



Ornamental Horticulture Program Research Project Sheet

<http://ir4.rutgers.edu/Ornamental/ornamentalProjectInformationSheets.cfm>

Project Name: Pre Emergent Herbicide Crop Safety – Isoxaben

New		Ongoing	X	Completed		Duration if ongoing or completed:	1991 – 2002, 2006 - 2015
------------	--	----------------	---	------------------	--	--	-----------------------------

Project Description:

The Pre-Emergent Herbicide Crop Safety Project began in 2004 and has continued through 2015. While specific crops and herbicides have changed, the intent of this research has been to screen over-the-top applications of pre-emergent herbicides as plants are breaking dormancy, or beginning new growth, and then 4 to 6 weeks later once foliage is more mature.

This research project sheet covers Gallery 75DF (isoxaben).

Research Project Abstract (if available):

Abstract from 2013 Isoxaben Crop Safety Summary

Gallery 75DF (isoxaben) was initially registered in 1992 for ornamental horticulture uses. This initial label contained an extensive list of ornamental horticulture crops where Gallery could be used without causing phytotoxicity. It also included a short list of crops where Gallery applications were not recommended. Between 1992 and 2013, IR-4 examined 93 crops to expand this label to other crops, including several different fern species grown in field containers. Of these, 24 crop species exhibited no or minimal transient injury with 20 already placed on the Gallery label. Eight crops exhibited injury in this research: *Astilbe sp.*, *Athyrium filix-femina*, *Buddleia davidii*, *Dendranthema x morifolium*, *Digitalis purpurea*, *Echinacea purpurea*, *Stachys byzantine*, and *Thymus sp.*

Target Species (Phytotoxicity, or common and Latin name of arthropod, pathogen, weed):

Crop Safety

Target Crops (list tested crops if ongoing or completed project)

See "IR-4 Crop Safety to Date" below

Target Product(s) (list tested products or numbered compounds if ongoing or completed project)

Gallery 75DF
Gallery SC

Product Registration and Research Status

	Registration Status
Labeled & Commercialized Wide range of ornamental horticulture crops listed	Gallery DF* Gallery SC
Labeled & Commercialized Opportunity to add additional ornamental horticulture crops	
Labeled But NOT Commercialized	
Not yet registered or labeled	
No longer available for development	
* IR-4 Data contributed to registration decision – either adding pest to label or not pursuing further research 1 At least one crop species screened fully 2 Product not available for production ornamentals	

Other:

Project Pros	Project Cons
1 Additional research could yield data favorable for further label expansion 2	1 Fairly extensive label

IR-4 Crop Safety Trials to Date
 Average rating on a scale of 1 – 5 with 1 = 0 to about no injury and 5 = severe injury and mortality; minimum to maximum rating; number of trials. A rating of 3 or higher is considered commercially unacceptable (*red text*). A rating of 1 or 2 is considered commercially acceptable and those with more than 3 trials are complete (*green text*). ‘Labeled’ indicates that IR-4 generated data in at least one trial and that this crop is listed on the label. For crop/product combinations that are blank, IR-4 has not screened this combination.

Plant Group	Crop	Gallery 75DF (Isoxaben)	Gallery SC (Isoxaben)
Broadleaf Evergreen Tree/Shrub	Aucuba (Aucuba sp.)	2.0 (1 - 3) n2	
Cactus & Succulents	Stonecrop (Crassula sp.)	2.0 (2 - 2) n2	
	Echeveria sp. (Echeveria sp.)	<i>3.0 (3 - 3) n1</i>	
	Echinocactus grusonii (Echinocactus grusonii)	2.0 (2 - 2) n2	
	Stonecrop (Sedum sp.)	Labeled	
Deciduous Tree/Shrub/Vine	Maple, Red (Acer rubrum)	<i>1.3 (1 - 2) n3</i>	
	Maple (Acer sp.)	<i>3.0 (3 - 3) n1</i>	
	Butterfly Bush (Buddleia davidii)	<i>2.5 (1 - 4) n6</i>	
	Dogwood, Kousa (Cornus kousa)	<i>3.0 (3 - 3) n1</i>	
	Golden Bells (Forsythia sp.)	1.0 (1 - 1) n1	
	Witch Alder (Fothergilla gardenii)	<i>4.0 (4 - 4) n1</i>	
	Japanese Kerria, Japanese Rose (Kerria japonica)	2.0 (2 - 2) n1	
	Golden-Rain Tree (Koelreuteria bipinnata)	1.0 (1 - 1) n1	
	Varnish Tree (Koelreuteria paniculata)	1.0 (1 - 1) n1	
	Tulip Tree (Liriodendron tulipifera)	<i>3.0 (3 - 3) n1</i>	
	Rose (Rosa sp.)	2.0 (2 - 2) n1	
	Lilac (Syringa sp.)	1.0 (1 - 1) n1	
	Arrowwood (Viburnum sp.)	Labeled	
	Japanese Zelkova (Zelkova serrata)	2.0 (2 - 2) n1	
Fern	Fern, Lady (Athyrium filix-femina)	Labeled	
	Fern, Lady (Athyrium nipponicum)	Labeled	
	Fern, Japanese Holly (Cyrtomium fortunei)	Labeled	
	Fern, Autumn (Dryopteris erythrosora)	Labeled	
	Fern, Southern Shield (Dryopteris ludoviciana)	2.0 (2 - 2) n2	
	Fern, Marginal Wood (Dryopteris marginalis)	Labeled	
	Fern, Dixie Wood (Dryopteris x australis)	Labeled	
	Fern, Ostrich (Matteuccia struthiopteris)	Labeled	
	Fern, Sensitive (Onoclea sensibilis)	Labeled	
	Fern, Cinnamon (Osmunda cinnamomea)	Labeled	
	Fern, Royal (Osmunda regalis)	Labeled	
	Fern, Christmas (Polystichum acrostichoides)	Labeled	
	Fern, Tassel (Polystichum polyblepharum)	Labeled	
Hardy Ground Cover Foliage	Mugwort, White (Artemisia lactiflora)	1.0 (1 - 1) n2	
	Delosperma sp. (Delosperma sp.)	<i>1.3 (1 - 2) n3</i>	
Herbaceous Flowering Plant	Hopflower Oregano (Origanum libanoticum)	Labeled	
	Sage (Salvia daghestanica)	Labeled	

Plant Group	Crop	Gallery 75DF (Isoxaben)	Gallery SC (Isoxaben)
Herbaceous Flowering Plant	Pasture Sage (<i>Salvia nemorosa</i>)	3.0 (3 - 3) n2	
Herbaceous Flowering Plant - Perennial	Hardy Mum (<i>Chrysanthemum/Dendranthema x morifolium</i>)	MFG Hold	
	Coral Bells, Alumroot (<i>Heuchera sanguinea</i>)	5.0 (5 - 5) n1	
	Poker Plant, Red-Hot-Poker (<i>Kniphofia</i> sp.)	Labeled	
	Shasta Daisy (<i>Leucanthemum maximum</i>)	Labeled	
	Beard-Tongue (<i>Penstemon</i> sp.)	2.5 (2 - 3) n2	
Narrowleaf Evergreen Tree/Shrub	Fir (<i>Abies</i> sp.)	Labeled	
	Arborvitae (<i>Thuja</i> sp.)	1.0 (1 - 1) n1	
Ornamental Grass	Reed Grass (<i>Calamagrostis arundinacea</i>)	1.0 (1 - 1) n1	
	Northern Sea Oats, Wild Oats (<i>Chasmanthium latifolium</i>)	1.0 (1 - 1) n2	1.5 (1 - 2) n2
	Hakone Grass, Japanese Forest Grass (<i>Hakonechloa</i> sp.)		1.0 (1 - 1) n1
	Muhly, hairyawn (<i>Muhlenbergia capillaris</i>)		1.0 (1 - 1) n1
	Little Blue Stem (<i>Schizachyrium scoparium</i>)	1.0 (1 - 1) n3	1.0 (1 - 1) n1