Table 8 – Selected biological control agents found in orchards

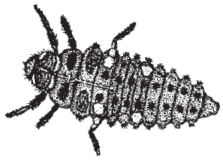
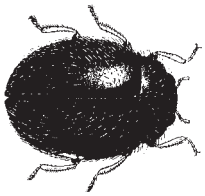
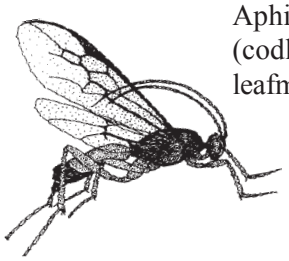
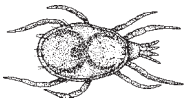
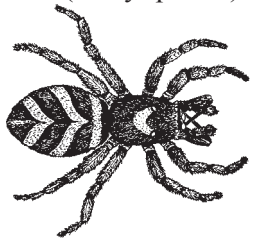
SPECIES or GROUP	PREY	COMMENTS
Cecidomyiid fly larva (*Aphidoletes aphidimyza*) 	Aphids, mites, scale insects	Small orange maggots found in aphid colonies, typically keep apple aphid below threshold.
Syrphid fly larva 	Aphids	Larva consumes 200-800 aphids. Adults are important apple pollinators.
Tachinid fly larva	Primarily the immature stages of moths, beetles, and sawflies.	Adults look like house flies, but with more hairs.
Green lacewing larva 	Aphids, leafhoppers, mites, eggs and small lepidoptera larvae, mealybugs, scale insects.	Active early spring to late summer. Consume 20 to several hundred aphids a day.
Ladybird beetle adults and larvae 	Aphids, mites, scale insects, small caterpillars, plant bugs. 	Many species found in orchards. Average female eats over 2000 aphids before she dies.
Stethorus punctum, ladybird beetle 	European red mites and twospotted spider mites.	Larva and adult eat up to 100 mites a day. More likely where mite density is 5 mites/leaf or higher. May be limited to southern New England.
Ground beetles and Rove beetles	Ground beetles: caterpillars, cutworms, pest lifestages that inhabit soil. Rove beetles: aphids and mites.	Adults and larvae are both predaceous.
Minute pirate bug 	Aphids and other small insects, mites, young scales, insect eggs.	Nymphs can consume about 30 mites a day.
Damsel bugs and assassin bugs (other true bug families)	Combined prey list includes aphids, leafhoppers, mites, moth eggs, small caterpillars. May also feed on tarnished plant bug nymphs.	Both families have long beaks. Nymphs and adults are predaceous.

Table 8 continued – Selected biological control agents found in orchards

SPECIES or GROUP	PREY	COMMENTS
Braconid wasp species 	Aphids, bark beetles, caterpillars (codling moth, leafroller, etc.), leafminers.	*Pholetesor ornigis* is a key parasite of tissue-feeding leafminer larvae. It leaves a white cocoon in the mine. 
Sympiesis marylandensis, Eulophid wasp	Leafminer tissue-feeding stage larvae	Wasp larva is a key factor in leafminer suppression. Adults also feed on leafminer larvae.
Chalcid wasp species 	Aphids, leafminers, moth eggs and caterpillars, scale insects.	In some pest species, chalcid parasitism may exceed 50 percent of the population.
Ichneumonid wasp species	Larvae of moths, butterflies, beetles, sawflies.	Adults generally larger than other wasp parasites, with a long ovipositor.
Amblyseius fallacis and *Typhlodromus pyri*, Phytoseiid predator mite species 	European red mites and twospotted spider mites. 	*A. fallacis* is a fast moving, yellow mite about the size of ERM, that moves back into trees in mid-summer. Where abundant, it can provide effective pest mite control. T. Pyri can provide season-long control.
Zetzellia mali, Stigmaeid predator mite	Primarily European red mite (ERM) eggs.	Adults are lemon yellow. Feeding pattern complements predation by Phytoseiid predators as they prefer different ERM stages.
Spiders (many species) 	All spider species are predators, primarily on insects. Leafhoppers, leafminer larvae, and many other apple pests are probably preyed upon by spiders.	The role of spiders in orchard pest regulation is not well understood.