

I. Revised OP Cumulative Risk Assessment

I. Future Work

The Revised OP Cumulative Risk Assessment provides a detailed picture of possible exposure to 32 OPs. Details retained in the assessment are sufficient to evaluate the impact of the methods and assumptions on the results of the assessment. This process is particularly important for a cumulative OP assessment because of its complexity and much additional data compared to single-chemical assessments. It uses distributions of data in place of point estimates to the extent possible. Appropriate information submitted during the comment period has been incorporated as appropriate as have comments from the March 2002 SAP review. This revised assessment utilizes the same innovative methodologies as that in the preliminary document. Since the issuance of the preliminary assessment OPP has analyzed the results presented therein and revised the outputs as necessary. Also further risk mitigation on individual chemicals which has occurred since December 2001 is incorporated in this revised assessment. This document also contains a section discussing the FQPA safety factor as it was applied in this cumulative assessment. That Section of the assessment will be reviewed by the SAP in June of 2002. This revised assessment will undergo an additional comment period during June and July. EPA will evaluate the SAP's comments as well as other comments or data that it receives and will modify this assessment as appropriate. In addition, as existing analyses are revised or new information is obtained, EPA will review this assessment and make further changes as appropriate.

With respect to the next steps discussed in the preliminary assessment, the revised document reflects essentially all of the proposed short term actions. In that document some of the activities were flagged as long term activities. These activities are not necessary for completion of the OP cumulative risk assessment, but are actively being pursued by OPP at present in the interest of improving OPP's risk assessment process. These long term steps are listed below categorized by discipline. Please note that no long term steps were discussed in the food and risk assessment methodology sections of the preliminary cumulative risk assessment and therefore there are no listings in these sections below.

As with the preliminary assessment, new information submitted during the comment period that will serve to improve the accuracy of the assessment will be incorporated into the assessment as appropriate. Also, further risk mitigation on individual chemicals which may have occurred since December of 2001 is incorporated in this revised assessment.

1. Hazard Assessment

- ① Long term: Research to develop and implement physiologically based pharmacokinetic [PBPK] models, which describe the time course disposition of chemicals and their metabolites, are well suited to provide more refined estimates of relative toxic potencies and points of departure for future cumulative risk assessment. OPP is currently working with the EPA's Office of Research and Development on the development and testing of such models for common mechanism pesticides.
- ② Long term: Pursue with ORD investigations on the interactions among simple mixtures of common mechanism pesticides to better understand the concept and application of dose additivity.

2. Food Exposure Assessment

To be determined.

3. Drinking Water Exposure Assessment

- ① Long term: What aspects of the modifications to the water residue modeling process can be applied to the conduct of single chemical aggregate assessments? What differences in assumptions may be needed for implementation of that process for single chemical assessments?

4. Residential Exposure Assessment

- ① Long term: Develop a science-based process for incorporation of spray drift and other sources of exposure into residential exposure assessment.
- ② Long term: What aspects of the modifications to the residential exposure estimation process can be applied to the conduct of single chemical aggregate assessments? What differences in assumptions may be needed for implementation of that process for single chemical assessments?
- ③ Long term: Develop better data defining the hand to mouth behavior of children in a variety of settings and for active and quiet play.

5. Risk Assessment Methodology

To be determined.