

# Predators

## EARWIG



Earwigs are omnivorous insects that are easy to recognize because of their well developed cerci or pinchers.. Adults range in size between 12-16 mm. They can feed on pest insects including aphids, spiders, caterpillar pupae, leaf beetle eggs, and scale insects. They can also feed on dahlia, carnation, and some ripe fruit. Its predatory habits generally offset its plant feeding behavior.

## MINUTE PIRATE BUG



Minute pirate bugs are efficient predators on small arthropods and upon the eggs and early instars of larger arthropods. They are between 1.5-6 mm in length and are actively used in commercial biological control. Conserving their habitat of white and yellow flowers is a good way to encourage their presence.

## ASSASSIN BUG



Assassin bugs were named because of the fierce way that some attack their prey. They vary in size and shape, but range between 3-40 mm in length. All are predatory and feed on many pest insects including grasshoppers, caterpillars and several different flies.

## PREDATORY MITE



Mites are mostly invisible to the human eye but predatory species offer significant control and are actively used in commercial biological control. Adults are about 0.1 mm in length. They are extremely important in controlling plant feeding mites.

## LACEWING



Lacewings undergo complete metamorphosis in which there are four stages including egg, larvae, pupae and adult. While many adults feed only on pollen, it is the larval stage that is known as a voracious predator of soft bodied insects including aphids. Many females lay their eggs on stalks to minimize cannibalism.

## PREDATORY THRIPS



While many thrips are known as plant pests, there are several species and at least two families which naturally prey on other pest insects including other thrips, scales, lace bugs, aphids, whiteflies and mites. Like other thrips, they range between 0.5-3mm in length.

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## ROVE BEETLE



Adult rove beetles are small slender beetles that are usually brown or black. They range in size between 3-35mm. The larvae are active feeders and can help control root maggot eggs and pupae.

They also feed on other small soft bodied insects. You can find rove beetles under rocks, near water, under compost and near decaying debris

## PREDATORY STINK BUG



A majority of Stink bugs are pest species. However, unlike pest species, spined soldier bug adults have a distinctive dark line on the membranous tip of each forewing that may form one dark streak when the wing tips overlap. They can consume caterpillars, beetle larvae and eggs. They are typically 8.5-13mm in length.

## LADY BEETLE



Lady beetles are the most visible and best known of the generalist predators. There are over 450 species in North America. They vary in shape and size but are typically oval

and dome shaped. Lady beetles tend to favor aphids for consumption. They can be very efficient with sufficient pest densities but this may cause some crop damage.

## ROBBER FLY



Adult robber flies have a distinctive appearance with a heavily developed thorax and are aggressive predators. They range between 12-18mm and are usually gray to brown in color. They are true generalists and will attack a diverse number of insects.

## GROUND BEETLE



Ground beetles consume soil-dwelling beetles and fly eggs, larvae and pupae. They also prey upon caterpillars and other soft bodied insects. They are typically dark colored with a metallic sheen and are

usually fast movers. They range in size between 3-25mm.

## BIG EYED BUG



Named affectionately for their large eyes, these bugs can feed on mites, insect eggs, small insects and larvae. They are typically about 3mm in length and vary in color from black and white to tan. They can be observed in weedy areas as they search for a source of pollen.

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## MEALYBUG DESTROYER



These are small lady beetles which feed on mealybugs and other sap sucking insects. They are generally less than 4mm in length. They don't survive the winter very well, but

can be purchased to replace populations or increase numbers for effective management.

## SYRPHID FLY



Syrphid flies, also known as hover flies, are abundant in many environments and only feed on pollen as adults. The larvae are effective aphid predators.

They have a "slug-like" appearance and will reach a length of up to 13mm. A single larva can consume up to 400 aphids during its development.

## APHID MIDGE LARVAE



The aphid midge is closely related to some of the flies which form galls on trees and other plants. Beneficial flies of this family are known to be effective predators and parasitoids of aphids scales or mites. Adults are tiny averaging between 2-3mm.

## SOLDIER BEETLE



Adult soldier beetles are between 8-11mm. Both the adult and the larvae are reported to feed on insect eggs, aphids, small caterpillars and other soft bodied insects. Adults are

common on flowering plants in late summer and fall.

## FLOWER BEETLE



Adult flower beetles are usually less than 10 mm in length. They are typically elongate to oval and often are brightly colored. Their impact on pests is not well documented, however, adults are known to feed on aphids,

flea beetles as well as the larvae and pupa of alfalfa caterpillars.

## DAMSEL BUGS



Damsel bugs are slender and usually a dull color of brown to yellow. They average about 8-12 mm in length and feed on a number of pests including armyworm, corn borer, leafhoppers, psyllids and several other pest insects.

Damsel bugs prefer to shelter in low growing grasses and ground covers.