

GROWERTALKS

Columns

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Taking Banker Plants Outdoors

Roger McGaughey

Six years ago when I started on this journey of controlling pests with biological control agents (BCAs), who would have thought we would have come so far in such a short time. Biological pest control is now commonplace for many greenhouse operations. At Pioneer Gardens, we have a designated drip line running through the greenhouse where there's a collection of banker plant varieties for indoor thrips control (Figure 1). This proved very successful last year and we were still finding adult *Orius* in late October. Coupled with weekly nematode applications, we were almost thrips-free in the greenhouse for the whole season. Now we want to take the process a stage further and see if we can make it work in our perennial field production sites.

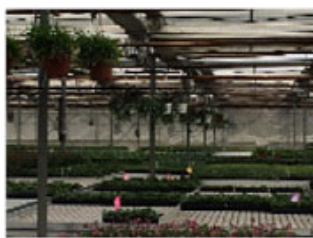


Figure 1



Figure 2



Figure 3

Pest control in outdoor production of pot perennial crops can be a real challenge, as there's a lot of area to be covered. The main pest problem is thrips and outside we're definitely at the mercy of the prevailing weather conditions. Hot, windy conditions can increase the population in a very short time, so there needs to be a good preventative plan in place to combat this. *Orius insidiosus*, a thrips predator, is our best friend and it's important to have a resident population of this insect in readiness for any thrips invasion.

In my early years of growing pot perennials, I tried to establish an *Orius* population in the production area. These insects are very difficult to find, but knowing where to look is a big advantage. My BCA rep in those days was Sebastian Jacob. On a field walk one evening, his keen eye soon found an adult *Orius* deep down inside a daylily flower. Last fall, after recounting this experience and discussing a potential outdoor field BCA project with my boss Jaap, we decided to attempt biological pest control in our daylily field production areas this year.

I took the necessary steps to plan production of a quantity of banker plants through the winter months so that we would have a viable population of *Orius* ready to go to war against the thrips invasion when it occurred. Purple Flash Peppers (Figure 2) are the best host plant for rearing an *Orius* population. At first flower stage,

we started weekly introductions of *Orius*, received from our BCA supplier BioBest. The pepper flowers produce a lot of pollen, food for the *Orius*, and when light and warm temperature conditions prevail, they'll happily reproduce in the banker plant environment. You know that there are adults and young nymphs in residence by knocking the flowers over a white sheet of paper and seeing all of the life stages moving around on the white background.

I also grew a quantity of lobularia, marigolds and zinnia. These are all good pollen-bearing plants and provide food for the *Orius* population. We've also grown some mullein plants and have introduced *Dicyphus*, a whitefly and general predator, to incorporate in the field banker plant area. Nutrimac can also be used as a food supplement for the *Orius* and *Dicyphus* while early flower pollen is in short supply. In our daylily fields this year, we'll have designated beds of the above banker plants with the hope that we can achieve good thrips management with minimal chemical control.

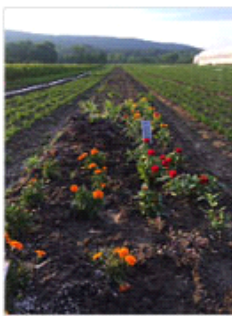


Figure 4

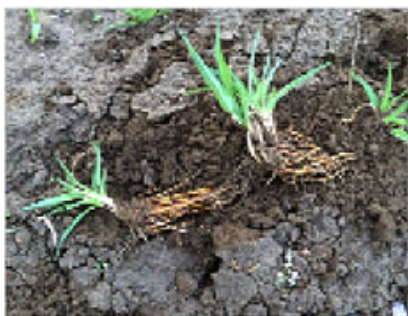


Figure 5

In order to acclimatize the banker plants for their new field home, we hardened them off on some roll out tables adjacent to the greenhouse (Figure 3). After a long, snowy winter in New England this year, spring was also unpredictable—cold, hot, with some very late frosts, but no regular pattern. Sometimes it was necessary to roll the tables inside the greenhouse to protect them from inclement weather

conditions.

At the time of writing this article (mid-May), we hadn't been able to plant the field areas due to cold weather conditions, but last week, I did plant out a small trial area in one bed to see how the product would perform (Figure 4). Hopefully, next week we'll be able to plant the two allocated rows in our daylily field. We apply RootShield Plus to all material at planting in the greenhouse and, over the last few years, have also found it to be very successful in promoting a good white healthy root system in field-grown material. RSWP Plus will be applied around the root zone of the banker plants at the time of planting. Figure 5 shows two-week-old daylily barerooted plants, which were dipped in RSWP Plus prior to planting.

It's our intention to carry on with BCA introduction for a few weeks on the field-planted material to assist with a good population establishment. As inside, a good scouting program will be necessary. The bed layout doesn't allow sprays to be applied to the banker plant material. From previous experience, it's expected that, with soft pesticides being applied only as absolutely necessary, natural predators will augment the introduced *Orius* and *Dicyphus* in the ensuing thrips battle.

Only a few aphid banker plants will be used in the field this first year, as I feel they won't relish the overhead sprinkler irrigation, which is necessary due to the unusually dry current weather conditions. We will, however, use some and see how they perform.

Speaking of aphid bankers leads into a follow-up to my recent March article about the young student growers producing a supply of banker plants for us this season. It's a pleasure to report that they took this project to

the state Future Farmers of America (FFA) convention in March and won first place in the science fair competition. Their prize is that they get to go to the national competition in Kentucky in the fall where they will submit their project again. Needless to say, Emily and Megan, the two girls responsible for the project, and their teachers are thrilled with their success. Also really pleased is my assistant grower, Amanda, currently in her first year as secretary for the Massachusetts FFA Alumni Association—the bridge between student members and industry professionals.

Do outside banker plants work? We certainly believe that they will. This is the second year that we've grown a quantity of banker plants and shipped them, complete with BCAs, to a large tomato operation in Maine. These are planted in the landscape just outside their greenhouses and seem to help control pests that otherwise might enter the tomato production areas.

For us, it will certainly be an interesting trial and may be the start of safer field production practices. **GT**

Roger McGaughey, head grower at Pioneer Gardens in Deerfield, Massachusetts, was educated in Northern Ireland and England and has 40 years experience as a grower.