



[Environment Horticulture Program Research Summaries](#)

IR-4 Environmental Horticulture Program Oxathiapiprolin Crop Safety

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**Acknowledgements
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Abstract

Oxathiapiprolin was registered as Segovis in the United States in 2017 for disease control on ornamental horticulture plants in greenhouse and nurseries. The commercial label contains a general list of 17 crop groups that cover virtually all environmental horticulture crops. From 2015 through 2019, the IR-4 Project completed 33 trials on 19 plant species or genera examining phytotoxicity related to drench applications of Segovis. In these trials, all species or genera exhibited minimal or no injury after drench applications. These results confirm Segovis may be used effectively for disease control across multiple crops with minimal impact on plant growth or quality.

Introduction

Oxathiapiprolin was registered as Segovis in the United States in 2017 for disease control on ornamental horticulture plants in greenhouse and nurseries. The commercial label contains a general list of 17 crop groups that cover virtually all environmental horticulture crops. From 2015 through 2019, the IR-4 Project completed 33 trials on 19 plant species or genera examining phytotoxicity related to drench applications of Segovis.

Materials and Methods

Segovis was applied as a single drench treatment at rates of 3.2, 16 and 32 fl oz per 100 gal. A minimum of six plants (replicate treatments) were required. Phytotoxicity was planned to be recorded on a scale of 0 to 10 (0 = no phytotoxicity; 10 = complete kill). Phytotoxicity was rated at 7, 14 and 28 days after application. For IR-4 testing, the following protocols were used: 15-004, 16-005, 17-005, and 19-007. For more detailed materials and methods, including application rates for various products, please visit <https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-researcher-resources/#Protocols> to view and download these protocols.

Segovis (oxathiapiprolin) was supplied to researchers (See list of researchers in Appendix 1) by Syngenta.

Results and Summary

Phytotoxicity

Based on the type and nature of injury seen with Segovis applications in the conducted research, tested plant species were placed into five categories: 1) no significant phytotoxicity or growth differences from the untreated check or any injury was transitory, 2) no or minimal transitory injury seen at the 1X rate, but the 2X and/or 4X rates did cause significant phytotoxicity, 3) significant injury at the 1X rate sufficient to recommend growers not utilize this product, and 4) variable responses were observed across trials, and 5) more data are needed to make informed recommendations.

Segovis exhibited no or minimal negative impact on 4 plant genera or species with drench applications (Table 1). For 15 genera/species, more information is needed because only 1 or 2 trials were conducted (Table 5). However, no injury was observed in these trials.

Please see Table 6 for a list of individual trial summaries for Segovis.

Table 1. List of Segovis treated crops with no or minimal transitory injury.

Alyssum sp.
Gerbera sp.

Impatiens walleriana
Osteospermum sp.

Table 2. List of Segovis treated crops with no or minimal transitory injury seen at the 1X rate, but the 2X or 4X rate did cause significant phytotoxicity.

None

Table 3. List of Segovis treated crops exhibiting significant injury.

None

Table 4. List of Segovis treated crops where more information is needed.

None

Table 5. List of Segovis treated crops with less than 3 trials.

Antirrhinum majus

Begonia sp.

Calibrachoa sp.

Catharanthus roseus

Chrysanthemum/Dendranthema x morifolium

Coreopsis sp.

Dianthus sp.

Impatiens hawkeri

Lupinus sp.

Pelargonium x hortorum

Petunia sp.

Salvia sp.

Verbena sp.

Viola sp.

Viola X wittrockiana

Table 6. Detailed Summary of Crop Safety Testing with Oxathiprolin.

Note: Table entries are sorted by crop Latin name. Only those trials with research reports received by 11/2/2023 are listed below.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
32485	Madwort (Alyssum sp.) 'Clear Crystal Lavender'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32485	Madwort (Alyssum sp.) 'Crystal Clear White'	Greenhouse	Catlin	NY	2019	Drench	No injury and growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal.
32485	Madwort (Alyssum sp.) 'Sweet Alyssum Peach'	Greenhouse	Grunwald	OR	2019	Drench	No injury, growth or flowering reduction when applied at 3.2, 6.4 and 12.8 fl oz per 100 gal
32494	Garden Snapdragon (Antirrhinum majus) 'Rocket Mix'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32494	Garden Snapdragon (Antirrhinum majus) 'Sonnet Mix'	Greenhouse	Catlin	NY	2019	Drench	No injury and growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal.
32497	Begonia (Begonia sp.) 'Dragon Wing Red'	Greenhouse	Freiberger	NJ	2016	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32493	Calibrachoa (Calibrachoa sp.) 'Kabloom Deep Blue'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32147	Periwinkle, Madagascar (Catharanthus roseus) 'Cora Burgundy'	Greenhouse	Freiberger	NJ	2014	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal; slight delay in blooming at the higher rates.
32147	Periwinkle, Madagascar (Catharanthus roseus) 'Sunstorm™ Purple'	Greenhouse	Wick	MA	2015	Drench	No injury with 3.2, 16 and 32 fl oz per 100 gal.
32491	Hardy Mum (Chrysanthemum/Dendranthema x morifolium) 'Snow Lady'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32488	Tickseed (Coreopsis sp.) 'Early Sunrise Yellow'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32484	Pink (Dianthus sp.) 'Bouquet Rose Magic'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32484	Pink (Dianthus sp.) 'Frostfire Magenta'	Greenhouse	Grunwald	OR	2019	Drench	No injury, growth or flowering reduction when applied at 3.2, 6.4 and 12.8 fl oz per 100 gal
32489	Transvaal Daisy (Gerbera sp.) 'Majorette Sunset Orange'	Greenhouse	Catlin	NY	2019	Drench	No injury and growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal.
32489	Transvaal Daisy (Gerbera sp.) 'Garvinea Sweet Honey'	Greenhouse	Freiberger	NJ	2016	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32489	Transvaal Daisy (Gerbera sp.) 'Revolution mix'	Greenhouse	Grunwald	OR	2019	Drench	No injury, growth or flowering reduction when applied at 3.2, 6.4 and 12.8 fl oz per 100 gal
32500	Impatiens, New Guinea (Impatiens hawkeri) 'Super Sonic Purple'	Greenhouse	Freiberger	NJ	2016	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32500	Impatiens, New Guinea (Impatiens hawkeri) 'Harmony Dark Lilac'	Greenhouse	Ong	TX	2019	Drench	No significant injury or growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal applied twice.

32499	Impatiens, Common Garden; Buzzy Lizzy (Impatiens walleriana) 'Super XP Pink'	Greenhouse	Freiberger	NJ	2016	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32499	Impatiens, Common Garden; Buzzy Lizzy (Impatiens walleriana) 'Super Elfin Lipstick'	Greenhouse	Hand	OH	2017	Drench	No injury or growth reduction with 3.2, 16 and 32 (10X) fl oz per 100 gal.
32499	Impatiens, Common Garden; Buzzy Lizzy (Impatiens walleriana) 'Impreza Red'	Greenhouse	Madeiras	MA	2017	Drench	No injury with 3.2, 16 and 32 fl oz per 100 gal; minor height reduction with 4X.
32483	Lupine (Lupinus sp.) 'Gallery Mix'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32483	Lupine (Lupinus sp.) 'Gallery Red'	Greenhouse	Grunwald	OR	2019	Drench	No injury, growth or flowering reduction when applied at 3.2, 6.4 and 12.8 fl oz per 100 gal
32492	Daisybush (Osteospermum sp.) 'Asti Purple'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32492	Daisybush (Osteospermum sp.) O. ecklonis 'Rose Magic'	Greenhouse	Hausbeck	MI	2017	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32492	Daisybush (Osteospermum sp.) 'Asti Purple'	Greenhouse	Meadows	NC	2017	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32496	Geranium, Zonal (Pelargonium x hortorum) 'Maverick Violet'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32496	Geranium, Zonal (Pelargonium x hortorum) 'Patriot Bright Red'	Greenhouse	Ong	TX	2019	Drench	No significant injury or growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal applied twice biweekly.
32495	Petunia (Petunia sp.) 'Tritunia Blue'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32486	Sage (Salvia sp.) 'New Dimension Blue'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32490	Vervain (Verbena sp.) 'Lanai Vintage Vodka'	Greenhouse	Freiberger	NJ	2016	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal.
32498	Violet (Viola sp.) V. x wittrockiana 'Cool Wave Blue Skies'	Greenhouse	Hand	OH	2018	Drench	No injury or significant growth reduction with 3.2, 6.4 and 12.8 fl oz per 100 gal applied twice.
32487	Pansy, Large Flowering; Wittrock's Violet (Viola X wittrockiana) 'Delta Blue Blotch'	Greenhouse	Bodine (NER)	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.

Appendix 1: Contributing Researchers

Mr. Dave Bodine <i>(past affiliate)</i>	Rutgers University Cream Ridge Experiment Station 283 Rt. 539 Cream Ridge, NJ 08514
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