

ARBICO Quick Pest Reference Guide

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Aphids

Damage to Plants: Honeydew & dark frass, leaf discoloration, puckered leaves.

Solutions:

- Green Lacewing - *Chrysoperla rufilabris*
- Ladybugs - *Hippodamia convergens*
- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- Aphid Parasites - *Aphelinus abdominalis*, *Aphidius ervi* & *Aphidius colemani*
- Aphid Predator - *Aphidoletes aphidimyza*
- Spinosad
- *Beauveria bassiana*



Budworms

Damage to Plants: Chewed, deformed or dying buds.

Solutions:

- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- Moth Egg Parasites - *Trichogramma sp.*
- Spinosad
- *Bacillus thuringiensis var. kurstaki (Btk)*



Cutworms

Damage to Plants: Missing or damaged seedlings cut right at soil level.

Solutions:

- NemAttack Beneficial Nematodes - *Steinernema carpocapsae (Sc)*
- Moth Egg Parasites - *Trichogramma sp.*
- Spinosad
- *Bacillus thuringiensis var. kurstaki (Btk)*
- Cutworm collars



Cyclamen & Broad Mites

Damage to Plants: Flowers can wither, distorted leaves, leaves curled inward, dark & streaked foliage, compact leaf masses.

Solutions:

- Mite Predator - *Neoseiulus (=Amblyseius) fallacis*, *Amblyseius andersoni*, *Neoseiulus (=Amblyseius) californicus* & *Amblyseius swirskii*
- Thrips Predator - *Neoseiulus (=Amblyseius) cucumeris*



Flea Beetles

Damage to Plants: Jumping insects, chewed leaves, small white buckshot holes.

Solutions:

- Assassin Bugs - *Zelus renardii*
- *Beauveria bassiana*
- NemaSeek Beneficial Nematodes - *Heterorhabditis bacteriophora (Hb)*



Fungus Gnats

Damage to Plants: Yellowing leaves, wilting plants, lack of root structure, damage may appear as nutrient deficiency.

Solutions:

- Fungus Gnat Predator - *Stratiolaelaps scimitus (=Hypoaspis miles)*
- Rove Beetle - *Dalotia coriaria*
- NemAttack Beneficial Nematodes - *Steinernema feltiae (Sf)*
- *Beauveria bassiana*
- *Bacillus thuringiensis israelensis (Bti)*



Grubs

Damage to Plants: Yellowing leaves, wilting plants, lack of root structure, damage may appear as nutrient deficiency, non-existent roots.

Solutions:

- NemaSeek Beneficial Nematodes - *Heterorhabditis bacteriophora (Hb)*
- NemAttack Beneficial Nematodes - *Steinernema riobrave (Sr)*



MEET OUR BENEFICIAL INSECTS



Chrysoperla rufilabris

Green Lacewings



Zelus renardii

Assassin Bugs



Orius insidiosus

Minute Pirate Bugs



Hippodamia convergens

Ladybugs

Mealybugs/Scale

Damage to Plants: Leaves may wilt, drop off easily, be discolored or reduced in size. Infested plants may have a distorted stem or growing points.

Solutions:

- Ladybugs - *Hippodamia convergens*
- Mealybug Destroyer - *Cryptolaemus montrouzieri*



Root Aphids

Damage to Plants: Lack of vigor, withering leaves, yellowing leaves, signs of nutrient deficiency.

Solutions:

- NemAttack Beneficial Nematodes - *Heterorhabditis bacteriophora (Hb)*
- *Beauveria bassiana*



Whitney Cranshaw, Colorado State University, Bugwood.org

Russet Mites

Damage to Plants: Leaflets curl, chlorosis, necrosis, lower leaves dry out, leaves look bronze in color.

Solutions:

- Thrips Predator - *Neoseiulus (=Amblyseius) cucumeris*
- Mite Predator - *Amblyseius andersoni*, *Neoseiulus (=Amblyseius) fallacis*, *Neoseiulus (=Amblyseius) californicus* & *Galendromus occidentalis*
- Sulfur



Slugs/Snails

Damage to Plants: Silver trail left on leaves, holes in leaves.

Solutions:

- Spinosad
- Iron Phosphate



Spider Mites

Damage to Plants: Webbing, leaf edges curling or burned, slowed growth, speckled, leathery golden leaves.

Solutions:

- Mite Predators - *Amblyseius andersoni*, *Phytoseiulus persimilis*, *Neoseiulus (=Amblyseius) fallacis*, *Mesoseiulus longipes*, *Galendromus occidentalis* & *Neoseiulus (=Amblyseius) californicus*
- Minute Pirate Bug - *Orius insidiosus*
- Spidermite Destroyer - *Feltiella acarisuga* & *Stethorus punctillum*
- Ladybugs - *Hippodamia convergens*
- Assassin Bugs - *Zelus renardii*



Thrips

Damage to Plants: Silver/bronze scarring on leaves & stems, browning & drying leaves, puckered leaves.

Solutions:

- Green Lacewing - *Chrysoperla rufilabris*
- Assassin Bugs - *Zelus renardii*
- Mite Predator - *Amblyseius swirskii*
- NemAttack Beneficial Nematodes - *Steinernema feltiae (Sf)*
- Minute Pirate Bug - *Orius insidiosus*
- Fungus Gnat Predator - *Stratiolaelaps scimitus (=Hypoaspis miles)*
- Spinosad
- *Beauveria bassiana*
- Thrips Predator - *Neoseiulus (=Amblyseius) cucumeris*



Frank Peairs, Colorado State University, Bugwood.org

Whiteflies

Damage to Plants: Piercing/sucking marks, dust like substance when touched, silver/white coloring.

Solutions:

- Green Lacewing - *Chrysoperla rufilabris*
- Minute Pirate Bug - *Orius insidiosus*
- Whitefly Parasite - *Encarsia formosa* & *Eretmocerus eremicus*
- Mite Predator - *Amblyseius swirskii*
- Whitefly Predator - *Delphastus catalinae*
- *Beauveria bassiana*



ARBICO Organics Difference

Visit arbico-organics.com for our full line of beneficial, biological and botanical pest control solutions.

History

We have been in business for over 35 years servicing conventional, transitional and organic growers.

Quality & Selection

For the home gardener to the commercial grower, we pride ourselves on the quality and selection of available products.

IPM Specialists

Our on-staff IPM Specialists are ready to listen to your needs and recommend solutions tailored to your situation.