EFFICACY OF SEED TREATMENTS FOR CONTROL OF THRIPS AND NEMATODES IN ARKANSAS COTTON

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Abstract

Studies to determine the efficacy of standard seed treatments and the impact of thrips and nematodes on cotton were performed during the 2007 cotton growing season in Lonoke and Monroe counties Arkansas. Natural infestations of thrips and nematodes were studied at each location, although nematode species differed between locations. Root-knot nematode (*Meliodogyne incognita*) was the dominant nematode species in Lonoke County, while the reniform nematode (*Rotylenchulus reniformis*) was dominant in Monroe County. Tobacco thrips (*Frankliniella fusca*) was the dominant thrips species at both locations. Each study was comprised of efficacy treatments and interaction treatments. Efficacy treatments included an untreated check, the seed treatments Gaucho Grande™, Aeris™, Exp 1, Avicta™, Cruiser™, and the in-furrow insecticide/nematicide Temik™. Pest populations, plant growth parameters, and yield were documented in each plot. Data indicate that all seed and in-furrow treatments provided effective control of thrips 3-4 weeks after planting. There were only slight improvements among plots with the addition of a nematicide, and these did not separate statistically. Interaction plots were established where only thrips were controlled, only nematodes were controlled, both were controlled and neither were managed. In the thrips-controlled treatments, seed was treated with Gaucho Grande™ and Bidrin™ was applied to foliage when thrips were present. In the nematode-controlled treatments the fumigant nematicide Telone™ was applied two weeks prior to planting. Thrips populations, nematode numbers and plant monitoring parameters were recorded to measure the independent and combined effects of these pests on cotton. Independently, thrips and nematodes altered cotton growth and yield relative to plots where these pests were not managed. Cotton growth and development is influenced by an interaction between these pests. Seed treatments were effective at combating the combined impact of thrips and nematodes, however it is unclear what role the addition of a seed treatment nematicide plays. Additional studies are needed to more thoroughly understand the complex above and below ground interaction that is occurring between these pests.