IR-4 Environmental Horticulture Program
SP2700 Crop Safety

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Acknowledgements
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Abstract

SP2700 is a new insecticide being developed by SePro for the control of diseases on ornamentals such as Alternaria, Cylindrocladium, Fusarium, Rhizoctonia, and Thielaviopsis. The IR-4 Project completed 18 crop safety trials on 10 ornamental horticulture plant species or genera from 2018 through 2019. In these trials, two 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 8 other species or genera exhibited minimal or no injury in the limited number of trials (one or two) for each crop.
Introduction
SP2700 is a new insecticide being developed by SePro for the control of diseases on ornamentals such as *Alternaria, Cylindrocladium, Fusarium, Rhizoctonia,* and *Thielaviopsis.* The IR-4 Project completed 18 crop safety trials on 40 ornamental horticulture plant species or genera from 2018 through 2019.

Materials and Methods
SP2700 was applied as foliar treatment mixed with NIS typically thrice (3 times) at approximately 14 days intervals. The application rates were at 11, 22 and 44 fl oz per 100 gal, plus a water treated control. A minimum of ten 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 weekly up to 6 weeks after initial application. For IR-4 testing, the following protocols were used: 18-006, 18-007, 19-006 and 19-007. 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](https://www.ir4project.org/ehc/ehc-registration-support-research/env-hort-researcher-resources/#Protocols) to view and download these protocols.

SP2700 was supplied to researchers (See list of researchers in Appendix 1) by SePro.

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 at the 1X rate sufficient to recommend growers not utilize afidopyrofen, and 4) more data are needed to make informed recommendations.

Phytotoxicity
Across all crops tested, SP2700 exhibited no or minimal negative impact on all plant species or genera. Two of these crops had the minimum number of 3 tests for definitive conclusion of crop safety (Table 1). No crop displayed significant injury with SP2700 (Tables 2 and 3). There are 8 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 SP2700 treated crops with no or minimal transitory injury.

*Hydrangea* sp.
*Petunia* sp.

Table 2.  List of SP2700 treated crops with no injury at 1X but significant injury at 2X or 4X.
None

Table 3.  List of SP2700 treated crops with significant injury at 1X.
None

Table 4.  List of SP2700 treated crops where more information is needed.

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Fuschia</em> sp. 1</td>
<td></td>
</tr>
<tr>
<td><em>Impatiens hawkeri</em> 1</td>
<td></td>
</tr>
<tr>
<td><em>Impatiens walleriana</em> 2</td>
<td></td>
</tr>
<tr>
<td><em>Leucanthemum x superbum</em> 2</td>
<td></td>
</tr>
<tr>
<td><em>Pelargonium x hortorum</em> 1</td>
<td></td>
</tr>
<tr>
<td><em>Rosa</em> sp. 2</td>
<td></td>
</tr>
<tr>
<td><em>Tagetes</em> sp. 2</td>
<td></td>
</tr>
<tr>
<td><em>Viola x wittrockiana</em> 1</td>
<td></td>
</tr>
</tbody>
</table>

1 No injury in 1 trial
2 No injury in 2 trials
Table 5. **Detailed Summary of Crop Safety Testing with SP2700**

Notes: Table entries are sorted by crop Latin name. Only those trials with research reports received by 3/19/2018 are listed below.

<table>
<thead>
<tr>
<th>PR#</th>
<th>Crop Description</th>
<th>Production Site</th>
<th>Researcher</th>
<th>State</th>
<th>Year</th>
<th>Application Type</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>33192</td>
<td>Fuschia; Ladies-Eardrops (Fuschia sp.) 'Dollar Princess'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly.</td>
</tr>
<tr>
<td>33207</td>
<td>Hydrangea (Hydrangea sp.) H. macrophylla 'Nikko Blue'</td>
<td>Field Container</td>
<td>Baysal-Gurel</td>
<td>TN</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times.</td>
</tr>
<tr>
<td>33207</td>
<td>Hydrangea (Hydrangea sp.) H. macrophylla 'Nikko Blue'</td>
<td>Field Container</td>
<td>Wade</td>
<td>SC</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; all plants marketable.</td>
</tr>
<tr>
<td>33201</td>
<td>Impatiens, New Guinea (Impatiens hawkeri) 'Sonic Pink'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, minor with 22 and 44 fl oz per 100 gal applied 3 times biweekly; plants flowered normally.</td>
</tr>
<tr>
<td>33200</td>
<td>Buzzy Lizzy; Impatiens, Common Garden (Impatiens walleriana) 'Dazzler Orange'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, minor with 22 and 44 fl oz per 100 gal applied 3 times biweekly.</td>
</tr>
<tr>
<td>33200</td>
<td>Buzzy Lizzy; Impatiens, Common Garden (Impatiens walleriana) 'Impeza Cherry Splash'</td>
<td>Greenhouse</td>
<td>Catlin</td>
<td>NY</td>
<td>2018</td>
<td>Foliar</td>
<td>Virtually no injury with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; minor growth reduction at 4X.</td>
</tr>
<tr>
<td>33895</td>
<td>Daisy (Leucanthemum x superbum) 'Snow Lady'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2019</td>
<td>Drench</td>
<td>No injury with 11, 22 and 44 fl oz per 100 gal; all plants grew and flowered normally.</td>
</tr>
<tr>
<td>33895</td>
<td>Daisy (Leucanthemum x superbum) 'Snow Lady'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2019</td>
<td>Foliar</td>
<td>No injury with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; all plants grew and flowered normally.</td>
</tr>
<tr>
<td>33208</td>
<td>Geranium, Zonal (Pelargonium x hortorum) 'Ringo 2000 Deep Red'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; plants flowered normally.</td>
</tr>
<tr>
<td>33196</td>
<td>Petunia (Petunia sp.) 'Cascadias Rim Chianti'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury with 11, minor with 22 and 44 fl oz per 100 gal applied 3 times biweekly; no growth reduction.</td>
</tr>
<tr>
<td>33196</td>
<td>Petunia (Petunia sp.) P. x hybrida 'Carpet Velvet'</td>
<td>Greenhouse</td>
<td>Hand</td>
<td>OH</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or significant growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times.</td>
</tr>
<tr>
<td>33196</td>
<td>Petunia (Petunia sp.) 'Pretty Flora Midnight'</td>
<td>Greenhouse</td>
<td>Catlin</td>
<td>NY</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury with 11 and 22, minor with 44 fl oz per 100 gal applied 3 times biweekly; no growth reduction.</td>
</tr>
<tr>
<td>33198</td>
<td>Rose (Rosa sp.) 'Iceberg White'</td>
<td>Field Container</td>
<td>Uber</td>
<td>CA</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly.</td>
</tr>
<tr>
<td>33198</td>
<td>Rose (Rosa sp.) 'Old Blush'</td>
<td>Field Container</td>
<td>Wade</td>
<td>SC</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; all plants marketable.</td>
</tr>
<tr>
<td>33194</td>
<td>Marigold (Tagetes sp.) 'Boy Orange'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; plants flowered normally.</td>
</tr>
<tr>
<td>PR#</td>
<td>Crop</td>
<td>Production Site</td>
<td>Researcher</td>
<td>State</td>
<td>Year</td>
<td>Application Type</td>
<td>Results</td>
</tr>
<tr>
<td>------</td>
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<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>33194</td>
<td>Marigold (Tagetes sp.) 'Inca II Orange'</td>
<td>Greenhouse</td>
<td>Catlin</td>
<td>NY</td>
<td>2018</td>
<td>Foliar</td>
<td>No injury with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; minor growth reduction at 4X.</td>
</tr>
<tr>
<td>33205</td>
<td>Pansy, Large Flowering; Wittrock's Violet (Viola X wittrockiana) 'Cool Wave Purple'</td>
<td>Greenhouse</td>
<td>Freiberger</td>
<td>NJ</td>
<td>2018</td>
<td>Foliar</td>
<td>No significant injury or growth reduction with 11, 22 and 44 fl oz per 100 gal applied 3 times biweekly; plants flowered normally.</td>
</tr>
</tbody>
</table>
Label Suggestions

In this report, two genera exhibited no or minimal injury after foliar treatments of SP2700 at 11, 22 and 44 fl oz per 100 gal. If tested crops will be listed on the label, these can be included in a future label:

_Hydrangea sp._

_Petunia sp._

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. SP2700 may be used on a wide number of crops, but 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 SP2700 to that crop’.
Appendix 1: Contributing Researchers

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Mr. Buzz Uber  Crop Inspection Service  
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