Neonicotinoid Pesticides

Developed in the 1990s from the plant compound nicotine, neonicotinoids have readily become the most widely used insecticide worldwide.

Neonicotinoid Pesticide Overview

- Low acute mammalian toxicity, a long residual effect, can be persistent in the soil, and water soluble.
- Applied as seed treatments, foliar sprays, soil drenches, or other methods.
- As systemic insecticides they can become present in nectar, pollen, and exudates at levels that are not immediately lethal. Sublethal effects on pollinator behavior, reproduction, etc. have been documented.
- Negative synergistic effects in combination with other pesticides have been documented.
- Untreated plants may take up neonicotinoids from previously treated soils or contaminated water.
- **Common active ingredients:** Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nitenpyram, Thiacloprid, Thiamethoxam.

Use Restrictions

- The European Union limited use 2013 and banned three products in 2018.
- The United States cancelled 12 products in 2019 and is reviewing registrations.
- Vermont restricted neonicotinoid use in 2019 to certified applicators only.

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