

THE SavvyGROWER'S cutting edge July 2018 Volume 19. Issue 1

OHP set to launch new Fortress herbicide

We are preparing to launch an exciting new pre-emergent herbicide for field and container-grown ornamentals in the 3rd quarter of 2018.

Fortress®, a combination of the active ingredients isoxaben and dithiopyr, has shown excellent plant tolerance and efficacy on many ornamentals including ornamental grasses and perennials.

Formulated utilizing the Verge® granular technology, Fortress features uniform particle size, extremely low dust and odor, and excellent ballistics, enabling the product to be spread uniformly, even under some breezy conditions.

Senior Technical Manager Dave Barcel has conducted many trials on Fortress from coast-to-coast and has seen the effectiveness first hand.

"We've seen excellent grassy and broadleaf weed control in many university trials and my own work," notes Barcel. "It is particularly good on crabgrass, bittercress, spurge, and many other hard to control weeds."

In additional to consistent performance, Fortress has shown excellent plant tolerance to sensitive plants, notes Barcel, including crops like pennisetum, fescue, fountain grasses, mandevilla, buddleia, hosta, rudbeckia, liriope, and others.

"We're excited to add another product to use on sensitive plants," notes Barcel. "There are not many choices for nurserymen and we're happy to develop another option."

Barcel notes Fortress was tested on over 120 ornamentals in 2017 and more in 2018, with positive results.

Fortress should be applied at 150 lbs./A for maxi-

mum results. The OHP calibration tray is an effective means of measuring application rates. They are available through your local OHP sales manager.

As with any pre-emergent herbicide, growers should rotate modes of action.

Fortress is packaged in 50-pound bags, 40 to a pallet.

Fortress is a registered trademark owned by AMVAC Chemical Corp., parent of OHP, Inc. Verge is a registered trademark of OilDri



The OHP team at CAST at American Takii in Salinas, CA; from left, Dr. Carlos Bográn, Dennis Kern, and Dave Barcel.

Astun proves to be valuable tool in successful spring 2018 debut

The addition of Astun[™] Ornamental Fungicide to our stable of pest and disease solutions came just in time for the spring botrytis season.

Astun was officially launched in the fourth quarter of 2017 and enjoyed wholesale use during the 2018 spring bedding plant growing season.

Astun provides outstanding botrytis control with the active ingredient isofetamid, a new fourth-generation member of the SDHI class of chemistry, mode of action (MOA) group 7.

"We are excited to add Astun to our portfolio," says Dan Stahl, OHP vice president and general manager. "Given Astun's performance in spring 2018, we anticipate it will become one of the industry standards for botrytis control."

SYSTEMIC CONTROL

Astun provides preventative, systemic, and curative activity on ornamentals grown in commercial greenhouses and nurseries, notes Dr. Carlos Bográn, OHP technical services manager.

"Astun is most effective when used as a protectant fungicide applied when conditions are right for botrytis development but before the disease damages the

crop," says Dr. Bográn.

Formulated as a user-friendly Suspension Concentrate (SC), Astun provides growers a new tool for botrytis resistance management. Astun can be tank mixed with other partners for a broader spectrum of control.

"In recent years, certain botrytis strains have become resistant to products used against the disease," notes Dr. Bográn. "Astun offers an option with no reported resistance against botrytis." continued page 3

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- Segway O now available in larger size
- OHP at CAST
- New OHP Sales and Marketing Head
- OHP purchased by AMVAC
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Effective use of natural pyrethrins on specialty crops

By Dr. Carlos Bográn, OHP Technical Services Manager

Pyrethrins are a group of six natural-plant chemicals extracted from the seed cases of the pyrethrum daisy, *Chrysanthemum (Tanacetum) cinerariaefolium (Asteraceae)*. Ground flower heads and pyrethrum extracts have been used as botanical insecticides for centuries.

Pyrethroid insecticides introduced in the 1970s are synthetic versions of single-pyrethrum compounds and widely used in agriculture because of their better stability and enhanced insecticidal efficacy than those of their natural counterparts.

However, the more complex chemical nature of natural pyrethrins and their broad but short-lived biological activity makes them highly compatible within biologically-based pest management programs.

Natural pyrethrins continue to be one of the only insecticides registered for use in organic crop production and in situations with little or no alternatives such as urban landscapes and interiorscapes, retail gardens, and medicinal/pharmaceutical crop production.

Effective use of natural pyrethrins to prevent pest damage in specialty crops requires a basic understanding their mode of action, their strengths and limitations.

Pyrethrins and synthetic pyrethroids work by interfering with the normal function of nerve-cells by binding to sodium channels on the cell membrane. Sodium channels mediate the nerve cell-membrane permeability and the transmission of nerve impulses.

Pyrethrins and pyrethroids are effective on contact and by ingestion; exposure leads to hyperexcitation, tremors and death.

Pyrethrins, however, are rapidly degraded in the environment by ultra violet light and oxidation which has limited their use in crop protection.

To enhance their effectiveness relative to that of the more stable pyrethroids, natural pyrethrins are traditionally formulated in combination with the synergist PBO (piperonyl butoxide) a synthetic compound that inhibits the natural detoxification processes in the target pests.

Recent studies on natural pyrethrins have shown that oleic acid and other components of botanical oils may be as good or better than PBO at synergizing natural pyrethrins. Botanical oils may facilitate penetration through the insect cuticle increasing exposure to the multiple insecticidal components of natural pyrethrins which complicates enzymatic detoxification by the pest, compared to that of single pyrethroid compounds.

This complexity also means that regular use of natural pyrethrins is less likely to generate problems with insecticide resistance than frequent use of synthetic pyrethroids. Botanical oils themselves control insects and mites by suffocation, disrupting normal respiration and cell membrane function and disrupting feeding on oil-covered plant surfaces

The combination of refined botanical oils and natural pyrethrins provides a promising new tool for growers.

For the last two years we have been developing one such combination product, Pycana^{**}, a combination of canola oil (89%) and natural pyrethrins (0.5%) for broadspectrum control of insects and mites on flowers, shrubs, fruits and vegetables grown in greenhouses, shadehouses, hoophouses, and container nurseries.



Carlos Bográn, PhD
Technical Services Manager

Initial testing at the recommended rates be-

tween 1 and 2 percent by volume have shown Pycana to be safe on most annuals and perennials, and highly effective on soft bodied insects such as aphids, whiteflies and spider mites (Figure 1).

Pycana is a contact insecticide with little residual activity after application which allows growers to use in biological control programs using natural enemies. For best results, Pycana should be used at first detection and applied before damaging pest populations occur.

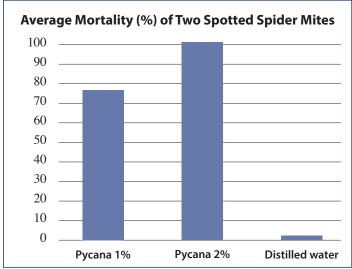


Figure 1. Average mortality (n=9) of two spotted spider mites on bean leaves previously infested with 25 adults per leaf. Leaves were sprayed on both sides and observations were made two days after treatment.

It can be used alone, in combination, or in a rotation with other organic or conventional insecticides miticides for enhanced activity. Like with other oils, care should be taken before large scale use, determining plant sensitivity before application, especially under hot and humid growing conditions.

Additional development work on Pycana is focusing on effectiveness against additional pests, crop safety, and compatibility with other OHP biosolutions.

Pycana is a trademark of OHP, Inc.



Product News

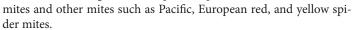
Miticide gets new name: Notavo

Notavo[™] Ovicide/Miticide is the new name for the former Applause® Ovicide/Miticide.

While the Notavo name is new, everything remains the same except the EPA registration number. Notavo has a new federal registration number: 53883-428-59807.

We will continue to support Applause and maintain state registrations for a period of time.

Notavo (clofentezine) provides long-term prevention and control (30-plus days) of eggs and immature stages of two-spotted spider



It's a good lead-off product for a mite control rotation and a great fit with our other miticides — Shuttle O, Floramite SC, Sirocco, and Triact 70.

A suspension concentrate formulation, Notavo has a 12-hour Restricted Entry Interval (REI) and CAUTION signal word.

Notavo and Sirocco are trademarks of OHP, Inc. Floramite and Shuttle are trademarks of Arysta LifeScience Group Co. Triact is a trademark of Certis USA.



Our Paczol $^{\circ}$ users will soon notice a name change to Pac O $^{\circ}$.

The Plant Growth Regulator (PGR) is still the same active ingredient (paclobutrazol), same AI concentration (0.4%), same gallon size, and same use patterns. And it's still backed by the best team in the horticulture industry.

Pac O will have a new EPA registration number, which represents the only change. The switch to Pac O takes place this summer. If you have Paczol in stock, be assured we



will maintain state registrations for a period of time.

As the leading PGR company in the production ornamentals market, we have the expertise to help with your PGR use.

On our tech line, we receive many calls about using Cycocel*, B-Nine*, and Pac O, our three leading PGRs, which are still a mystery to some.

For all OHP PGR users, our free PGR Calculator App, available through the App Store, is a great tool to quickly calculate rates, etc.

Paczol, B-Nine and Cycocel are registered trademarks of Arysta LifeSciences Group Co. Pac O is a trademark of OHP, Inc.

Segway O Fungicide now available in larger container

From the department of meeting customer requests: Segway® O Ornamental Fungicide is now available in a convenient 64 fl. oz. (0.5 gal.) package for large scale applications.

"Over the past three years, we've had many growers request a larger Segway O package size," says Dan Stahl, OHP vice president and general manager. "We are fortunate at OHP to be nimble enough to respond to input from our grower customers and introduce a new Segway O package size."



We will continue to market Segway O in the current 16 fl. oz. size.

Segway O provides excellent control of pythium, phytophthora crown and root rot, phytophthora aerial blight, and downy mildews.

Cyazofamid, the active ingredient in Segway O, is the only member of fungicide Mode of Action (MOA) Group #21, making it an ideal rotational product for disease control.

The active ingredient cyazofamid works by blocking the plant pathogen's ability to produce energy.

Effective as a spray or drench, Segway O provides control of 7 to 28 days, depending on disease pressure, as both a preventive and curative.

Segway is a registered trademark of Ishihara Sangyo Kaisha, Ltd.

Astun proves to be valuable tool in successful spring 2018 debut

continued from p. 1.

Astun is packaged in quart (32 fl.oz.) containers, four to a case. Use rates range from 10 to 17 fl. oz. per 100 gal., with 13.5 fl. oz. per 100 gal. an average use rate. Astun has a 12-hour REI and CAUTION signal word.

The addition of a spreader sticker with Astun may help reduce residue on certain crops.

California state registration is pending.

Labels, SDS, and Product Information Bulletins (PIB) are available at ohp.com. Contact your local OHP regional sales manager for more information.

Astun is a trademark of OHP, Inc.



OHP marks 24th year of CAST presence

There are several "can't miss" events in the world of professional horticulture.

One of those is the California Spring Trials (CAST), formerly known as "Pack Trials."

Senior Technical Manager Dave Barcel participated in his 24th CAST event in Salinas, April 14-18, presenting his latest demonstration plots used for education and showcasing his current research projects.

His 2018 topics included OHP 1701B (Fortress) herbicide research.

"1701B is a combination pre-emergent herbicide for use on grasses and perennials," says Barcel. "The two active ingredients are isoxaben and dithiopyr, two very well-known and trusted herbicide molecules"

Barcel displayed his Fortress application results on Mexican feather grass, juncus (curly soft rush) and blue fescue grass. In his testing throughout the U.S., Barcel has seen good safety margins with 1701B. In addition, both active ingredients in the IR4 Project have shown good safety margins on ornamental grasses and excellent weed control of many common nursery weeds.

In his CAST trials, no phytotoxicity was observed from any of the rates tested (1x, 2x, and 4x) on April 14 or 64 DAT.

The 1x and 2x rates performed without issue. At 600 lbs./ac. (4x) there was about 10% stunting on both the feather grass and blue fescue.

"At 4x, that's not a surprise and actually a good performance considering the amount of product applied to the plant," says Barcel.

Another consideration to crop tolerance is root development or lack thereof. OHP 1701B showed no ill effects on root development of juncus in Barcel's CAST trial. Significant root loss often results in a stunted plant.

Barcel also tested 1701B on several field grown cut flower varieties such as snap-dragon, aster, kale stock and delphinium. Though more testing is needed, the aster, delphinium and kale tolerated the 1x, 2x, and 4x rates without issue.



In left photo, root growth of juncus showed no difference with the untreated check (l) and the 150 lbs., 300 lbs., and 600 lbs. rate of 1701B (Fortress). On right, Western Regional Sales Manager Dennis Kern (l) and Senior Technical Manager Dave Barcel (r) interact with attendees at CAST 2018.

In addition to our 1701B research in 2017, Dr. Andy Senesac of Cornell University was asked by Long Island growers to find herbicides that could be safely used on green roof sedum crops. This is an emerging new market for a number of sedum varieties and succulent plants.

Sedum crops are often hand-weeded, thus the interest in a herbicide.

Dr. Senesac tested several materials in 2017

and found 1701B to be tolerated (Table 1, below) by many of the common varieties. Sedum album did have issue at the high 4x rate but looked good at the 1x rate of 150 lbs./ac.

In the table, 1702 is noted. It is a combination pre-emergent granular herbicide in development by OHP.

Dr. Senesac will be re-testing these crops in 2018 for crop quality and plant tolerance to the herbicides.

Table 1
Results of Pre-emergence Treatments on Sedum

Percentage Injury						
30 DAT						
Common name	rate (a.i. Ibs/a)	Sedum reflexum	Sedum rupestre 'Angelina'	Sedum spurium, 'red carpet'	Sedum album	Sedum kamtschaticum ellacombeanum
Untreated	~	0	0	0	0	0
1701	1x	3	5	3	9	0
1701	4x	23	16	0	24	0
1702	1x	14	14	23	86	15
1702	4x	69	49	80	100	16



Troy Bettner joins OHP as sales and marketing head

We said good-bye to a special OHP employee in early 2018 and said hello to a new employee shortly afterward.

We added Troy Bettner as sales and marketing head in late April. His hiring follows the March 31 retirement of long-time OHP Vice President and General Manager Terry Higgins.

"Troy has all the qualities to continue to help lead OHP into the future," says OHP Vice President and General Manager Dan Stahl.

"Terry was an integral part of OHP the last 25 years, the face of the company. We can't replace him," says Stahl, adding "but we intend to maintain and nurture all the relationships he helped cultivate. Troy excels in that area."

Troy comes to OHP from Helm Agro, an agricultural-based provider of pest control chemicals,



Troy Bettner

and prior to that, spent many years in horticulture.

At Helm Agro, Troy served as marketing business development leader.

Troy holds a Bachelor Degree in Ag Business from Cal Poly San Luis Obispo as well as a Master of Business Administration (MBA) from Purdue University.

He and his family currently reside in Carmel, IN.

Please join us in welcoming Troy to the OHP family! ■

OHP purchased by American Vanguard

The fourth quarter of 2017 was a noteworthy period in the history of OHP.

In September, 2017, OHP was purchased by American Vanguard Corporation (AMVAC) of Newport Beach, CA. The sale closing occurred in early October.

There are no planned changes for the immediate future and OHP will continue to operate as it has in the past with the same people and products.

"We still offer the same quality products backed by the same professionals as before the sale," notes Dan Stahl, OHP vice president and general manager, who leads the OHP team and reports directly to Bob Trogele, AMVAC chief operating officer.

AMVAC is a publicly-held, diversified specialty and agricultural products company that develops and markets products for crop protection and management, turf and ornamentals management, and public and animal health.

"We are excited to have OHP be a part of AMVAC," says Trogele in a news release. "The reputation and quality of the entire OHP team is remarkable. The entrepreneurial culture, business model, and strategy are very similar to the way we operate at AMVAC so it is a great fit."

Next stop - Gulf of Mexico; Terry Higgins retires after 26 years

Back in 1992, Terry Higgins took a leap of faith and joined the fledging Olympic Chemical Co. (later Olympic Horticultural Products and then, OHP, Inc.).

His crapshoot worked out superbly as the former vice president and general manager helped guide OHP to where it is today: one of the premier suppliers of pest control solutions in horticulture.

The early days were a struggle but when Marathon* Insecticide debuted in 1994, things quickly improved. OHP added more quality products, more quality people, and became the leader it is today.

Terry's contributions are too long to note in

this short article. But suffice to say, without him OHP wouldn't be where it is today.

He became the face of Terry Higgins
OHP and a true leader. You always knew where Terry stood on an issue.

We'll miss him. Best of luck to he and wife Marianne as they move onto the next phase with grandchildren, travel, etc. And of course, keep a chair ready for us from your perch on the Gulf.

Best of luck friend and know that you left a major mark on all of us at OHP.



Updated literature available at Cultivate

We hope to see you at the premier trade show in the horticulture industry, Cultivate '18, at the Columbus Convention Center July 14-17.

Please stop by our booth (#2747) and pick up the latest copies of OHP literature, including our popular Chemical Class Chart, volume 20; our product guide, and our many solutions.

We provide outstanding, well-researched literature that is of value and not just a commercial.

You can download copies off our website at ohp.com. See you in Columbus! ■

AMVAC

As OHP heads into its 30th year, the company has never had a brighter future, notes Stahl.

"The cultural fit, resources, and business development approach of AMVAC will create tremendous opportunities for future growth," says Stahl.

American Vanguard Corp. is listed on the New York Stock Exchange under AVD. More information may be found at amvac-chemical.com.

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biosolutions news

Thuricide available for lepidoptera control

We added to our biosolutions segment earlier this year with our new product Thuricide $^{\sim}$ N/G.

Thuricide N/G Biological Insecticide, derived from a naturally-occurring bacteria, infects lepidopteran larvae and other insect larvae. The active ingredient is the bacteria *bacillus*



Thuricide N/G comes in easy-to-use .5 lbs. packages.

thuringiensis subspecies kurstaki strain SA-12.

It is effective on the larvae stage of caterpillars, loopers, gypsy moths, leaf rollers, and other larvae. Thuricide N/G may be used on ornamentals, trees and shrubs, fruits and vegetables, and herbs and spices.

Approved for organic production and OMRI certified, Thuricide N/G has a 4-hour REI and CAUTION signal word.

After a Thuricide N/G application, insect larvae consume the bacteria. Once in the insect gut (stomach) cryotoxins are released causing the larvae to stop feeding and subsequently die within a few days.

Thuricide N/G should be applied at the first sign of pest infestations for optimal results.

Thuricide N/G is packaged in a 20 x .5 lbs case. Foliar rates range from .25 to .50 lbs. per 100 gal. of water. For best results, Thuricide N/G should be reapplied at 3 to 5-day intervals under insect pressure.

Specimen labels, SDS, and Product Information Bulletins (PIB) are available at ohp.com. ■

Thuricide is a trademark of Certis USA, LLC.

Pycana latest addition to OHP biosolutions line-up

Our biosolutions segment continues to grow with the summer, 2018 addition of Pycana™ Insecticide/Miticide.

Pycana gives ornamental, fruit, vegetable, and herb growers another tool to fight pesky insects and mites.



A combination of canola oil and natural pyrethrins, Pycana provides quick knockdown of existing populations through the dual modes of action.

Pycana may be used in greenhouses, shadehouses, hoophouses, and on container-grown nursery crops.

Even better, Pycana has a 0-hour pre-harvest interval (PHI), meaning growers can spray up to the day of harvest.

Like other sprays, Pycana should be applied every 7 to 14 days as part of an insecticide/miticide rotation utilizing products with different modes of action.

OHP's Azatin® O Insect Growth Regulator (IGR) and Triact® Insecticide/Miticide are natural rotational partners with Pycana.

Pycana is effective in controlling spider mites as a 1% stand-alone solution (1 gal. Pycana/100 gal. water) or as a tank mix partner with other miticides to enhance performance. Rate range is 1 to 2 gal. of Pycana/100 gal. of water.

Pycana has a 12-hour REI and CAUTION signal word. It is packaged in a one-gallon jug, four to a case.

Pycana is a trademark of OHP, Inc. Azatin and Triact are registered trademarks of Certis USA LLC.

OHP adds Kopa Insecticidal Soap to biosolutions

Our biosolutions portfolio continues to expand!

We recently added Kopa™ Insecticidal Soap to our portfolio of OHP biosolutions.

Kopa is approved for organic production and is OMRI listed.

Kopa is aimed at growers who are using not only conventional, but other means of pest control. Kopa is a great rotational tool for an insect and mite control program, whether biological or conventional.

Kopa provides fast broad-spectrum activity on foliar insects in the greenhouse, nursery, and landscape markets.

Upon application, the spray solution coats the insects or mite pest and causes suffoca-

tion and or desiccation, resulting in quick knockdown.

In addition, due to its short residual, Kopa is ideal for programs using beneficial insects or predators.

"Growers should introduce predators the next day or make sure not to contact them with the spray," says Dr. Carlos Bográn, OHP technical services manager. Dr. Bográn notes Kopa should be used at the first sign of pest infestations for optimal results and in a rotation with products from different classes with different modes of action. Kopa may be tank mixed with appropriate tank mix partners.

Kopa has a 12-hour Restricted Entry Interval (REI) and CAUTION signal word. ■

Kopa is a trademark of Neudroff GmbH KG.

We welcome comments from readers

We are always looking for ways to make our newsletter more informative for our grower and distributor partners.

If you have a suggestion or comment, please contact our editor Ken Kuhajda at:

kkuhajda@ohp.com.

If you are not currently receiving this newsletter and wish to be added to our mailing list, please send a note to the same email address. If you wish to discontinue receiving, please notify us as well.

We look forward to hearing from you!

800.356.4647



Cultivate 2018: a chance to meet you!

We are looking forward to meeting with our industry friends July 14-17 in Columbus!

This will mark the second year of our redesigned booth, designed by OHP Manager of Marketing Services Ryan Boehm.

It's pretty awesome – open, bright, inviting – and the best part is there's plenty of room for our friends and customers to chat and pick up the latest OHP literature. We are located in space #2747 in a 20' by 20' island. Just look for the overhead "OHP" sign.

On the educational side, Dr. Carlos Bográn, OHP technical services manager, will be on the program on Saturday, July 14 at 4 p.m. Carlos' topic: "Biocontrols in the Nursery."

In addition OHP will be sponsoring several educational sessions including: IPM for thrips and aphids in the greenhouse; safeguarding boxwood with the latest research; biostimulants in nursery production; latest on Q-biotype whitefly; equipment for microbial pesticide application; the economics of biocontrols, and a few other sessions. Visit cultivate18.org for schedule and information.

Please stop by to visit some familiar faces and meet some new team members. We're always appreciative of those who take the time to visit with us. Trade show hours are on July 15-17. We look forward to seeing you there.



The OHP booth at Cultivate 2017, space #2747. We look forward to seeing our friends and customers this year.

OHP will be at summer and fall shows

We hope to see you at Cultivate 2018 July 14-17 in Columbus, OH.

If we don't, we'll be at some other shows later this summer including:

- TNLA in San Antonio, TX, Aug. 16-18 Booth 1412;
- FarWest in Portland, OR, Aug. 22-24, Booths 14015, 15016;

In addition, we'll be at some of the summer and early fall distributor shows. Please stop by and say hello. We look forward to seeing you sometime in the next few months!

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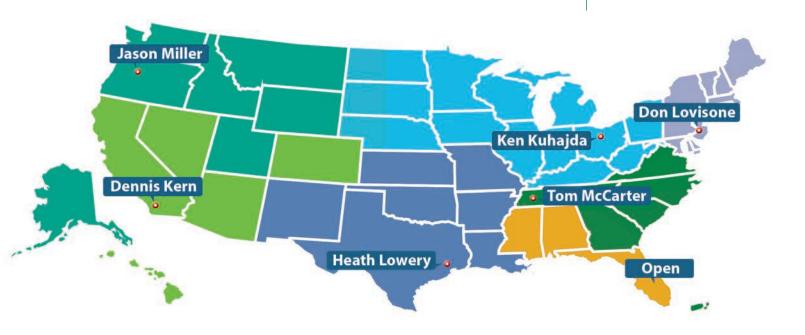
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