SOIL TREATMENTS AGAINST FUSARIUM OXYSPORUM F. SP. VASINFECTUM RACE 4

Rebecca S. Bennett, Dale W. Spurgeon, and William R. DeTar
USDA-ARS, Western Integrated Cropping Systems Research Unit
Shafter, CA

Bradley D. Hanson and James S. Gerik
USDA-ARS, Water Management Research Unit,
Parlier, CA

Robert B. Hutmacher
University of California, Shafter Research and Extension Center,
Shafter, CA

R. Michael Davis
University of California, Department of Plant Pathology,
Davis, CA

Abstract

Few economically feasible disease management options are available for California cotton producers with fields infested with race 4 of *Fusarium oxysporum* f. sp. *vasinfectum*. For treating soil to reduce inoculum levels, past studies indicate that solarization and fumigation with metam-sodium may be affordable, yet effective solutions. To test their applicability to race 4 in cotton, we compared four soil treatments: a six-week-long summertime solarization, metam-sodium (75 gal/acre), methyl bromide-chloropicrin (50:50, 350 lbs/acre, tarped) and Telone-chloropicrin (40:60, 31.5 gal/acre, tarped). The treatments were applied in plots in a field naturally infested with race 4, using a split-plot design, with soil treatment as the whole plot factor and cotton cultivar as the subplot. Four cultivars representing a range of susceptibilities to race 4 were used to evaluate the treatments. We will present observations from the first season indicating that soil solarization worked as well as more costly, tarped fumigants (methyl bromide-chloropicrin and Telone-chloropicrin) as evidenced by plant survival.