HOW YOU CAN HELP

1. Avoid using neonicotinoids in your garden or yard. Read the label to determine whether a product contains neonicotinoids; look out for imidacloprid, acetamiprid, dinotefuran, clothianidin, and thiamethoxam.
2. When purchasing plants, ask nursery or garden center staff if the plants were treated with neonicotinoids.
3. Encourage your city or park district to use alternatives to neonicotinoids on plants that are bee-visited (e.g., maple trees) or bee-pollinated (e.g., linden trees, roses).
4. Create patches of pesticide-free, pollinator-friendly flowers in your garden or neighborhood. For lists of suitable plants, visit www.xerces.org.
5. Share this information with your neighbors and local community!
6. Show your commitment to providing safe pollinator habitat by signing the Xerces Society's Bring Back the Pollinators pledge. Visit www.bringbackthepollinators.org

Neonicotinoid insecticides have been implicated in the die-off of bees. This brochure will help you identify hazardous products and make your garden more bee friendly.

XERCES SOCIETY
for Invertebrate Conservation

Established in 1971, the Society is at the forefront of invertebrate protection, harnessing the knowledge of scientists and the enthusiasm of citizens to implement conservation programs worldwide. The Society uses advocacy, education, and applied research to promote invertebrate conservation.

The Xerces Society for Invertebrate Conservation
628 NE Broadway, Suite 200, Portland, OR 97232
Tel (855) 232-6639 Fax (503) 233-6794 www.xerces.org

Regional offices across the United States.

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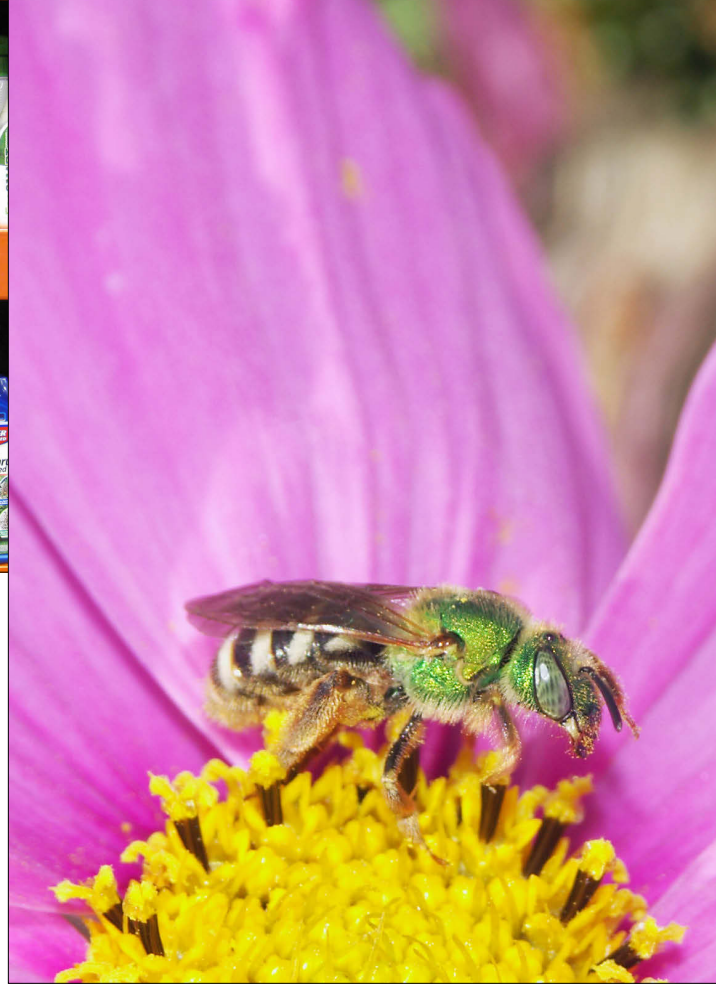

Protecting Bees from Neonicotinoid Insecticides in Your Garden

XERCES SOCIETY
for Invertebrate Conservation

WHAT ARE NEONICOTINOIDS?

Neonicotinoids are a group of insecticides that are used widely on farms, as well as around our homes, schools, and city landscapes.

Neonicotinoids are systemic chemicals. They are absorbed by the plant and dispersed through plant tissues, including pollen and nectar.

Because they target nerve impulses in insects and other invertebrates, neonicotinoids are deemed "safe" since harm to humans and other mammals is minimal. However, neonicotinoids are toxic to bees and many other beneficial insects. Imidacloprid and clothianidin, common ingredients in garden insecticides, can linger in the soil for months or even years, from where they can be picked up by the next season's plants. Imidacloprid can remain active in flowers, shrubs, or trees for a year or more.

WHY ARE THEY A RISK TO BEES?

Bees are exposed to neonicotinoids in many ways, including contact with spray residue on plants or by eating contaminated and toxic pollen or nectar.

Even when used according to printed instructions, garden products containing neonicotinoids can be applied to plants in concentrations dozens of times greater than on farm crops. This means that bees can be exposed to lethal doses of neonicotinoids in gardens. Even if bees are not killed outright, smaller (nonlethal) doses can impact their health.

When exposed to very small amounts of neonicotinoids, bumble bee colonies grow more slowly and produce fewer new queens, which impacts overall bumble bee populations. Honey bees are also affected by low doses; exposure can impair their ability to fly, navigate, and forage for food.

Examples of Neonicotinoid Garden Products Used in the United States

Neonicotinoid	**Garden and ornamental uses**	**Garden product trademark names**
Imidacloprid	Foliar spray for turf and ornamental flowers, trees, and shrubs; soil drench for garden fruits and vegetables, and ornamental flowers, trees, and shrubs; trunk injection for trees; granules for turf and ornamental flowers, shrubs or trees.	Bayer Advanced 3-in-1 Insect, Disease, & Mite Control Bayer Advanced 12 Month Tree & Shrub Insect Control Bayer Advanced 12 Month Tree & Shrub Protect & Feed Bayer Advanced Fruit, Citrus & Vegetable Insect Control Bayer Advanced All-in-One Rose & Flower Care concentrate DIY Tree Care Products Multi-Insect Killer Ferti-lome 2-N-1 Systemic Hi-Yield Systemic Insect Spray Knockout Ready-To-Use Grub Killer Monterey Once a Year Insect Control II Ortho Bug B Gon Year-Long Tree & Shrub Insect Control Ortho MAX Tree & Shrub Insect Control Surrender Brand GrubZ Out
Clothianidin	Granules for turf, and ornamental flowers, shrubs or trees.	Bayer Advanced All-in-One Rose & Flower Care granules Green Light Grub Control with Arena
Thiamethoxam	Foliar spray for turf and ornamental flowers, trees, and shrubs; granules for turf and ornamental flowers, trees, and shrubs.	Amdro Quick Kill Lawn & Landscape Insect Killer granules Amdro Rose & Flower Care Maxide Dual Action Insect Killer
Acetamiprid	Foliar spray for garden fruits and vegetables, and ornamental flowers, trees, and shrubs.	Ortho Bug B Gon Garden Insect Killer Ortho Bug B Gon for Lawns Ortho Flower, Fruit and Vegetable Insect Killer Ortho Rose and Flower Insect Killer Ortho RosePride Insect Killer
Dinotefuran	Granules for turf and ornamental flowers, shrubs or trees; soil drench for ornamental flowers, trees, and shrubs.	Green Light Tree & Shrub Insect Control with Safari 2 G Ortho Tree & Shrub Insect Control Plus Miracle Gro Plant Food

To learn more, read the the article, "Neonicotinoids in Your Garden," from *Wings* magazine, or the scientific report, *Are Neonicotinoids Killing Bees?* Both are available at www.xerces.org/pesticides/