GROWERSEDGE

JULY 2020

Pradia, Sarisa providing broad-spectrum insect control

OHP's newest insecticide additions are proving to be valuable tools for both greenhouse and nursery growers.

With less than one year in the market, both Pradia® and Sarisa® have carved out a space in many insecticide rotations due to the efficacy, economics, and user safety of each.

Pradia

A combination of the diamide insecticide cyclaniliprole (MOA 28) plus flonicamid (MOA 29), Pradia offers control of a wide spectrum of sucking insects such as aphids, thrips, mealybugs, and whiteflies, along with control of chewing insects like worms, beetles, and flies.

The versatility makes Pradia the ideal cornerstone of insect control programs for greenhouse and nursery operations.

Carlos Bográn

"We have excellent data with Pradia controlling aphids, thrips, mealybugs, whiteflies, and other sucking and chewing insects," says Dr. Carlos Bográn, OHP technical manager. "It compares very favorably with competitive products in the horticulture segment."

Applied as a spray or sprench, Pradia moves readily through leaf tissue to aid coverage. Pradia has a 12-hour REI and is compatible with beneficial insects. We recommend allowing 24 hours after a Pradia spray and the release of beneficial insects.

The rate range for Pradia is 10-17 fl. oz. per 100 gal. and most growers are using at 13.5 fl. oz. per 100 gal.

"We see enhanced performance with the addition of spreader-type surfactant," says Dr. Bográn.

Both Pradia and Sarisa are safe to use on open blooms.

Sarisa

Sarisa's active ingredient, the diamide insecticide cyclaniliprole (MOA 28), provides excellent control of lepidoptera spp. and beetles, including flea beetles, which have become a major problem in nurseries throughout the country in the last few years.

Sarisa has a 4-hour REI and has no harmful effects on beneficial insects or pollinators at the labeled rates of 20-27 fl. oz. per 100 gal. The active ingredient in Sarisa moves readily through the plant leaves. For best results, users should include a spreader-type surfactant with Sarisa.

"Flea beetle control with Sarisa is a strength," says Dr. Bográn. "At higher rates, we see activity on sucking insects as well."

On mums, Sarisa provides good control of worms and moths with no phytoxicity issues.

Dr. Bográn notes both Pradia and Sarisa can be fogged or sprayed.

For more information on Pradia and Sarisa, contact your OHP technical sales manager.

Pradia and Sarisa are trademarks of Ishihara Sangyo Kaisha, Ltd.

OHP adds Grotto Fungicide to Biosolutions Portfolio

We are proud to announce the addition of Grotto™ Fungicide/Bactericide to our pest control solutions for the ornamental industry.

Grotto is a high-quality copper octanoate, broad-spectrum fungicide that has activity on many greenhouse and nursery fungal and bacterial diseases and is labelled for use on ornamentals plus vegetables and herbs grown in greenhouses, shadehouses, and nurseries.

In addition, Grotto has a user-friendly 4-hour Restricted Entry Interval (REI), Caution signal word, and OMRI (Organic Materials Review Institute) listing.

"Grotto fits well in our biosolutions™ segment and fulfills a grower's need for shorter REI products and broadly-labeled products," says Dan Stahl, OHP vice president and general manager. "Growers are demanding more products with 4-hour REIs."

Grotto is labelled for control of several challenging fungal and bacterial diseases such as bacterial leaf spot and blight, botrytis, downy mildew, fire blight, fungal leaf spot, powdery mildew, and rhizoctonia, on many ornamentals.

With Grotto and Kalmor® Fungicide/Bactericide in our biosolutions™ product portfolio, we now offer a broad range of copper-based solutions for our grower customers.

For more information on Grotto, Kalmor, and biosolutions, visit **ohp.com**.

Grotto, Kalmor, and biosolutions are trademarks of OHP, Inc.

COMPATIBILITY OF DIAMIDE INSECTICIDES AND BIOLOGICAL CONTROL AGENTS (BCAS)

By Dr. Carlos Bográn - OHP Technical Manager

Some of the most common questions we get asked when introducing a new product are on its compatibility with beneficial organisms, pollinators, and biological control agents (BCAs).

Many new products make claims about their compatibility with 'beneficials' but what does it mean?

Compatibility is not a black or white issue; it is a relative term. It describes the degree to which an insecticide (or any chemical) may be used in conjunction with BCAs and with minimum non-target effects.

Compatibility depends not only on the direct toxicity of the product to the target pests and nontarget- beneficial species, but also their biology and behavior which influences exposure of the BCAs to plant protection chemicals.

Even in the absence of direct effects, an insecticide may have indirect effects on BCAs by reducing the availability of their food source as the pest density crashes after application.

Diamide insecticides such as Sarisa®, Pradia®(OHP Inc.) and Mainspring® are one of the newest classes of modern insecticides.

As a group, diamides are much more compatible with BCAs and pollinators than pyrethroids (MOA 3) and neonicotinoids (MOA 4A) due to their selectivity and physicochemical properties.

Although some pest insects are very susceptible to diamides even at low concentrations, mites and some groups of insects appear tolerant to the active ingredients even at high concentrations.

Their relatively low water solubility also helps keep diamides from reaching pollen or nectar which are resources for pollinators and other beneficial organisms.

With the help of university cooperators, we have been working to determine the compatibility of Pradia and Sarisa with common biological control agents used in greenhouses and nurseries.

For example, work on western flower thrips integrated pest management by Dr. Luis Cañas at The Ohio State University has demonstrated Pradia and Sarisa to be compatible with the beneficial mite, Ambliseus cucumeris, a thrips predator and widely used BCA. **(Figure 1)**.

Compatibility was assessed in the laboratory by exposing the predatory mites to the insecticides in two ways, directly by spraying groups of mites and assessing mortality relative to water, and indirectly by spraying plants infested with the pest, and then releasing the predatory mites at different periods after insecticide application to measure their survival **(Figure 1)**.

Results show that exposure to Pradia and Sarisa did not significantly reduced survival of A. cucumeris by direct or indirect exposure.

Since Pradia and Sarisa have great activity against western flower thrips, but do not significantly affect the survival of this predator, they are fully compatible within a pest management strategy that takes advantage of both BCAs and chemical control using insecticides.

Growers may use Pradia or Sarisa to clean up a crop before predatory mite releases against thrips, to control outbreaks and reestablish the pest/predator balance required for successful biological control and, to conserve any predatory mites that may occur once the plant reaches its final destination.

Similar compatibility work on Pradia and Sarisa has been completed with other BCAs including Encarsia formosa, a parasitoid of whitefly and Aphidius colemani, a parasitoid of aphids with great and positive results. For more information on our products and grower solutions visit **ohp.com**.

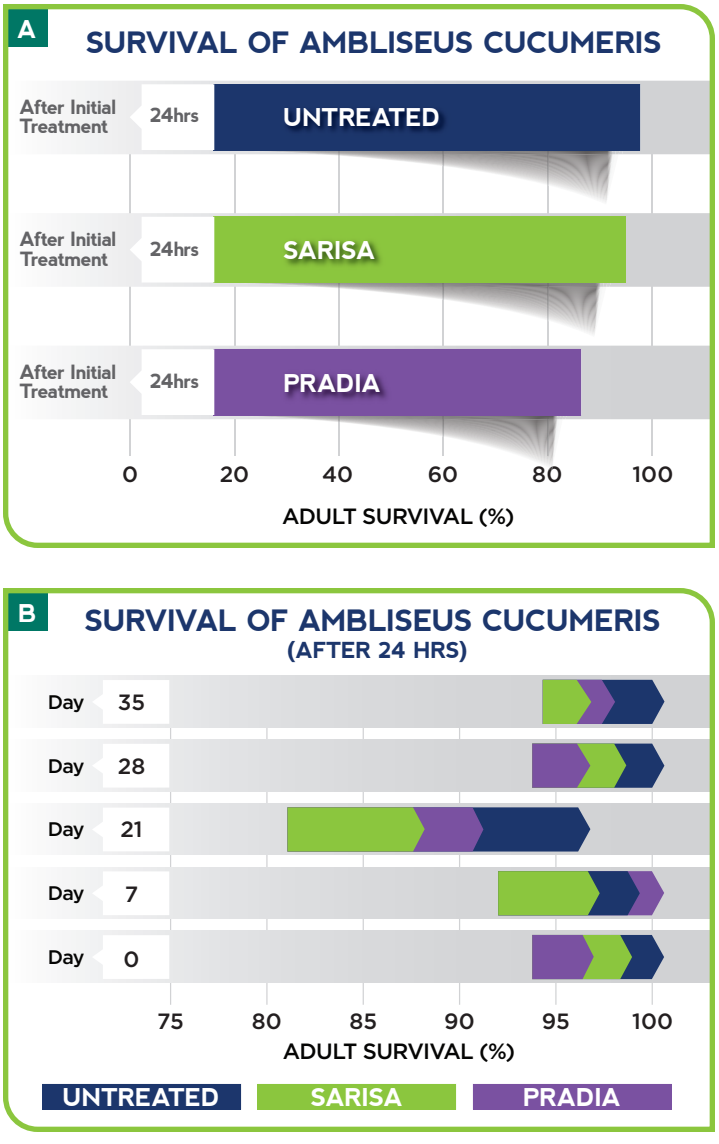

Figure 1. Survival of Ambliseus Cucumeris after direct exposure (A) and indirect exposure (B) to the insecticides at average label rates. No significant differences were found in survival (proportion alive) after direct spray application to the mites or after indirect application to the plants before mite releases (Cañas, L. 2019. Ohio State University).

Growers in the Golden State can now use OHP's Fortress® Herbicide to control many broadleaf and grassy weeds. OHP announces Fortress has been granted state registration in California.

With the active ingredients isoxaben and dithiopyr, Fortress may be used on perennials and ornamental grasses where choices are limited, for quality weed control without fear of phytotoxicity.

Fortress has been available in most states since 2018 and the reception has been excellent among users.

"We knew the combination of the two active ingredients would be a natural fit but we've been surprised by the quick market acceptance," says Senior Technical Manager Dave Barcel.

"It really fills a need for growers, who are limited on what they can safely use on perennials and ornamental grasses."

Barcel notes Fortress is formulated on a virtually dust and odor-free granule that makes the product easy to apply. Use rate is 150 lbs. per acre.

With Fortress, Fuerte®, Biathlon®, and Casoron® Herbicides, OHP features the broadest pre-emergent granular herbicide portfolio in the horticulture market.

For more information on Fortress and other OHP products, visit **ohp.com**.

Fortress is a trademark of AMVAC Chemical Corp. Biathlon and Fuerte are trademarks of OHP, Inc. Casoron is a trademark of Arysta LifeSciences Group Company.

FireWorxx Offers Weed Burndown, CA Registration

The elimination of existing weeds before applying a pre-emergent herbicide is critical for a successful weed control program.

OHP's new FireWorxx™ Herbicide helps eliminate existing weeds with a combination of caprylic and capric acid in a fatty-acid, soap-based formulation.

FireWorxx, a newer generation burn-down herbicide, provides fast and thorough burn-down activity in as little as 15-30 minutes.

An added benefit: FireWorxx gained registration in California in late spring.

Consult the label at **ohp.com** for use rates, etc., or contact your technical sales manager.

FireWorxx is a trademark of W. Neudorff GmbH KG.

Fuerte Providing Stellar Weed Control in Harsh Conditions

OHP's Fuerte® pre-emergent granular herbicide has been available just a short time but is already becoming a useful tool in battle against weeds.

Introduced late in 2019, Fuerte (meaning "strong" in Spanish) is a great choice to use in summer months when weed pressure is high and a strong herbicide is needed.

A combination of two well-known active ingredients, flumioxazin (MOA 14) and prodiamine (MOA 3), Fuerte provides broad-spectrum control of broadleaf and grassy weeds on woody ornamentals, conifers, and non-crop and woody landscape sites.

"The weed list on the label is extensive having many of the most common and troublesome weeds found in nursery operations," says OHP Senior Technical Manager Dave Barcel. "University testing has shown outstanding control on oxalis, spurge, eclipta and willowherb." adds Barcel.

Barcel notes Dr. Chris Marble of Univ. of Florida tested Fuerte in 2018 and found outstanding results after two back-to-back applications under harsh Florida conditions. **(Chart 1.)**

Applied at a rate of 100 lbs. per acre (lower than many other common herbicides), Fuerte is formulated on a virtually dust and odor-free granule that allows for easy application through many types of equipment, even in breezy conditions. PPE requirements are minimal.

Fuerte is an exceptional tool for growers and fits well into a rotational program with OHP's Fortress and Biathlon herbicides.

A grower could start the year using Fortress® on young or newly established plant material, then change over to Fuerte and then finish the year with Biathlon®.

Visit **ohp.com** or contact your local technical sales manager for more information on the Fuerte and the OHP family of herbicides.

Fuerte and Biathlon are trademarks of OHP, Inc. Fortress is a trademark of AMVAC Chemical Corp.

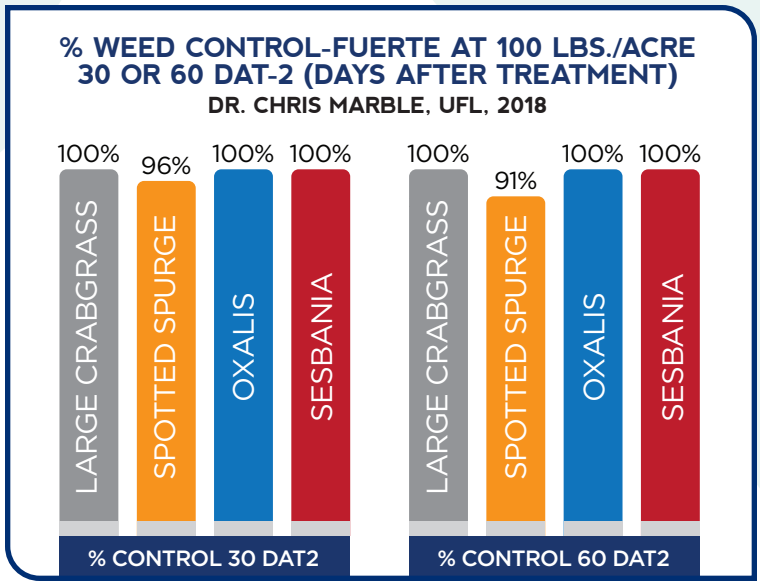

Chart 1

ohp Partners with solutions

Veggie transplants, herbs added to Segway O label

At the request of many of our grower partners, we have added certain vegetable transplants and herbs to our Segway® O label, giving users even more flexibility.

With the active ingredient cyazofamid, Segway O is an excellent choice for control of the water molds – pythium, phytophthora, and downy mildew on ornamentals and now on vegetable transplants and herbs.

The revised Segway O label has a new EPA registration so users should make that note in spray records. That number is #71512-38-59807.

On greenhouse-grown tomato transplants, Segway O is labeled for pythium damping-off, while on greenhouse-grown bell peppers, Segway O is labeled for pythium damping-off and phythophthora blight. With both tomatoes and bell peppers, the pre-harvest interval (PHI) is 0 days.

Segway O is labeled for downy mildew and phythophthora root rot on greenhouse-grown herbs such like basil and others in Subgroup 19A, and carries a 0-day PHI.

"The addition of greenhouse-grown tomatoes, bell peppers, and herbs to the Segway O label gives growers more flexibility to battle hard-to-control issues like basil downy mildew and pythium root rot on tomatoes," notes Dr. Carlos Bogran, OHP technical manager.

With ornamentals, vegetables, and herbs, Segway O is an excellent choice for resistant strains of pythium that exist in the horticulture market.

"With the widespread resistance to many commonly-used fungicides, Segway O, with its unique mode of action, is an excellent alternative," says Dr. Bogran.

Segway O has a 12-hour Restricted Entry Interval (REI) and Caution signal word.

Please visit ohp.com for more information on the additions to the Segway O label.

Segway is a registered trademark of Ishihara Sangyo Kaisha Ltd.

Kalmor Technical Update

Using Kalmor for control of nostoc algae

There's a hard-to-control pest that is growing on the ground each year in many nurseries and even some greenhouses throughout the U.S.

Nostoc algae (shown above) is a common ground pest found on bareground, gravel, and other surfaces in outdoor and some indoor production areas. The pest has become a concern regarding worker safety, customer safety, and cleanliness.

OHP submitted an amendment to the Kalmor® Fungicide Bactericide label for the addition of nostoc algae and expects registration in mid-summer.

Nostoc algae is described as a cyanobacteria or blue-green algae, having no roots, stems, leaves, or flowers. However, it does contain chlorophyll and thus, its commonality to plants (Dr. Hannah Mathers, 2019).

OHP's Senior Technical Manager Dave Barcel has done a lot of testing on using Kalmor®, a 46.1% copper hydroxide formulation, to control nostoc algae with good success. The product was found to be highly effective in both controlling and suppressing this troublesome pest.

"Kalmor is a very small particle – about 0.75 microns – and allows for penetration into the folds of the nostoc algae and in addition, the particles are redistributed during rain events and irrigation, aiding in coverage." says Barcel.

In Barcel's tests, he found that Kalmor applied at 2.5 to 5.0 lbs. per acre in 100 gal. of water provided good nostoc algae control.

"There's no need to water in after applying Kalmor," says Barcel. "We've also learned reapplication at four weeks improves control."

In OHP's research, the nostoc algae turned off-color in 1-2 weeks followed by death at 2-4 weeks. Dead nostoc algae turns dark or black, becomes flat, dries up, and crumbles apart.

In one trial conducted by Barcel, Kalmor provided nostoc algae control to 118 Days After Treatment (DAT).

For more information on Kalmor, contact your technical sales manager.

Kalmor is a trademark of OHP, Inc.

WE HOPE TO SEE YOU AT VIRTUAL CULTIVATE 2020!

Imagine you travel back in a time tunnel to July of 2017. You're preparing for Cultivate when someone pulls the plug on a face-to-face meeting and says it will instead be of the "virtual" variety. You gasp!

Three years ago, that probably would have sounded strange. However, in these times of COVID-19, it's not so strange. We have all grown accustomed to virtual gatherings with colleagues, customers, friends, and relatives the last several months. Virtual has become the norm.

So we hope for seamless communication with growers, distributors, and academia at the virtual Cultivate July 13-16, 2020.

While the format is different, we will have the same assortment of quality updated literature on hand – like the revised Chemical Class Chart. You can count on our technical sales managers plus our technical services staff, Dave Barcel and Dr. Carlos Bográn, being on-hand to answer questions.

We're looking forward to a new experience. Should be interesting and we hope to speak with you during the show. We'll "see" you in July!

Adult flea beetle

Sarisa effective as flea beetle option for Alabama nursery

OHP's new diamide insecticide Sarisa® (MOA 28) is new to the market but has already become an important part of flea beetle rotational strategies in nurseries throughout the U.S.

Flea beetle infestations are perhaps the biggest pest challenge faced by many nursery growers throughout most of the Eastern U.S.

One nursery operation has made Sarisa a part of its flea beetle program and is pleased with performance, based on results from the spring of 2020.

"Sarisa is a valuable tool in the fight against red-headed flea beetle," says Michael Monroe, crop protection manager of Flowerwood Nurseries in Loxley, AL.

This spring, Flowerwood applied Sarisa on azaleas, hydrangea paniculata, crape myrtle, osmanthus, weigela, and rose crops. Most of those crops were sprayed three times with Sarisa, along with products with other modes of action.

"I originally purchased Sarisa because of my interest in MOA 28 as a new chemical class," says Monroe. "It is labeled for thrips and caterpillars, has a 4-hour REI, and has good bee safety."

Monroe discovered Sarisa is labeled for flea beetle control as well.

"I was pleasantly surprised to find a new product specifically labeled for flea beetle, not just leaf-feeding beetles as a group," he adds.

"I have since realized Sarisa can be applied at the high label rate for less than one-third the cost of other MOA 28 products, a bonus."

Flowerwood growers apply Sarisa at a rate of 24 fl. oz. per 100 gal. but will cut back to 16 fl. oz. per 100 gal. if the crop is in flower. All sprays are done after dark to minimize impact on bees and pollinators, says Monroe.

Flowerwood started its flea beetle applications in March after a series of preventative applications with other insecticides during the late fall and winter. Monroe pays particular attention to holdover crops from the previous summer because they can harbor the highest populations of overwintering flea beetles.

"We target crops that we know are very susceptible to flea beetles. It is not a spray and walk away approach," says Monroe. "All these crops are monitored for flea beetles and I am ready to use the next attack, if necessary."

Monroe found success with Sarisa but noted that Flowerwood continued to spray its flea-beetle susceptible crops on a weekly basis with alternative chemistries.

In early March, a crop of *Osmanthus heterophyllus* was found to have a high population of flea beetles that had gone unnoticed.

"We treated the crop at 24 fl. oz. per 100 gal. with Sarisa and watched and waited for any re-population but that didn't occur," he says.

Monroe realizes there is no miracle cure for flea beetles and stresses that applying Sarisa and other products with different modes of action in a regular rotation is the key to keeping populations down.

"To sum it up, Sarisa does a great job protecting plants from flea beetle damage. I can't say it totally eliminates them – some flea beetles can still be found in crops that flea beetles love," he says. "However, we haven't had one report of flea beetle damage stopping sale of a finished crop this year."

For more information on Sarisa, visit **ohp.com**.

Sarisa is a trademark of Ishihara Sangyo Kaisha, Ltd.

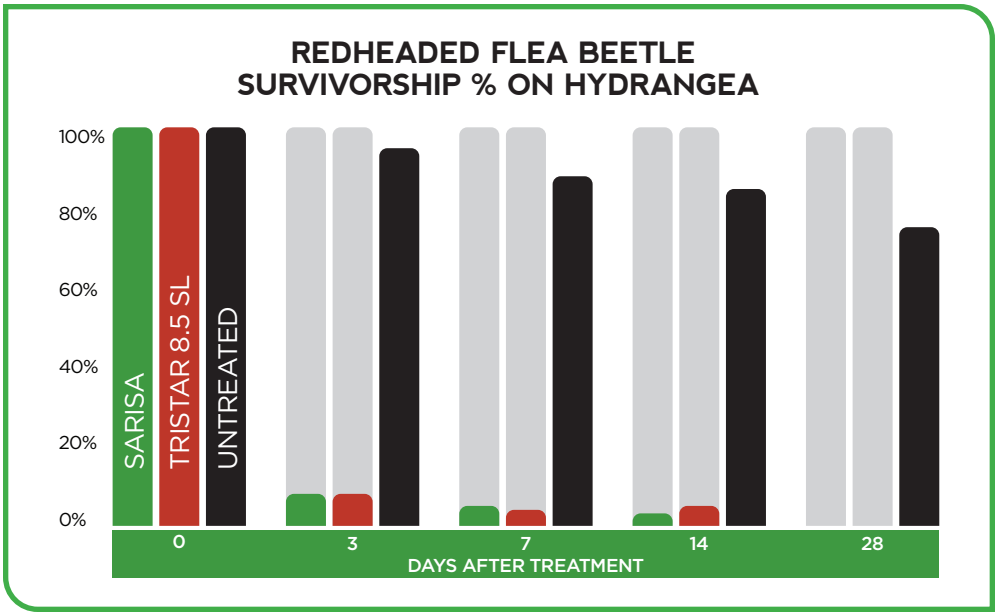

Figure 1. Survivorship of redheaded flea beetles on Hydrangea paniculata 'Sweet Summer' after treatment with several insecticides. (Gilrein, D. 2018, Cornell Cooperative Extension)

ohp Partners with solutions

GROWERSEDGE

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