



**IPM Laboratories, Inc.**

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## Aphid Guard™ Aphid Banker Plant

**Support for the aphid parasite:** *Aphidius colemani* and aphid predators: *Aphidoletes aphidimyza* and *Scymnus creperus*

**Aphid species:** *Rhopalosiphon padi*, bird cherry oat aphid (BCOA)

**Aphid Host Plant:** barley

### Instructions:

1. Divide Aphid Guard Banker Plant into six pieces and pot in six 6" pots or split into 3 sections and pot in three 10" pots, splitting up individual seedlings as much as possible.
2. Both potted Aphid Guard divisions and newly sprouted barley with aphids will be referred to as "banker plants."
3. Barley and aphids prefer cooler temperatures, near 70° F with even moisture. Water gently, or set up a drip line to assure that the aphids are not knocked off the grass.
4. Space plants to allow ample air circulation; fungal pathogens can kill aphids and barley.
5. Protect the aphids in a mesh cage or other protected site for 2 weeks until they quadruple in number. Bioquip sells very handy cages at [www.bioquip.com](http://www.bioquip.com). We like the Bug Dorm 2 Rearing Cage 1462W. Specify the fine screen.

### Greenhouse Introduction Rates:

- For small (<5,000 ft<sup>2</sup>) spaces, add one banker plant every two weeks, to a total of 3-5 banker plants, depending on house size and aphid levels.
- For larger areas, add 1-2 new banker plants weekly, to a total of one plant every 2-4,000 ft<sup>2</sup>.
- Triple these numbers to support predators (i.e. 3 plants every 2,000-5,000 ft<sup>2</sup>). Predators that can use aphid banker plants are *Aphidoletes aphidimyza* (the aphid midge) and *Scymnus creperus* (a tiny lady beetle produced by IPM Laboratories, Inc.)
- Hold unused banker plants in protected place with bright light until needed.
- Banker plants last roughly 2 months or until the aphids no longer reproduce on the plant.

### Aphid Parasite Tips:

- Release no more than 100 *Aphidius colemani* per pot two weeks after receiving your banker plants; too many parasites will exhaust BCOA quickly, rendering banker plants ineffective.
- Observe the banker plants regularly for aphid mummies. Release a fresh set of *Aphidius* one or two weeks later, depending on aphid levels in the crop.
- Watch the crop closely for aphid mummies. If you find aphid colonies in the crop that do not have any mummies, check the aphid species.
- BCOA can infest ornamental grasses, though parasites will likely prevent any outbreaks. Keep grasses away from banker plants and monitor closely if in the same house.

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### **New Banker Plant Production:**

- Grow or purchase new banker plants to be added to the greenhouse every 1 or 2 weeks.
- If growing your own, sow new barley seed weekly or biweekly.
- Distribute grain in 6-10" pot at a rate of about 4 seeds per square inch. (roughly 2 teaspoons of seeds for a 6" pot and 5 teaspoons for a 10" pot).
- Allow six days for germination at 70° F. Higher temperatures impair germination rate.
- Transfer aphids to the new plants as soon as they are an inch high by gently brushing an infested plant over the new plant.
- Hold newly infested plants in a protected site for at least 2 weeks before placing into the greenhouse.

### **To culture your own aphids:**

You will need twice as many banker plants held in reserve as the number of pots going into the greenhouse in any given week. One third of the initial banker plant purchase goes into the greenhouse, and two thirds are held back (unless you plan to purchase in your breeding stock weekly or biweekly). For example, one banker plant unit will supply two 6" pots to be placed in the greenhouse, and four 6" pots to be put toward producing new banker plants.

Once a pot goes into a house with active parasites or predators, it cannot be placed back in reserve with your "clean" BCOA. Even though the banker plant does not appear to have parasites or predators, natural enemies are tiny and easily overlooked. One female parasite is all it takes to compromise your aphid production.

In the summer, hyperparasites (parasites that attack *Aphidius* wasps) enter the greenhouse and can reduce the effectiveness of your Aphid control program. Retaining banker plants all year may allow hyperparasites to overwinter in your greenhouses, thereby suppressing *Aphidius* wasp populations the following year. *We urge you to dispose of all banker plants in October or November* and buy clean stock next year.

### **Is the cost of overnight freight a problem?**

We offer the same number of aphids on cut barley leaves or plant-free aphids. The reduced size of the shipping box reduces freight costs. However, you must have barley plants started enough in advance for plants to be at least one inch tall when the aphids arrive. The cut leaves can simply be placed on top of the sprouted barley, and the aphids will walk onto the new plants very quickly.

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