Pesticides are useful tools which, when used properly, help eliminate unwanted pests. Unfortunately, beneficial insects such as bees are sensitive to many pesticides and can be inadvertently killed when a pesticide applicator is targeting another organism. Honeybees are the most economically important pollinators. In Utah managed honeybees pollinate commercial apple, pear, apricot and sweet cherries orchards, as well as many other crops. By following the guidelines provided, unintentional pesticide poisonings of bees can be reduced or eliminated altogether.

Most bee poisonings are due to a lack of awareness—not an intent to do harm. When beekeepers, growers and pesticide applicators work together, bee kills are dramatically reduced.

If a grower rents hives from a beekeeper for crop pollination, it is wise to have a written contract. Details of the contract should include responsibilities of both parties and protocol for chemical spraying. **Good communication is essential** to making beekeeper and grower cooperation work.

Pesticides that are dangerous to bees have specific precautionary statements that must be followed. **Remember: the label is the law.** Applicators are required to follow these rules in order to protect honeybees as well as other pollinators.

Information about hazards to bees are usually found in the Environmental Hazards section of the label. Look for key words such as “highly toxic to bees,” “toxic to bees” and “residues.”

**Pesticides Applicator Best Practices**

*Applicators can reduce poisonings of honeybees and native bees by spraying later in the day after bees have stopped foraging and avoid spraying plants that are in bloom.*

Pest control programs can almost always be modified to protect bees without created economic burden or inconvenience to the applicator. Here are some good tips to observe:

- If an insecticide poses a residual hazard to bees (4 to 8 hours), **only spray after bees have stopped foraging**—between late evening and midnight.
- Pesticides with extended residual toxicity (ERT) to bees (8 or more hours), should not be applied if plants in bloom are present (this includes weeds).
- **Don’t allow pesticides to drift** to non-target crops or weeds that are in bloom.
- If a pesticide is toxic to bees, try an alternative pesticide or other control if such options are available.
- **Use the least hazardous formulation** of the insecticide (see the box on next page).
- If an insecticide if highly toxic to bees, **ask beekeepers if their colonies can be moved** prior to application.
- When temperatures are unusually low or dew is forecast, don’t make applications. Bees are especially vulnerable during these conditions.
Growers can also alter their operations in a way that prevents honeybee poisonings. Below are some simple, inexpensive steps which growers can take to reduce damage to non-target insects:

- **Control weeds before they begin to bloom.** If weeds are already in bloom, kill them mechanically or with a selective herbicide (not hazardous to bees) prior to applying an insecticide.
- Some blossom thinning agents are hazardous to bees. Read the label. **If it is dangerous to bees, consider selecting an alternative chemical.**
- Understand the pollination requirements of the crops being grown.
- **Take an Integrated Pest Management (IPM) approach to pest control.** Use economic thresholds to determine when to make pesticide applications. This will reduce the amount of chemicals that are applied and save money!

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### Beekeeper Best Practices

In some cases, pesticide poisonings of honeybees would not have occurred if the beekeeper following good practices. The following are some ways beekeepers can prevent poisonings:

- **Register hives with the Utah Department of Agriculture and Food (UDAF); paint the registration number on the side of at least 1 hive in the apiary.**
- **Don’t leave hives near orchards or fields that are unmarked.** Consider putting contact information on hives so that pesticide applicators make contact.
- **Make preparations in case hives need to be moved.** Locate a holding yard at least 4 miles from crops that treated with pesticides.
- If bees are moved because of an application, wait at 48-72 hours before returning to areas treated with chemicals that are highly toxic to bees.
- Since insecticides drift downward, place apiaries on ridge tops instead of canyon bottoms.
- **Follow the label when using miticides.** Beekeepers can poison their own bees when they do not follow label instructions.
- Verify that your bees have a clean water source.

For more information about the proper use of pesticides, please visit UDAF’s pesticide webpage:

http://ag.utah.gov/pesticides.html

To report suspected cases of honeybees killed by pesticides, please contact UDAF’s Pesticide Program:

**Scott Oldham**

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UDAF-Pesticide@utah.gov

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References: