



Environmental Horticulture Program Research Project Sheet

<https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-extension-resources/>

Project Name: Insecticide Crop Safety – New Products

New	Ongoing	X	Completed	Duration if ongoing or completed:	2010-2021
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Project Description:

While it is fairly common for environmental horticulture labels to allow the use of insecticides and miticides on crops generally, developing crop safety data is still critical to support these ‘open’ labels. Many labels list the tested crops along with the plant type as well as any crops that might be injured after application. From 2010 through 2013, IR-4 tested several new insecticides for thrips management to verify and expand the screened crops. Since then, IR-4 screened new insecticides for pest management.

Research Project Abstract (if available):

Abstract from 2019 Afidopyropen Crop Safety Summary

Ventiga (BAS 440i) (afidopyropen) is a new insecticide recently registered by BASF for the control of piercing and sucking insect pests such as aphids, whiteflies, psyllids, scales and leafhoppers. The IR-4 Project completed 106 crop safety trials on 42 environmental horticulture plant species or genera from 2015 through 2019. In these trials, 24 genera or species exhibited minimal or no injury after foliar applications in a minimum of 3 trials for each crop; these can be added to a list of tolerant plants in the new label for this active ingredient. All trials for 18 other species or genera exhibited minimal or no injury in the limited number of trials (one or two) for each crop with the exception of dahlia which had moderate injury in one trial.

Abstract from 2020 Cyclanilprole + Flonicamid Crop Safety Summary

Pradia (cyclanilprole + flonicamid) is a new insecticide combination recently registered for environmental horticultural crops for the control of a wide variety of insects including aphids, leafminers, scales and mealybugs, foliage feeding beetles and caterpillars, thrips, and whiteflies. In 2019, the IR-4 Project completed 16 crop safety trials on 9 ornamental plant genera or species. In these trials, 2 exhibited minimal or no injury after foliar applications. For the remaining 7 crops, sufficient information has not yet been generated. However, all tested crops are not sensitive to foliar applications up to 4X the proposed high label rate.

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)

ANEEM	TetraCURB Concentrate
BCS991	TetraCURB Organic
ISM-555	V10433
Pradia	Velifer
PyClear	Ventiga
SP3014	

Product Registration and Research Status

	Registration Status
Labeled & Commercialized Wide range of ornamental horticulture crops listed	Pradia PyClear Ventiga
Labeled & Commercialized Opportunity to add additional ornamental horticulture crops	



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Labeled But NOT Commercialized	
Not yet registered or labeled	ANEEM BCS991 ISM-555 SP3014 TetraCURB V-10433
No longer available for development	
* IR-4 Data contributed to registration decision – either adding pest to label or not pursuing further research	

Other:
 This project arose from the Thrips Efficacy Project but has since become screening new active ingredients and newly registered insecticides and miticides.

Project Pros	Project Cons
1	1

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	BCS991 (BCS991)	ISM-555 (ISM-555)	Pradia (Cyclanilprole + Flonicamid)	SP3014 (SP3014)	V-10433 (V- 10433)	Ventiga Insecticide (Afidopypropen)
Broadleaf Evergreen Tree/Shrub	Camellia (Camellia sp.)						1.0 (1 - 1) n2
	Oleander, Rosebay (Nerium oleander)						1.5 (1 - 2) n2
	Azalea (Rhododendron sp.)						1.0 (1 - 1) n1
	Cotoneaster (Cotoneaster sp.)						1.3 (1 - 2) n3
	Spindletree (Euonymus sp.)						1.7 (1 - 3) n3
	Privet (Ligustrum sp.)						1.0 (1 - 1) n2
Bulbs & Corms	Dahlia (Dahlia sp.)						2.3 (1 - 5) n3
Cactus & Succulents	Stonecrop (Sedum sp.)						1.0 (1 - 1) n3
Deciduous Tree/Shrub/Vine	Alder (Alnus sp.)						1.0 (1 - 1) n1 Labeled
	Dogwood (Cornus sp.)						1.0 (1 - 1) n3
	Hawthorn (Crataegus sp.)						1.0 (1 - 1) n1 Labeled
	Ash (Fraxinus sp.)						1.0 (1 - 1) n1 Labeled
	Hydrangea (Hydrangea sp.)	1.0 (1 - 1) n1				1.0 (1 - 1) n2	1.3 (1 - 2) n4
	Crape Myrtle (Lagerstroemia indica)						1.3 (1 - 2) n3
	Apple (Malus sp.)						1.0 (1 - 1) n1 Labeled
	Plane Tree, Sycamore (Platanus sp.)						3.0 (3 - 3) n1 <i>Labeled</i>
	Callery Pear (Pyrus calleryana)						1.0 (1 - 1) n1 Labeled
	Rose (Rosa sp.)					1.0 (1 - 1) n2	1.5 (1 - 2) n2 Labeled
	Willow (Salix sp.)						1.0 (1 - 1) n3 Labeled
	Arrowwood (Viburnum sp.)						1.0 (1 - 1) n3
Hardy Ground Cover Foliage	Ivy (Hedera sp.)						1.0 (1 - 1) n3
Herbaceous Flowering Plant	Narrowleaf Angelonia (Angelonia angustifolia)						1.0 (1 - 1) n2 Labeled
	Angelonia (Angelonia sp.)					1.0 (1 - 1) n1	
Herbaceous Flowering Plant - Annual	Garden Snapdragon (Antirrhinum majus)						1.0 (1 - 1) n3

Plant Group	Crop	BCS991 (BCS991)	ISM-555 (ISM-555)	Pradia (Cyclanilprole + Flonicamid)	SP3014 (SP3014)	V-10433 (V- 10433)	Ventigra Insecticide (Afidopyropen)
Herbaceous Flowering Plant - Annual	Clubed Begonia (<i>Begonia semperflorens</i>)				1.0 (1 - 1) n1	1.0 (1 - 1) n1	
	Begonia (<i>Begonia</i> sp.)			1.5 (1 - 2) n4			1.0 (1 - 1) n3
	Coleus, Flamenettle (<i>Coleus</i> sp.)						1.0 (1 - 1) n4
	Poinsettia (<i>Euphorbia pulcherrima</i>)		1.0 (1 - 1) n1				1.0 (1 - 1) n2
	Fuschia; Ladies-Eardrops (<i>Fuschia</i> sp.)				1.0 (1 - 1) n1		
	Barberton Daisy (<i>Gerbera jamesonii</i>)			1.0 (1 - 1) n2			
	Transvaal Daisy (<i>Gerbera</i> sp.)					1.0 (1 - 1) n2	1.0 (1 - 1) n2
	Strawflower (<i>Helichrysum</i> sp.)						1.0 (1 - 1) n1 Labeled
	Impatiens, New Guinea (<i>Impatiens hawkeri</i>)			1.0 (1 - 1) n1	1.0 (1 - 1) n2	1.0 (1 - 1) n1	
	Impatiens, Common Garden; Buzzy Lizzy (<i>Impatiens walleriana</i>)		1.0 (1 - 1) n3	1.0 (1 - 1) n2	1.0 (1 - 1) n3	1.0 (1 - 1) n3	
	Geranium (<i>Pelargonium</i> sp.)						
	Geranium, Zonal (<i>Pelargonium x hortorum</i>)			1.3 (1 - 2) n3	1.0 (1 - 1) n1	1.0 (1 - 1) n1	
	Petunia (<i>Petunia</i> sp.)				1.0 (1 - 1) n2		
	Petunia (<i>Petunia x hybrida</i>)		1.0 (1 - 1) n2	1.0 (1 - 1) n1		1.0 (1 - 1) n1	
	Marigold, African (<i>Tagetes erecta</i>)		1.0 (1 - 1) n3	1.0 (1 - 1) n1			
	Marigold, French (<i>Tagetes patula</i>)		1.0 (1 - 1) n1	1.0 (1 - 1) n2			
	Marigold (<i>Tagetes</i> sp.)				1.0 (1 - 1) n2	1.0 (1 - 1) n2	
	Violet (<i>Viola</i> sp.)				1.0 (1 - 1) n1		
	Pansy, Large Flowering; Wittrock's Violet (<i>Viola X wittrockiana</i>)			1.0 (1 - 1) n3	1.0 (1 - 1) n1		
	Zinna, Elegant (<i>Zinnia elegans</i>)					1.0 (1 - 1) n2	
Zinnia (<i>Zinnia</i> sp.)						2.0 (1 - 5) n4	
Herbaceous Flowering Plant - Perennial	Columbine (<i>Aquilegia</i> sp.)						2.5 (1 - 4) n2
	Aster (<i>Aster</i> sp.)						1.0 (1 - 1) n4
	False Goat's Beard (<i>Astilbe</i> sp.)						1.0 (1 - 1) n3
	Chrysanthemum x rubellum (<i>Chrysanthemum x rubellum</i>)						1.0 (1 - 1) n1 Labeled
	Chrysanthemum, Garden (<i>Chrysanthemum/Dendranthema</i> sp.)		1.0 (1 - 1) n1		1.5 (1 - 2) n2		1.0 (1 - 1) n2

Plant Group	Crop	BCS991 (BCS991)	ISM-555 (ISM-555)	Pradia (Cyclanilprole + Flonicamid)	SP3014 (SP3014)	V-10433 (V- 10433)	Ventigra Insecticide (Afidopyropen)
Herbaceous Flowering Plant - Perennial	Golden Tickseed, Garden Coreopsis (Coreopsis tinctoria)						1.0 (1 - 1) n3
	Larkspur (Delphinium sp.)						1.0 (1 - 1) n3
	Pink (Dianthus sp.)					1.0 (1 - 1) n2	1.0 (1 - 1) n3
	Foxglove, Purple (Digitalis purpurea)						1.0 (1 - 1) n3
	Purple Coneflower (Echinacea sp.)						1.0 (1 - 1) n4
	Rosemallow (Hibiscus sp.)						1.3 (1 - 2) n3
	Daisy, Shasta (Leucanthemum x superbum)						1.0 (1 - 1) n2 Labeled
	Bee Balm, Scarlet (Monarda didyma)						1.0 (1 - 1) n3
	Peony (Paeonia sp.)						1.0 (1 - 1) n2
	Oriental Poppy (Papaver orientale)						1.5 (1 - 2) n2 Labeled
	Woodland Sage (Salvia nemorosa)			1.0 (1 - 1) n1			
	Goldenrod (Solidago sp.)						1.0 (1 - 1) n3
	Vervain (Verbena sp.)				1.0 (1 - 1) n1		
	Speedwell (Veronica sp.)						1.0 (1 - 1) n3
Narrowleaf Evergreen Tree/Shrub	Spruce (Picea sp.)						1.0 (1 - 1) n1 Labeled
	Yew (Taxus sp.)						1.0 (1 - 1) n3
Tropical Foliage Plant	Dracaena (Dracaena sp.)				1.0 (1 - 1) n1		
	Coleus (Solenostemon sp.)					1.0 (1 - 1) n2	