

New Insecticides and Miticides

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This handout outlined some information included in the entitled presentation at the 2022 Great Lakes/Greenhouse Growers Expo.

A word on pesticide rotation

Pests commonly encountered in greenhouses, such as aphids, whiteflies, mites and thrips, are notorious for their propensity to develop pesticide resistance. The best way to delay the development of pesticide resistance (thus, giving us longer use time for pesticides) is to practice reduce pesticide application amount and frequency through integrated pest management (IPM). Another effective way is to practice pesticide rotation. Here are some tips to keep in mind when developing a pesticide rotation program:

1. Rotate to a pesticide of different mode of action (MOA) for each pest generation;
2. It is okay to use the same MOA against the same generation;
3. Avoid tank mixing multiple insecticides of the same MOA;
4. If tank mixing is desired, mix different MOAs in one tank, then change to a different combination for the next pest generation.

The MOA or IRAC (Insecticide Resistance Action Committee) Group number can be found on the cover page of almost all pesticide labels.

Altus (flypyradifurone; IRAC Group 4D)

T&O use sites: Landscape, greenhouse, nursery

Labeled crops: Ornamentals, certain greenhouse veggies, fruits, nuts, veggie and fruit transplants, Christmas trees

REI: 4 hours

Target pests: Foliar: Sucking insects (aphids, planthoppers, leafhoppers, lace bugs, scale insects, mealybugs, whiteflies), thrips, leafminer (suppression), black vine weevil (drench), etc.

Pro: A systemic insecticide so it can be applied both as foliar spray and drench. Effective against sucking insects, so Altus is a replacement for neonicotinoids. No bee advisory box.

Con: Should not be rotated with neonicotinoids or XXpire (IRAC Group 4C + 5).

Sarisa (cyclaniliprole; IRAC Group 28)

T&O use sites: Greenhouse, nursery

Labeled crops: Ornamentals, Christmas trees, non-bearing fruit, nut and vines

REI: 4 hours

Target pests: Caterpillars, leaf beetles, borers, sucking insects [adelgids, aphids, lace bugs, mealybug (suppression), soft scale, whiteflies, psyllids], leafminers, root weevils, thrips (suppression), sawflies, midges

Pro: A replacement for neonicotinoids.

Con: Systemic but foliar only; no drench application. Not a rotation partner with other diamides (IRAC Group 28, including Mainspring, Acelepryn and Pradia).

Pradia (cyclaniliprole + flonicamid; IRAC Group 28 + 29)

T&O use sites: Greenhouse, nursery

Labeled crops: Ornamentals, Christmas trees, non-bearing fruit, nut and vines

REI: 12 hours

Target pests: Caterpillars, leaf beetles, borers, sucking insects (adelgids, aphids, lace bugs, mealybug, soft scale, whiteflies, psyllids), leafminers, root weevils, thrips, sawflies, midges

Pro: A replacement for neonicotinoids. The addition of flonicamid increases the product's target pest range and efficacy against certain pests.

Con: Systemic but foliar only; no drench application. Not a rotation partner with other diamides (IRAC Group 28, including Mainspring, Acelepryn and Sarisa) and Aria (IRAC 29; flonicamid).

Ventiga (afidopyropen; IRAC Group 9D)

T&O use sites: Landscape, greenhouse, nursery, interiorscape

Labeled crops: Ornamentals, veggie transplants

REI: 12 hours

Target pests: Sucking insects – aphids, whiteflies, mealybugs (suppression), scale insects (suppression)

Pro: A translaminar insecticide for foliar spray. Quick knockdown. Excellent against aphids and whiteflies.

Con: Suppression of mealybugs and scale insects. Not a rotation partner with Endeavor and Rycar (IRAC Group 9B).

Velifer (*Beauveria bassiana* strain PPRI 5339; IRAC Group UNF)

T&O use sites: Greenhouse

Labeled crops: Ornamentals, vegetables, herbs/spices, transplants (veggie, herb, spice, fruit)

REI: 12 hours

Target pests: Aphids, whiteflies, mealybugs, mites, thrips.

Pro: Can be incorporated in just about any rotation program. Oil dispersion formulation but generally safe to crops (test before broadcast).

Con: Must achieve complete spray coverage for optimal efficacy. Not a rescue treatment, i.e., use when pest population is still small.

Other additions and label changes/expansion

Engulf GHN: New miticide with bifenazate (IRAC Group 20D). Registered for use against spider mites (several species) on greenhouse ornamentals and tomatoes and nursery ornamentals. Highly effective against spider mites and compatible with biological control agents.

Acelepryn: A product (chlorantraniliprole; IRAC Group 28) that had been introduced for turf and landscape for some time, but label recently expanded for use in nurseries and greenhouse. Target pests include sucking, chewing and boring insects, but particularly effective against caterpillars and beetle grubs.

M-Pede: Now with a 2(ee) recommendation for pre-transplant dip against whiteflies and mites.

Hexygon IQ: Now with a 2(ee) recommendation for pre-transplant dip against spider mites.