

# GROWERTALKS

## Pest Management

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### War on the Whiteflies

*Jason Rekker*

Here's how some leading poinsettia growers responded to the following questions about their whitefly management strategies:

How are you managing whitefly resistance, particularly the *Bemisia* Q biotype?

**Rob O'Hara, Rainbow Greenhouses, British Columbia:** For the past several years, I used a rotation of chemicals that target all types of whitefly, such as Kontos, Distance, Endeavor, Enstar, Avid, Beleaf and Dynamite. We also scout on a weekly basis to determine pest pressure, which then determines the timing and rate of applications, and which type to target.

**Amy Morris, N.M. Heimos/Millstadt Young Plants, Missouri/Illinois:** Using sticky cards and scouting, we try to identify which whitefly we are dealing with, and from there, treat accordingly. We use one mode of action for two weeks and then switch to another mode of action for the entire greenhouse. We only do supplemental sprays if we find hot spots. We try to drench at the latest possible date to cover the end of the crop so we don't have to apply sprays to the bracts.

**Tom Wheeler, Bell Nursery, Maryland:** We rotate MOA, generally making sure we rotate MOA after one generation. We see BCAs as an important tool in control of the Q biotype and will be dedicating an acre area of poinsettia production to trialing BCA control.

**Albert Grimm, Jeffery's Greenhouses, Ontario:** In 2004, after a near catastrophic crop loss due to resistant whitefly, the company decided to support all-out biological control for whitefly on poinsettia, and it has been very successful. We have not made a single insecticide application for whitefly control and our crops have been clean. No resistance issues to manage. In a biocontrol system, Q-biotype is a non-issue. The only advantage that Q-biotype has over other whitefly is its ability to survive pesticide application. In the absence of pesticides Q-biotype is not as fit as B-biotype, and it will eventually disappear from the population in a biocontrol environment. We design our biocontrol strategy for the control of *Bemisia*, because its behavior and peculiarities make it a much more difficult target than greenhouse whitefly.

Do you use neonics as part of your whitefly program, and if you've stopped, how has that impacted your program?

**Rob O'Hara:** Neonics are still very effective, but we no longer use them since our customers require that from us. Not using neonics has taken some good tools away from us and made us be more diligent in prevention. I haven't had to adjust my practices too much because I never completely relied on them to start with.

**Amy Morris:** This year, we're trying a Mainspring drench and biologicals. In the past, we've used drenches, but due to the bee situation, we're trying different avenues.

**Tom Wheeler:** We do not use neonics in poinsettia production or on any other crops. It's important to start with a clean, sanitized greenhouse and clean cuttings. We also have a strong IPM program and an independent scout. We have used both Kontos and Mainspring as our systemic options on poinsettias and these have been our primary replacements for the neonic class.

Our basic program for whitefly controls is to do a media surface spray/foliar spray of Distance within two weeks after pinch when soil is exposed, but leaves are flushing actively, to help control whitefly (and fungus gnat and shore fly larvae). We follow this up in early September with a drench of Kontos or Mainspring. If necessary, in October, we rotate to the different MOA. For late-season whitefly, one good option is Rycar from Sepro, which is a great option as a foliar spray if you have late-season whitefly pop up and it is safe on bracts.

**Albert Grimm:** We had not been using insecticides in poinsettias for more than a decade, but even in bedding plants, I have not been using neonicotinoids since several years before these chemicals became a news issue. I considered them too disruptive to the year-round biocontrol systems and there are usually better options.

What other biological and cultural techniques do you employ to help manage this pest?

**Rob O'Hara:** I have never used biological programs for whitefly. Some growers have and it has been effective, but we just have never gone that route. I believe strongly in sanitation (we sanitize all greenhouses pre-season) and scouting so you find small problems before they become large ones.

**Amy Morris:** Number one is to keep the place clean. My father always instilled in everyone, "Start clean and stay clean." We are also working with several companies trialing different biologicals to determine what works best for us.

**Tom Wheeler:** After two years of trialing BCAs on spring and summer crops, we feel that they will be an integral part of our pest and resistance management in the future. Our logical next step will be to extend the BCA program to our poinsettias. I foresee trialing three strategies—including a Kontos integration, a Mainspring integration and a BCAs only. Sanitation, a clean start and vigorous scouting are of particular importance when relying on BCAs.

**Albert Grimm:** Sanitation and weed control are absolute pre-requisites for all pest control. We also begin to scout very early in the crop to determine the initial presence of whitefly long before we see the first adult, in order to set my biocontrol strategy. This is absolutely crucial. Yellow sticky cards are useless for this purpose.

They only tell us whether our controls have worked; they don't tell us anything about the initial presence of whitefly.

We check the leaves of poinsettia cuttings for whitefly nymphs about 10 days after sticking and count the visible whitefly nymphs on the leaves, which then provides the basis for our strategy. We continue this leaf count weekly throughout the crop, adjusting the strategy as necessary.

For the first 10 years, we based our *Bemisia* control on the parasitoid wasp *Eretmocerus mundus*, which we found to be the key for whitefly control, but their availability has since been discontinued by our principle producers due to production and cost issues. We now base our *Bemisia* control on the predatory mite *Amblydromalus limonicus*, which is very expensive and requires supplementary feeding. Once the crop is spaced, we introduce *Delphastus catalinae*, a predatory beetle that feeds exclusively on whitefly.

In 2015, this strategy resulted in no visible whitefly and this year looks equally good so far. The caveat is cost, with our entire pest control cost increasing from less than 5 cents per plant to over 10 cents per plant with the new strategy. However, it is important to remember that the most expensive pest control is always the one that does not work.

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So there you have it—lots of ways to skin a cat. Or, apparently, a Q biotype *Bemisia*.

Sincere thanks to everyone for their input. **GT**

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