



Ornamental Horticulture Program Research Project Sheet

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

Project Name: Pre Emergent Herbicide Crop Safety - Dithiopyr

New	Ongoing	Completed	X	Duration if ongoing or completed:	2004-2015
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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 dithiopyr based formulations (Dimension 1EC, Dimension 2EW, Dimension WSP).

Research Project Abstract (if available):

Abstract from 2014 Dithiopyr Crop Safety Summary

Dimension was initially registered in 1992 for ornamental horticulture uses. This initial label contained an extensive list of ornamental horticulture plants in landscapes where Dimension could be used without causing phytotoxicity. In 2006, the new Dimension 2EW label contained registered uses for field container and in ground nursery production, the first dithiopyr product to have these use sites. Starting in 1992, IR-4 examined 67 crops to expand this label to other crops, including several different fern species grown in field containers. Of the researched crops and Dimension formulations, only one crop (*Rosa sp.*) can be added at this time based on the data provided here. It is recommended the trials conducted using emulsifiable concentrate formulations be repeated with Dimension 2EW.

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)

Product Registration and Research Status

	Registration Status
Labeled & Commercialized Wide range of ornamental horticulture crops listed	
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	1 Wide range of crops already listed on the labels

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	Dimension 1EC (Dithiopyr)	Dimension 2EW (Dithiopyr)	Dimension WSP (Dithiopyr)
Broadleaf Evergreen Tree/Shrub	Wintercreeper (Euonymus fortunei)		1.3 (1 - 2) n3	
	Holly, Japanese (Ilex crenata)		1.0 (1 - 1) n1	
	Holly, Savannah (Ilex x attenuata)		2.0 (2 - 2) n1	
	Holly, Blue (Ilex x meserveae)		1.5 (1 - 2) n2	
	Azalea (Rhododendron sp.)		2.0 (2 - 2) n2	
	Azalea, & Rhododendron (Rhododendron sp.)			1.0 (1 - 1) n1
Bulbs & Corms	Daylily (Hemerocallis sp.)	Labeled	1.3 (1 - 2) n3	1.0 (1 - 1) n2
Deciduous Tree/Shrub/Vi ne	Japanese Barberry (Berberis thunbergii)		1.0 (1 - 1) n1	
	Red Bud, Eastern (Cercis canadensis)		3.0 (3 - 3) n1	
	Rose-Of-Sharon, Althaea (Hibiscus syriacus)		2.0 (2 - 2) n1	
	Hydrangea (Hydrangea sp.)		3.0 (3 - 3) n1	1.0 (1 - 1) n1
	Cherry, Black (Non-Bearing) (Prunus serotina)		4.0 (4 - 4) n1	
	Rose (Rosa sp.)		Labeled	
Hardy Ground Cover Foliage	Delosperma sp. (Delosperma sp.)		1.0 (1 - 1) n2	
	Shrub Verbena (Lantana sp.)		Labeled	
Herbaceous Flowering Plant	Mallow, Rose Mallow (Hibiscus sp.)		3.0 (3 - 3) n1	
	Rose moss (Portulaca grandiflora)		2.0 (2 - 2) n1	
	Sage, Scarlet (Salvia splendens)	2.5 (1 - 4) n2		
	Speedwell, Brooklime (Veronica sp.)			2.0 (2 - 2) n1
Herbaceous Flowering Plant - Annual	Begonia (Begonia sp.)	2.0 (2 - 2) n1	4.0 (4 - 4) n1	
	Ornamental Cabbage, Ornamental Kale (Brassica sp.)	4.0 (4 - 4) n1		
	Balsam (Impatiens sp.)	3.0 (3 - 3) n1		
Herbaceous Flowering Plant - Perennial	Bluestar (Amsonia sp.)	2.0 (1 - 3) n2		
	Chrysanthemum, Garden (Chrysanthemum/Dendranthema sp.)		2.0 (2 - 2) n1	
	Purple Coneflower (Echinacea sp.)	3.0 (3 - 3) n2		
	Gaura (Gaura lindheimeri)		2.0 (1 - 3) n2	
	Hellebore, Christmas rose, Lenten Rose (Helleborus niger)	2.0 (2 - 2) n1		
	Hosta (Hosta sp.)		2.0 (2 - 2) n2	
	Shasta Daisy (Leucanthemum maximum)		2.0 (2 - 2) n1	
	Cardinal Flower, Indian Pink (Lobelia cardinalis)	2.3 (1 - 4) n3		
Narrowleaf Evergreen Tree/Shrub	Fir, Fraser (Abies fraseri)		1.0 (1 - 1) n1	
	Juniper (Juniperus sp.)			MFG Hold
	Spruce, Norway (Picea abies)		3.0 (3 - 3) n1	
	Spruce, White; Cat (Picea glauca)		3.0 (3 - 3) n1	
	Pine (Pinus sp.)		1.0 (1 - 1) n1	
	Feather Reed Grass (Calamagrostis acutiflora)		2.0 (1 - 3) n2	

Plant Group	Crop	Dimension 1EC (Dithiopyr)	Dimension 2EW (Dithiopyr)	Dimension WSP (Dithiopyr)
Ornamental Grass	Carex buchanani (Carex buchanani)		1.5 (1 - 2) n2	
	Carex morrowii (Carex morrowii)		2.5 (2 - 3) n2	
	Northern Sea Oats, Wild Oats (Chasmanthium latifolium)		2.3 (1 - 4) n3	
	Tufted hairgrass (Deschampsia caespitosa)		2.7 (2 - 4) n3	
	Weeping lovegrass (Eragrostis curvula)		2.0 (1 - 3) n2	
	Blue Fescue (Festuca glauca)		3.0 (2 - 4) n2	
	Hakone Grass, Japanese Forest Grass (Hakonechloa sp.)		1.7 (1 - 2) n3	
	Blue Lyme Grass (Leymus arenarius)		1.0 (1 - 1) n1	
	Muhly, hairyawn (Muhlenbergia capillaris)		1.0 (1 - 1) n1	
	Switch-Grass (Panicum virgatum)		1.0 (1 - 1) n1	
	Chinese Pennisetum (Pennisetum alopecuroides)		1.0 (1 - 1) n2	
	Pennisetum orientale (Pennisetum orientale)		3.0 (3 - 3) n1	
	Little Blue Stem (Schizachyrium scoparium)		2.3 (1 - 3) n3	
	Prairie dropseed (Sporobolus heterolepis)		3.0 (3 - 3) n1	
Turf	Blue Fescue (Festuca cinerea)		1.5 (1 - 2) n2	