

Evaluation of fungicides for management of whit mold of pepper, 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 pepper. 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. Pepper seedlings (cv. Aristotle) 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 13 May, 20 May, and 27 May (corresponding with applications 1 to 3 below). Foliar treatments were applied with a CO₂ back pack sprayer calibrated to deliver 60 gal/A (apps. 1,2,3) 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. Alternating applications of Firewall (16 oz/A) and Cuprofix (2 lb/A)-Penncozeb (0.5 lb/A) were applied on 20 May and 27 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 3 Jun. The inoculation site was sealed with parafilm. On 24 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 80.6±1.33°F and 73.3±4.35% respectively, suggesting that the environmental conditions were not favorable for the development of white mold. Although stem lesions were observed in stems at 3 weeks after inoculation, they were less than 3 cm. Compare to the non-treated control, Inspire Super, Endura, Luna Privilege, and Heads-up significantly reduced the stem lesions by 20.7–31.7%. Moreover, application timing of Luna Privilege significantly affected disease control. Drip application of Luna Privilege at 14 days prior to inoculation performed significantly better than the untreated control in disease control, but treatments of Luna Privilege at 7 days or 21 days before inoculation did not significantly lower disease in comparison to the non-treated control. Drip applications of Endura performed significantly better than foliar sprays of the fungicide in reducing disease ($P=0.0457$).

Treatment, rate/A (application) ^z	Stem lesion length (cm)
Switch, 14 oz (Foliar spray; 3).....	2.55 ab ^y
Inspire Super, 20 fl oz (Foliar spray; 3).....	2.18 bc
Endura, 7 oz (Drip; 3).....	2.01 c
Endura, 10.5 oz (Drip; 3).....	2.26 bc
Endura, 7 oz (Foliar spray; 3).....	2.34 bc
Endura, 10.5 oz (Foliar spray; 3).....	2.68 ab
Luna Privilege, 6.84 oz (Drip; 3).....	2.72 ab
Luna Privilege, 6.84 oz (Drip; 2).....	2.32 bc
Luna Privilege, 6.84 oz (Drip; 1).....	2.49 abc
Heads-up, 0.13 oz/gal (Foliar spray; 3).....	2.23 bc
Non-treated control.....	2.96 a
<i>P</i> > <i>F</i>	0.0301

^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.