GROWERTALKS

Pest Management

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Diving Into Diamides

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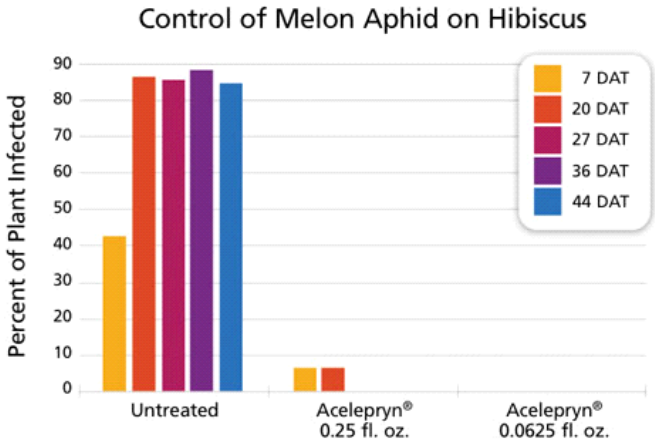
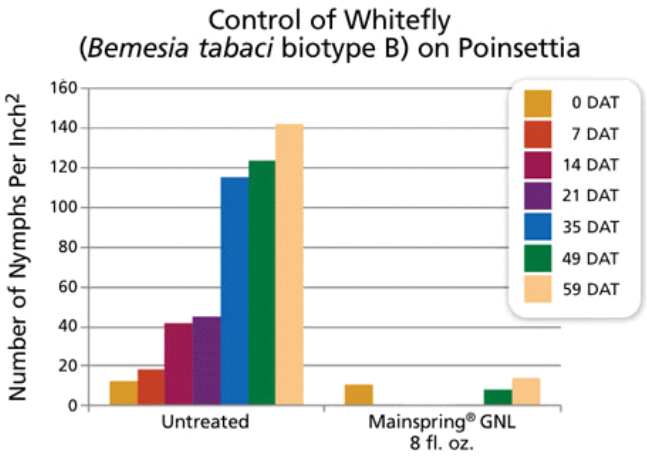
Insecticide innovations continue to be introduced in the ornamental market as a result of growing concerns about insect resistance, and the use of neonicotinoids and pyrethroids.
Ryanodine receptor modulators are a recent group of insecticidal modes of action called diamides. Diamides fall under Insecticide Resistance Action Committee (IRAC) Group 28. This unique class of chemistry offers an alternative for growers looking for newer, non-neonicotinoid chemistries to add into their programs.

Active ingredients in this class of chemistry include chlorantraniliprole and cyantraniliprole. Each work by activating ryanodine receptors in insect pests, which results in unregulated calcium release. The calcium stores are then depleted, leading to muscle paralysis and eventual death.



Drench application rates are per ft. of shrub height
DAT = Days After Treatment



Drench application rates per 100 gallons
DAT = Days After Treatment

Diamide best practices

As a newer innovation, it's important to understand diamides should be used differently than other chemistries. They're best used early, at the first sign of pest activity, to prevent populations from establishing and not as a quick knockdown. Mainspring GNL insecticide from Syngenta is a diamide powered by cyantraniliprole. It stops insect feeding shortly after ingestion, limiting damage to the plant and disease transmission. Insect mortality will occur within two to seven days.

A broad-spectrum insecticide, Mainspring GNL prevents damage caused by multiple insect pests, including thrips, aphids, whiteflies, leafminers, caterpillars, leaf-feeding beetles (adult and larval stages), lace bugs and soft scales. It can be applied as a spray or a drench at low-use rates. As a drench, it's proven to offer eight to 12 weeks of control

with one application, saving time, resources and labor.

The following recommendations can help guide greenhouse and nursery growers as they make applications of Mainspring GNL.

Greenhouse crops

• Use as a spray for young plants and ornamentals with short crop times (less than eight weeks)

• Use as a drench for plants with larger biomass and with those having crop times longer than eight weeks

• In propagation, apply as a foliar spray seven days after sticking

• Early in the growing stage, make two preventive foliar applications on a 14-day interval to keep young plants clean and protected from pests

• During the growing stage of longer crops and production of hanging baskets, apply as a drench once plants have rooted into their container

Nursery perennial crops

• Apply as a foliar spray as needed when pest pressure is starting; applications on a 14-day interval provide excellent protection

• Apply as a drench once plants have rooted into their container for longer and broader control across the pest spectrum

Nursery woody crops

• Apply as a foliar spray as needed when pest pressure is starting

• Use systemic soil treatments for season-long protection from soft scales, adelgids, plant bugs, pysllids, leafminers and leaf-feeding beetles

Drench application tips

• Drench applications should be applied once plants have begun to root into their container (ideally two weeks after transplant)

• The more roots present, the more the active ingredient will be absorbed and moved systemically up into the plant canopy to provide protection

A new tool for growers

A recent innovation from Syngenta, Acelepryn insecticide is a diamide containing the active ingredient chlorantraniliprole, which offers effective control of Japanese beetles, lepidopteran pests—including eastern tent caterpillars, fall webworm and bagworms—and sawfly larvae. Acelepryn, as well as Mainspring GNL, offer the following benefits for growers:

• No signal word on the label

• Registered as reduced-risk by the U.S. EPA under its Reduced Risk Program*

• Four-hour restricted entry intervals (REI)

• Minimal personal protective equipment (long-sleeved shirt and pants)

• Both products can be used in nurseries, greenhouses, and commercial and residential landscapes on ornamental plants, trees, shrubs, bulbs and Christmas trees

Pictured: Mainspring GNL insecticide is a diamide that stops insect feeding shortly after ingestion, limiting damage to the plant and disease transmission. Acelepryn insecticide is a diamide containing the active ingredient chlorantraniliprole, which offers effective control of Japanese beetles, lepidopteran pests and sawfly larvae.

Preventing spring pests this fall

Although temperatures are getting cooler, spring will be here before we know it. To get ahead of leaf-feeding beetles and lepidopteran pests, Acelepryn can be applied in the fall as a bark, drench or systemic soil treatment.

Bark applications

• Clearwing moth and borer larvae: 4 to 8 fl. oz./100 gal.

• Apply after the emergence of adult moths, but before eggs hatch in the spring or summer

Drench applications

• White grubs, including Japanese beetles: 8 to 16 fl. oz./acre

• Apply prior to egg lay in late spring or early summer

Systemic soil treatments

• Lace bugs and aphids: 0.0625 to 0.25 fl. oz. per ft. of shrub height

• Birch leafminers: 0.25 fl. oz. per ft. of shrub height

• Systemic soil treatments should be made at least two to three months prior to expected pest pressure to allow the active ingredient time to translocate throughout the plant

As insect pests become more resistant, it's important to use products from different chemistry classes in your operation. Rotating insecticides can help strengthen your integrated pest management program and lead to more successful production. With diamides like Mainspring GNL and Acelepryn, their long residual activity also leads to fewer applications, saving time and resources for applicators.

Learn more about Acelepryn and Mainspring GNL at www.GreenCastOnline.com/Ornamentals.

**A reduced-risk pesticide is defined as one which "may reasonably be expected to accomplish one or more of the following: 1) reduces pesticide risks to human health; 2) reduces pesticide risks to non-target organisms; 3) reduces the potential for contamination of valued, environmental resources; or 4) broadens adoption of IPM or makes it more effective." Acelepryn and Mainspring GNL qualify under one or more of the above criteria.*

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