

## Neonicotinoid Treatment

Neonicotinoids are insecticides chemically related to nicotine. Neonicotinoids have success against sucking insects such as aphids and against chewing pests such as beetles and cutworms. Due to its water solubility, these chemicals are highly systemic in the plant roots and new leaf tissues and have been utilized for seed treatment since 1990's. According to the Environmental Protection Agency (EPA) proprietary data, about 30% of the soybean acres planted in the US are treated with Neonicotinoids.

Recently, the EPA conducted a study of soybean seeds that have been treated with neonicotinoids versus not receiving any insect control treatment with an outcome that in most cases, yield was not affected.

The EPA also found that treatments do not overlap with the more important Ohio pests, as treatment only last the first 3 - 4 weeks after planting. The more problematic pests such as slugs, bean leaf beetles, and seed corn maggots are not affected by neonicotinoids.

Dr. Andy Michel, The Ohio State University (OSU) Ohio Agricultural Research and Development Center (OARDC) Professor of Entomology, sympathizes, "I know growers might be reluctant to do away with seed treatment, but their return on investment might be minimal."

Neonicotinoids have been used for pest management for years in place of foliage treatment because they are less expensive. However, after this recent EPA study, the investment might be worth the return.

Neonicotinoids have also been paired with the linkage to the decrease in bee population. Residues are found in nectar and pollen that are consumed by insects such as bees. Concentrations of residues can reach very harmful and even lethal levels. Likewise, exposure to this insecticide can make honey bees more susceptible to parasites and pathogens that cause a disorder called Colony Collapse Disorder. This disorder causes honey bees to flee and abandon their hive.

While a decrease in bee population might not seem significant, the USDA reports that Bee pollination is responsible for more than \$15 billion in increased crop value each year. Many specialty crops like almonds and other tree nuts, fruits and vegetables, and berries depend on pollination by honey bees to be produced commercially.

Neonicotinoids have been up for review and concerns of its presence in water as well as its effect on the decreasing population of honeybees continue to raise awareness. Michel states that it's important for growers to know that this is not an outright ban on Neonicotinoids, but encourages farmers to try an alternative.