

Evaluation of fungicides for management of whit mold of tomato, spring 2011.

On 15 Mar 2010, plots were established at the University of Florida’s Gulf Coast Research and Education Center in Balm, FL to assess effects of fungicides on the control of white mold of tomato. Plots consisted of 25-ft long bed sections within 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. Tomato seedlings (cv. SecuriTY 28) were transplanted at 18-in spacing along beds skipping a 4 ft alley between plots as a buffer. Fungicide treatments, including a non-treated control, were arranged in a randomized complete block design with each treatment repeated four times. The treatments were applied on 5 May, 13 May, and 20 May (corresponding with applications 1 to 3 below). Foliar treatments were applied with a CO₂ back pack sprayer calibrated to deliver 90 gal/A at 40 psi. Drip treatments were applied through a manifold by CO₂ at 12 psi through the drip tape in 2 L of water, and then followed by approximately 1.2 L of water at 10 psi to flush the tape (as predetermined by a dye test); equivalent to approx. 0.013 acre-inch of water. Applications of Cuprofix 40D (2 lb/A) and Penncozeb 75DF (0.5 lb/A) were applied on 5 May and 20 May to minimize the impact of bacterial leaf spot. A circular 0.2-in diameter wound on the stem of each plant was produced with a hole puncher, and three 0.2-in diameter mycelia plugs obtained from 1-wk-old PDA cultures growing in Petri dishes were placed into the hole on 31 May. The inoculation site was sealed with parafilm. On 21 Jun, the inoculated stems were longitudinally cut for evaluating the internal lesion length.

The average temperature and relative humidity of the period between the inoculation and disease rating were 80.2±2.02°F and 72.5±3.84% respectively, suggesting that the environmental conditions were not favorable for the development of white mold. However, stem lesions were visualized and longer than 7 cm at 3 weeks after inoculation. The canopy of tomato plants and sap in vascular tissues probably provided a favorable environment for disease development of white mold. All treatments in this study significantly reduced stem lesions by 20.4–40.0% in comparison to the non-treated control. No significant difference was observed among application timings of Luna Privilege in control of white mold. Foliar sprays of Endura performed significantly better than drip applications in reducing stem lesion lengths ($P=0.0363$).

Treatment, rate/A (application)^z	Stem lesion length (cm)
Switch, 14 oz (Foliar spray; 3).....	8.12 bc ^y
Inspire Super, 20 fl oz (Foliar spray; 3).....	7.86 bc
Endura, 7 oz (Drip; 3).....	9.71 b
Endura, 10.5 oz (Drip; 3).....	7.94 bc
Endura, 7 oz (Foliar spray; 3).....	7.32 c
Endura, 10.5 oz (Foliar spray; 3).....	7.39 c
Luna Privilege, 6.84 oz (Drip; 3).....	7.41 c
Luna Privilege, 6.84 oz (Drip; 2).....	7.39 c
Luna Privilege, 6.84 oz (Drip; 1).....	8.80 bc
Heads-up, 0.13 oz/gal (Foliar spray; 3).....	8.66 bc
Non-treated control.....	12.2 a
<i>P</i> > <i>F</i>	<0.0001

^z Listed treatment rates are on a per acre basis unless noted otherwise.

^y Values followed by the same letter are not statistically significant ($P = 0.05$) according to Fisher’s LSD test.