

# Comparison of fungicides for late blight control on tomato, spring 2012.

On 23 Feb 2012, plots were established at the University of Florida's Gulf Coast Research and Education Center in Balm, FL to assess the effect of several fungicide programs on the control of late blight of tomato. Plots consisted of 25 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. Tomato seedlings (cv. Charger) were transplanted at 18-in spacing along beds skipping a 4-ft alley between plots as a buffer. Treatments, including a non-treated control, were arranged in a completely randomized design with each treatment repeated four times. The treatments were applied on 15 Mar, 26 Mar, 2 Apr, 9 Apr, and 16 Apr (corresponding with applications 1 to 5 below). Foliar treatments were applied with a CO<sub>2</sub> back pack sprayer calibrated to deliver 60 (apps. 1-2), and 90 gal/A (apps. 3-5) at 40 psi. Plots were repeatedly inoculated in early March with suspensions (10<sup>3</sup> to 10<sup>5</sup> sporangia/ml) of *Phytophthora infestans* using a backpack sprayer. Plots were monitored regularly for late blight, and rated on 19 Apr and 1 May as disease developed. Trial was terminated prematurely due to hot, dry weather that impeded further late blight development, and the onset of bacterial wilt throughout the trial. No noticeable phytotoxicity was documented. No yield was collected from the trial due to the severity of bacterial wilt in throughout the trial.

Treatment, Rate/A (application)	Late Blight Severity (%)	
	19-Apr	1-May
Gavel, 2 lb (1,4); GWN-4700, 3.5 floz (2,4); GWN-10073, 16 oz (3,5); GWN-10043, 16 oz (2,4)	0 b	0 b
Gavel, 2 lb; (1,5) GWN-4700, 3.5 floz (2,4); GWN-10073, 16 oz (1,3,5); GWN-10043, 16 oz (2,4)	0 b	0 b
Gavel, 2 lb (1,5); Kocide 3000, 1.25 lb (1,3,5); GWN-4700, 3.5 floz (2,4); GWN-10043, 16 oz (2,4)	0 b	0.5 b
GWN-4700, 3.5 oz (1,3,5); GWN-10043, 16 oz (1,3,5); Revus, 8 oz (4)	0 b	0 b
GWN-4700, 3.5 oz (2); GWN-10043, 16 oz (2); Ranman, 2.75 oz (1,5); Presidio, 4 floz (3)	0 b	0.5 b
GWN-4700, 3.5 oz (2); GWN-10043, 16 oz (2); Gavel, 2 lb (4); Ranman, 2.75 oz (3); Presidio, 4 floz (1)	0 b	0 b
Zampro, 14 floz (1,3,5); Ranman, 2.5 floz (2,4); Kinetic, 0.125 % v/v (1-5)	0 b	1 b
Zampro, 14 floz (1,3,5); Ranman, 2.5 floz (2,4); LI-700, 0.125 % v/v (1-5)	0 b	1.5 b
Untreated control	3.25 a	10.25 a
	<i>P</i> = < 0.0001	< 0.0001

<sup>w</sup> Listed treatment rates are on a per acre basis unless noted otherwise. Treatments were applied 15 Mar, 26 Mar, 2 Apr, 9 Apr, and 16 Apr (corresponding with applications 1 to 5 above).

<sup>x</sup> The severity of late blight 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>y</sup> Area under the disease progress curve (AUDPC) values were calculated using the formula:  $\Sigma[(x_i + x_{i-1})/2](t_i - t_{i-1})$  where  $x_i$  is the rating at each evaluation time and  $(t_i - t_{i-1})$  is the time between evaluations.

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