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POLLINATOR PROTECTION WHEN USING DIBROM[®] CONCENTRATE AND TRUMPET[®] EC FOR PUBLIC HEALTH PROTECTION

Mosquitoes are a vector for many pathogens that cause diseases in humans, horses and other mammals and birds. Eastern equine encephalitis, West Nile, dengue and Malaria threaten hundreds of millions around the world each year and result in sickness and fatalities in the United States and abroad. Wide area mosquito control, typically achieved through the aerial spraying of pesticides by state and local governmental agencies, is necessary to ensure the protection of the public's health.

Pollinators, to include bees, are essential for crop growth. Without adequate numbers of pollinators foraging at the sites where crops are growing, our food supply would be in jeopardy.

It is imperative to both protect the health of the public through mosquito control programs and protect the population of pollinators. Both can be achieved by following the label directions and precautions on the pesticides being utilized and by employing well-recognized best management practices designed to protect pollinators.

There are relatively few pesticides available for use in public health mosquito control programs. Naled is the active ingredient in both Dibrom[®] Concentrate and Trumpet[®] EC, and is unique in that there are no known issues with pest resistance, which is a well-documented problem with other available compounds. Naled is an organophosphate pesticide (OP); however not all OPs have the same characteristics. Naled is broken down rapidly in the environment and therefore does not persist in the environment, like some other commonly used organophosphates. Naled is labeled for use on many crops. Residues on crops and other foliage from public health applications of naled pose a lower threat to bees when compared with many other chemical classes, including pyrethroids and other organophosphates because of its rapid degradation into DDVP, which is relatively nontoxic to bees. Given this rapid breakdown, the major route by which the use of naled could be damaging to bee populations is limited to direct contact of the pesticide spray application with the pollinator.

Adherence to the precautionary statements on the product label and conformance with other best management practices will properly mitigate damage to bees.

The Environmental Hazards section of the labels for Dibrom® Concentrate and Trumpet® EC state:

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. To minimize hazard to bees, it is recommended that the product is not applied more than two hours after sunrise or two hours before sunset, limiting application to times when bees are least active. Do not apply this product or allow it to drift to blooming crops or weeds while bees are visiting the treatment area, except when applications are made to prevent or control a threat to public and/or animal health determined by a state, tribal or local health or vector control agency on the basis of documented evidence of disease causing agents in vector mosquitoes or the occurrence of mosquito-borne disease in animal or human populations, or if specifically approved by the state or the tribe during a natural disaster recovery effort.

The point worth stressing in the label precautionary language is that the first consideration would be to apply when bees are not present or likely to visit the treatment area during the application. In the situations where bees might be present but there is need to spray to protect the public from mosquitoes, naled should be applied in a manner that protects pollinators. Following these label precautions ensures that naled is limited to application times when bees are unlikely to be present in the treatment area and provides appropriate protection.

In addition to following the label precautions above, the following are some other, reasonable measures applicators and beekeepers can take to limit pollinator damage.

1. **Bee Colony Registration:** In some states, beekeepers register the locations of their hives or apiaries with the state agricultural or pesticide regulation department. Checking applicable websites for such registries can provide important information to pesticide applicators.
2. **Dispose of Pesticide Containers Properly:** Pollinators need a clean source of water. Applicators should not allow pesticide runoff or rinsate to contaminate standing water.
3. **Mark Apiaries:** Apiaries and hives should have the beekeeper's name and contact information on them so that applicators have a way to communicate if there are concerns.
4. **Cover Beehives When Necessary:** It is generally impractical to keep apiaries or hives covered frequently or for long durations. In the event that pesticide must be applied for the protection of the public's health and drift may occur to bee colony areas, cover the apiaries with wet burlap once the bees have returned to the apiary and prior to the public health spray event.

Communication between pesticide applicators and beekeepers is key in protecting both the public's health and bees. Both Dibrom® Concentrate and Trumpet® EC are critical tools for mosquito control and when used as labeled, can be a good choice where pollinator concerns exist.

Information in this bulletin was taken from the Environmental Protection Agency's Office of Pesticide Programs website and from "How to Reduce Bee Poisoning from Pesticides", 2013, Oregon State University.