Cornell Cooperative Extension

Capital Area Agriculture and Horticulture Program

Aphid Banker Plants 101:
Culturing Aphids to Sustain Parasitoid Wasps

Plan to get ahead. Biocontrol agents, also known as beneficial organisms or natural enemies, lag behind pest species. Pests reproduce much more quickly than their predators. For biocontrol to work, establish a population of "good guys" before the number of pests reaches an action threshold (time to spray). If biocontrol organisms are established, they will manage a healthy level of pests in your greenhouse.

Maintaining a colony of parasitoid wasps is an effective and economical way to manage green peach or melon aphids in the greenhouse.

FAQ

Q: Are the parasitoids going to stay in the greenhouse?
A: If you provide food and habitat for biocontrol organisms (bankerplants), they will stick around.
Q: Do these wasps sting?
A: Not people, only aphids.
Q: How do I know they are working?
A: Use yellow sticky cards in your greenhouse to monitor flying insects.
Q: How expensive is it to start an oat-aphid-parasitoid banker plant system?
A: See Table 1.

Table 1. First and second season cost breakdown for an aphid parasitoid banker plant system. Quantities are calculated for a 1,000 sqft greenhouse with 4 sticky traps placed in the greenhouse. Prices are calculated based on what was purchased fora 2016 Community NYS IPM Grant.

First Season Material	Quantity	Cost as of 1/4/17	Shipping
Colemani-banker-system	1 (barley plant with cereal aphids)	19.80	40.00
Aphidius-System	1 (500 mummies)	19.00	30.00
Bug cages	2	93.00	12.56
Yellow sticky traps (3x5 cards)	1 box of 100	23.95	7.35
Barley seed	1 lb bag	5.90	6.00
Total			**$257.56**

Second Season Material	Quantity	Cost as of 1/4/17	Shipping
Colemani-banker-system	1 (barely plant with cereal aphids)	19.80	40.00
Aphidius-System	1 (500 mummies)	19.00	30.00
Barley seed	1 lb bag	5.90	6.00
Total			**$120.70**

See other side for a step-by-step banker plant system set up!

Step by Step Banker Plant Set Up

Step 1. *Plant barley every week beginning 2 weeks before "Colemani-banker-system" and "Aphidius system" arrive.*

Step 2. *The "Colemani-banker-system" comes in the mail like this. It is then placed immediatelyinto the bug cage with clean barley plants.*

Step 3. *A. colemani parasitoid wasp mummies (Aphidius system) come in a tube (inset). Shake these onto barley plants infested with cereal aphids. Soon enough you'll see your very own mummies on the barley plants you planted.*

Step 4. *Place barley banker plant among cash crop and check sticky traps every other week. Look for mummies on plants.*

Barley or oat plants with cereal aphids and *Aphidius colemani*, depicted here, is not the only banker plant system. Depending on what your cash crop is, a different system may be best. Identify the species of aphids that are a problem on your cash crop. **Compatibility with your cash crop is critical.** If your cash crop is in the grass family (Poaceae), a barley,oat, or wheat banker plant system is not the right choice. Cereal aphids (including oat-birdcherry aphids) are pests of cerealcrops. To reduce the risk of aphid spread from banker plants to a cereal cash crop, avoid using a cereal banker plant system in locations where you are growing plants in the Asparagales order of plants (e.g. ornamental grasses, orchids, irises, dracaena, spring bulbs, onions, and garlic).

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