

AZALEA (*Rhododendron* sp. 'Mandarin Lights')

CAMELLIA (*Camellia* hybrid 'April Dawn')

MAPLE (*Acer palmatum* 'Bloodgood')

RHODODENDRON (*Rhododendron* hybrid 'Roseum Elegans')

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#### **IR-4 Crop Safety Ornamental Protocol Numbers 10-015 and 10-024.**

Plants were obtained from local nurseries during the spring of 2010 and grown at the Botany and Plant Pathology Field Laboratory. Camellias (*Camellia* hybrid 'April Dawn') grown in 5 gal pots were received on 2 Apr. Plants arrived in good condition just past flowering and beginning to push new shoots. Deciduous azaleas (*Rhododendron* sp. 'Mandarin Lights') and evergreen rhododendrons (*Rhododendron* hybrid 'Roseum Elegans') grown in 1 gal pots were received on 13 Apr. Plants arrived in good condition and prior to bud break. Azaleas were cut back on 4 May to make working with the plants easier. Azaleas, Camellias and Rhododendrons were grown in a Quonset-style house covered only with shade cloth. Bare-root, dormant Japanese Maples (*Acer palmatum* 'Bloodgood') were received on 5 May. Trees (grade 3 ft CB) arrived bundled from cold storage ready to break bud and were healed into saw dust until potting. Trees were planted on 13 May into #10 sized pots with 'Sun Grow Sunshine Mix SB40' media (35 to 40% Canadian sphagnum peat moss, fir bark, pumice/cinders, dolomitic limestone, gypsum and a wetting agent). Trees were grown between widely spaced mature cherry trees.

Fungicide treatments and plants (pots) for this trial were arranged in a randomized complete block design. Plants were in separate species specific blocks and each treatment was replicated on 3 sets of 3 plants. Foliar fungicides were applied until runoff using a Stihl SG-20 pump-style backpack sprayer. A separate backpack sprayer was used for each chemical to avoid contamination. A 1 gallon solution was prepared for each plant type. Azaleas and Rhododendrons received approximately 0.25 gal of a spray suspension per 9 plants while Japanese maples received approximately 0.75 gal of a spray suspension per 9 trees. Application dates for azaleas and Rhododendrons were 20 May, 3 and 17 Jun. Application dates for Japanese maple was 11 and 25 Jun and 8 Jul. Azaleas and Rhododendrons were topdressed (1 Tablespoon/pot) with fertilizer (5-10-5) on 25 May. To manage aphids and sucking insects Marathon 1G (2 Teaspoons/pot) was applied on 7 Jun. No fertilizer or insecticides were applied to Camellias or Japanese maples. Drench fungicide applications for Camellias and Japanese maples were made by hand. A 10 gallon stock solution was prepared and then 32 fl oz was applied to the media of each plant. Plants were thoroughly watered 24 hours prior to application such that some fluid escaped through the drainage holes of each pot post-application. Drench applications to Camellias occurred on 7 Jun and 8 Jul. Drench applications for Japanese maples occurred on 10 Jun and 8 Jul. The height and/or width of plants was measured 24 hours before test materials were applied and again one week after the last application. Plants were surveyed for phytotoxicity every week once fungicide applications were initiated. Spring weather conditions were cold and wet which are typical for western Oregon.

## AZALEA

The average height of plants was 48 cm at the start of the experiment and 55 cm at the end. There was no significant difference in height before or after the experiment (data not shown) or change in height among the various treatments (table 1). No specific phytotoxicity was observed on any plants treated with any fungicide. All plants generally grew poorly after flowering regardless of treatment (root rot was observed and suspected as the problem).

Table 1. Safety of metconazole and triticonazole on container azaleas.

PR #	Treatment and Rate/100 gal	Method of Application	Change in Hieght* (%)**
-----	Nontreated.....	None	15.0
29403	Tourney 50 WDG at 2 oz...	Foliar	14.0
29403	Tourney 50 WDG at 4 oz...	Foliar	13.3
29403	Tourney 50 WDG at 8 oz...	Foliar	10.0
29430	Trinity 2 SC at 4 fl oz.....	Foliar	11.7
29430	Trinity 2 SC at 8 fl oz.....	Foliar	12.3
29430	Trinity2 SC at 16 fl oz.....	Foliar	6.7

\* The height of azaleas was measured on 20 May and again on 28 Jun.

\*\* Means without letters did not differ significantly based on Fisher's protected LSD (P=0.05).

## CAMELLIA

The average height of plants was 73 cm at the start of the experiment and 78 cm at the end. The average width of plants was 57 cm at the start and 66 cm at the end. There was no significant difference in height or width before or after the experiment (data not shown) or change in height or width among the various treatments (table 2). No phytotoxicity was observed on any plants treated with any fungicide.

Table 2. Safety of fluopicolide on container camellias.

PR #	Treatment and Rate/100 gal	Method of Application	Change in Hieght* (%)**	Change in Width* (%)**
-----	Nontreated.....	None	2.9	17.1
27435	Adorn 4F at 1 fl oz.....	Drench	6.2	14.1
27435	Adorn 4F at 2 fl oz.....	Drench	6.3	9.7
27435	Adorn 4F at 4 fl oz.....	Drench	7.7	20.3

\* The height and width of camellias was measured on 7 Jun and again on 15 Jul.

\*\* Means without letters did not differ significantly based on Fisher's protected LSD (P=0.05).

## JAPANESE MAPLE

The average height of trees was 142 cm at the start of the experiment and 151 cm at the end. The average width of trees was 92 cm at the start and 96 cm at the end. There was no significant difference in height or width before or after the experiment (data not shown). Trees treated with the low rate of Adorn had a significant change in height that was higher than other treatments (table 3). This was due to a single tree that was generally shorter to begin with and grew very tall. No phytotoxicity was observed on any trees treated with any fungicide.

Table 3. Safety of metconazole and fluopicolide on container Japanese maples.

PR #	Treatment and Rate/100 gal	Method of Application	Change in Hieght (%)*	Change in Width (%)*
----	Nontreated.....	None	4.7 b	7.8
29406	Tourney 50 WDG at 2 oz...	Foliar	6.6 b	5.8
29406	Tourney 50 WDG at 4 oz...	Foliar	5.8 b	5.8
29406	Tourney 50 WDG at 8 oz...	Foliar	5.9 b	0.8
27799	Adorn 4F at 1 fl oz.....	Drench	13.0 a	5.3
27799	Adorn 4F at 2 fl oz.....	Drench	4.0 b	2.9
27799	Adorn 4F at 4 fl oz.....	Drench	4.7 b	2.7

\* The height and width of Japanese maples was measured on 10 Jun and again on 15 Jul.

\*\* Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without letters did not differ significantly.

## RHODODENDRON

The average height of plants was 45 cm at the start of the experiment and 50 cm at the end. There was no significant difference in height before or after the experiment (data not shown) or change in height among the various treatments (table 4). No phytotoxicity was observed on any plants treated with any fungicide.

Table 4. Safety of metconazole and triticonazole on container rhododendrons.

PR #	Treatment and Rate/100 gal	Method of Application	Change in Hieght (%)*
---	Nontreated.....	None	10.0
29402	Tourney 50 WDG at 2 oz...	Foliar	12.9
29402	Tourney 50 WDG at 4 oz...	Foliar	7.5
29402	Tourney 50 WDG at 8 oz...	Foliar	11.7
29429	Trinity 2 SC at 4 fl oz.....	Foliar	9.5
29429	Trinity 2 SC at 8 fl oz.....	Foliar	8.0
29429	Trinity2 SC at 16 fl oz.....	Foliar	7.2

\* The height of rhododendrons was measured on 20 May and again on 28 Jun.

\*\* Means without letters did not differ significantly based on Fisher's protected LSD (P=0.05).