



## Protecting Pollinators in Your Own Backyard – the dangers of Neonicotinoids

By Trecia Neal

Many of us will recall the uproar created when researchers from Friends of the Earth found that many “bee-friendly” plants being sold at big box stores were actually treated with **neonicotinoids**. The study, *Gardeners Beware 2014*, found that 36 out of 71 (51%) garden plant samples purchased at major garden retailers in 18 cities in the United States and Canada contained neonicotinoid (neonic) pesticides -- a key contributor to recent pollinator declines. Some of the flowers contained neonic levels high enough to kill bees. Furthermore, 40% of the positive samples contained two or more neonics. See [Gardeners Beware!](#)

Many seeds and plants sold at home improvement stores are pretreated with neonicotinoids. First registered for use in the mid-1990s, neonicotinoids are a class of neuro-disruptive insecticide that is chemically similar to nicotine. Neonicotinoids are systemic insecticides—the insecticide is absorbed by the plant, and transferred through the vascular system, making all parts of the plant toxic to “pests.” This means even the **POLLEN** and **NECTAR** of treated plants will contain neonic residues--sometimes at lethal levels. Neonics can persist in plants and soil for months after application, and have been found in woody plants up to 6 years after application. Even untreated plants may pose a risk to pollinators when the plants absorb neonics left over in the soil from the previous year. Recent research from Dr. Krischik and colleagues of the University of Minnesota shows that milkweed may retain neonicotinoids from nearby treated plants, making the milkweed lethally toxic to monarch larvae [Butterfly Deaths attributed to Neonicotinoids](#). Says Dr. Krischik, “I would say if you’re using it (neonic) in your backyard and you’re applying this to a rosebush right next to the milkweed, the risk is high.”

Nurseries and growers may spray their plants with neonicotinoids. Dr. Chip Taylor of Monarch Watch notes that just 2 or 3 bites of a neonic-treated milkweed plant can kill a monarch caterpillar. The monarch will drop off the plant, curl up into a “c” position and slowly die. [How to Help Monarch Butterflies without Poisoning Them](#) Notably, products approved for homeowners to use in gardens, lawns, and on ornamental trees have manufacturer-recommended application rates up to 32 times higher than rates approved for agricultural crops. Dr. Krischik and colleagues state that “...greenhouse/nursery use of imidacloprid applied to flowering plants can result in 793 to 1,368 times higher concentration compared to an imidacloprid seed treatment (7.6 ppb pollen in seed- treated canola), where most research has focused....The use of the neonicotinoid imidacloprid at greenhouse/nursery rates reduced survival of beneficial insects feeding on pollen and nectar and is incompatible with the principles of IPM (Integrated Pest Management).”

A meta-analysis of 1,121 peer-reviewed studies released by the Task Force on Systemic Pesticides confirms neonics are a key factor in bee declines and are harming beneficial organisms essential to functional ecosystems and food production, including soil microbes, butterflies, earthworms, reptiles, and birds. [The Taskforce for Systemic Pesticides](#) Neonicotinoid insecticides have been responsible for

several high profile bee kills from high doses of the pesticides. But Xerces notes, “Even if bees are not killed outright, smaller (nonlethal) doses can impact 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.” Neonics can impair memory and the ability to learn new tasks, and weaken the bee’s immune system.

In response to the uproar from the public concerning the presence of neonics in plants sold by major retailers such as Home Depot, Lowe’s and Wal-Mart, some major retailers announced they will be working to phase out their use of neonicotinoids. Lowe’s has not yet labelled their neonic-treated plants, but announced they will begin phasing out neonicotinoids by 2019 “as soon as suitable alternatives become available.” We are still waiting on confirmation of this happening. Lowe’s will redouble existing IPM practices and provide educational material about pollinator health for consumers. Home Depot has created a label identifying neonic-treated plants, and the labels can be found in stores now. While it is commendable that Home Depot has labelled treated plants, the labels appear to put a positive spin on neonics. [The Reality of Home Depot plant labels](#) My colleagues who recently visited Home Depot stores reported finding these labels on tropical plants, cacti, and edible grape and blueberry bushes. A cashier explained the plants were “flying off the shelves, since people really like knowing their plants will not be attacked by bugs.” This is an indication that the public needs more education about pesticides and pollinator health. To their credit, Home Depot provided a website on their new neonic labels, and this website educates consumers about Home Depot’s efforts to reduce the use of neonics and encourages homeowners to grow plants that attract beneficial insects. [Home Depot Healthy Gardening](#)

What can you do to help pollinators in your garden? Avoid the use of neonicotinoids, which include imidacloprid, acetamiprid, clothianidin, dinotefuran, and thiamethoxam. See this helpful brochure from Xerces Society to learn more about neonics and the home garden products they are found in [Xerces Neonicotinoids In Your Garden](#). Educate yourself about neonics, and share your knowledge with others. See this great neonics summary from Xerces. [Xerces How Neonics Kill Bees](#) Lastly, support growers and nurseries that use IPM and organic growing methods. Demand pesticide-free plants so the supply will grow. Protect the pollinators in your own backyard! See Monarchs Across Georgia’s list of neonicotinoid free nurseries in Georgia. [Georgia Nurseries that carry milkweed species](#). Here is a link to a field guide to the native milkweed species growing in Georgia: [Field Guide To Georgia Milkweed Species](#)