

**Evaluation of selected fungicides for management of powdery mildew of squash, fall 2012.**

On 24 Sep 2012, plots were established at the University of Florida's Gulf Coast Research and Education Center in Balm, FL to evaluate selected fungicides for the control of powdery mildew on squash. Plots consisted of 21 ft-long bed sections within 300 ft-long, raised beds with 5 ft center-to-center bed spacing. Beds were covered with black virtually impermeable mulch and irrigated with a drip system. Seeds were sown at 18-in spacing along beds skipping a 6-ft alley between plots or 25-ft ditch as a buffer between treatment beds. Fungicide treatments were initiated 5 Nov with the first appearance of powdery mildew in nearby sentinel plots and grower fields. Treatments were applied on 5 Nov, 13 Nov, 20 Nov, 28 Nov, and 6 Dec (corresponding with applications 1 to 5 below) with a CO<sub>2</sub> back pack sprayer calibrated to deliver 100 gal/A at 40 psi. Treatments, including a water-treated control, were arranged in a completely randomized block design with each treatment repeated four times. Plots were monitored regularly for powdery mildew, and rated on 28 Nov, 10 Dec, and 21 Dec after disease reached appreciable levels. Alternating applications of Previcur Flex (1.2 pt/A) and Curzate 60DF (3.2 oz/A) were applied to minimize the impact of downy mildew. The trial was terminated after 21 Dec.

Treatment (application timing) <sup>z</sup> , rate/A	Powdery Mildew Severity (% foliage) <sup>y</sup> :			
	28-Nov	10-Dec	21-Dec	AUDPC <sup>x</sup>
Bravo (1-5), 2 pt.....	12.9 a-d <sup>w</sup>	48.4 b	66.8 a-d	1293 b
Problad (1-5), 1 qt.....	4.5 cd	48.4 b	99.6 a	1214 b
Water-treated Control (1-5).....	29.8 a	95.1 a	100.0 a	2416 a
Bravo (1-5), 2 pt; Synbiont (1-5), 64 floz.....	13.0 a-d	42.6 b	62.5 bcd	1232 b
Bravo (1-5), 2 pt; Synbiont (1-5), 96 floz.....	9.1 a-d	26.3 cd	58.8 cd	931 bc
Quintec (1,3,5), 6 floz; Procure (2,4), 8 floz.....	2.0 d	10.8 fgh	12.9 g	204 g
Procure (1-5), 8 floz.....	2.0 d	12.9 efg	88.5 abc	667 cde
Torac (1-5), 21 floz.....	15.5 abc	48.4 b	66.8 a-d	1319 b
NAI-5750 (Drip; 1-5), 5.24 L.....	23.3 ab	97.7 a	100.0 a	2514 a
Torac (1,3,5), 21 floz; Procure (2,4), 8 floz .....	6.3 bcd	7.6 hi	66.8 a-d	683 cde
Mettle (1-5), 8.....	2.0 d	6.4 ij	81.5 abc	547 def
Mettle (1-5), 6 oz.....	2.0 d	9.0 ghi	93.2 ab	660 cde
Mettle (1-5), 4 oz.....	2.0 d	15.5 ef	93.2 ab	740 cd
Bravo (1,2), 2 pt; Torino (3,5), 3.4 floz; Procure (4), 8 floz.....	4.4 d	12.9 efg	31.4 ef	425 eef
Bravo (1,2), 2 pt; Quintec (3,5), 6 floz; Procure (4), 8 floz.....	18.4 ab	26.3 cd	42.6 de	1022 bc
Bravo (1), 2 pt; Torino (2,5), 3.4 floz; Procure (3,4), 8 floz.....	2.0 d	2.0 k	4.5 h	56 h
Bravo (1), 2 pt; Quintec (2,5), 6 floz; Procure (3,4), 8 floz.....	2.4 d	6.4 ij	9.1 g	182 g
Bravo (1,3,4), 2 pt; Torino (2,5), 3.4 floz.....	2.0 d	4.5 j	10.8 g	135 g
Torino (1-5), 3.4 floz.....	2.0 d	18.4 de	23.5 f	362 f
Fontelis (2,4), 16 oz; Bravo (1,3,5), 2 pt.....	4.5 cd	31.4 bc	71.4 abc	861 bcd
<i>P</i> =	< 0.0001	< 0.0001	< 0.0001	< 0.0001

<sup>z</sup> Listed treatment rates are on a per acre basis unless noted otherwise; numbering (1-5) corresponds to applications on 5 Nov, 13 Nov, 20 Nov, 28 Nov, and 6 Dec.

<sup>y</sup> The severity of bacterial spot was assessed as the percentage of canopy affected. The Horsfall-Barratt scale was used for all ratings, but values were converted to mid-percentages prior to statistical analyses.

<sup>x</sup> Area under the disease progress curves (AUDPC) was calculated using the formula:  $\sum[(x_i+x_{i-1})/2](t_i-t_{i-1})$  where  $x_i$  is the rating at each evaluation time and  $(t_i-t_{i-1})$  is the time between evaluations.

<sup>w</sup> Means followed by the same letter are not significantly different according to Fisher's LSD test ( $\alpha=0.05$ ).