

Methidathion Facts

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EPA has assessed the risks of methidathion and reached an Interim Reregistration Eligibility Decision (interim RED) for this organophosphate (OP) pesticide. Provided that risk mitigation measures are adopted, methidathion fits into its own "risk cup" -- its individual, aggregate risks are within acceptable levels. Methidathion is also eligible for reregistration, pending a full reassessment of the cumulative risk from all OPs.

Used on a variety of agricultural crops, predominantly alfalfa, citrus and cotton, methidathion residues in food and drinking water do not pose risk concerns. Methidathion has no residential uses. EPA considered the mitigation proposal submitted by the technical registrant, as well as comments and mitigation ideas from other interested parties, and has decided on a number of label amendments (restrictions) to mitigate risks of concern posed by the uses of methidathion. With the implementation of these mitigation measures, methidathion's worker and ecological risks also will be below levels of concern for reregistration.

EPA's next step under the Food Quality Protection Act (FQPA) is to consider available information on the basis of cumulative risk encompassing all of the OP pesticides, sharing a common mechanism of toxicity. The final tolerance reassessment decision for methidathion cannot be considered final until the cumulative risks for all of the OPs is considered. The Agency may need to pursue further risk management measures at that time.

EPA is reviewing the OP pesticides to determine whether they meet current health and safety standards. Older OPs need decisions about their eligibility for reregistration under FIFRA. OPs with residues in food, drinking water and other non-occupational exposures also must be reassessed to make sure they meet the new FQPA safety standard.

The methidathion interim decision was made 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 has worked extensively with affected parties to reach the decisions presented in this interim RED document, which concludes the OP pilot process for methidathion.

Uses

- An insecticide and acaricide, methidathion is used to control a broad spectrum of agricultural insect and mite pests on a variety of nut, citrus and stone and pome fruit tree crops, artichokes, olives, cotton, alfalfa (grown for seed), safflower and ornamentals.
- Methidathion is a Restricted Use Pesticide applied aerially and by ground methods. There are no residential uses for methidathion.

- Annual domestic use in the U.S. is low -- approximately 241,000 pounds of active ingredient is used per year.

Health Effects

- Methidathion can cause cholinesterase inhibition in humans; that is, it can overstimulate the nervous system causing nausea, dizziness, confusion and at very high exposures (e.g., accidents or major spills), respiratory paralysis and death.

Risks

Based on the data currently available, residues of only methidathion in food do not pose risk concerns. Dietary exposures from eating food crops treated with methidathion are well below the level of concern for the entire U.S. population, including infants and children. Similarly, drinking water is not a significant source of exposure.

- EPA has risk concerns for workers who mix, load and/or apply methidathion to agricultural sites; and reentry into treated areas by workers. While data are insufficient to assess the risks associated with pesticide handlers, the Agency has determined that there is considerable potential for post-application occupational exposure to methidathion residues.
- Acute and chronic risks are of concern to birds, mammals and aquatic species. Methidathion may pose risks to beneficial insects that may be present at the treated area on an acute contact basis.

Risk Mitigation

In order to support a reregistration eligibility decision for methidathion, the following risk mitigation measures are necessary:

To mitigate risks to agricultural workers:

- Limit the use of water-soluble package formulation (WSP) to non-aerial applications. The WSP formulation will be available to air blast or groundboom applications.
- To mitigate the concern of air blast applications in citrus groves, the registrant has agreed to require a minimum of 500 gallons of water per acre to dilute methidathion products.
- For groundboom application, add chemical-resistant gloves, a chemical-resistant apron and an organic vapor-removing respirator for mixers and/or loaders; add personal protective equipment or use of closed systems for commercial applicators.
- The Restricted Entry Interval (REI) for methidathion will be established at 3 days for all crops. This is based on the day on which MOEs are greater than 100 for activities other than harvesting. The Agency believes that an REI of 3 days will sufficiently protect workers.

To mitigate ecological risks:

- The Agency is proposing buffer zones, improved labeling to limit spray drift and a surface water advisory statement on the label.
- To reduce avian risk, the additional dilution of methidathion products (with a minimum of 500 gallons of water per acre) is intended to reduce exposure to workers and may also reduce exposure to birds.

- Methidathion's use could present both acute and chronic risk to birds since applications to citrus coincide with the breeding period of many bird species and because citrus orchards are attractive to birds. To address this risk, the registrant has agreed to precautionary labeling.
- Labels should be amended to include a surface water advisory statement that will encourage users to apply methidathion in a way that will minimize exposure to freshwater fish and invertebrates.
- To reduce the likelihood for significant mortality to bees from exposure to foliage treated with methidathion, precautionary labeling is required to mitigate these risks.

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 under 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, [Pesticide Reregistration Status](#).)

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, and will make final decisions through a cumulative OP assessment.

Next Steps

- The interim RED for methidathion includes guidance and time frames for complying with any necessary label changes for products containing methidathion. The registrants will submit the label amendments.
- When the cumulative risks for all OPs is considered, EPA will issue its final tolerance reassessment decision for methidathion and may request further risk management measures.
- Numerous opportunities for public comment were offered, through the OP public participation process, as this interim decision was being developed. The methidathion interim RED therefore is issued in final without a formal public comment period. The docket remains open, however, and any comments submitted in the future will be placed in the public docket.
- A Notice of Availability for this interim RED for methidathion is being published in the *Federal Register*. Copies of this interim RED and all supporting documents are available on the Agency's website at [Pesticide Reregistration Status](#).