



press release

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Dimilin Insecticide at Bloom May Be Harmful to Honey Bee Brood

(Modesto, Calif., Jan. 29) — Almond growers who plan to apply Dimilin (diflubenzuron) insecticide at bloom should reconsider this practice as new research suggests it may be harmful to honey bee brood (developing larvae), and alternative timings or different insecticides should be considered in order to safeguard bee brood.

In a move away from dormant sprays that can have negative environmental impacts, almond growers and pest control advisers have been using alternate timings with softer bio-rational insecticides. One such practice is to apply Dimilin at bloom, tank-mixed with fungicides, to control peach twig borer and obliquebanded leafroller.

Dimilin is a unique growth regulator that disrupts the normal molting-development process of insect larvae, in this case honey bee brood, and the larvae do not reach adulthood. Dimilin does not affect adult bees, but enough residues may be picked up in the almond pollen, which is taken back to the hive by foraging bees and fed to the bee larvae. The action of Dimilin is slow and several days may elapse before a dying or failing brood is observed.

Fortunately, there are several alternative timing options and insecticides to applying Dimilin at bloom for peach twig borer, and these are covered by [UC IPM Online](#). These include:

1. Dimilin and other insecticides, such as Intrepid (methoxyfenozide) and Altacor (chlorantraniliprole), applied as a **delayed dormant** treatment.
2. *Bacillus thuringiensis* (B.t.) Kurstaki applied twice during **bloom** between popcorn and full bloom and at petal fall. The Kurstaki strain is selective for Lepidoptera, such as peach twig borer, and is safe for honey bees; however, application of any pesticide when pollen is available and bees are foraging should and can be avoided.
3. Numerous insecticide options are available for **spring** applications.

As a rule, applications of all insecticides during bloom — except B.t. Kurstaki — should and can be avoided, as the impact on bee larvae is not known. Future studies will help clarify the impact of insecticides on bee larvae under field situations.

Disease protection during bloom is important and fungicide applications are needed in many growing situations. Nevertheless, a key consideration is minimizing exposure of bees and pollen to any spray by avoiding applications when pollen is available and bees are foraging. This normally is best accomplished by spraying after

mid-afternoon and at night. Information and guidelines can be found in the booklet "[2012 Efficacy and Timing of Fungicides, Bactericides, and Biologicals for Deciduous Tree Fruit, Nut, Strawberry, and Vine Crops](#)." See also "[Relative Toxicities of Pesticides used in Almonds to Natural Enemies and Honey Bees](#)" and "[Honey Bees and Agricultural Sprays](#)" on the Almond Board website.

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The Almond Board of California administers a grower-enacted Federal Marketing Order under the supervision of the United States Department of Agriculture. Established in 1950, the Board's charge is to promote the best-quality almonds, California's largest tree nut crop. For more information on the Almond Board of California or almonds, visit www.AlmondBoard.com.

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