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IR-4 Ornamental Horticulture Program Oxathiapiprolin Crop Safety

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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 ornamental crops. During 2015 and 2016, the IR-4 Project completed 19 trials on 18 ornamental 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 the crop safety for Segovis.

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 ornamental crops. During 2015 and 2016, the IR-4 Project completed 19 trials on 18 ornamental plant species or genera examining phytotoxicity related to drench applications of Segovis.

Materials and Methods

Segovis was tested 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 and 16-005. For more detailed materials and methods, including application rates for various products, please visit <http://ir4.rutgers.edu/ornamental/OrnamentalDrafts.cfm> to view and download these protocols.

Segovis (SYN546539) was supplied to researchers (See list of researchers in Appendix 1) by Syngenta.

Results and Summary

Based on the type and nature of injury seen with pesticide applications, tested plant species were placed into four 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 sufficient to recommend growers not utilize oxathiapiprolin, and 4) more data are needed to make informed recommendations.

Phytotoxicity

Across all 18 plant species or genera tested, Segovis exhibited no or minimal negative impact. However, less than 3 trials were conducted so there is not enough information available at this time (Table 4).

Please see Table 5 for a summary of the individual trial results.

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

None

Table 2. List of Segovis treated crops with no injury at 1X but significant injury at 2X or 4X.

None

Table 3. List of Segovis treated crops with significant injury at 1X.

None

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

Alyssum sp.

Antirrhinum majus

Begonia sp.

Calibrachoa sp.

Catharanthus roseus

Dendranthema x morifolium

Coreopsis sp.

Dianthus sp.

Gerbera sp.

Impatiens hawkeri

Impatiens walleriana

Lupinus sp.

Osteospermum sp.

Pelargonium x hortorum

Petunia sp.

Salvia sp.

Verbena sp.

Viola X wittrockiana

¹ For these plants, the one or two trials presented here indicate no phytotoxicity or slight, transient injury, but these findings need to be confirmed.

Table 5 Detailed Summary of Crop Safety Testing with Segovis (oxathiapiprolin)

Notes: Table entries are sorted by crop Latin name. Only those trials with research reports received by 12/14/2017 are listed below.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
32485	Madwort (Alyssum sp.) 'Clear Crystal Lavender'	Greenhouse	Bodine	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) 'Rocket Mix'	Greenhouse	Bodine	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
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	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32147	Madagascar Periwinkle (Catharanthusroseus) 'Sunstorm™ Purple'	Greenhouse	Wick	MA	2015	Drench	No injury with 3.2, 16 and 32 fl oz per 100 gal.
32147	Madagascar Periwinkle (Catharanthusroseus) '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.
32491	Hardy Mum (Chrysanthemum/Dendranthema x morifolium) 'Snow Lady'	Greenhouse	Bodine	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	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	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
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.
32500	New Guinea Impatiens (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.
32499	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.
32483	Lupine (Lupinus sp.) 'Gallery Mix'	Greenhouse	Bodine	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.) 'Asti Purple'	Greenhouse	Bodine	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) 'Maverick Violet'	Greenhouse	Bodine	NJ	2015	Drench	No injury or growth reduction with 3.2, 16 and 32 fl oz per 100 gal applied once.
32495	Petunia (Petunia sp.) 'Tritunia Blue'	Greenhouse	Bodine	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	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.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
32487	Wittrock's Violet; Pansy (Viola X wittrockiana) 'Delta Blue Blotch'	Greenhouse	Bodine	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

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