

Avoid the Use of Pesticides

Pesticides, as a class, include both insecticides and herbicides. Taken together these agents harm not only our native bees, but an entire spectrum of beneficial insects that would otherwise naturally control garden pests. And it's the pests, not the pollinators and other beneficial insects, that quickly become resistant to pesticides, spurring their more frequent and intense applications. Unlike the agricultural sector where growers must adhere to strict protocols when applying pesticides, the use of these toxic agents by home gardeners, and even commercial landscapers, is largely unregulated. In fact you're likely to find higher concentrations of pesticides in many urban neighborhoods than in a field of monoculture crops! If we want to walk along the paths of a healthy bee garden, we need to first get off the pesticide treadmill.



Keeping your bee garden free of pesticides will protect not only our bees, but other beneficial insects as well. Photo by Celeste Ets-Hokin.

Insecticides

Insecticides will either kill bees directly or, at lower levels of exposure, impair their ability to reproduce. Many of these substances remain in the soil or on the plants for extended periods, harming not only adult bees, but potentially their offspring as well. Neonicotinoids are a class of insecticides that have recently been making the headlines, as they have been implicated in the die-off of honey bees. Native bees are also exquisitely sensitive to the toxicity of these agents, which interfere with a bee's nervous system and its ability to navigate.

Although banned in Europe, neonicotinoid products are widely available in garden supply stores across the U.S., both as foliar sprays and as systemic treatments for ornamental plants. An unprecedented incident, which occurred in June of 2013 in a Target parking lot in Oregon, underscores the significant threat to pollinators posed by the unregulated, commercial use of these insecticides. After dozens of flowering linden trees were sprayed with a neonicotinoid contained in the product, "Safari", 50,000 bumble bees were found dead in the parking lot. Spraying the trees while they were in flower was in direct violation of the product instructions, and caused the largest mass killing of these critical pollinators ever recorded. To compound the environmental cost of this irresponsible action, those 50,000 bumble bees likely represented 300 colonies that would consequently never produce new queens for the following year.

Unfortunately, these same insecticides have made their way into nursery plants – even those advertised as “bee-friendly” – that are sold by many garden stores. Be certain to inquire about the use of systemic pesticides before purchasing new plants for your bee garden. Native plant nurseries, or those that carry native plants from a reputable grower, are usually a safe option. Besides the heightened awareness of native plant growers, native plants are more naturally resistant to local pests and wouldn't typically benefit from treatment with systemic pesticides.

Here is a list of resources to help you locate true bee-friendly plants and seeds for your garden, which products to avoid on the shelves of your local garden store, and additional tips on gardening without the use of pesticides:

- [Pollinator-friendly seeds and nursery directory](#)
- [View the list of retailers committing to not use or sell neonicotinoid pesticides](#)
- [Learn which common home and garden pesticides are harmful to bees](#)
- [Managing pests without neonics](#)

Herbicides

Herbicides kill potential forage plants along with the intended target, reducing the diversity and richness of floral resources available to pollinators. Herbicides sold for cosmetic use on lawns have been banned in Canada due to their harmful effects on human health and the environment, but are still widely available in the U.S. Apart from the toxicity of these agents, they destroy any habitat value a lawn may offer to pollinators. The clover and daisies that may dot your lawn in the spring and summer can provide needed forage in a sea of otherwise flower-less groundcover. So put away the lawn pesticides, and make a daisy chain instead!

A poignant example of the collateral damage that can be caused by herbicides is the decimation of milkweed plants in the Midwest due to increasingly intense applications of “Roundup” (trade name for the herbicide, glyphosate) to “Roundup Ready” GM corn and soybean crops. The untargeted spraying of Roundup to kill “weeds” in and around these vast fields of monoculture crops has eliminated more than **80 million acres** of North American milkweed – the *only* host plant that monarch butterflies use to lay their eggs, and on which the larvae can feed. As a result, the number of monarchs making the annual migration from the U.S. and southern Canada to Mexico has plummeted over the past decade, leading to a record 90% decline in the fall migratory population of 2013.



Monarch butterfly adult (left) and Monarch caterpillar on [milkweed](#). Photos by Rollin Coville.

The Indiscriminate use of herbicides can destroy important forage plants, along with the intended target. In the Midwest, over 80 million acres of milkweed - the only plants on which monarch butterflies lay their eggs - have been eliminated over the past decade by the application of Roundup (herbicide containing glyphosate) to Roundup Ready GM crops. By the end of 2013, migratory monarch populations had declined by 90%.

Hand-weeding of your bee garden is the best approach. An added benefit of this manual labor is that you're much more likely to observe, up close and personal, the native bees and other pollinators attracted to your garden. And once your native and other bee plants become established, they should gradually out-compete the weeds. This will leave you more time to just sit back with a glass of lemonade, and watch the parade of pollinators in your wild bee garden.



Butterfly visitor to bee garden. Photo by Celeste Ets-Hokin.