

US EPA ARCHIVE DOCUMENT

Bensulide Facts

EPA has assessed the risks of bensulide and reached an Interim Reregistration Eligibility Decision (IRED) for this organophosphate (OP) pesticide. With the risk mitigation measures required, bensulide fits into its own “risk cup”-- its individual, aggregate risks are within acceptable levels. Bensulide also is eligible for reregistration, pending a full reassessment of the cumulative risk from all OPs.

Bensulide residues in food and drinking water do not pose risk concerns. With mitigation limiting homeowners’ and children’s exposure via home lawns and other turf, bensulide fits into its own “risk cup.” With other mitigation measures, bensulide’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 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 bensulide cannot be considered final until this cumulative assessment is complete. Further risk mitigation may be required 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 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.

The bensulide 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 bensulide.

Uses

- An herbicide, bensulide is used to control a variety of grasses and weeds in food crops (60 to 65 % of all use) including carrots, fruiting vegetables, leafy vegetables (mostly head lettuce), dry bulb vegetables (onions), cucurbits (mostly melons), and cole crops (cauliflower, cabbage, broccolini and broccoflower). Bensulide products may be used outdoors by homeowners on lawns and ornamentals, and by professional lawn care operators. Bensulide may be used on turf (primarily golf course greens and tees), on ornamentals, and for greenhouse and outdoor uses in commercial nurseries.
- Annual domestic use is low-- approximately 550,000 pounds of active ingredient per year.

Health Effects

- Bensulide 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 bensulide are below the level of concern for the entire U.S. population, including infants and children. Drinking water is not a significant source of exposure.
- Risks are of concern for homeowners who apply bensulide, and for children entering turf areas treated with bensulide if label directions are not followed properly.
- EPA also has risk concerns for workers who mix, load, and/or apply bensulide to agricultural sites, golf courses, and home lawns.
- Chronic risks are of concern for birds and mammals; risks are posed to some aquatic species.

Risk Mitigation

- To mitigate risks to agricultural workers:
 - for groundboom application, add respirators for mixers and/or loaders; add personal protective equipment or use of closed systems for commercial applicators;
 - for chemigation, require respirators for mixing and/or loading; and restrict this application to California and Arizona where acreage treated is low.
- To mitigate worker risks from turf use:
 - prohibit all handheld application methods except one (retained for spot treatment only);
 - prohibit treatment of large turf areas like parks and recreation areas, except golf courses (see restrictions below for golf courses) (this measure will also reduce risks to children and the environment);
 - require respirators and gloves for all remaining mixer/loader turf uses;
 - require respirators for all “for hire” applications;
 - require coveralls, gloves, and a respirator for application of granulars with a push spreader.
- To mitigate residential risks:
 - add label language prohibiting use of any handheld application method;
 - add label language directing homeowners to water in the herbicide immediately after application, for safety reasons; and
 - prohibit treatment of large turf areas, as mentioned above.
- To mitigate ecological risks:
 - prohibit use on large non-golf course turf sites (as mentioned above);
 - restrict golf course fairway use to a single grass type (bentgrass) in certain states;
 - restrict the number of fairway applications to one; and
 - limit the fairway application to the fall (minimizing exposure to birds during breeding season).

Next Steps

- Numerous opportunities for public comment were offered as this decision was being developed. The Bensulide IRED therefore is issued in final (see www.epa.gov/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.
- To effect risk mitigation as quickly as possible, time frames for making the changes required by the Bensulide IRED are shorter than those in a usual RED. The Agency is requiring that all

labels must be amended to include the above mitigation and submitted to the Agency within 90 days after issuance of this IRED.

- When the cumulative risk assessment for all organophosphate pesticides is completed, EPA will issue its final tolerance reassessment decision for bensulide and may require further risk mitigation measures. The Agency will revoke the cottonseed tolerance because there are no registered uses, amend a carrot tolerance, and make administrative changes to commodity definitions now. For all OPs, raising and/or establishing tolerances will be considered once a cumulative assessment is completed.