



COLORADO ENVIRONMENTAL PESTICIDE EDUCATION PROGRAM

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Adult Mosquito Control and Honey Bee Safety

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This fact sheet describes how to effectively protect honey bees during mosquito adulticide applications.

<http://www.colostate.edu/Depts/SoilCrop/extension/CEPEP/>

Adult Mosquito Control and Honey Bee Safety

Any mosquito control program should have Integrated Pest Management (IPM) as the foundation. This usually involves directing management initiatives to immature stages of mosquitoes. However, there is sometimes a need for adult mosquito control, which may adversely affect non-target organisms. This factsheet will focus on keeping honey bees safe when pesticide applications are being made for adult mosquito control.

Pesticides used in adult mosquito control are called adulticides (see Pesticide Factsheet [#101](#)). Larvacides are the products used in controlling immature mosquitoes.



Honey bees and other insect pollinators play an important role in the production of many crops in Colorado. Protecting pollinators, especially honey bees, from pesticide poisoning should be part of mosquito control programs. Understanding the following concepts can help minimize bee kills:

- Bees are the least active at dawn and dusk, this is when adult mosquito control is usually done
- Daylight applications of adult mosquito control should be avoided to not only protect bees, but also because mosquitoes are not active at that time
- Always read and follow label directions

Precautions for Applicators

- Apply pesticides only when needed
- Use the pesticide least hazardous to bees that will control mosquitoes
- Use the recommended pesticides at the lowest effective rate
- Apply pesticides in the early morning (pre-dawn), late afternoon or at night when bees are not working blooms
- Notify beekeepers several days before applying any pesticide that is hazardous to honey bees. This will give them a chance to protect their colonies

Precautions for Beekeepers

- Place colonies away from places routinely treated for adult mosquitoes
- Identify your apiary. Post your name, address and phone number in a conspicuous place near your apiary

- Let applicators in your area know where your apiaries are located so they will not unknowingly poison them
- Be familiar with pesticides commonly used for adult mosquito control
- Relocate colonies that are exposed repeatedly to hazardous pesticides
 - Remember that soon after colonies are moved to a new location, foraging bees search for water. They may collect water that has been contaminated with pesticides. To reduce the chance of bee losses, provide clean water near the hives

Table 1: Registered Active Ingredients for Adult Mosquito Control in Colorado

Adulticide (active ingredient)	Product Names	*Hazard to Honey bees	Length of residual toxic effect to bees in hours or days
chlorpyrifos	ULV Mosquito Master, Mosquitomist	“Relatively safe to bees when applied at night at the mosquito abatement rate”	4-6 days
malathion	Atrapa, Malathion, Fyfanon	“Minimally hazardous”	2-6 hours
naled	Dibrom, Trumpet	Not available	16 hours
permethrin	Permanone, Aqua-Reslin, Prentox, Masterlin Kontrol, Biomist	Not available	1-2 days
pyrethrins	Pyrenone, Pyrocide	“Relatively nontoxic”	Not available
resmethrin	Scourge	Not available	Not available
sumithrin	Anvil	Not available	Not available

*Information on Hazard to Honeybees taken from Johansen and Mayer *Pollinator Protection: A Bee and Pesticide Handbook*

*Please note that there is a difference between hazard and toxicity. They are often confused with one another, but they are not necessarily the same. Hazard is the risk of danger. The hazard of a toxic chemical is always based on two things; its ability to harm (i.e., toxicity, corrosiveness) and the ease with which a bee can come in contact with the chemical.

Always read and follow the label directions for any pesticide used (see Pesticide factsheet [#103](#)).

For more information on [West Nile Virus](#) visit the CEPEP website at <http://www.ext.colostate.edu/westnile/reslist.html>

EPA has issued a Draft Guidance on Labeling Statements on products used for adult mosquito control. EPA site on improving Mosquito Control (Adulticide) labeling: <http://www.epa.gov/oppfead1/cb/ppdc/2003/mosquitocont.htm>



KEY POINTS:

- Pre-dawn or early evening applications will reduce bee kills, this is also the time that mosquitoes are the most active
- COMMUNICATION between beekeepers, pesticide applicators, and planning agencies to notify beekeepers in advance of an application to control adult mosquitoes will reduce accidental bee kills
- ALWAYS FOLLOW PESTICIDE LABEL DIRECTIONS

References and Resources

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