DEVELOPMENT OF MANAGEMENT STRATEGIES TO REDUCE *MELOIDOGYNE ENTEROLOBII* IMPACTS IN COTTON

Lindsey Thiessen
North Carolina State University
Raleigh, NC

Abstract

Meloidogyne enterolobii, the pacara earpod root-knot nematode (PERKN), is endemic in the southeast United States and threatens profitable production of cotton in affected areas. PERKN has a wide host range and overcomes known root-knot nematode resistance genes. Because this nematode affects all commercially available cotton varieties, chemical management strategies in combination with new host resistance traits are needed to limit the impacts to cotton production. The goal of this research was to evaluate the efficacy of host resistance and chemical management and impact on soil nematode populations. Data collected were analyzed using a general linear model and marginal means were estimated using a Tukey adjustment for multiple comparisons. Stand was significantly greater in plots planted with Phytogen PX3D32 compared to plots planted to PHY 340 ($P < 0.05$). Nematode juvenile counts per 500 cc soil were not significantly different at any sampling date (pre-season, mid-season, at harvest). Propulse (fluopyram + prothioconazole, 13.6 fl oz) in furrow on both PHY 340 and PX3D32 significantly reduced galls/g root compared to the non-treated control. Eggs/g root were not impacted by any treatment. Harvest could not be collected in 2020 due to environmental conditions that favored hardlock. Continued evaluations of chemical and host resistance management strategies are needed for limiting losses in cotton to *M. enterolobii.*