

TOMATO (*Lycopersicon esculentum*)
Southern blight; *Sclerotinia rolfsii*

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Evaluation of biopesticides and fungicides for the management of southern blight on tomato, fall 2012.

On 28 Sep 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 conventional and biological fungicides on the control of southern blight of tomato. Plots consisted of three 30 ft long bed sections within 300 ft long, raised beds with 5 ft center-to-center bed spacing. Beds were fumigated with PicChlor 60 (250 lbs per treated acre) covered with black virtually impermeable mulch. Two weeks after fumigation, plastic was lifted and dried sclerotia were spread in a 12 inch band along the center of the two west beds in each plot at a density of approximately 25 sclerotia/ square foot. Plastic mulch was then re-laid and drip irrigation system installed. Tomato seedlings (cv Charger) were transplanted at 18" spacing along beds skipping a 4 ft alley between plots as a buffer. Treatments of Serenade Soil, SoilGard and Bio-Tam were applied to transplants a week prior to planting. Additional treatments were applied 1 Oct, 9 Oct, 16 Oct, 22 Oct, 29 Oct, 5 Nov (corresponding with applications 1- 6 below). Drench treatment rates were based on a 100 gal volume with 100 ml of solution applied to each seedling. Drip treatments were applied to plots through a manifold by CO₂ at 12 psi through the drip tape in 14.4 L of water, and then followed by approximately 3.6 L of water at 10 psi to flush the tape (as predetermined by a dye test). Evito, Quadris, Quadris Top, and X4601 were applied as standard foliar applications with a tractor-driven sprayer calibrated to deliver 90 (apps. 4 and 6) and 120 gal/A (app. 8) at 210 psi; whereas, Evito, Quadris, Cabrio, and Omega 500F were also applied directly to the crowns using the lower four nozzles of a tractor-driven sprayer at 90 gal/A. Treatments, including a non-treated control, were arranged in a completely randomized design with each treatment repeated four times. Because of the sudden onset of cool, dry weather in October and November, disease incidence did not progress sufficiently to differentiate treatments. However, yield was assessed from two hand harvests on 26 Nov and 17 Dec from the outer, non-inoculated row of each plot.

Treatment (Application), rate/A	Marketable Yield (lbs):				Ex. Large	Total
	Small	Medium	Large			
Serenade Soil (Drench 1 wk prior to plant), 1 % v/v; Serenade Soil (Drip 2, 4, 6), 2 qt.....	9.8	22.5	30.6	abc	48.9	114.7
SoilGard (Drench 1 wk prior to plant), 2 lb/100 gal; Soilgard (Drip 2, 4, 6), 5 lb; CX-9032 (Drip 2, 4, 6), 1 pt.....	8.6	19.2	31.3	abc	49.7	110.7
Bio-Tam (Drench 1 wk prior to plant), 1 lb/100 gal; Bio-Tam (Drip 2, 4, 6), 4 lb.....	7.1	17.8	25.0	d	55.8	106.1
MBI-10605 (Drench 1), 0.25 % v/v; MBI-10605 (Drip 2, 4, 6), 1 qt.....	10.4	17.5	32.2	abc	56.5	118.8
MBI-10605 (Drench 1), 0.5 % v/v; MBI-10605 (Drip 2, 4, 6), 2 qt.....	8.9	20.2	31.8	abc	50.9	114.0
MBI-10605 (Drench 1), 0.25 % v/v; MBI-10605 (Foliar 2, 4, 6), 4 qt; Cabrio (Foliar 2, 4, 6), 16 oz.....	9.6	18.9	28.0	cd	50.0	108.8
Convoy (Drench 1), 32 floz/100 gal; Convoy (Drip 3, 5), 2 pt.....	13.0	25.0	36.9	a	42.4	118.3
Evito (Foliar 3, 5), 5.7 floz.....	9.2	17.7	32.9	abc	54.7	117.1
Evito (Crown 3, 5), 5.7 floz.....	10.0	20.1	36.2	ab	48.4	117.0
Quadris (Foliar 3, 5), 6 floz.....	7.6	22.0	31.8	abc	43.5	107.5
Quadris (Crown 3, 5), 6 floz.....	10.2	16.6	33.8	abc	50.7	113.6
Non-treated Control	7.9	19.1	32.1	abc	47.2	109.1
Microx (Drip 1), 1.5 oz.....	11.5	23.1	33.2	abc	49.1	117.9
Cabrio (Crown 3, 5), 16 oz.....	14.9	25.3	33.3	abc	41.2	116.0
Quadris Top (Foliar 3, 5), 8 floz.....	11.4	22.9	30.9	abc	46.8	113.9
Fontelis (Drench 1; Drip 2,4), 24 oz.....	11.3	24.2	36.2	ab	41.2	114.8
Omega 500F (Drench 1), 1 pt.....	11.2	21.8	37.2	a	42.4	114.9
Omega 500F (Crown 3, 5), 1 pt.....	10.6	22.6	29.7	bcd	51.6	116.3
X4601 (Foliar 3, 5), 10.3 floz.....	10.4	23.8	32.7	abc	51.7	119.1
X4602 (Foliar 3, 5), 5 oz.....	9.7	21.6	35.3	ab	41.9	109.5
X4601 (Drip 1), 6.1 floz; X4601 (Drip 1), 8.4 floz.....	8.7	21.4	30.4	a-d	49.4	111.0
X4601 (Drench 1), 6.1 floz.....	9.4	19.6	34.1	abc	49.9	116.1
X4601 (Drench 1), 8.4 floz.....	7.8	21.8	32.8	abc	44.8	110.4
X4602 (Drip 1), 3.1 oz.....	10.7	19.9	33.0	abc	46.3	110.9
<i>P =</i>	0.4795	0.4964	0.0912		0.7865	0.8474