

**Evaluation of fungicides for the management of boxwood blight, 2013.**

This trial evaluated the efficacy of several commercially available fungicides for activity against boxwood blight caused by *Cylindrocladium buxicola* (= *Calonectria pseudonaviculata*). Treatments were arranged in a randomized complete block design consisting of four replications of six 1-gal English boxwood plants per treatment on a shaded container pad with overhead irrigation at the Mountain Horticultural Crops Research Station in Mills River, NC. Plants were stored overwinter at this container pad prior to commencing this experiment and potentially exposed to low levels of pathogen contamination. Treatments were applied as foliar sprays until runoff using a CO<sub>2</sub>-pressurized backpack sprayer equipped with a handheld boom and a single, hollow-cone nozzle (TXVS-26) delivering 50-60 psi. Excluding the ZeroTol applications, treatments were applied on a 14-day schedule on 23 May, 6 Jun and 20 Jun. As requested by the manufacturer, the ZeroTol applications were made 24 hr and 48 hr after inoculation (25 and 26 May respectively), then weekly after on 30 May, 6 Jun, 13 Jun, and 20 Jun. Inoculum was prepared by flooding Petri-dishes of actively-growing PDA cultures (<14 days) of the pathogen. Plants were spray inoculated with a suspension containing 10,000 spores per ml until runoff one day post treatment on 24 May. Disease assessments were conducted on 6, 14 and 26 Jun. The percentage of leaves with disease symptoms was recorded for each treatment block using a modified Horsfall-Barratt scale. AUDPC for percent leaf area diseased across the three assessment dates was calculated. Air temperatures and rainfall during the trial were optimal for infection such that 76% of the leaves per plant had symptoms in the non-treated, inoculated control after 32 days. Average daily high and low temperatures were 71.3 and 50.4°F for May and 80.7 and 60.8°F for Jun; cumulative rainfall was 8.2 inches in May and 11.0 inches in Jun.

Spectro, Torque, Daconil WeatherStik, Concert II and Disarm C resulted in less than 0.5% leaf infection by *C. buxicola* at 32 days when applied one day before inoculation; a number of other products resulted in less than 10% leaf infection. ZeroTol, Affirm, or ProPhyt were least effective at controlling boxwood blight, but applications of Affirm or ProPhyt were more effective than spraying nothing at all (non-treated control). Phytotoxic symptoms were not observed for any of the treatments.

Treatment and rate /100 gal	FRAC code*	Percent leaf area diseased (26 Jun geometric midpoint)	AUDPC
Spectro 90WDG 1.5 lb.....	M5 + 1	0.01 i**	0.21 g
Torque 10.0 fl oz.....	3	0.02 i	1.03 g
Daconil WeatherStik 1.375 pt.....	M5	0.36 i	6.79 fg
Concert II 35.0 fl oz.....	M5 + 3	0.35 i	15.51 efg
Disarm C 11.0 fl oz.....	M5 + 11	0.36 i	15.57 efg
Medallion WDG 4.0 oz.....	12	1.38 ghi	32.74 efg
Tourney 50WDG 4.0 oz.....	3	0.70 hi	39.06 efg
Strike Plus 50WDG 9.0 oz.....	3 + 11	1.41 ghi	47.73 efg
Compass O 50WDG 2.0 oz.....	11	3.53 fg hi	116.03 efg
Pageant 38WG 14.0 oz.....	7 + 11	4.24 fg hi	156.14 efg
Palladium 6.0 oz.....	9 + 12	5.65 fg hi	209.52 efg
3336F 16.0 fl oz.....	1	6.36 fg hi	254.07 efg
Insignia SC 10.0 oz.....	11	7.86 efghi	322.61 defg
Protect DF 2.0 lb.....	M3	11.13 efg	404.84 cdef
Heritage 50WG 8.0 oz.....	11	17.32 d	663.96 c
ProPhyt 4.0 pt.....	33	37.32 c	1302.87 b
Affirm WDG 0.5 lb.....	19	53.18 b	1648.69 b
Non-treated inoculated control.....	NA	75.89 a	2876.66 a
ZeroTol 2.0 1.0 gal.....	NA	75.89 a	2922.78 a

\* Fungicide Resistance Action Committee (FRAC) code indicates fungicide mode of action.

\*\* Means within a column followed by the same letter are not significantly different ( $P = 0.05$ ) based on the Waller-Duncan  $k$ -ratio ( $k = 100$ )  $t$  test.