

Neonicotinoid pesticides have been a frequent subject in the news for several gardening seasons, as awareness has increased about diminishing bee and butterfly populations. What are these pesticides, and how are they linked to a crisis in our pollinator populations?

Neonicotinoids are a relatively new class of insecticides, introduced in the last 50 years. The neonicotinoid [imidacloprid](#) is currently **the most widely used insecticide in the world**. Other neonicotinoids include [acetamiprid](#), [clothianidin](#), [dinotefuran](#) and [thiamethoxam](#). They are the active ingredients in many home garden products by Bayer, Ortho, and Bonide. The use of some “neonics” has been restricted in some countries due to evidence of a connection to honey bee colony collapse disorder. There is a very long and informative wikipedia page <http://en.wikipedia.org/wiki/Neonicotinoid> that goes into the science in great detail. Most neonicotinoids are water-soluble and break down slowly in the environment, so they can be taken up by the plant and provide protection from biting and chewing insects as the plant grows. When these pesticides were introduced, they were hailed as a step forward because they have lower toxicity to mammals than previous widely used pesticides. But because they are systemic, staying present in the plant for what is currently an unknown number of years, their effect on beneficial insects like bees is now being questioned. Most **scientists agree that a combination of factors is affecting honey bees, including pathogens and loss of habitat**, but research is pointing to neonics as both an outright killer of bees and, at “sub-lethal” doses, as an agent of disruption, hampering the bees ability to forage and navigate. This **combination of forces** is causing a crisis in the population of a pollinator that humans depend on to pollinate food crops, and that is an integral part of a delicate ecosystem.

The use of neonicotinoids is much more widespread than most of us probably realize. It is routinely used in big agriculture, in the form of both seed treatments and in the spraying of millions of acres of cropland. It is also used by arborists to control a number of pests that attack trees, particularly in urban settings. Most recently it’s been used to control emerald ash borer, but the city of Minneapolis has decided NOT to incorporate neonics in its ash borer strategy. Neonics are also industry standard in what is called “nursery stock” in the garden center trade, which the rest of us simply call trees, shrubs and perennials. Neonics are applied as seed treatments, soil drenches, and foliar sprays. They are a common ingredient in many bottled home garden pesticides.

Mother Earth Gardens does not advocate the use of any synthetic pesticides. We do not sell home pest control products that contain synthetic pesticides, and therefore none of our bottled or bulk pest remedies contain neonicotinoids.

We have been monitoring this information for several years, and we have contacted all of our growers to get information about their use of neonicotinoids. Since we have been buying the majority of our products from growers who use organic methods for years, at first it seemed like a simple task: identify those conventionally grown products that had been treated with neonics and eliminate them. That task quickly showed itself to be much more complex. After talking with our growers, we came to understand that neonicotinoids were being used throughout the horticultural industry.

We see it as part of our mission to educate and share information back and forth with our community. You, the gardener on the front lines, should have all the information, and it is nuanced. We are counting on our growers to give us honest information - we do not test or certify every plant. It should also be stated that there are many factors at play here, including loss of habitat, and we have lots of info at the store about helping to restore habitat in your own backyard.

But let’s start at the source: what’s going on with **seeds**? This is an easy one - are they treated or not? We have been assured that none of our seeds are treated with neonics, and none of them are GMOs (genetically modified organisms). This includes seed packs, potatoes, grass seed and bird seed.

What about **bulbs**? We sell both organically grown and conventionally grown bulbs. Because the Netherlands had a ban on neonics, we thought these were all clean. We have gotten enough conflicting information on some bulbs that we cannot be sure, and we will label those with a sticker that indicates they don’t not meet our highest pollinator standard.

The next step up the rung are seed grown plants. Again, we had no problem with this. 100% of our seed grown herbs and veggies are grown with organic methods.

All of our seed grown annuals and perennials are from growers who don't use neonicotinoid chemicals . 90% of our seed grown annuals are grown using organic practices..

After seed grown, you get to **tissue-cultivated, or plants grown from cuttings**. Most specialty annuals and larger perennials are in this category. Here the issue of whether the plant has ever been treated becomes difficult to determine. The original plant that the cuttings came from could be several different companies away from the grower who bought the cutting to grow to mature size. What we can say is that our main annual and perennial grower uses organic methods from the time they receive that cutting until it arrives on our tables. They also actively seek vendors who do **not** use neonics on their cuttings.

Now we are moving on to larger plants, and larger problems. One of our secondary perennial growers made a commitment to stop using neonics in 2014.. We responded by ordering large perennials from them, moving away from vendors who have not made that commitment. Our smaller perennials are all from growers who do not use neonicotinoids.

**Trees and shrubs** are the most difficult area. They are the oldest plants for sale in nurseries, and as such are the most likely to have been treated. We have yet to locate a vendor who supplies a wide range of organically grown trees and shrubs, but we've tried to stick to another phrase from our mission statement: buy local whenever possible.

Unfortunately, local or not, these pesticides have been used on older plants like trees and shrubs. So what can we do? We have taken several steps to mitigate the problem. We have transferred a large portion of our tree and shrub order, principally those trees and shrubs pollinated by bees, to our vendor who has committed to stop using neonics. We also try to limit any exposure by taking a few other steps: buying our fruit trees and shrubs from local vendors as bare root stock and planting them in untreated, organic soil, and buying smaller native shrubs that are untreated. We are still actively trying to isolate individual categories of plants to try to understand their history. If we just don't know - we will label that plant with a tag that indicates that it does not meet our highest pollinator standard.

We have always been committed to educating our customers about organic gardening, so even if none of us can know with absolute certainty what may have been treated in the past, we can *go forward and do no more harm*. And know this: we will give you the whole story, not just a sound bite.

So, yes, plant for pollinators! They need our help. Please ask us for information about what plants you can incorporate into your garden to help increase bio-diversity. All pollinators, not just bees, are struggling, and we can help by gardening with habitat in mind.

In conclusion, we'd like to say some words in support of the growers that we have developed relationships with over the years. Despite the recent news about this class of pesticides, many of the growers who have used them have done so with the understanding that they were using a product that was less toxic, that required fewer applications, and that would protect an investment that both the government *and consumers* were telling them had to be pest-free and perfectly presented. These are people, just like all of us, who have jobs and families and pets and gardens. These folks are nature lovers - they didn't set out to kill the bees, in fact they thought they were doing less damage.

Certainly, the big pesticide companies who developed these products have known the dangers for longer than the rest of us have and need to be held to account. This is an enormous, world wide problem that has to be dealt with by all of us, and we need to work together, not make pariahs out of the people with the most knowledge and ability to set this right.

Please feel free to contact us anytime with questions or concerns: [info@motherearthgarden.com](mailto:info@motherearthgarden.com)

Paige, Karen and the entire staff at Mother Earth Gardens