

US EPA ARCHIVE DOCUMENT

Ethion Facts

EPA has assessed the risks associated with the organophosphate (OP) pesticide ethion, and identified risk mitigation measures and data needed to reduce and better characterize those risks. As reflected in the Agency's reregistration Eligibility Decision (RED) document, the registrants of ethion have requested voluntary cancellation of their products rather than committing to develop the additional data. These data include developmental neurotoxicity studies, and data on the effects of water treatment on ethion in drinking water. The voluntary cancellations will be "phased-in" to facilitate the users' transition to other products. In the interim before sale, distribution, and use of ethion cease, the registrants have agreed to measures which mitigate the worker and ecological risks associated with ethion.

The ethion agreement was reached after the risk assessment and mitigation proposal were completed through the OP pilot public participation process, which increases transparency and maximizes stakeholder involvement in EPA's development of risk assessments and risk management decisions. EPA worked extensively with affected parties during the development of the risk mitigation proposal. The agreement on the voluntary cancellation, based on the registrants' decision not to develop the required data, concludes the OP pilot process for ethion. The registrants have informed users of the interim risk mitigation measures and the phase-out schedule, explained further below.

The OP Pilot Public Participation Process

The organophosphates are a group of related pesticides that affect the functioning of the nervous system. They are among EPA's highest priority for review in implementing the Food Quality Protection Act.

EPA is encouraging the public to participate in the review of the OP pesticides. Through a six-phased pilot public participation process, the Agency is releasing for review and comment its preliminary and revised scientific risk assessments for individual OPs. (Please contact the OP Docket, telephone 703-305-5805, or see EPA's web site, www.epa.gov/pesticides/op.)

EPA is exchanging information with stakeholders and the public about the OPs, their uses, and risks through Technical Briefings, stakeholder meetings, and other fora. USDA is coordinating input from growers and other OP pesticide users.

Based on current information from interested stakeholders and the public, EPA is making interim risk management decisions for individual OP pesticides. The Agency will make final decisions after considering the cumulative risks of the OP. (Please see

Uses

- An insecticide and acaricide, ethion is used to control leaf-feeding insects, mites, and scales on citrus, and flies and ticks on cattle. Use on citrus accounts for more than 98% of the ethion

used, with the large majority of that amount used on oranges and grapefruit in Florida. There are no residential uses.

- Estimates of domestic use range from more than 400,000 lbs. for 1997 to approximately 50,000 lbs. for 1999. Use has dropped in recent years because of drought conditions in Florida and the emergence of pest control alternatives.

Risks

Based on the data currently available, residues of only ethion in food do not pose risk concerns. The Agency has developed drinking water risk estimates for ethion based primarily on screening level exposure assessments. These estimates exceed, in some cases, acceptable levels of drinking water risk. While the Agency believes that the exposure and risk are likely reduced below those levels by water treatment, additional data on the effect of water treatment on residues were needed.

- EPA has risk concerns for workers who mix, load, and/or apply ethion to citrus. These risks are associated with hand-held sprayers; airblast mixing, loading, and application; and reentry into treated areas by workers. While data are insufficient to assess the risks associated with the handling of cattle eartags impregnated with ethion, the Agency believes it is prudent to reduce potential exposure of this type.
- Acute risks are of concern for aquatic organisms, especially aquatic invertebrates. Chronic risks are of concern for birds and fish; data are lacking for aquatic invertebrates.

Risk Mitigation

The registrants have requested a voluntary cancellation action that will end the sale and distribution of ethion by December 2003. The last legal use of ethion will be in December 2004. Labeling for ethion end-use products manufactured for use beginning with the 2002 use season will inform users of the phase-out schedule and incorporate the following risk mitigation measures:

- To mitigate risks to agricultural workers:
 - All ethion products for use on citrus will be classified as Restricted Use Pesticides.
 - On citrus, only airblast applications will be allowed, except for spot treatment of snow scale.
 - Spot treatments will only be made with a high-pressure hand-gun attached to a truck- or trailer-mounted tank; applicators making the spot treatments will wear cotton coveralls over long-sleeved shirt and long pants, shoes, socks, chemical resistant gloves, and a dust/mist respirator; applicators will use no more than 2.5 lbs ai/day, diluting to 250 gallons for a final concentration of 0.01 lb ai/gal.
 - Airblast applications will be made using enclosed cabs.

- Closed systems will be used for mixing/loading operations which support airblast applications. (The registrants have agreed that production in Fall/Winter 2001/2002 will be in appropriate containers.)
- For reentry into citrus groves which have been treated with ethion, the Restricted Entry Interval (REI) will be five days, with an exemption for scouting and irrigation activities after three days.
- To mitigate risks to workers handling cattle eartags:
 - Persons applying cattle eartags containing ethion will wear chemical-resistant gloves.
- To mitigate ecological risks:
 - All ethion products for use on citrus will be classified as Restricted Use Pesticides.

Next Steps

- The registrants will submit the label amendments.
- Tolerances for commodities with no associated permissible use site (tea and raisins) will be revoked at this time. Other tolerance actions will follow the cancellation.
- Labels of ethion end-use products manufactured for use beginning January 1, 2002 will inform users of the product phase-out and incorporate the risk mitigation measures described above.
- Sale and distribution of ethion will end December 31, 2003.
- The last legal date for use of ethion will be December 31, 2004.