

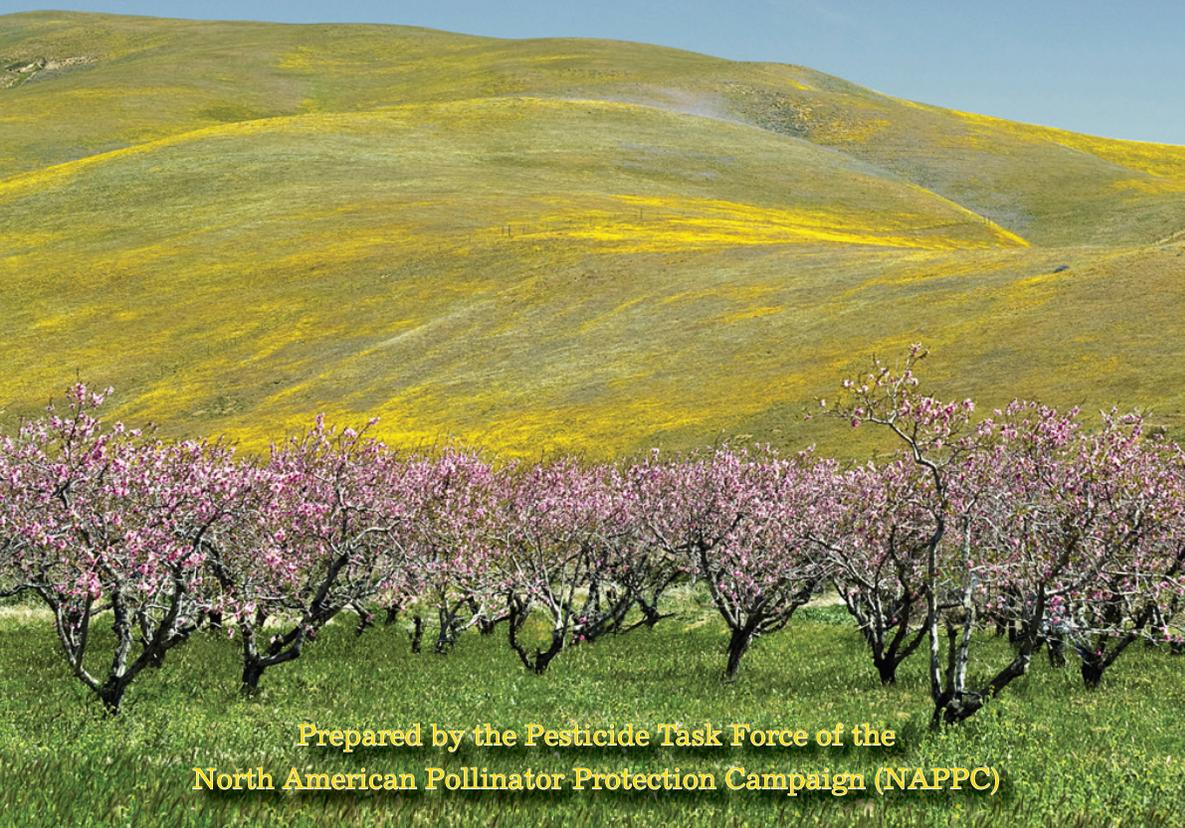
Protecting Pollinators:

Why and How Pesticide Applicators Can Help Them



What are pollinators and why should you care?

Pollinators, such as bees, bats, birds, and butterflies, are essential to the majority of the flowering plants in our environment and to the production of over 130 different food crops. Pollinators are highly sensitive to many pesticides, especially insecticides, and some combinations of pesticides. Your help as a pesticide applicator is critical to the continued safety of our food supply and environment.



Prepared by the Pesticide Task Force of the North American Pollinator Protection Campaign (NAPPC)

For Pollinator Safety... Read and follow the label directions of pesticides!

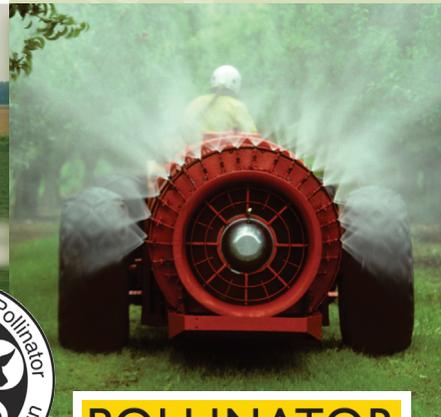
On pesticide labels, look under the “**Environmental Hazards**” and “**Directions for Use**” headings for important information on protecting pollinators.

Some labels warn against use of the product on blooming crops by stating “**Do not apply to blooming crops or weeds if bees are VISITING in the treatment area.**”

Some labels limit at-bloom applications to times when bees are **NOT ACTIVELY VISITING**, such as late evening.

Do not depend solely on someone else’s interpretation of the label. You are responsible for proper application of the pesticide.

Spray drift should be avoided at all times.



NAPPC



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Pollinator Facts

You depend on pollinators for 1 out of every 3 bites of food.

Over \$15 billion is attributed to the value of pollination of our food crops annually; the value of pollinators to our environment is incalculable.

Pollinators are responsible for pollinating many of our nuts, fruits, and vegetables. Even crops like broccoli depend on pollinators for seed production for the next year's crop.

Honey bees are the major pollinators on which we depend; but native pollinators, like other species of bees, butterflies, and other insects, are also essential.

Native pollinators commonly live in fencerows and natural areas.

Native pollinators may yet be visiting flowering plants, like fruit trees, after commercial honey bee colonies have been removed.

Pesticide Toxicity

EPA evaluates a pesticide for toxicity to pollinators if it is used outdoors.

A pesticide's toxicity to bees is measured by:

- The pesticide dose that causes death of bees; and
- How long the pesticide can affect bees after it has been applied to plants.

EPA assesses the bee toxicity using three types of studies:

- **Honey Bee Acute Contact LD50** - a lab study determines the amount of pesticide that kills 50% of a test group of bees.
- **Honey Bee - Toxicity of Residues on Foliage** - a lab test determines the amount of time that pesticide residues on leaves remain toxic to honey bees.
- **Field Testing for Pollinators** may be required if the above tests indicate adverse effects on bees.

If the LD50 of the pesticide is greater than 11 micrograms per bee (Toxicity Group III), it is relatively nontoxic, and no bee caution statement is required on the label.

If the LD50 is less than 11 but greater than 2 micrograms per bee, it is classified as Toxicity Category II, "toxic to bees."

If the LD50 is less than or equal to 2 micrograms per bee, it is classified as Toxicity Category I, "highly toxic to bees." Toxicity Categories I and II are pollinator-toxic pesticides and the label will have specific use instructions to reduce the risk to pollinators.

Furthermore, some pesticides have **Extended Residual Toxicity (ERT)**, or longer term effects, that require somewhat different protective measures.

Don't assume that all bee cautionary statements are the same. Read and follow label guidance carefully. The subtle differences regarding treating blooming crops, treating blooming weeds, treating plants while bees are **VISITING**, or treating plants while bees are **ACTIVELY VISITING** are important to assure adequate protection for pollinators. "Actively visiting the treatment area" refers to bees you see on the plants and pertains to products that do not show ERT. "Visiting the treatment area" refers to bees that may visit the plants after treatment and pertains to products that do show ERT; such products require a higher level of care in avoiding pollinator exposure by not applying them while the crop is in bloom.

Pollinator Poisoning

Most pollinator poisoning occurs when pollinator-toxic pesticides are applied to crops during the blooming period.

Poisoning of pollinators can also result from:

- ☞ Drift of pesticides onto adjoining crops or plants that are in bloom.
- ☞ Contamination of flowering ground cover plants when sprayed with pesticides.
- ☞ Pesticide residues being picked up by foraging pollinators and taken back to the nest/colony.
- ☞ Pollinators drinking or touching contaminated water sources or dew on recently treated plants.

Remember, YOU, the Pesticide Applicator, are critical to reducing pesticide risk for pollinators.

Use pesticides only when needed.

Check for "Bee Hazard" warnings and pollinator precautions in the Environmental Hazards statement and in the directions for use on the label.

Consider the toxicity to pollinators when selecting a pesticide and formulation and when combining products.

Guard against drift of pesticides from ground or aerial applications.

Bloom is a key factor in pollinator exposure to pesticides.

When crops or ground cover plants are in bloom:

- Apply non-ERT ("actively visiting") pollinator-toxic pesticides in late evening to minimize exposure to pollinators.
- Do not apply ERT ("visiting") pollinator-toxic pesticides.

Avoid applying when lower temperatures will allow dew formation. Dew may re-wet pesticides and increase bee exposure.

Avoid spraying areas where native pollinators live such as hedge rows and natural areas.

Establish good relations and communication with commercial and local beekeepers.



This brochure was produced by the **Pesticide Task Force of the North American Pollinator Protection Campaign (NAPPC)** with members from American and Canadian universities, bee keepers, industry, and government agencies. **NAPPC** is a collaborative body of over 140 organizations that work for the protection of pollinators across Mexico, Canada, and the United States. Feedback is welcome. For more information please consult www.pollinator.org or contact info@pollinator.org or call **415-362-1137**.