chapter 19, Agenda 21. The IOMC calendar is available on the IOMC web site, from the IOMC Secretariat, or from any of the participating organizations. Further-

more, to facilitate provision of information and use of developed materials, an annotated list of available training materials will be posted on the IOMC web site and linked to the Inventory of Information Sources on Chemicals on UNEP's web site.

### **Reduction of Risk from Exposure to Chemicals**

The following various activities were proposed.

#### *Public Awareness Activities*

With the goal of promoting the safe use of chemicals through public information and education campaigns, existing materials prepared by IPCS and collected from countries (e.g., publications, audiovisual material, brochures, posters, and examples of poisons prevention campaigns) are being assembled into a package, which may be adapted to the needs of individual countries and used for primary prevention activities.

#### *Characterization of Populations*

In order to promote better understanding of the impact of chemicals on vulnerable groups, such as children, women, malnourished people, and specific groups of workers, and to encourage prevention, it was recommended that IPCS consult widely with other organizations who may have collected data on vulnerable populations in order to enable risk assessments for such vulnerable groups to be made using relevant data.

#### *Training Courses and Materials*

Training activities for poisoning prevention and treatment include the following:

- *Operating Analytical Facilities:* An introductory (half-day) course by Dr. R. Braithwaite (Birmingham, England, UK) with members of the INTOX Analytical Group. An advanced level (one- to two-week) course, with practical laboratory training, is at the planning stage.
- *Provision of Evaluated Information:* Work plans for preparation of further evaluated documents for poisons control, up to the end of 1999, include 100 Poisons Information Monographs (PIMs), of which 30 will contain analytical sections where laboratory techniques are important for patient diagnosis and management; 23 Treatment Guides; and Antidote Volumes (chelating agents; organophosphorus poisoning; amatoxin, gyrometrine, and isoniazid poisoning; decontamination procedures; and enhancement of elimination). During the biennium 2000–2001, a further 150 PIMs and 3 Antidote Volumes are scheduled for preparation. These publications will be issued on INTOX and INCHEM CD-ROMs biennially, as well as on the INCHEM web site, and summaries of the Antidote Volumes will appear in *Clinical Toxicology*.

• *Information Management Tools and Networking:* Systems development during the period up to the end of 1999 is expected to include the following:

- An enhanced Version 4 of the INTOX CD-ROM, tested for single and multiple PC terminal use, and issued in English, French, Portuguese, and Spanish (for use at poisons centers).
- A database management system for a chemicals products register (for use in ministries and other institutions).
- Specific software applications based on the INTOX system, including a system for the Pesticide Epidemiology Project (see IPCS/PAC/98.15).
- Enhancement of the INTOX CD-ROM, with facilities for downloading substance characteristics and product information into the INTOX Version 4 system.

#### *Other Activities*

Other proposed activities include the following:

- Assembling guidance on emergency intervention levels for chemicals in a major incident.
- Expanding the number of Chemical Emergency Response Cards for first responders. A list of priority chemicals is being drawn up, based on a survey of the most commonly involved chemicals in incidents to which emergency services respond.
- Completion and testing of a modular, multilevel training course on chemical incident response for different authorities and issuing material in English, French, and Spanish (depends on availability of funding).
- Completion and testing of the database management software systems for the full range of proposed registries and issuing it in English, French, and Spanish, including the provision of user's manuals and training packages.
- Developing a database that consolidates evaluated information for chemicals emergency response in order to provide a compendium of official reviews of major incidents and results of the international data exchange on incidents; to be issued biannually on CD-ROM and updated regularly on the Web as a contribution to the Global Information Network on Chemicals (GINC) (depends on availability of funding).
- Consolidating an international data exchange mechanism for major chemical incidents with analysis and dissemination of the data (e.g., on CD-ROM and the Web, as proposed above), with consideration of the need for regional mechanisms through regional WHO Collaborating Centers.

## Risk Assessment Issues

- The first 12 Concise International Chemical Assessment Documents (CICADs) have been completed and a guidance manual compiled for authors involved in the preparation of these documents. IPCS has collaborated with OECD in the preparation of the documents, and this collaboration will continue to include IPCS involvement in OECD assessments of existing chemicals, concentrating on high production volume chemicals.
- Continuing efforts are being made to ascertain the effective use of Environmental Health Criteria documents to ensure that they are meeting their objectives.
- Risk assessment and safety evaluation of pesticides continues, with increased efforts to obtain and ensure international collaboration in these matters. While appreciating that current IPCS links with FAO on issues of pesticide risk assessment could facilitate the collection of data on pesticide exposures and health impacts, the PAC considered that the problem requires partnership with a broader range of stakeholders, including industry and various national, regional, intergovernmental, and nongovernmental organizations. The PAC recommended that the IOMC may be well placed to assist with coordinating this liaison. Partnership with industry was considered to be vital, because there is a need for ready access to information on pesticide product formulations. The PAC noted and encouraged the further development of efforts to harmonize pesticide risk assessment processes, particularly those intended to make more use of existing national assessment documents.
- The work on risk assessment of endocrine disrupters will produce an online repository of global research on the health and ecological effects of these substances. In addition, a scientific peer-reviewed global assessment document will be published to summarize what is known and what remains unknown about the effects of endocrine disrupters.

## Research Methodology

Development of risk assessment methodology will continue, and research in this area will be encouraged, particularly with reference to the derivation of better exposure guidance values. It was recommended that the intended outcomes of the research methodology projects specifically address connectivity with other IPCS risk assessment programs so that they may be applied strategically to achieve overall program objectives. Such projects could also have an important catalytic role in promoting collaborative research activities, seminars, and workshops, with the opportunity to achieve useful outcomes in risk assessment methodology with only a modest investment of scarce IPCS resources. It was further recommended that IPCS continue to play a role in developing methodological documents on the principles of risk assessment.

## Conclusion

As an observer at this meeting, I was impressed by the wide range of activities sustained by IPCS on rather meager funds. It is a pity that the work of IPCS is not better known in the chemical community. This relative obscurity exists largely because IPCS has not been as well publicized as it should be by WHO or by national governments via their public information services. For some reason, the publications side of WHO is much less successful in marketing its products than are commercial publishers. Part of the solution, identified by PAC, is to draw the attention of WHO to the need to make the IPCS component of its web site more visible and accessible to those seeking information on chemical safety programs. PAC also recommended that its members actively seek to promote the use of IPCS information resources, such as INCHEM, INTOX, etc., within their own regions. For myself, I strongly recommend that every institution involved in chemistry and concerned about the safety of chemicals make full use of IPCS publications as the most reliable source of evaluated information available in this area.

With great sadness, we report that Prof. Dr. Antonin A. Vlček passed away on Sunday, 10 October 1999. Throughout his career, he was very active in IUPAC. He was a member of the IUPAC Bureau from 1979 to 1987, and he also served as National Representative on the Commission on Electroanalytical Chemistry (V.5) from 1984 to 1991.