

Food Quality Protection Act: Cumulative Risk Assessment for the Organophosphate Pesticides

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The primary focus of EPA's Office of Pesticide Programs activities over the past year has been the development of a cumulative risk assessment for the organophosphate pesticides (OPCRA). This risk assessment is the most complicated, comprehensive attempt to measure cumulative exposure to a particular group of pesticides that has ever been undertaken.

The OPCRA final document exceeds 5,000 pages in length. The methodologies developed by EPA to collect and analyze the data are extremely sophisticated and complex and have also been a source of much controversy in the agricultural stakeholder community. EPA is relying heavily on the advice of the FIFRA Science Advisory Panel, a panel of expert scientists, especially those in statistical modeling and toxicology, for validation of the methods used. These methodologies have been developed over the past 5 years, and represent a significant advance in EPA's abilities to evaluate pesticides in a comprehensive manner. It must be emphasized that the current risk assessment, which was released in January 2002 for public and scientific comment, is a *preliminary* assessment. The Agency expects a large number of comments to be submitted until the comment period closes on March 8, 2002.

A cumulative risk assessment is the process of combining exposure (the amount of pesticide to which an individual is exposed) and hazard (the health effects a pesticide could cause) from all substances that share a common mechanism of toxicity. In assessing hazard associated with the organophosphate pesticides, EPA analyzed their common method of toxicity, inhibition of acetylcholinesterase, as the means for assessing risk.

The goal of the organophosphate cumulative risk assessment (OPCRA) is to measure the probability of exposure to more than one organophosphate pesticide and to assess the effects of this combined exposure. The assessment incorporates possible OP exposures

from structural, recreational, and drinking water, as well as from OP residues in consumed food. Each component of the risk assessment uses the best available data: data from surveys of what people eat and drink, of their activities involving pesticide use around the home and workplace, and monitoring studies of pesticide residues in these environments.

A comprehensive assessment of the organophosphates may raise concerns with growers about further restrictions on materials available for crop production. However, the results of the OPCRA may not have much effect on current OP use. Much work has been done previously on the individual organophosphates to reduce their risks as they go through the FQPA-mandated tolerance reassessment process.

The risks for the individual OPs will be factored into the cumulative equation at these lower levels. Most structural and home-garden uses have already been cancelled or significantly curtailed. Routes of exposure through drinking water have already been determined to be negligible.

It must be noted again that the recently released OP cumulative risk assessment is preliminary. EPA is continuing to seek input from the scientific community and stakeholders and is aware that revisions and refinements will be necessary. Determining cumulative exposure is a huge task, and this is the first time EPA has attempted develop a comprehensive profile of human exposure to a group of chemicals with common modes of toxicity. It will be an evolving process that will take years to refine.

Following the comment period closure of March 8, 2002, EPA will consider submitted comments and plans to issue a revised risk assessment in the summer of 2002.

The preliminary OPCRA may be accessed at www.epa.gov/pesticides/cumulative.

