



PESTICIDES AND POLLINATORS

MOLBAK'S BUTTERFLY GARDEN AND MICROSOFT POLLINATOR PATIO

HOW DO PESTICIDES AFFECT POLLINATORS?

Pesticides are chemicals used to eradicate “pests” and include insecticides (for insects), fungicides (for fungi and molds), and herbicides (for plants such as mosses or weeds). Insecticides harm pollinators by killing them directly and herbicides can affect them by killing wildflowers, an important food source.

WHAT ARE PYRETHROIDS AND NEONICOTINOIDS?

Pyrethroids and neonicotinoids are relatively new classes of insecticides that are popular because tests have shown that they are not toxic to mammals while being very effective at killing insects. However, pyrethroids and neonicotinoids persist in plants and the environment for a much longer time than other older, more toxic classes of insecticides (Hopwood & Shepherd, 2012; McLain, 2014).

NEONICOTINOIDS

There is a growing concern of neonicotinoids and their potential for harming insect pollinators. Seattle and several other cities have banned neonicotinoid use on municipal land (Seattle City Council, 2014).

Check the label to see if your garden product has neonicotinoids in it. Neonicotinoids are a group of chemicals with a variety of names, so avoid products with these chemicals:

- Acetamiprid
- Clothianidin
- Dinotefuran
- Imidacloprid
- Thiamethoxam

The Xerces Society published a pamphlet, available at <http://xerces.org/pollinator-conservation/protecting-bees-from-neonicotinoid-insecticides-in-your-garden/>, with a list of example products sold in the U.S. that contain neonicotinoids (The Xerces Society, 2013).

PYRETHROIDS

Pyrethroids are human-made chemicals derived from naturally occurring pyrethrins in chrysanthemum flowers. They are the most common insecticide found in household products, including those for controlling bed bugs, lice and mosquitos (Thatheyus & Gnana Selvam, 2013). In addition to being deadly to insect pollinators, many pyrethroids are also toxic to fish and cats (Baynes, 2009; Thatheyus & Gnana Selvam, 2013).

Common pyrethroids found in household products include (Young & Krupke, 2016):

- Phenothrin
- T-Fluvalinate
- Prallethrin

- Tetramethrin
- λ -Cyhalothrin

PESTICIDE ALTERNATIVES

A report from the Washington State Department of Agriculture (WSDA) reported that approximately half of residential homeowners in Puget Sound use pesticides, and the most common use of insecticides were to control spiders and ants (McLain, 2014). Prevent insects from entering your home by pruning away vegetation from walls, roofs and foundations. If ants come inside your home, use a vinegar-water spray to remove their trails.

Many wildflowers (or “weeds” if they are a nuisance) provide pollinators with vital food sources. For example, dandelions (*Taraxacum* spp.) are a common wildflower that is considered to be a noxious weed in many areas. However, they are an early-blooming and important food source for bumble bees and other pollinators (Bradbury, 2015). Instead of using weed-killers or herbicides, yard owners can allow dandelions to grow and bloom by setting their lawn mowers at a high height, but then remove the heads before they seed to prevent them from spreading.

The **UNIVERSITY OF CALIFORNIA STATEWIDE INTEGRATED PEST MANAGEMENT PROGRAM** has a website (<http://ipm.ucanr.edu/PMG/menu.homegarden.html>) with lots of information on home, garden, turf and landscape pests and how to manage them without pesticides (University of California Agriculture & Natural Resources, 2017).

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