FUNGICIDE SENSITIVITY SCREENING OF TARGET SPOT IN COTTON AND SOYBEAN

T. Smith
H. Kelly
University of Tennessee
Jackson, TN
Z. Hansen
University of Tennessee
Knoxville, TN

Abstract

Target spot (TS), caused by the fungus *Corynespora cassiicola*, is a foliar disease of cotton and soybean. Over recent years, TS has become a disease of concern in both production systems. Data for fungicide sensitivity and understanding potential impact on yield is lacking for *C. cassiicola*. The objective of this study was to conduct fungicide screening to monitor sensitivity in *C. cassiicola* in Tennessee soybean and cotton production. The sensitivity of 30 *C. cassiicola* isolates to 8 technical grade fungicides across multiple fungicide groups (FRAC Groups 1, 3, 7, and 11) was evaluated based on mycelial growth inhibition assays. The EC_{50} of each fungicide was calculated. Field trials were also conducted at 3 locations for soybean and 1 location for cotton in 2018 and 2019. Five fungicide tank mixes were evaluated for control of TS among 3 soybean varieties of differing susceptibility and 6 fungicide products were evaluated among 1 cotton cultivar. TS in soybean was decreased by all products except Domark, but only Miravis TOP protected yield in both years. Cotton yield, defoliation, and TS were not affected in 2018, but Miravis TOP decreased defoliation and TS in 2019 while also increasing yield. Pyraclostrobin, thiophanate methyl, and azoxystrobin had the highest EC_{50} values. *In vitro* and field evaluations suggest that products that contain FRAC groups 7 and 3 have the potential to better protect yield from target spot compared to products containing groups 11 or 1 fungicides.