Oxydemeton-Methyl Facts

EPA 738-F-06-020
August 2002

EPA has assessed the risks of oxydemeton-methyl (ODM) and reached an Interim Reregistration Eligibility Decision (IRED) for this organophosphate (OP) pesticide. Provided that risk mitigation measures are adopted, ODM's individual, aggregate risks are within acceptable levels. ODM also is eligible for reregistration, pending a full reassessment of the cumulative risk from all OPs.

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

ODM is a broad spectrum, systemic insecticide/acaricide registered for foliar and bark treatment uses to control many insects, primarily aphids, mites, and thrips. ODM residues in food and drinking water do not pose risk concerns. At this time, products containing ODM are intended solely for use in agricultural and non-agricultural settings by certified applicators. The only registered use likely to involve applications to public access areas or residential sites is tree injection by certified applicators to ornamental trees. With mitigation limiting homeowners' and children's exposure ODM fits into its own "risk cup." With other mitigation measures, ODM's worker and ecological risks will also be below levels of concern for reregistration.

EPA's next step under the Food Quality Protection Act (FQPA) is to complete a cumulative risk assessment and risk management decision encompassing all the OP pesticides, which share a common

mechanism of toxicity. The interim decision on ODM cannot be considered final until this cumulative assessment is complete. Further risk mitigation may be warranted 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 ODM 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 worked extensively with affected parties to reach the decisions presented in this interim decision document, which concludes the OP pilot process for ODM.

Uses

- A systemic insecticide/acaricide, ODM is registered for foliar and bark treatment uses to control many insects, primarily aphids, mites, and thrips. Registered use sites include terrestrial food crops (vegetable, field, tree fruit, and nut crops) and terrestrial non-food crops (ornamental uses).

- Approximately 150,000 pounds of ODM active ingredient are used annually in the United States.

Health Effects

- ODM 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

- Dietary exposures from eating food crops treated with ODM are below the level of concern for the entire U.S. population, including all population subgroups. Drinking water is not a significant source of exposure.

- ODM is not currently registered for residential use, and therefore a residential risk assessment was not conducted for ODM. Soil injection uses on ornamentals located in interior plantscapes, ornamental gardens, parks, golf courses, and non-residential lawns and grounds are being voluntarily cancelled.

- Several occupational mixer/loader/applicator risk scenarios for ODM currently exceed the Agency's level of concern.

- The potential for acute and chronic avian and mammalian effects, as well as toxicity to non-target insects, is of concern to the Agency.

Risk Mitigation

To mitigate risks to agricultural workers:

- Eliminate the following use sites: eggplants, field corn, bell peppers, pears, popcorn, snap beans, and turnips;
- Require all product to be sold in closed systems, including water soluble bags;
- Require enclosed cabs for application;
- Require enclosed cabs for flaggers, or the use of mechanical flagging or GPS;
- Require mixer/loaders using product in a closed system to wear a chemical resistant apron, chemical resistant gloves, and protective eyewear;
- Require applicators using enclosed cabs to wear long-sleeved shirts, long pants, shoes plus socks;
- Require handlers performing tasks for which engineering controls are not feasible, such as cleaning equipment or cleaning up after a spill, to wear coveralls over long-sleeved shirt and long pants, chemical-resistant gloves, chemical resistant footwear plus socks, and a chemical-resistant apron if exposed to the concentrate;
- Eliminate all hand-held application methods except tree injection;
- For citrus, require the use of trunk-directed microjet sprinklers (FL SLN only);
- For sweet corn, restrict use to west of the Rockies (including HI) and prohibit hand detassling;
- For cotton, restrict use to AZ and CA;
- For filberts, restrict use to OR and WA;
- For non-bearing fruit trees, filberts, and walnuts, restrict application to airblast sprayer only;
- Reduce application rates to 0.5 lbs a.i./acre for the following crops: sugar beets, cotton, Spanish bulb onions, and safflower;
- Reduce the maximum number of applications to 1 per season for cotton, curcurbits, all melons, and sugar beets;
- Reduce the maximum number of applications to 2 per season for lima beans, broccoli, broccoli raab, cauliflower, sweet corn, non-bearing fruit trees and grapes, Spanish bulb onions, safflower, sorghum, and strawberries (pre-bloom and post-harvest only);
- Increase the REIs for all crops (see section IV. D. 1. b. (3) of the ODM IRED);
- Require mechanical harvesting for alfalfa grown for seed, sugar beets, filberts, peppermint, spearmint, safflower, walnuts, field grown ornamental bulbs, and Christmas trees (note: these crops are already harvested mechanically in most cases);

To mitigate risk to residents and children, the following measures are needed:

- Except for tree injection application to ornamentals, eliminate all residential use sites, including ornamentals located in interior plantscapes, ornamental gardens, parks, golf courses, lawns and grounds;

To mitigate risk to non-target species:

- Require a no-spray buffer zone of 25 feet (groundboom and chemigation), 50 feet (airblast) or 100 feet (aerial) between the application site and any area managed for wildlife or wildlife habitat.

Next Steps

- Numerous opportunities for public comment were offered as this decision was being developed. The ODM IRED therefore is issued in final (see www.epa.gov/oppsrrd1/REDs/ or www.epa.gov/pesticides/op), without a formal public comment period. The docket remains open, however, and any comments submitted in the future will be placed in this public docket.