

US EPA ARCHIVE DOCUMENT

## AGENDA

### FIFRA SCIENTIFIC ADVISORY PANEL (SAP) OPEN MEETING

October 6 – 9, 2009

FIFRA SAP WEB SITE <http://www.epa.gov/scipoly/sap/>  
OPP Docket Telephone: (703) 305-5805  
Docket Number: EPA-HQ-OPP-0516

U.S. Environmental Protection Agency  
Conference Center - Lobby Level  
One Potomac Yard (South Bldg.)  
2777 S. Crystal Drive, Arlington, VA 22202

#### Evaluation of Updated Standard Operating Procedures for Residential Pesticide Exposure Assessment

Please note that all times are approximate  
(See note at the end of the Agenda)

**Tuesday, October 6, 2009**

- 8:30 A.M.**    **Opening of Meeting and Administrative Procedures** – Myrta R. Christian, M.S., Designated Federal Official, Office of Science Coordination and Policy, EPA
- 8:35 A.M.**    **Introduction and Identification of Panel Members** – Steven G. Heeringa, Ph.D., FIFRA Scientific Advisory Panel Chair
- 8:50 A.M.**    **Welcome and Opening Remarks** – Steven Bradbury, Ph.D., Deputy Director, Office of Pesticide Programs, EPA
- 9:00 A.M.**    **Welcome and Opening Remarks** – Tina E. Levine, Ph.D., Director, Health Effects Division, Office of Pesticide Programs, EPA
- 9:15 A.M.**    **Meeting Goals and Objectives** – Dana Vogel, Health Effects Division, Office of Pesticide Programs, EPA
- 9:30 A.M.**    **Overview of Residential Pesticide Exposure Assessment** – Jeff Evans and Jeff Dawson, Health Effects Division, Office of Pesticide Programs, EPA
- 10:15 A.M.**    **Break**
- 10:30 A.M.**    **Overview of Residential Pesticide Exposure Assessment (cont'd.)** – Jeff Evans and Jeff Dawson, Health Effects Division, Office of Pesticide Programs, EPA
- 11:15 A.M.**    **Handler Exposure** – Wade Britton, MPH, Health Effects Division, Office of Pesticide Programs, EPA
- 12:00 P.M.**    **Lunch**
- 1:00 P.M.**    **Post-application Dermal Exposure** – Margarita Collantes, Health Effects Division, Office of Pesticide Programs, EPA

- 1:45 P.M. **Post-application Inhalation Exposure** – Matthew Lloyd, CIH, Health Effects Division, Office of Pesticide Programs, EPA
- 2:30 P.M. **Break**
- 2:45 P.M. **Post-application Non-dietary Ingestion Exposure** – Shalu Shelat, Health Effects Division, Office of Pesticide Programs, EPA
- 3:15 P.M. **Lawns/Turf** – Charles Smith, Health Effects Division, Office of Pesticide Programs, EPA
- 3:45 P.M. **Gardens and Trees** – Matthew Crowley, Health Effects Division, Office of Pesticide Programs, EPA
- 4:15 P.M. **Insect Repellents** – Mary Clock-Rust, Health Effects Division, Office of Pesticide Programs, EPA
- 4:45 P.M. **Adjourn**

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Pesticide Exposure Assessment**

**Wednesday, October 7, 2009**

- 8:30 A.M. Opening of Meeting and Administrative Procedures** – Myrta R. Christian, M.S, Designated Federal Official, Office of Science Coordination and Policy, EPA
- 8:35 A.M. Introduction and Identification of Panel Members** – Steven G. Heeringa, Ph.D., FIFRA Scientific Advisory Panel Chair
- 8:50 A.M. Follow-up from Previous Day’s Discussion** – TBD, Health Effects Division, Office of Pesticide Programs, EPA
- 9:15 A.M. Outdoor Fogging/Misting Systems** – Zaida Figueroa, Health Effects Division, Office of Pesticide Programs, EPA
- 9:45 A.M. Indoor Environments** – Kelly Lowe, Health Effects Division, Office of Pesticide Programs, EPA
- 10:15 A.M. Break**
- 10:30 A.M. Treated Pets** – Alexandra LaMay, Health Effects Division, Office of Pesticide Programs, EPA
- 11:15 A.M. Impregnated Materials** – Aaron Niman, Health Effects Division, Office of Pesticide Programs, EPA
- 11:45 A.M. Paints and Wood Preservatives** – Aaron Niman, Health Effects Division, Office of Pesticide Programs, EPA
- 12:15 P.M. Lunch**
- 1:15 P.M. Public Comments**
- 3:30 P.M. Break**
- 3:45 P.M. Charge to Panel – Question 1**

- 1. Exposure Sources, Routes, and Populations of Concern**

The scope of this effort by the Agency has been to focus on revising its methods for conducting exposure assessments for the most commonly available products which, through various routes (i.e., dermal, inhalation, etc.), may lead to exposure in the home or otherwise in the general population. For example, pet uses, lawn care, insect repellents, and indoor pest control are common exposure sources and dermal, inhalation, and non-dietary ingestion through mouthing behavior are common exposure routes. A constant challenge in the completion of exposure assessments associated with the residential uses of pesticides is ensuring that they are reflective of the current marketplace which rapidly evolves to provide the latest conveniences to consumers. The advent of monthly flea control spot application products is one example of market forces and technology altering the way pesticides are used in and around the home. These revisions have been primarily based on the availability of recent data received from various pesticide registrants as well as other public and private data. The Agency is aware that there are other residential exposure sources for which assessments have been conducted in the past (e.g., field volatilization and mosquito control applications), but which have not been included in this current effort. While future revisions will focus on methodologies for the aforementioned exposure sources, the use patterns included in the document are the focus of this FIFRA SAP meeting.

Additionally, as a standard routine pesticide exposure assessment practice, the Agency uses select age-based life stages (referred to as “sentinel populations”) considered the most highly exposed for each scenario as a means to encompass exposures and risks for all potentially exposed age groups. This is done mainly to streamline the exposure and risk assessment process and save time and resources, but also as a reflection of the limitations of our data. For example, though based on limited data, observational studies appear to indicate that infants exhibit higher mouthing behavior than toddlers. However, toddlers may be the chosen sentinel population for non-dietary exposure assessments in certain scenarios because they spend a longer amount of time doing certain activities that contribute to greater overall exposure levels. This behavioral difference results in a greater potential to contact surface residues and thus a greater potential for exposure.

- **Please comment on the completeness of both the exposure sources and exposure routes identified for each scenario. If a type of product or a potential source of exposure has not been identified, please identify them and suggest modifications to ensure that they are reflected in the SOP document.**
- **Please comment on whether the sentinel population approach is reasonable for exposure assessment purposes and on the age-based choices for each scenario.**

5:00 P.M.    Adjourn

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#### Evaluation of Updated Standard Operating Procedures for Residential Pesticide Exposure Assessment

**Thursday, October 8, 2009**

- 8:30 A.M. Opening of Meeting and Administrative Procedures** – Myrta R. Christian, M.S, Designated Federal Official, Office of Science Coordination and Policy, EPA
- 8:35 A.M. Introduction and Identification of Panel Members** – Steven G. Heeringa, Ph.D., FIFRA Scientific Advisory Panel Chair
- 8:50 A.M. Follow-up from Previous Day's Discussion** – TBD, Health Effects Division, Office of Pesticide Programs, EPA
- 9:15 A.M. Charge to Panel – Question 2**

#### 2. Utility and Transparency of the Residential SOPs

Two primary goals of the Residential SOPs are to 1) serve as an instruction manual for residential pesticide exposure assessors, and 2) provide transparency to stakeholders who wish to understand how the Agency conducts residential pesticide exposure assessments.

- **Please comment on whether the Residential SOPs meet these goals, and if not, identify where improvements are needed.**

- 10:30 A.M. Break**
- 10:45 A.M. Charge to Panel – Question 3**

#### 3. Consideration of Data Sources

The Agency has attempted to comprehensively identify sources of applicable data

for use in revising the Residential SOPs by evaluating exposure assessment literature, studies generated by pesticide registrants, survey research, and data provided in peer reviewed Agency publications such as the *Exposure Factors Handbook*, the *Child-Specific Exposure Factors Handbook*, and *Guidance on Selecting Age Groups for Monitoring and Assessing Childhood Exposures to Environmental Contaminants*.

- **Please comment on the strengths and limitations of the data sources identified by the Agency, including the implications of associated study designs, and how these factors might impact their use in exposure assessment.**
- **Please comment on whether additional data are available and how they might be incorporated into the document.**

12:00 P.M. Lunch

1:00 P.M. Charge to Panel – Question 4

#### **4. Analysis and Utilization of Available Data**

The Agency has summarized and presented the data analysis for all exposure factors. Examples include the analysis of transferable residues indoors, and on lawns, garden plants, and pets; analysis of post-application exposure studies for the purposes of developing transfer coefficients for children playing on lawns, homeowner gardening, and contacting pets; and analysis of insect repellent efficacy studies to establish formulation-specific application rates. Additionally, where data are lacking and surrogate data have been proposed or data are unavailable and expert judgment is applied, the Agency has attempted to explain the rationale behind its choices. Examples include “time spent outdoors playing” as a surrogate for time spent on lawns, “time spent outdoors at a farm” as a surrogate for time spent at a “pick-your-own” farm, and assumptions for spray volumes for residential handlers.

- **Please comment on whether the various data analyses and data choices for each scenario are scientifically sound and reasonable for the purposes of residential pesticide exposure assessment. Please include commentary on the analysis and use of:**
  - a. exposure data for developing pet activity dermal transfer coefficients;**
  - b. scenario-specific data used to estimate surface-to-hand residue transfer for non-dietary ingestion exposure assessments;**
  - c. repellent application data to establish formulation-specific rates;**
  - d. occupational re-entry exposure data to establish dermal transfer coefficients for home gardening and ornamental maintenance; and,**



- e. **data supporting differentiation between potential exposures following indoor broadcast treatments and localized “crack-and-crevice” treatments.**
- **Please identify specific examples and recommendations for analytical modifications or any additional data that may enhance or supplement those presented in the SOPs.**

2:30 P.M. Break

2:45 P.M. Charge to Panel – Question 5

## 5. Residential Exposure Assessment Methodologies and Algorithms

Most of the residential exposure scenarios use algorithms that employ chemical- and scenario-specific exposure monitoring data coupled with applicable exposure factors to predict exposures. They are common approaches for pesticide exposure assessment and consistent with the Agency’s *Guidelines for Exposure Assessment* with some being included in recent SAP discussions. Examples include the use of applicator exposure monitoring data for various chemicals and scenarios to derive the unit exposure-based residential handler exposure algorithm (January 2007 SAP), the use of post-application exposure monitoring data for various chemicals and scenarios to derive the transfer coefficient-based post-application dermal exposure assessment (December 2008 SAP), and the non-dietary ingestion exposure model (August 2005 and August 2007 SAP). Other scenarios, like post-application inhalation exposure following indoor and outdoor fogger applications, now rely more heavily on standard 1<sup>st</sup> principles modeling to predict exposures, which tend to require less case-specific data. There are also some scenarios, like insect repellents and dust ingestion indoors, that are new additions to the Residential SOPs whose methodologies will benefit from SAP review.

- **Please comment on whether the methodologies and algorithms for each scenario used are scientifically sound and reasonable for the purposes of these SOPs. Please include commentary on:**
  - a. **scenario-specific approaches for both hand-to-mouth and object-to-mouth non-dietary ingestion exposure;**
  - b. **post-application inhalation exposure (e.g., the well-mixed box model); and,**
  - c. **considerations for assessing exposure via ingestion of dust.**
- **Please identify specific examples and provide recommendations for improvement or alternative approaches.**

4:30 P.M. Adjourn



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#### Friday, October 9, 2009

- 8:30 A.M. Opening of Meeting and Administrative Procedures** – Myrta R. Christian, M.S, Designated Federal Official, Office of Science Coordination and Policy, EPA
- 8:35 A.M. Introduction and Identification of Panel Members** – Steven G. Heeringa, Ph.D., FIFRA Scientific Advisory Panel Chair
- 8:50 A.M. Follow-up from Previous Day's Discussion Opening of Meeting and Administrative Procedures** – TBD, Health Effects Division, Office of Pesticide Programs, EPA
- 9:15 A.M. Charge to Panel – (continued as needed)**
- 11:30 A.M. Adjourn**

Please be advised that agenda times are approximate; when the discussion for one topic is completed, discussions for the next topic will begin. For further information, please contact the Designated Federal Official for this meeting, Myrta R. Christian, via telephone: (202) 564-8498; fax: (202) 564-8382; or email: christian.myrta@epa.gov