

Pesticide Comparisons

Pesticide	What is It?	How it works	Toxicity to People	Toxicity to birds, fish, bees
<i>Bacillus thuringiensis</i> (BT)	Microbe naturally found in soil	Bt makes toxins in an target insect larvae's gut when eaten.	low in toxicity to people and other mammals	Virtually non-toxic to birds and fish. Little to no direct toxicity to non-target insects and other shelled invertebrates. However, the Aizawai strain is highly toxic to honeybees. Other strains have minimal toxicity to honeybees.
pyrethrins	Found naturally in some chrysanthemum flowers. Most products contain synthetic pyrethrin	Pyrethrins excite the nervous system of insects that touch or eat it which causes paralysis and death	Low in toxicity to people and other mammals, but skin contact can be irritating. It can cause tingling or numbness at the site of contact.	Practically non-toxic to birds but highly toxic to honey bees. The risk to pollinators is limited by their slight repellent activity and rapid breakdown. Highly toxic to fish and aquatic insects.
chlorpyrifos	An organophosphate insecticide	Chlorpyrifos, touched, inhaled or eaten, blocks an enzyme which controls messages between nerve cells. The nervous system then malfunctions.	Chlorpyrifos affects the nervous system of people and other mammals in the same way it affects the target pest. Signs and symptoms can last for days or weeks while the body replaces the depleted enzymes in the nervous system.	Very toxic to many bird species and moderately toxic to others. Very toxic to fish and aquatic invertebrates. Very toxic to bees. It can poison non-target insects for up to 24-hours after it is sprayed.
acephate	A broad spectrum, organophosphate insecticide	When insects eat acephate, it becomes a stronger chemical in their bodies that over-activates nerves, muscles and brain.	People briefly exposed to acephate have had nausea, diarrhea, abdominal cramps, and other symptoms.	Moderately toxic to birds, species dependent. Slightly toxic to fish and amphibians. Highly toxic to bees and other beneficial insects.
carbaryl	A man-made pesticide also known as naphthyl methylcarbamate	When insects eat or touch carbaryl, it over stimulates their nervous systems.	Symptoms from brief exposure to carbaryl include weakness, dizziness and sweating. Slight to moderate toxicity to mammals.	Virtually non-toxic or slightly toxic to birds. Moderately to highly toxic to fish. Very highly toxic to waterfleas and stoneflies. Highly toxic to honey bees.

Source: National Pesticide Information Center, npic@ace.orst.edu