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

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Evaluation of azoxystrobin and experimental 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 single 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. Drench treatments were applied on 21 Mar (100 ml seedling drench), followed by drip or foliar applications on 5-Apr, 11-Apr, 19-Apr, 30-Apr, 4-May, 10-May, 18-May and 25-May (corresponding to applications 1 through 8 below). Drip applications were applied into irrigation lines through a manifold with pressurized CO_2 (12 psi) in 4 L of water per a plot. Foliar applications were made with a back pack sprayer calibrated to deliver 60 (apps. 1-3), 90 (apps. 4-6) and 120 gal/A (apps. 7-8) at 40 psi. Within a week after planting, mature sclerotia of *S. rolfsii* 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 and a non-inoculated 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 two hand harvests on 23 May and 7 June.

	Disease Incidence (%):[x]					Total Marketable Yield (lbs/plot):[y]			
Treatment, Rate / Acre (application)[w]	**15-May**	**22-May**	**29-May**	**8-Jun**	**AUDPC**	**Medium**	**Large**	**Ex. Large**	**Total**
Quadris, 6 floz (4,6,8)	4.4	5.7 a[z]	10.5 a-e	12.4 a-d	300 abc	15.2	27.2 a-d	53.1 bcd	99.4 bcd
Quadris, 6 floz (4,6,8); Actigard, 0.5 oz (1-8)	3.2	4.1 ab	4.1 c-f	6.3 b-f	261 a-d	8.3	19.3 d	44.0 d	75.1 e
Omega 500F, 1.5 pt (4,6,8)	2.3	7.2 a	10.5 a-e	14.0 a-d	277 a-d	13.9	27.5 abc	65.2 abc	110.8 b
EXP 1, 10.3 floz (4,6,8)	1.5	4.1 ab	6.8 a-f	6.8 a-f	235 a-d	11.3	22.8 bcd	61.1 a-d	97.9 b-e
EXP 2, 5 oz (4,6,8)	0.8	0.8 ab	0.8 gf	0.8 ef	69 cd	10.8	27.9 abc	71.0 ab	113.9 b
Omega 500F, 1 pt (drench)	0.1	0.1 b	0.1 g	0.1 f	0 d	12.4	26.1 a-d	63.0 a-d	104.0 bcd
Quadris, 6 floz (drench)	0.8	0.8 ab	2.1 d-g	9.7 a-e	153 a-d	12.1	24.4 bcd	56.5 a-d	96.1 b-e
Quadris, 3.5 floz (drip 4)	2.3	7.2 a	12.4 a-d	19.4 abc	319 abc	10.1	29.5 abc	52.2 bcd	93.4 b-e
EXP 1, 6.1 floz (drip 4)	0.8	2.7 ab	19.4 a	21.3 ab	377 ab	12.7	25.3 a-d	43.4 d	86.1 cde
EXP 1, 8.4 floz (drip 4)	2.3	4.4 ab	15.0 abc	17.8 b-f	337 abc	9.6	23.3 bcd	63.5 a-d	99.1 bcd
EXP 1, 6.1 floz (drench)	0.1	0.1 b	0.1 g	0.8 ef	9 d	11.5	29.5 abc	71.3 ab	115.0 b
EXP 1, 8.4 floz (drench)	0.8	0.8 ab	0.8 fg	2.3 def	78 cd	12.0	32.4 a	75.5 a	144.4 a
EXP 1, 8.4 floz (drench)	0.1	0.1 b	1.5 efg	1.5 def	48 cd	10.2	24.5 a-d	44.7 cd	81.8 de
EXP 2, 3.1 oz (drip 4)	0.8	1.5 ab	3.4 c-g	4.8 b-f	196 a-d	10.5	22.8 bcd	63.5 a-d	98.2 b-e
Untreated Control (added inoculum)	2.3	5.7 a	18.2 ab	25.3 a	415 a	8.6	22.1 cd	59.1 a-d	92.0 b-e
Untreated Control (natural inoculum)	0.1	0.1 b	4.4 b-g	4.4 c-f	96 bcd	12.1	30.3 ab	62.3 a-d	108.2 bc
P =	***0.5474***	***0.0569***	***0.0020***	***0.0041***	***0.0713***	***0.2948***	***0.1210***	***0.0776***	***0.0003***

[w] Listed treatment rates are foliar and applied on a per acre basis unless noted otherwise. A 100 ml drench treatment was applied 21 March at transplant, while other drip and foliar treatments were applied 5-Apr, 11-Apr, 19-Apr, 30-Apr, 4-May, 10-May, 18-May and 25-May corresponding to 1 to 8 weeks after planting (1-8).

[x] Disease incidence was based on the number of plants per a plot exhibiting clear symptoms of southern blight. A bacterial streaming test was utilized to test for possible bacterial wilt.

[y] Total marketable yields are based on two separate hand harvests on 23 May and 7 June. To convert yields to boxes (20lb) per an Acre equivalents, multiply values by 294.

[z] Values followed by the same letter are not significantly different on Fisher's protected LSD at the 95% level of confidence based, unless specified otherwise.

	Marketable Yield from 1st Harvest (lbs/plot):[x]				Marketable Yield from 2nd Harvest (lbs/plot):[y]				
Treatment, rate/A (application)[w]	**Medium**	**Large**	**Ex. Large**	**Total**	**Small**	**Medium**	**Large**	**Ex. Large**	**Total**
Quadris, 6 floz (4,6,8)	4.0	14.7	32.1	50.8	3.9	11.3	12.5 cde[z]	21.0 bc	48.6 bc
Quadris, 6 floz (4,6,8); Actigard, 0.5 oz (1-8)	0.9	7.8	26.3	35.1	3.5	7.4	11.5 e	17.7 c	40.1 c
Omega 500F, 1.5 pt (4,6,8)	2.1	11.7	37.2	50.9	4.2	11.8	15.8 a-e	28.0 abc	59.8 bc
X4601, 10.3 floz (4,6,8)	2.1	9.4	31.4	42.9	2.7	9.2	13.4 b-e	29.8 abc	55.0 bc
X4602, 5 oz (4,6,8)	2.8	11.7	34.7	49.2	4.2	8.0	16.1 a-e	36.3 a	64.7 b
Omega 500F, 1 pt (drench)	2.1	8.2	33.8	44.1	2.6	10.3	17.9 abc	29.2 abc	59.9 bc
Quadris, 6 floz (drench)	1.9	9.7	29.3	40.9	3.1	10.2	14.6 b-e	27.3 abc	55.2 bc
Quadris, 3.5 floz (4)	2.7	12.2	29.5	44.4	1.6	7.4	17.3 a-d	22.8 abc	49.0 bc
X4601, 6.1 floz (4)	2.3	10.0	26.9	39.2	4.7	10.4	15.3 a-e	16.5 c	46.8 bc
X4601, 8.4 floz (4)	1.1	10.9	30.8	42.9	2.8	8.5	12.4 de	32.7 ab	56.3 bc
X4601, 6.1 floz (drench)	2.9	11.3	37.2	51.4	2.7	8.6	18.2 ab	34.1 ab	63.6 b
X4601, 8.4 floz (drench)	1.7	12.1	38.0	51.8	24.6	10.3	20.3 a	37.5 a	92.6 a
X4601, 8.4 floz (drench)	2.2	10.7	27.3	40.2	2.3	8.0	13.9 b-e	17.4 c	41.6 c
X4602, 3.1 oz (4)	1.6	9.2	35.3	46.1	1.3	8.9	13.6 b-e	28.2 abc	52.1 bc
Untreated Control (added inoculum)	0.6	8.8	30.7	40.2	2.3	7.9	13.3 b-e	28.4 abc	51.8 bc
Untreated Control (natural inoculum)	2.2	13.4	36.4	51.9	3.4	9.9	16.9 a-d	25.9 abc	56.2 bc
P =	***0.4312***	***0.4327***	***0.4742***	***0.3723***	***0.3449***	***0.4706***	***0.0923***	***0.1186***	***0.0028***

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