

**Evaluation of fungicides for controlling timber rot in tomato, 2012.**

The experiment was conducted at the Long Island Horticultural Research and Extension Center in Riverhead, NY, in a field with Haven loam soil. Pro-Grow 5-3-4 organic fertilizer at 2000 lb/A (100 lb/A N) was spread over rows to be planted, then incorporated on 31 May. Next drip tape was laid as the rows were being covered with black plastic mulch. Annual ryegrass was planted between plastic mulch to establish a living mulch by broadcasting seed with a hand-operated spreader, then lightly raking to incorporate on 6 Jun. The ryegrass plus weeds that grew were mowed routinely. Some weeds were removed by hand. Tomato seeds were sown on 15 May in the greenhouse. Seedlings were transplanted by hand on 26 Jun into holes opened in the plastic mulch by a waterwheel transplanter that also placed in the holes a starter fertilizer, Neptune's Harvest Benefits of Fish (2-4-1 N-P-K). Plants were staked and trellised following standard fresh-market tomato production practices. The following fungicides with targeted activity for oomycetes were applied on a 7-day, preventive schedule due to an early outbreak of late blight in the region: Forum 4.16SC (6 oz/A) on 27 Jul, 21 Sep; Presidio (4 fl oz/A) on 27 Jul, 23 Aug, 7 Sep; Previcur Flex 6 F (1.5 pt/A) on 18 Jul, 8 Aug; Revus (8 oz/A) on 14 Aug, 31 Aug, 14 Sep; and Ridomil Gold EC (0.25 pt/A) on 31 Jul. Plots consisted of 10 plants in a single row with 24-in. plant spacing and 68-in. row spacing. There was 8-ft spacing between plots in a row. Separator rows were planted between replications 1 and 2 and between replications 3 and 4. A completely randomized block design with four replications was used. Treatments were applied as soil drench and foliar sprays. Drench applications were made on 12 Jul and 31 Aug by pouring 3.38 fl oz of fungicide solution around the base of each plant. Additionally, four foliar applications were made on 30 Aug; 10, 19, and 20 Sep, and 1 Oct using a CO<sub>2</sub>-pressurized backpack sprayer with a boom that has a single twin-jet nozzle (TJ60-11003) delivering 49 gal/A when operated at 54 psi and 2.4 mph. Each side of the planted row was treated with the boom held sideways to obtain thorough coverage of foliage mimicking a drop nozzle on a tractor sprayer. *Sclerotinia sclerotiorum* has not been detected previously at LIHREC, therefore artificial inoculation was done. Every other plant was wounded, then a water solution of ascospores of *S. sclerotiorum* was sprayed on all plants using a hand-pump sprayer. Inoculation was done twice when rain provided conditions favorable for infection. First inoculation was done on 7 Sep after an intensive rain when plants were expected to remain wet over night. Branches were broken to provide sites for infection before spraying a suspension of 11.6 x 10<sup>6</sup> ascospores/fl oz. On 25 Sep, plants were wounded by scraping the side of branches, then a suspension of 0.3 x 10<sup>6</sup> ascospores/fl oz was sprayed just before a light rain. Plants were examined routinely for symptoms following the first inoculation. Average monthly high and low temperatures (°F) were 78/61 in Jun, 85/68 in Jul, 83/67 in Aug, 75/60 in Sep, and 66/52 in Oct. Rainfall (inches) was 5.44, 4.35, 3.24, 3.75, and 2.17 for these months, respectively.

Symptoms were first seen on 10 Oct. Most symptoms observed were at wound sites. No significant differences were detected among treatments. Symptoms were observed on 12 Oct in all control and Omega plots, but only one of the four plots treated with Fontelis and one plot treated with IKF-5411. Plots treated with IKF-5411 had the fewest affected plants at both assessments. Fungicide treatments are listed in the table based on incidence on 23 Oct.

Fungicide and rate/A (application dates) *	Timber rot incidence (% plants affected)	
	12 Oct	23 Oct
Non-treated control.....	17.5	17.5
Approach 9.0 fl oz (1-6) .....	17.5	22.5
Omega 500F 6.45 fl oz (1-6) .....	18.7	21.9
Endura 12.5 oz (1-6) .....	17.5	15.0
Cannonball 0.5 lb (1-6) .....	2.5	10.0
Fontelis 200 SC 24.0 fl oz (1-6) .....	5.0	7.5
IKF-5411 13.5 fl oz (1-6) .....	5.0	5.0
<i>P</i> -value (treatment)	0.3192	0.0559

\* Rate of formulated product/A. Drench application dates were 1=12 Jul and 2=31 Aug. Foliar application dates were 3=30 Aug, 4=10 Sep, 5=19 Sep, and 6=1 Oct.