Bee Decline in Minnesota

The science continues to point to neonicotinoid pesticides as a main contributor to pollinator decline

Honey bees and pollinators are declining at alarming rates. Since 2006, beekeepers nationwide have reported losing an average of 30% of their bees per year. **Minnesota beekeepers lost 54.5% of their colonies in the 2012–2013 season.**[1] Scientists increasingly link these pollinator declines with low-level exposure to pesticide cocktails in the environment—especially to a class of systemic insecticides called neonicotinoids.

Pollinators are critical to Minnesota's agricultural economy—fruit and vegetable crops rely on bees. And neonicotinoids are harming bees without consistently helping farmers: research shows that many common uses of neonicotinoids don't increase yield or farmer profits.[2] A five-year moratorium on neonicotinoids is a scientifically sound response to unsustainable bee declines.

Neonicotinoids are the most widely used insecticides in the world. In the U.S., 94% of corn and about half the soybeans planted are coated with these chemicals. As systemic pesticides, neonics are expressed through the entire plant, including pollen, nectar and dew. They are also long-lasting, persisting in soil, water and plant tissue for months or even years. Bees can be exposed to neonics when they collect contaminated pollen and nectar, drink from water droplets emitted by treated crops, and encounter seed dust released during planting.

Persistent & long-lasting

USGS found neonics in **75%** of Midwest waterways tested.

> ***"We found no yield benefits resulting from seed-applied insecticides. At $12 to $15 per acre for soybeans, it turns out that this seed treatment is costing growers a lot of money unnecessarily."***
>
> — Jonathan Lundgren, research entomologist, USDA Agricultural Research Service

What you need to know

1. Neonicotinoid pesticides are one of the main drivers of bee declines. Multiple, interacting factors are harming bees, including loss of habitat, pesticides and disease. While there is no single cause of bee declines, neonics and other systemic insecticides are a critical factor. Neonics can kill bees outright at high enough doses. Long-term exposure to low levels compromises bees' immune systems and interferes with their ability to reproduce, forage for food, navigate and communicate.

2. Key Minnesota crops rely on honey bees and other pollinators. Important Minnesota-grown foods like apples, melons, cucumbers, squash, strawberries, apricots and berries all need pollinators to flourish. Pollination is essential for apples, which are Minnesota's top fruit crop, valued at $11.8 million.[4] Minnesota has historically been one of the top five honey-producing states in the country, with honey production contributing an average of $9–13 million annually towards the state's agricultural economy. However, Minnesota honey production is falling, in large part due to annual bee losses.

3. Neonicotinoids don't measure up. For crops like corn, soybeans, dry beans, wheat and canola, neonicotinoid seed treatments fail to consistently increase yield or farmer profits, especially in northern climates. [3,5,7,8]

Why now

The honey bee losses that beekeepers are currently experiencing are unsustainable. Minnesota is also home to 400 species of native bees whose decline is harder to measure but whose ecosystem services are indispensable. The state has taken some important steps to increase pollinator habitat, improve nursery plant labels, and compensate beekeepers for losses **but more work is urgently needed to protect pollinators**.

Minnesota isn't alone in taking action to protect pollinators from neonicotinoids. Ontario has committed to an 80% reduction in neonic use in corn and soybeans by 2017. The European Union implemented a two-year moratorium on neonicotinoids in December 2013; in the first year of the moratorium, crop yields were well above average. Oregon has banned the use of four neonicotinoids on certain species of bee-attractive plants. And many local municipalities, from Shorewood, Minnesota to Spokane, Washington, have eliminated neonics from public property.

Beekeepers speak out

" I'm losing about 50% of my bees every year. I notice higher losses when my bees are near neonicotinoid-treated crops. Neonics have a long half-life, and they accumulate in the environment, including in the water that bees bring back to the hive. I look for places to keep my bees that are as far away from neonic-treated fields as I can find. Bees are a warning sign about the pesticides that are contaminating our environment. Minnesota needs to do more to protect bees from neonicotinoids."

—Jim Whitlock, beekeeper
Peterson, Minnesota

A neonicotinoid moratorium will press the pause button on one of the major factors causing bee declines. Neonicotinoids are hazardous to bees, long-lasting in the environment, and often ineffective at fighting pests. **It's time for policies that protect pollinators and Minnesota's fruits, vegetables and honey.**

Want to know more?

Contact Lex Horan, organizer with Pesticide Action Network at (612) 254-9222.

Resources Cited

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