## STEM APPLICATION OF FUNGICIDES FOR CONTROL OF PHYMATOTRICHOPSIS (COTTON) ROOT ROT T. Isakeit Texas A&M University College Station, TX Jeff Stapper Sinton, TX R.R. Minzenmayer Texas Cooperative Extension Ballinger, TX Steve E. Sturtz Texas Cooperative Extension San Angelo, TY

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## **Abstract Only**

The objective of this study was to determine if fungicides sprayed on the lower stem could control cotton root rot, caused by the fungus Phymatotrichopsis omnivora. The experiments were done in three dripirrigated fields in Texas, located in San Patricio County (SPC) near Tynan, and near Wall and Mereta in Tom Green County. The fungicides, thiophanate-methyl, propiconazole, azoxystrobin, and fludioxinil applied with fluazinam, were evaluated in all locations at a rate of 3.3 lb ai/A. Additionally, flusilazole and a formulation of famoxate + flusilazole were evaluated at the Tom Green County locations. The fungicides were applied using a hollow cone nozzle directed toward the lower stem in a volume of 50 GPA at 26 PSI. Plots consisted of two, 17-foot-long rows and were arranged in a randomized complete block design with four replications. Plots were located in portions of the fields with a prior history of total infection. Fungicides were applied June 23, 2005 in the SPC field, and July 6, 2005 in the Wall and Mereta fields, when plants were at 3 NAWF, 7th true leaf stage, and 12th true leaf stage, respectively. None of the fungicides adequately reduced the incidence of disease, although disease incidence was lowered and disease onset was delayed by the fungicides, in comparison with the control. An analysis of variance demonstrated significant differences in the incidence of disease between the control and some of the treatments in the Mereta (P=0.023) and Wall (P=0.033) fields, but not in SPC. By the end of the season, disease incidence was lower with the combination of fludioxinil + fluazinam at all three locations, in comparison with no fungicide treatment: 26.2% in SPC (70.4% non-treated); 77.1% in Wall (94.5% nontreated); and 78.5% in Mereta (98.8% non-treated). Propiconazole and azoxystrobin also reduced disease incidence in SPC (36.7% and 43.2%, respectively), while propiconazole and flusilazole significiantly reduced disease in Wall (73.5% and 72%, respectively), and thiophanate-methyl, propiconazole and flusilazole significantly reduced disease in Mereta (83.2%, 89.1% and 86.4%, respectively). None of these fungicides are labeled for root rot control on cotton. Further experiments are needed to determine if application timing could improve the level of control. If control efficacy is improved, the cost of such applications must be weighed against the economic return. Such applications may be most economical as part of a precision agriculture program in a high input-high yield production system such as drip-irrigated cotton.