

# Benomyl RED Facts

November 2001  
EPA-738-F-02-001

This fact sheet serves as and explains EPA's reregistration eligibility decision (RED) for benomyl, which consists of a voluntary cancellation of this pesticide. Benomyl was scheduled for reregistration in 2002; however, during 2001, the registrants of benomyl requested voluntary cancellation. The following provides background information on pesticide registration, reregistration, and tolerance reassessment, an overview of the uses and health effects associated with benomyl, and a summary of the terms of its cancellation. Because of the voluntary cancellation decision, EPA did not complete risk assessments for benomyl and will not issue a RED document for this pesticide

## Pesticide Registration and Reregistration

All pesticides sold or distributed in the United States must be registered by EPA, based on scientific studies showing that they can be used without posing unreasonable risks to people or the environment. Because of advances in scientific knowledge, the law requires that pesticides which were first registered before November 1, 1984, be reregistered to ensure that they meet today's more stringent standards.

To implement provisions of the Food Quality Protection Act of 1996 (FQPA), EPA considers the special sensitivity of infants and children to pesticides, as well as aggregate exposure of the public to pesticide residues from all sources, and the cumulative effects of pesticides and other compounds with common mechanisms of toxicity. The Agency develops any mitigation measures or regulatory controls needed to effectively reduce each pesticide's risks. EPA then reregisters pesticides that meet the safety standard of the FQPA, and can be used without posing unreasonable risks to human health or the environment.

## Tolerance Reassessment Decisions

EPA issues a TRED (Tolerance Reassessment Eligibility Decision) for a pesticide that requires tolerance reassessment decisions, but does not require a reregistration eligibility decision at present because: (1) the pesticide was initially registered after November 1, 1984, and by law is not included within the scope of the reregistration program; (2) EPA completed a RED for the pesticide before FQPA was enacted on August 3, 1996; or (3) the pesticide is not registered for use in the U.S. but tolerances are established that allow crops treated with the pesticide to be imported from other countries. TREDs for pesticides that are part of a cumulative group, such as the organophosphates, will not become final until EPA considers the cumulative risks of all the pesticides in the group.

## Background

Benomyl was first registered in 1969 by E.I. du Pont de Nemours and Co. (DuPont). EPA issued a Registration Standard for benomyl in June 1987. A June 1992 Data Call-In (DCI) required additional data. DuPont voluntarily canceled registrations for dry flowable (DF) products in 1995. Over the years, DuPont also canceled the following use sites: post harvest use on apples, citrus, pineapple, bananas, pears, and stone fruit; flowers; ornamentals; bulbs; shade trees; greenhouse, dip treatment for sugarcane, drench treatment for strawberry plants; and turf and residential uses. On April 18, 2001, DuPont requested voluntary cancellation of all its benomyl registrations. EPA published a Federal Register Notice on May 23, 2001 (Federal Register Notice, OPP-66288; FRL-6794-9), announcing receipt of DuPont's request for cancellation and inviting the public to comment during the next 30 days. The Agency considered the comments submitted and on August 8, 2001, the cancellation of benomyl registrations became effective. All other companies holding benomyl product registrations have also since requested and obtained voluntary cancellation of their benomyl products. See 6(f) notice in the Federal Register (FR) on October 12, 2001, and cancellation order on January 15, 2002.

## Uses

Benomyl is a systemic foliar fungicide registered for control of a wide range of diseases of fruits, nuts, vegetables, and field crops. Benomyl is formulated as a wettable powder (WP) and wettable powder in water soluble film (i.e., packets WSP), both of which contain 50 percent active ingredient. These formulations may be applied as delayed dormant, foliar, seed, and seed piece treatments. Application techniques include airblast, aerial, tractor-drawn equipment (groundboom or spreader), chemigation, and hand held equipment. Benomyl was registered for use on the following crops: almonds, apples, anise, apricots, asparagus, avocado, banana, barley, bean vine, blueberries, brassica (broccoli, Brussels sprouts, cabbage, chicory, Chinese cabbage, cauliflower, collards, kale, kohlrabi, mustard greens, rutabagas, and turnips), caneberries (raspberries, blackberries, boysenberries, loganberries, and dewberries), cardoon, carrots, celery, cherries, citrus, conifers, corn, cucurbits (cucumber, melons, pumpkins, and squash), currants, dandelions, dill, figs, grapes, macadamia nuts, mangoes, mushrooms, nectarines, onions, oats, papayas, peaches, peanuts, pears, peas, pecans, peppers, pineapple, pistachio, plums, prunes, rape, rice, rye, soybeans, spinach, strawberry, sugar beets, tomatoes, wheat, and yams. Tolerance Reassessment Decisions

## Health Effects

Benomyl rapidly degrades to carbendazim (MBC) which is also of toxicological concern. MBC is the primary metabolite of thiophanate methyl, another fungicide, and is also registered as an active ingredient.

Effects associated with both benomyl and MBC include liver toxicity, developmental toxicity (such as fetal eye and brain malformations and increased mortality), and reproductive (testicular) effects.

Both benomyl and MBC are also considered possible human carcinogens.

## **Tolerances**

100 tolerances exist for food and feed items such as fruits and nuts, vegetables, soybeans, grains, meat, milk, and eggs. EPA published an FR notice January 15, 2002, proposing to revoke tolerances for benomyl. EPA will make a final decision regarding tolerance revocation after considering public comments on the proposal.

## **Regulatory Conclusion**

All Dupont registrations of pesticide products that contain benomyl were effectively canceled on August 8, 2001, and all other registrants' benomyl product registrations were canceled effective January 15, 2002.

Sale and distribution of existing stocks of products already in the channels of trade is permitted until December 31, 2002.

EPA expects that use of any remaining benomyl products will end in 2003 given that production ceased in 2001 and the sale and distribution of benomyl products will end on December 31, 2002.

## **For More Information**

For additional information regarding the voluntary cancellation of benomyl, visit the EPA website at [Pesticide Tolerance Reassessment and Reregistration](#) or see [Pesticide Reregistration Status](#).