New Insecticides
Offer Alternatives For Growers

Chemistry advances in insecticides broaden growers’ pest management options, without compromising control.

by JANEEN WRIGHT
Associate Editor
jwright@meistermedia.com

RECENTLY, OHP sent an email to its customers that expressed its continued support of neonicotinoid (neonic) insecticides in accordance with science-based EPA regulations. The company stated that while it continues to support the use of neonicotinoid chemistries, it also recognizes that growers are looking for chemical alternatives to manage insect pests.

In many instances, greenhouse and nursery growers find themselves in the same position. While they recognize that the verdict is still out on any effects of neonicotinoids on pollinators, it is judicious to be on the lookout for alternative chemistries.

And that isn’t necessarily a bad thing. Nor does it mean growers are ready to give up on using neonics altogether. What it does mean is they understand that the more tools they have in their toolbox for pest control, the better, especially when resistance is a concern.

“Resistance drives innovation,” says Jamie Breuninger, technical leader for Dow AgroSciences Turf and Ornamental. He adds that it leads companies like his to search out new chemistries that fit the needs of the industry, which means more options for growers to put in rotation.

Dan Stahl, OHP vice president of marketing and business development, echoes Breuninger’s sentiments, saying his company, as well as others in the industry, focuses on supporting existing tools and figuring out how to use them better. Along with that, it probes for new tools and solutions that will fill its customers’ needs.

Stahl says growers who choose to grow without neonicotinoids will find it a challenge, because products that provide the broad-spectrum control that neonicotinoids do are limited. But they are out there.

Recent advances in insecticide chemistry expand the options growers have available to them. They provide crop-safe, neonicotinoid alternatives that represent new classes of chemistry, while being efficacious and providing broad-spectrum control. Here’s an update on some of the latest products on the market.

Mainspring (Syngenta): Bars Pests From Feeding And Deters Their Establishment

Mainspring is a new systemic insecticide with broad spectrum activity against a wide array of chewing and sucking pests such as caterpillars, thrips and whiteflies (B and Q types). It contains the new active ingredient cyantraniliprole (IRAC Group 28), which causes paralysis, feeding inhibition and death. Mortality is observed within two to four days.

“Mainspring offers a new class of chemistry for the ornamental market that growers can use for systemic protection against key ornamental pests,” says Syngenta’s Field Technical Manager, Nancy Rechcigl.

“It is best used early in production to keep insect populations from building to damaging levels; it stops pests from feeding and keeps them from establishing in the crop.”

Mainspring can be applied as a foliar spray or a drench and has a four-hour REI (re-entry interval). Rechcigl says good control has been observed when foliar sprays are applied using a rate of 4 to 8 fluid ounces/100 gallons on a 14-day interval, while a drench application provides residual control for five to six weeks, depending upon the pest. The product does not negatively affect predator and parasitoid populations when used according to the label.

Syngenta has also registered Enfold insecticide for use on herbaceous and woody ornamentals grown in commercial outdoor production. It contains the active ingredient emamectin benzoate (IRAC Group 6) and has activity across a wide array of lepidopteran pests, and it provides suppression of the Liriomyza leafminer, spider mites and pear psylla.

XXpire WG (Dow AgroSciences) Combines Two New Active Ingredients

XXpire WG is a systemic insecticide that controls a wide variety of chewing and sap-feeding insects. It is a combination of the active ingredients spinetoram and Isoclast Active, which is a brand-new chemistry proprietary to Dow AgroSciences.

“XXpire is a valuable rotation partner with other chemistries,” Breuninger says. “There is no visible residue on the leaves and virtually no odor. It also shows no phytotoxicity on the plants we have trialed so far. That includes poinsettias and damage to their bracts.”

Field tests show that XXpire provides knockdown with up to one month of re-
Production Insecticides

Breuninger says. Control of spider mites in trials has been variable. Breuninger says mixing XXpire with a blend of organo-silicone and non-ionic spray adjuvants at label rates for outdoor settings has helped with suppression of spider mites and with the control of other insects such as whiteflies.

XXpire can be applied up to six times in a 12-month period inside a greenhouse, and there are no restrictions during bloom. For external use, such as outdoor production areas, applications are limited to four per year, with no more than two consecutive applications. The minimum treatment interval is 14 days. Growers should only make one application during bloom, which must not exceed 5.5 ounces per acre.

“These outdoor use restrictions are designed to protect pollinators,” Breuninger says. “Toxicity of XXpire to pollinators is reduced once the spray dries. Precautions need to be taken to spray at times when pollinators are not active, and it is always important to follow the label carefully.”

XXpire should not be used on edible crops or seedlings of edible crops. When applied properly, it is soft on beneficials.

SuffOil-X And BotaniGard (BioWorks) Offer Quick Kill And Preventative Control

BioWorks’ SuffOil-X is a hard-hitting spray oil emulsion insecticide and fungicide that kills on contact. It is registered for use on vegetables, ornamentals, landscape, nursery and greenhouse crops.

“SuffOil-X is a hammer product with a quick kill,” says Chris Hayes, technical sales manager for BioWorks. “It can be used for organic food and fiber production and has a four-hour REI. Once it dries, it is safe and beneficials applied afterward, are not harmed by the oil residue.”

Growers should be aware that oils could burn the foliage if improperly applied, Hayes says. Reading the label is important to protect the crops.

According to its label, SuffOil-X’s mode of action works through suffocation of eggs, larvae and nymphs of insects and mites and adults of soft-bodied insects. As a fungicide, it interferes with the attachment of the pathogen to the foliar surface and acts as a suffocant. This mode of action requires total spray coverage to be effective.

Another product for ornamental use is BioWorks’ BotaniGard, which comes in a liquid emulsifiable suspension (BotaniGard ES) or wettable powder (BotaniGard WP). Its active ingredient, Beauveria bassiana (strain GHA), is a living fungus that is effective against a number of soft-bodied insects like whiteflies (including the Q-biotype), aphids and thrips.

BotaniGard is exempt from residue harvest tolerance levels, has a zero-day pre-harvest interval and a four-hour REI. An
OMRI-listed formulation of BotaniGard is available under the name Mycotrol-O. Hayes says BotaniGard works best as a preventative insecticide. If an outbreak occurs, a quick knockdown treatment like SuffOil-X is advisable.

**Fulcrum And AzatinO (OHP): Improved Formulations For Stronger Control**

Fulcrum is an insect growth regulator (IGR) from OHP that is an improved formulation of pyriproxyfen, which provides broad-spectrum control of nymphs/larvae and pupae, besides inhibiting egg development. Pyriproxyfen is an insect juvenile hormone analog and disrupts normal insect growth, molt and metamorphosis.

This formulation is soft on beneficials and can be used as a foliar spray or drench to control insects like fungus gnats, scales (hard and soft), shoreflies and whiteflies.

AzatinO, an improved formulation of azadirachtin, is used to control a diversity of greenhouse and nursery pests. It is active against immature stages as an IGR and against adult stages as a repellent and antifeedant. AzatinO is OMRI-listed, soft on beneficials and has a four-hour REI. Death occurs three to four days after application, though feeding stops much earlier.

“As growers look for alternatives to neonicotinoids, one product that closely fits that profile, although it is not new, is Kontos (MOA Group 23),” Stahl says. “It has systemic action and targets pests such as whiteflies, aphids and leafhoppers. Kontos has the added benefit that when used preventatively, as part of a program, it is effective on several species of mites.”

**BASF Sultan Miticide: Targeted Pest Control**

Sultan’s active ingredient cyflumetofen, provides effective control for all life stages of spider mites, while being soft on beneficials. It shows no cross resistance to other commercial miticides and no phytotoxicity on the ornamentals tested so far.

“Our grower customers are confirming the fast knockdown of mite populations within a few hours,” says Joe Lara, product manager for greenhouse and nursery pests.

“The level of control across all pest mite life stages is validated by these growers when they scout one to two days later and find non-viable mites — both eggs and motiles — in the population.”

Lara says the early results of commercial crop safety checks are consistent with BASF’s research work with Sultan miticide to help ensure grower success.”

To answer questions about today’s cultural practices and the use of products like Sultan miticide for biocontrol-release programs, BASF released an educational video series in October that features noted industry experts.