APPLICATION AND PLACEMENT OF THE FUNGICIDE FLUTRIAFOL FOR MANAGEMENT OF COTTON ROOT ROT IN THE ROLLING PLAINS OF TEXAS Jonathan H. Ramirez Texas A&M AgriLife Extension Service Vernon, TX Jason E. Woodward Texas A&M AgriLife Extension Service and Texas Tech University Lubbock, TX Gaylon D. Morgan Texas A&M AgriLife Extension Service College Station, TX Ken L. Smith Cheminova, Inc. Groveton, TX

<u>Abstract</u>

Cotton root rot, caused by the soilborne fungus Phymatotrichopsis omnivorum, is an economically important disease of cotton in Texas. Recent studies have reported that in-furrow applications of the fungicide flutriafol (Topguard, Cheminova, Inc., Research Triangle Park, NC) have led to enhanced disease control and increased yields; however, reports of phytotoxicity have also been made. The objectives of this research were 1) to compare two application methods and 2) to evaluate pre-plant applications of flutriafol. Three field trials were conducted to compare applications of flutriafol formulations applied via T-Band or Y-Split applicators. Conditions prior to planting were relatively dry; however, adequate soil moisture was present at planting to obtain cotton emergence at all locations. Differences in stand were observed at one trial. Stands in plots where flutriafol was applied via the T-Band application method were similar to the non-treated control; whereas, the 1.0 and 2.0 pint ac⁻¹ Y-Split applications led to stand reductions of 31.6 and 63.2%, respectively. Phytotoxicity was believed to have resulted from approximately 0.3 inches of rain that fell shortly after planting and prior to crop emergence. Despite having a history of severe Cotton root rot, disease incidence at each location was low with no disease being observed in two of the trials. Lint yields were not significantly different among treatments where disease did not develop; however, yields were positively correlated with final plant populations where phytotoxicity occurred. A second experiment was conducted in an attempt to reduce the risk of phytotoxicity. In this study, pre-plant applications of different rates of flutriafol were applied at 6, 8 and 10 inch depths using a fertilizer applicator 2 weeks before planting. As with the application method studies, dry conditions were experienced prior to treatment and planting; however, rainfall was not received until after the crop had emerged. Plant populations were not affected by flutriafol rate or depth. Appreciable levels of disease were observed by the end of the growing season averaging 34.8% in the non-treated control. The application of flutriafol at 1.0 and 2.0 pint ac⁻¹ reduced the incidence of Cotton root rot to 10.8 and 15.0% when averaged over the three application depths. Yields did not differ among treatments, but yields were numerically greater than the non-treated control (628 lb ac⁻¹) by 119, 80 and 155 lb ac⁻¹ at the 6, 8 and 10 inch depths, respectively. While delayed emergence and the loss of stands due to the application of flutriafol have been documented, alternative application methods using the T-Band configuration have reduced the risk of these events occurring in the field. Results from this study suggest that the placement of flutriafol below the seed furrow may alleviate the potential for phytotoxicity without compromising efficacy; however, additional studies are warranted.