

# ARBICO Quick Pest Reference Guide

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## Aphids

**DAMAGE TO PLANTS:** Reduction in plant vigor, slow growth, leaf yellowing, wilting.

**SOLUTIONS:**

- Aphid Parasites - *Aphelinus abdominalis*, *Aphidius colemani* & *Aphidius ervi*
- Aphid Predator - *Aphidoletes aphidimyza*
- Green Lacewing - *Chrysoperla spp.*
- Minute Pirate Bug - *Orius insidiosus*
- Assassin Bugs - *Zelus renardii*
- *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.*
- *Bacillus thuringiensis var. kurstaki (Btk)*



Image Citation: R.J. Reynolds Tobacco Company, Bugwood.org

## Cutworms

**DAMAGE TO PLANTS:** Missing or damaged seedlings cut right at soil level.

**SOLUTIONS:**

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



## Broad Mites

**DAMAGE TO PLANTS:** Blistered/glossy leaves, 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 - *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*
- NemaAttack 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)*
- NemaAttack Beneficial Nematodes - *Steinernema riobrave (Sr)*



## 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:**

- Mealybug Destroyer - *Cryptolaemus montrouzieri*
- Mealybug Parasitoid - *Anagyrus pseudococci*
- Red Scale Parasite - *Aphytis melinus*



## Root Aphids

**DAMAGE TO PLANTS:** Lack of vigor, withering leaves, yellowing leaves, signs of nutrient deficiency.

**SOLUTIONS:**

- NemAttack Beneficial Nematodes  
- *Heterorhabditis bacteriophora* (Hb)  
- *Steinernema feltiae* (Sf)
- Fungus Gnat Predator - *Stratiolaelaps scimitus* (=Hypoaspis miles)
- Rove Beetle - *Dalotia coriaria*
- *Beauveria bassiana*

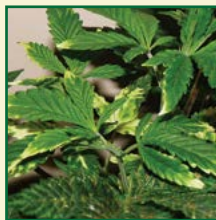


## Russet Mites

**DAMAGE TO PLANTS:** Leaflets curl, chlorosis, necrosis, lower leaves dry out, leaves look bronze in color.

**SOLUTIONS:**

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



## Slugs/Snails

**DAMAGE TO PLANTS:** Silver trail left on leaves, holes in leaves.

**SOLUTIONS:**

- 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*



Image Citation: Whitney Cranshaw, Colorado State University, Bugwood.org

## Thrips

**DAMAGE TO PLANTS:** Silver/bronze scarring on leaves & stems, browning & drying leaves, puckered leaves.

**SOLUTIONS:**

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



Frank Peairs, Colorado State University, Bugwood.org

## Whiteflies

**DAMAGE TO PLANTS:** Piercing/sucking marks, dust like substance when touched, silver/white coloring.

**SOLUTIONS:**

- Whitefly Parasites - *Encarsia formosa* & *Eretmocerus eremicus*
- Whitefly Predator - *Delphastus catalinae*
- Green Lacewing - *Chrysoperla* spp.
- Mite Predator - *Amblyseius swirskii*
- Thrips Predator - *Amblyseius cucumeris*
- Aphid Predator - *Aphidoletes aphidimyza*
- *Beauveria bassiana*





**Break the Pest Lifecycle!**

Use sticky traps to kill flying pests and stop the reproductive lifecycle. For pest insects that have a soil developing stage, such as Thrips and Fungus Gnats, utilize Beneficial Nematodes in the soil to stop infestations before pests emerge.