

**Evaluation of Quintec for management of bacterial spot of tomato, spring 2010.**

On 9 April 2010, plots were established at the University of Florida’s Gulf Coast Research and Education Center in Balm, FL to assess the effect of Quintec on the control of bacterial spot of tomato. Whole plots consisted bactericide treatments applied to 3 adjacent 25 ft-long bed sections along 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. Seedlings of three cultivars, Florida 47, XP 01420-200 (XP 200), and SecuriTY 28, were transplanted on each bed within the whole plot at 18-in spacing along beds skipping a 4-ft alley between plots as a buffer. Bactericide treatments were applied on 7 May, 17 May, 27 May, 4 Jun, 18 Jun, and 25 Jun (corresponding with applications 1 to 6 below) with a tractor sprayer calibrated to deliver 60 (apps. 1,2), 90 (app. 3), and 120 gal/A (apps. 4,5,6) at 210 psi. The treatments, including the non-treated control, were arranged in a completely randomized block with split-plot design with bactericides as the main plot factor and cultivar as the sub-plot factor in four replicated blocks. Plots were inoculated 1 May with a suspension ( $10^6$  cfu/ml) of *Xanthomonas perforans* race 4 using a backpack sprayer. The plots were monitored regularly for bacterial spot, and rated 25 May, 16 Jun, and 1 Jul after disease reached appreciable levels. Marketable yield was assessed from a single harvest on 30 Jun. Alternating applications of Revus Top (7.7 fl oz/A), Quadris (16.4 fl oz/A), and insecticides were applied separately during the trial to minimize the impact of early blight, target blight, late blight, and insect pests. Bloom drop was assessed on 28 May for each cultivar in each whole plot by determining the percentage of pedicels bearing blossoms in two 3-ft sections.

According to disease severity rated on 25 May, significant difference was not detected between treatments. By mid-Jun, only Quintec applied at 6 fl oz/100 gal alone or mixed with Surfifix significantly reduced bacterial spot in comparison to the untreated control and the Cuprofix-Penncozeb standard. Significant difference in the final disease severity was not detected between Quintec treatments and the non-treated control, but plants sprayed with Quintec at 6 or 12 fl oz/100 gal had significantly less disease severity than those treated with Cuprofix-Penncozeb. According to area under the disease progress curves (AUDPC), applications of Quintec at 6 fl oz/100 gal alone or mixed with Surfifix significantly reduced disease epidemics compared with the standard and non-treated control. Florida 47 had the lowest level of bacterial spot on the first disease rating, but XP 200 had significantly less bacterial spot on the final rating. AUDPC was not significantly affected by cultivars. No significant difference was detected in blossom drop between spray treatments, suggesting that Quintec might not cause phytotoxicity in this study. However, the cultivar SecuriTY 28 had significantly lower blossom drop than the other two cultivars. Spray treatments and cultivars did not show a significant effect on the marketable fruit yield. Moreover, there were no significant interactions between cultivars and spray treatments on disease severity, blossom drop, or marketable fruit yield.

Treatment, rate/A (application) <sup>z</sup>	Disease severity (%) <sup>y</sup>				Marketable fruit yield <sup>w</sup>		
	25 May	16 Jun	1 Jul	AUDPC <sup>x</sup>	Blossom drop (%)	Weight (Boxes/A)	Fruit (numbers/A)
Quintec, 6 fl oz/100 gal (1-6).....	6.54	72.0 b <sup>v</sup>	95.1 c	2117 b	44.3	1241	62027
Quintec, 12 fl oz/100 gal (1-6).....	5.13	82.3 a	95.4 c	2294 a	48.6	935	64048
Quintec, 18 fl oz/100 gal (1-6).....	7.21	87.0 a	97.3 ab	2419 a	45.6	939	63007
Quintec, 6 fl oz/100 gal (1-6); Surfifix 0.025% v/v.....	6.42	70.4 b	95.4 c	2089 b	44.7	1060	73958
Cuprofix Ultra 40D, 3 lb (1-6); Penncozeb 75DF, 2 lb (1-6).....	6.67	86.3 a	97.5 a	2400 a	46.3	858	56763
Non-treated control.....	5.38	87.0 a	96.3 bc	2391 a	47.2	1334	70174
<i>P &gt; F</i>	0.7506	< 0.0001	0.0002	< 0.0001	0.8806	0.1751	0.9013
<b>Cultivar</b>							
Florida 47.....	4.01 b	78.7	96.5 a	2227	51.9 a	928	59891
XP 200.....	7.48 a	82.7	95.4 b	2330	49.0 a	1004	55635
SecuriTY 28.....	7.17 a	81.1	96.5 a	2299	37.4 b	1252	79463
<i>P &gt; F</i>	0.0101	0.2920	0.0193	0.1185	< 0.0001	0.1121	0.1067

<sup>z</sup> Listed treatment rates are on a per acre basis unless noted otherwise.

<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> Marketable yield is based on a hand harvest on 30 Jun, assumes 4356 plants/A and 20 lb/box, and includes medium, large, and extra-large fruits.

<sup>v</sup> Values followed by the same letter are not statistically significant ( $P = 0.05$ ) according to Fisher’s LSD test.