



[Environment Horticulture Program Research Summaries](#)

IR-4 Environmental Horticulture Program Pyridalyl Crop Safety

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**Acknowledgements
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Abstract

Pyridalyl was registered as Overture for use on environmental horticulture plants in greenhouses with foliar applications in the United States in 2008. The label recommends use on horticulture plants with testing by the grower. From 2010 to 2015, the IR-4 Project conducted 51 trials on 12 ornamental plant species or genera examining phytotoxicity related to Overture applications. In these trials, no injury was noted.

Introduction

Pyridalyl was registered as Overture for use on environmental horticulture plants in greenhouses with foliar applications in the United States in 2008. The label recommends use on environmental horticulture plants with testing by the grower. From 2010 to 2015, the IR-4 Project conducted 51 trials on 12 environmental horticulture plant species or genera examining phytotoxicity related to Overture applications.

Materials and Methods

Overture was tested as foliar treatment typically three times at approximately 14 days interval or as a single drench application. The foliar application rates were 8, 16 and 32 oz per 100 gal applied foliar transplanting. A minimum of three plants (replicate treatments) were required with most researchers exceeding this minimum. Phytotoxicity was recorded on a scale of 0 to 10 (0 = no phytotoxicity; 10 = complete kill) one to four times from 1 to 8 weeks after initial application. For IR-4 testing, the following protocols were used: 10-004, 11-016, 12-002 13-002 and 15-008. 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.

Overture was supplied to researchers (See list of researchers in Appendix 1) by Valent.

Results and Summary

Phytotoxicity

Based on the type and nature of injury seen with pesticide applications, tested plant species were placed into three 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 pyridalyl, and 4) more data are needed to make informed recommendations.

No injury or minimal transient injury was observed for all tested crops.

Please see Table 3 for a summary of the individual trial results.

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

Begonia sp.

Chrysanthemum sp.

Gerbera sp.

Impatiens sp.

Petunia sp.

Tagetes sp.

Verbena sp.

Zinnia sp.

Table 2. List of Overture treated crops where more information is needed.

Angelonia sp.¹

Dianthus sp.¹

Fuschia sp.¹

Viola sp.¹

¹ No injury in 1 trial.

Table 3 Detailed Summary of Crop Safety Testing with Overture (pyridalyl)

Notes: Table entries are sorted by crop Latin name. Only those trials with research reports received by 5/1/2015 are listed below.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
30182	Narrowleaf Angelonia (<i>Angelonia angustifolia</i>) 'Adessa Pink'	Greenhouse	Freiberger	NJ	2013	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal mixed with surfactant applied 3 times.
30387	<i>Begonia</i> (<i>Begonia</i> sp.)	Field Container	Davis	MI	2010	Foliar	No significant injury at 8, 16, and 32 fl oz per 100 gal.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) B. x semperflorens-cultorum 'Cocktail Rum'	Greenhouse	Gilrein	NY	2011	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) B. x semperflorens-cultorum 'Eureka GL White'	Greenhouse	Gilrein	NY	2011	Foliar	No injury or growth reduction with 8 and 16, moderate injury (necrotic leaf spotting) with 32 oz per 100 gal.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) 'Cocktail Pink'	Greenhouse	Chen	LA	2012	Foliar	No injury with 8, 16 and 32 oz per 100 gal applied twice; virtually no growth reduction.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) 'Cocktail White'	Greenhouse	Chen	LA	2012	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) 'Dragon Wing Red'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29307	<i>Begonia</i> (<i>Begonia</i> sp.) 'Non- stop Orange'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
30537	Chrysanthemum, Garden (<i>Chrysanthemum/Dendranthema</i> sp.) 'Outrageous Orange'	Greenhouse	Gilrein	NY	2012	Foliar	No injury on foliage or flowers at 8, 16, and 32 fl oz per 100 gal applied biweekly 3 times.
30537	Chrysanthemum, Garden (<i>Chrysanthemum/Dendranthema</i> sp.) 'Sly Jenna'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
30537	Chrysanthemum, Garden (<i>Chrysanthemum/Dendranthema</i> sp.) 'Sparkle White'	Greenhouse	Gilrein	NY	2012	Foliar	No injury on foliage or flowers at 8, 16, and 32 fl oz per 100 gal applied biweekly 3 times.
30537	Chrysanthemum, Garden (<i>Chrysanthemum/Dendranthema</i> sp.) <i>Tanacetum</i> x <i>grandiflorum</i>	Greenhouse	Cloyd	KS	2012	Foliar	No injury with 8, 10 and 12 fl oz per 100 gal.
30592	Pink (<i>Dianthus</i> sp.) 'Floral Lace Crimson'	Greenhouse	Freiberger	NJ	2013	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal mixed with surfactant applied 3 times.
29308	Fuschia; Ladies-Eardrops (<i>Fuschia</i> sp.) 'Dollar Princess'	Greenhouse	Freiberger	NJ	2015	Foliar	No injury or growth reduction with 8 oz per 100 gal applied twice.
29308	Fuschia; Ladies-Eardrops (<i>Fuschia</i> sp.) <i>Fuschia</i> x <i>hybrida</i>	Greenhouse	Cloyd	KS	2012	Foliar	No injury with 8 and 10 fl oz per 100 gal.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
29309	Transvaal Daisy (Gerbera sp.) 'Festival Lt. Eye Orange'	Greenhouse	Edmunds	CO	2010	Spray-to-wet	No injury at 8 oz, minor flower injury (slight yellowing) at 16 and 32 oz per 100 gal after 3rd application; application residue at higher rates.
29309	Transvaal Daisy (Gerbera sp.) 'Jaguar Pink'	Greenhouse	Gilrein	NY	2012	Foliar	No injury on foliage or flowers with 8, 16, and 32 oz per 100 gal applied biweekly three times.
29309	Transvaal Daisy (Gerbera sp.) 'Royal Red'	Greenhouse	Gilrein	NY	2012	Foliar	No injury on foliage or flowers with 8, 16, and 32 oz per 100 gal applied biweekly three times.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Dazzler Violet'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Infinity Salmon Glow'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Paradise Pearl White'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Patchwork Salmon'	Greenhouse	Chen	LA	2011	Foliar	No significant injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Sonic Lilac'	Greenhouse	Chen	LA	2011	Foliar	No significant injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice.
29311	Impatiens, New Guinea (Impatiens hawkeri) 'Super Elfin Red'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
29310	Impatiens; Touch-me-not (Impatiens sp.) 'Cherry Splash'	Greenhouse	Gilrein	NY	2012	Foliar	No injury at 8, 16, and 32 oz per 100 gal applied biweekly three times.
29310	Impatiens; Touch-me-not (Impatiens sp.) 'Double Camellia Mix'	Greenhouse	Freiberger	NJ	2011	Foliar	Virtually no injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29310	Impatiens; Touch-me-not (Impatiens sp.) 'Extra Dwarf Tom Thumb'	Greenhouse	Freiberger	NJ	2011	Foliar	Virtually no injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
30388	Impatiens; Touch-me-not (Impatiens sp.) I. walleriana 'Dazzler Pink'	Field Container	Davis	MI	2010	Foliar	No significant injury at 8, 16, and 32 fl oz per 100 gal.
29310	Impatiens; Touch-me-not (Impatiens sp.) 'Super Elfin XP Red'	Greenhouse	Gilrein	NY	2012	Foliar	No injury at 8, 16, and 32 oz per 100 gal applied biweekly three times.
29312	Petunia (Petunia sp.) 'Dolcissima Flambe'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
29312	Petunia (Petunia sp.) 'Easy Wave Rose'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
30389	Petunia (Petunia sp.) P. x hybrida 'Prism Sunshine'	Field Container	Davis	MI	2010	Foliar	No significant injury at 8, 16, and 32 fl oz per 100 gal.
29312	Petunia (Petunia sp.) 'Wave Purple Hybrid'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29313	Marigold (Tagetes sp.) 'Marvel Orange'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
30390	Marigold (Tagetes sp.) T. erecta 'Inca Orange'	Field Container	Davis	MI	2010	Foliar	No significant injury at 8, 16, and 32 fl oz per 100 gal.
29313	Marigold (Tagetes sp.) 'Taishan Orange'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
29313	Marigold (Tagetes sp.) 'Taishan Orange'	Greenhouse	Chen	LA	2012	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice.
29313	Marigold (Tagetes sp.) 'Taishan Yellow'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
29313	Marigold (Tagetes sp.) 'Taishan Yellow'	Greenhouse	Chen	LA	2012	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice.
29313	Marigold (Tagetes sp.) 'Tiger Eyes'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29314	Vervain (Verbena sp.) 'Homestead Purple'	Greenhouse	Chen	LA	2010	Foliar	No injury with 8,16 and 32 oz per 100 gal applied twice; growth reduction at 4X; noticeable white spray deposits.
29314	Vervain (Verbena sp.) 'Quartz x P Scarlet'	Greenhouse	Edmunds	CO	2010	Spray-to-wet	No injury at 8,16 and 32 oz per 100 gal; application residue at higher rates.
29314	Vervain (Verbena sp.) 'Serenity Pink'	Greenhouse	Chen	LA	2010	Foliar	No injury with 8,16 and 32 oz per 100 gal applied twice; growth reduction at 4X; noticeable white spray deposits.
29314	Vervain (Verbena sp.) V. hybrida 'Obsession Blue with Eye'	Greenhouse	Gilrein	NY	2011	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal.
29314	Vervain (Verbena sp.) V. hybrida 'Quartz White'	Greenhouse	Gilrein	NY	2011	Foliar	No injury or growth reduction with 8, 16 and 32 oz per 100 gal.
29315	Violet (Viola sp.) 'Dynamite Scarlet'	Greenhouse	Chen	LA	2010	Foliar	No injury or growth reduction with 8,16 and 32 oz per 100 gal applied twice; noticeable white spray deposits.
29316	Zinnia (Zinnia sp.) 'Elegans Envy'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.
29316	Zinnia (Zinnia sp.) 'Magellan Coral'	Greenhouse	Edmunds	CO	2010	Spray-to-wet	Minor injury (leaf chlorosis) with recovery in 14 days at 8, 16 and 32 oz per 100 gal; application residue at higher rates.
29316	Zinnia (Zinnia sp.) 'Profusion Knee-high Yellow'	Greenhouse	Chen	LA	2011	Foliar	No significant injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice
29316	Zinnia (Zinnia sp.) 'Red Spider'	Greenhouse	Freiberger	NJ	2011	Foliar	No injury with 8, 16 and 32 oz per 100 gal + surfactant applied 3 times.

PR#	Crop	Production Site	Researcher	State	Year	Application Type	Results
29316	Zinnia (Zinnia sp.) 'Zahra White'	Greenhouse	Chen	LA	2011	Foliar	No significant injury or growth reduction with 8, 16 and 32 oz per 100 gal applied twice

Label Suggestions

No label recommendations are made at this time.

Appendix 1: Contributing Researchers

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