

Good bugs clean up at B and H

By Bob Johnson

Yellow sticky cards hung abundantly above the gerbera daisies as nearly 150 organic farmers toured the B and H Flowers greenhouses on Freedom Boulevard outside Watsonville, as part of the Ecological Farming Conference tour in January.

The cards are part of a far-ranging scouting program that has allowed this large cut-flower producer to use beneficial insects to slash pesticide use over the last decade by 95 percent.

Before the managers nervously tried beneficial insect releases, they said they were applying pesticides in their Carpenteria and Watsonville greenhouses with increasing frequency and decreasing effectiveness.

Today a variety of beneficial wasps, predatory mites and other insect helpers do almost all of the work of controlling aphids, thrips, leaf miners and whiteflies.

The initial costs for biological pest control were high, according to production manager Alberto Arroyo. But now they are lower than ever. Part of the savings has come from the maintenance of a greenhouse environment that lets the beneficials remain established.

"Twelve years ago we were spraying every other day and some of it wasn't working," Arroyo recalled. "These guys from the beneficial nursery came in and I didn't know if they knew what they were talking about. I tried it and I'm glad I did."

In the beginning biological controls were not the easiest way to guarantee good yields of their high value crop of cut gerbera.

"Getting the yields is more difficult when you're using beneficials rather than chemicals, at least initially," said Scott Fulton, B and H Flowers vice president for sales and marketing.

Pest management with beneficial insects was working so poorly initially that the company was ready to give up. But Arroyo and the employees asked for another chance to make it work.

Arroyo came up with the idea of training the harvesters to recognize the pests as they worked their way down the rows of flowers. This additional scouting information is invaluable in deciding when and where to release beneficials in the greenhouse, or to spray to supplement the bio-controls.

A vital part of making bio-control work in the greenhouse is achieving a balance between predators and pests, according to Arroyo.

The scouting by the harvesters is invaluable in helping to target the right time for release. So, too, is the information gathered from the yellow sticky cards abundantly scattered throughout the greenhouses.

But sometimes it comes down to developing the art of timing releases early enough to avoid pest outbreaks, and late enough to avoid having predators with nothing to eat.

The firm's success in converting to biological pest control has been made possible, in part, by the help of beneficial insectaries and university researchers who specialize in greenhouse cut flower pest control.

"Fortunately the beneficial industry has come up with answers for us," Arroyo said. "We use a wide

variety of beneficial insects. We're trying a new mite that I call the super mite because it controls aphids, thrips and whiteflies."

Two insectaries in California, one in Holland and a fourth in England all supply different beneficial insects.

The company's work with bio-control has helped B and H earn certification the last three years by

VeriFlora, a third-party group that certifies compliance with sustainability standards for practices that are responsible to the workers, the community and the environment, and produce a quality product.

"I view VeriFlora certification as part of the path toward organic," Fulton said. The company does not get a premium for VeriFlora certification but does get about a 30 percent premium for the organic gerbera, lilies and sunflowers they produce in Carpenteria.

The pest control at B and H is almost entirely biological, but the most modern computer controls are used to precisely set the climate, irrigation and fertilization.



Gerbera daisies

"With gerbera we have some customers whose specification on stem length is 22 inches," Fulton said. The light and heat in the greenhouses are adjusted to meet those exacting standards.

But the key is controlling the greenhouse environment to maximize flower production during the peak times. Half or more of the firm's sales come during the spring window from Valentine's Day through Mother's Day.

"We have to be ready to hit on all cylinders then," Fulton said.

The crews take care of greenhouse maintenance and cleaning up the plants during the fall and winter so they can focus entirely on harvesting during that peak season.

B and H has two facilities in Watsonville and one in Carpenteria, which combined have 2 million square feet of greenhouse space and another 170 acres of fields, including an avocado ranch.

Dutch immigrant Jan Brand started this operation and named the company after his sons Barry and Hans.

"This was started by some immigrants who began with nothing," Fulton said.

Today the firm produces 10 million Oriental lilies, 5 million Asiatic lilies, 8 million Dutch tulips, 15 million gerbera daisies and 50 acres of irises.

Most of the state's cut flower business has been lost over the last two decades to lower cost producers in the Andean countries.

But B and H bought the greenhouses on Freedom Boulevard outside Watsonville two years ago and converted it from cut roses to gerbera and Asiatic lilies.

California leads the United States in production of cut flowers. During 2007, the most recent year for which full statistics are available, the state accounted for 77 percent of the wholesale value of cut flowers produced nationally. The U.S. Department of Agriculture estimated the wholesale value of California-grown cut flowers at \$320 million.

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