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GROWERTALKS

Columns

Bug Patrol

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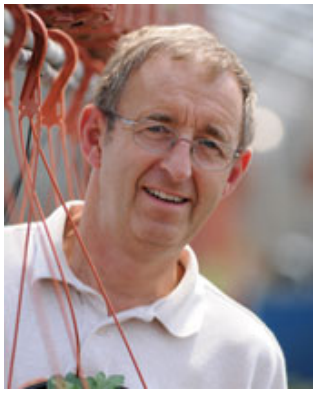

Life without having to spray my crops would be wonderful. This year I'm setting a goal that in at least two main areas I'm going to start using biological control.

Last year in our glasshouse I used parasitic nematodes (Steinernema feltiae) as an aid to control fungus gnats/shoreflies and to get a jump on some thrips control. We grew New Guinea hybrids, and every batch that was planted was treated with a mixture of Plantshield HC (now Rootshield wettable powder [RSWP]) and nematodes. I also used Botanigard ES as a wet spray on a fairly regular rotation. Overall, the season was very successful: clean yellow cards and few or no thrips problems at shipping time. After this experience, I decided to go further in 2009.

This year we're growing more pansies than before and putting a lot of them in our 3/4-acre plastic gutter-connect house. With extra hanging baskets and lots of flats in one area, I decided to go the biological route this season.

This is a work in progress. It involves establishing a "banker plant system" and preventing aphid problems with the predator *Aphidius colemani*. Barley plants (the banker plants) are infected with a cereal aphid, which only affects monocotyledonous crops, and then these banker plants are inoculated with *A. colemani,* which uses the aphids as a food source. You need a minimum of 2.5 banker plants per acre, but later you'll need more, since aphid pressure will increase in spring. Basically, the *A. colemani* population explodes after the initial inoculation and then fly around the greenhouse on "bug patrol," looking in the pansy crop for aphids to feed on. Once they've cleaned up any population, they come back to the banker plants to feed on the original monocot aphids. The banker plants need to be replaced every two to three weeks to ensure a constant food source. In late February, A. ervi ought to be added to the banker plants to help control foxglove aphids, which are too large for the *A. colemani* to attack.

My entire pansy crop is being treated with RSWP at planting, and so far crops that we started a week before Christmas have a good, clean root system and fungus gnat-free yellow cards. With continual monitoring, we hope to get to the shipping season with a healthy, pest-free crop. A buildup of banker plants and predator population will be a significant advantage going into spring when the population can be used to extend aphid control to other areas of the nursery.

We'll plant our zonal geranium crop in mid-February/early March, and here the main pest problem will be thrips. Nematodes will be the first predator used. We'll drench/dip trays of bought-in cuttings in a nematode solution before planting and treated with RSWP. The planted crop will be treated twice, three to four weeks apart, with Hypoaspis miles at the rate of 5 to 10 mites per sq. ft. and Atheta coriaria, a predatory rove beetle of soil-dwelling insects, at a rate of 1 to 2 per sq. ft. These last two predators target shorefly and fungus gnat larvae, but since RSWP seems to do a great job of reducing/controlling the fungus gnat population, I may be able to reduce the levels of Hypoaspis and Atheta needed. Initially though, as they also feed on thrips pupae in the soil, I probably ought to stick to the recommended program. *A. colemani* and the banker plant system will be utilized here also just to keep any aphid problems at bay.

Next in the thrips control arsenal is an application of Amblyseius cucumeris, which is a small predatory mite. When the thrips pressure increases in late spring/early summer, another predator, namely Orius insidiosus, should be introduced. This is a highly mobile thrips predator whose sole purpose in life is to wake up each morning, hunt down thrips and eat them for fun. What could be better!

This will be a new venture for Michael's Greenhouses, but with help from our predator supplier and other local growers, along with regular scouting, hopefully we can make a success of growing the biological way. Wish us luck!

Roger McGaughey, head grower at Michael's Greenhouses in Cheshire, Connecticut, was educated in Northern Ireland and England and has 34 years experience as a grower.