



[Environment Horticulture Program Research Summaries](#)

IR-4 Environmental Horticulture Program Cyclaniliprole + Flonicamid Crop Safety

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Table of Contents

Table of Contents	2
Table of Tables	3
Abstract	4
Introduction.....	5
Materials and Methods.....	5
Results and Summary	5
Phytotoxicity.....	5
Label Suggestions	8
Appendix 1: Contributing Researchers	9

Table of Tables

Table 1.	List of cyclaniliprole + flonicamid treated crops with no or minimal transitory injury.....	6
Table 2.	List of cyclaniliprole + flonicamid treated crops with no injury at 1X but significant injury at 2X or 4X.	6
Table 3.	List of cyclaniliprole + flonicamid treated crops with significant injury at 1X.....	6
Table 4.	List of cyclaniliprole + flonicamid treated crops where more information is needed.	6
Table 5	Detailed Summary of Crop Safety Testing with Pradia (cyclaniliprole + flonicamid).....	7

Abstract

Pradia (cyclaniliprole + 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.

Introduction

Pradia (cyclaniliprole + flonicamid) 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 started screening for potential crop safety issues.

Materials and Methods

Foliar applications of cyclaniliprole + flonicamid at 12, 24 and 48 fl oz per 100 gal were applied twice at 14 day intervals. All experiments had an untreated control. A minimum of 10 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 7 days after each application. For testing, the following protocol was used: 19-011. Please visit <https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-researcher-resources/#Protocols> to view and download this protocol.

Pradia was supplied to 2 researchers (See list of researchers in Appendix 1) by OHP.

Results and Summary

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 Pradia and 4) more data are needed to make informed recommendations.

Phytotoxicity

Across all plant species tested, Pradia exhibited no or minimal negative impact (Table 1) on 2 plant genera or species fell into this category. No crops exhibited significant injury (Tables 2 and 3). There are 7 species or genera where less than 3 trials were conducted so there is not enough information available at this time (Table 4). All trials for each of these crops showed no or minimal, transitory phytotoxicity.

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

Table 1. List of cyclaniliprole + flonicamid treated crops with no or minimal transitory injury.

Pelargonium x hortorum
Viola x wittrockiana

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

None

Table 3. List of cyclaniliprole + flonicamid treated crops with significant injury at 1X.

None

Table 4. List of cyclaniliprole + flonicamid treated crops where more information is needed.

*Begonia sp.*¹
*Begonia x tuberhybrida*²
*Gerbera jamesonii*²
*Impatiens hawkeri*¹
*Impatiens walleriana*¹
*Petunia hybrida*¹
*Tagetes erecta*¹
*Tagetes patula*¹

¹ No injury in 1 trial

² No injury in 2 trials

Table 5 Detailed Summary of Crop Safety Testing with Pradia (cyclaniliprole + flonicamid).

Notes: Table entries are sorted by crop Latin name. Only those trials with research reports received by 6/17/2020 are listed below.

PR #	Crop	Production Site	Researcher	State	Year	Application Type	Results
33680	Barberton Daisy (Gerbera jamesonii) 'Revolution Red Light Eye'	Greenhouse	Gilrein	NY	2019	Foliar	No significant injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice biweekly.
33680	Barberton Daisy (Gerbera jamesonii) 'Revolution White'	Greenhouse	Gilrein	NY	2019	Foliar	No significant injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice biweekly.
33673	Begonia (Begonia sp.) B. x tuberhybrida 'Nonstop Mocca Joy White'	Greenhouse	Gilrein	NY	2019	Foliar	Minor injury with complete recovery with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33673	Begonia (Begonia sp.) B. x tuberhybrida 'Nonstop Orange'	Greenhouse	Gilrein	NY	2019	Foliar	Minor injury with complete recovery with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33673	Begonia (Begonia sp.) 'Babywing White'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33679	Geranium, Zonal (Pelargonium x hortorum) 'Mavrick Salmon confetti'	Greenhouse	Gilrein	NY	2019	Foliar	Minor injury with complete recovery with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33679	Geranium, Zonal (Pelargonium x hortorum) 'Multibloom White'	Greenhouse	Gilrein	NY	2019	Foliar	No injury with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33679	Geranium, Zonal (Pelargonium x hortorum) 'Patriot Bright Red'	Greenhouse	Freiberger	NJ	2019	Foliar	No significant injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33682	Impatiens, Common Garden; Buzzy Lizzy (Impatiens walleriana) 'Super Elfin Bright Orange'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33681	Impatiens, New Guinea (Impatiens hawkeri) 'Harmony Violet'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33683	Marigold, African (Tagetes erecta) 'Taishan Gold'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33684	Marigold, French (Tagetes patula) 'Little Hero Yellow'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33685	Pansy, Large Flowering; Wittrock's Violet (Viola x wittrockiana) 'Delta Premium Pure Light Blue'	Greenhouse	Gilrein	NY	2019	Foliar	No injury with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33685	Pansy, Large Flowering; Wittrock's Violet (Viola x wittrockiana) 'Delta Premium Pure White'	Greenhouse	Gilrein	NY	2019	Foliar	No injury with 12, 24 and 48 fl oz per 100 gal applied twice biweekly; no significant growth reduction.
33685	Pansy, Large Flowering; Wittrock's Violet (Viola x wittrockiana) 'Delta Pure Yellow'	Greenhouse	Freiberger	NJ	2019	Foliar	No significant injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.
33686	Petunia (Petunia hybrida) 'Duvet White'	Greenhouse	Freiberger	NJ	2019	Foliar	No injury or growth reduction with 12, 24 and 48 fl oz per 100 gal applied twice.

Label Suggestions

In this report, 2 species exhibited minimal or no injury after foliar sprays of Pradia at 12, 24 and 48 fl oz per 100 gal. If tested crops will be listed on the label, these can be included in a future label:

Pelargonium x hortorum

Viola x wittrockiana

Given the lack of phytotoxicity across so many different plant species and genera, it is suggested that a general statement can be placed on the label such as ‘has not been demonstrated to cause damage on various ornamental plant species according to labeled use instructions. Pradia may be used on a wide number of crops, but it must be tested on a limited portion of the crop prior to applying to the whole crop if the grower has no previous experience applying Pradia to that crop’.

Appendix 1: Contributing Researchers

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