

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

On 21 March 2012, plots were established at the University of Florida's Gulf Coast Research and Education Center in Balm, FL to assess the effect of biopesticides and 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 and irrigated with a drip system. Tomato seedlings (cv Charger) were transplanted at 18" spacing along beds skipping a 4 ft alley between plots as a buffer. Treatments were applied on 21 Mar (100 ml seedling drench), 5-Apr, 19-Apr, 27-Apr, 4-May, 18-May (corresponding with applications 1, 2, 4, 5, 6, and 8 below). Applications 2, 5, and 8 of Serenade Soil, Soilgard, Tenet, Regalia, and Convoy were dripped into irrigation lines through a manifold with pressurized CO₂ (12 psi) in 6 L of water per a plot. Evito, Cabrio, Quadris were 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. Within a week after planting, mature sclerotia of *S. rolfisii* were mixed in sand and spread out within a 2-3 inch diameter around the base of each plant (approximately 50 sclerotia per a plant). Treatments, including a non-treated control, were arranged in a completely randomized block design with each treatment repeated 4 times. Plots were monitored regularly for southern blight, and rated beginning on 15 May after disease first appeared. The yield was assessed from a single hand harvest on 16 May. A second harvest was not conducted since most of the plants in the untreated control and plots treated with Terrachlor, Serenade Soil, Soilgard, Tenet, or Regalia were wilted due to southern blight.

Treatment, rate (application)	Disease Incidence (%)				Marketable Yield (lbs / plot)			
	15-May	22-May	29-May	8-Jun	AUDPC	Large	Extra Large	Total
Serenade Soil, 1% v/v (1); 2 qt (2,5,8)	6.1 a	12.4 a	12.9 a	20.3 a	417 a	1.7	13.3	15.0
Soilgard, 1 lb/100 gal (1); 5 lb (2,5,8)	3.1 ab	5.4 abc	10.2 ab	17.4 a	316 ab	2.8	15.3	18.1
Tenet, 1 lb/100 gal (1); 4 lb (2,5,8)	4.9 a	6.4 ab	7.6 abc	13.1 a	311 ab	3.2	20.8	24.2
Regalia, 0.25% v/v (1); 1 qt (2,5,8)	3.3 ab	2.9 bcd	4.6 bcd	12.1 a	212 bc	1.0	14.3	15.3
Regalia, 0.5% v/v (1); 2 qt (2,5,8)	5.4 a	7.9 ab	10.5 ab	15.3 a	341 ab	2.4	13.5	15.9
Regalia, 1% v/v (1); 4 qt (2,5,8)	3.4 ab	6.3 ab	10.3 ab	12.9 a	280 ab	1.2	9.3	10.6
Convoy, 32 floz/100 gal (1); 2 pt (2,5,8)	0.1 c	0.1 d	0.4 e	1.6 b	17 d	2.0	14.2	16.5
Evito, 5.7 floz (4,6,8)	0.9 bc	0.4 d	1.6 de	1.6 b	50 cd	2.4	8.5	10.9
Cabrio, 16 oz (4,6,8)	0.1 c	0.6 d	0.6 de	0.6 b	24 d	3.0	12.7	15.9
Quadris, 6 floz (4,6,8)	0.1 c	0.9 dc	1.2 de	2.6 b	45 cd	1.4	11.0	12.5
Terrachlor, 3 lb/100 gal (1)	0.4 bc	2.5 bcd	2.5 cde	3.6 b	67 cd	1.7	9.5	11.3
Non-treated Control	1.5 abc	7.7 ab	10.5 ab	14.7 a	271 ab	2.0	9.2	11.2
	<i>P</i> = 0.0025	0.0004	< 0.0001	< 0.0001	0.0001	0.9138	0.6936	0.7166

^x Listed treatment rates are on a per acre basis unless noted otherwise. Treatments were applied 21-Mar, 5-Apr, 19-Apr, 27-Apr, 4-May, 18-May corresponding to at planting (1), and 2, 4, 5, 6, and 8 weeks after planting (2-8). The applications on 21-Mar were drenched following planting

^z The yield assumes 4356 plants/A and 20 lb/box.