2004 BELTWIDE COTTON CONFERENCES, SAN ANTONIO, TX – JANUARY 5-9

EFFECT OF A NOVEL SEED TREATMENT ON INFECTION OF COTTON SEEDLINGS BY *MELOIDOGYNE INCOGNITA*

Scott Monfort and Craig Rothrock
University of Arkansas
Fayetteville, AR
Terry Kirkpatrick
University of Arkansas
Hope, AR

The efficacy of abamectin (Stan) formulated as a seed treatment for nematode management in cotton was evaluated in microplot trials in 2003 at the University of Arkansas Southwest Research and Extension Center (SWREC) at Hope, Arkansas. Treatments consisted of Stan at 0 and 100 g a.i./100 kg seed and aldicarb (Temik) applied to the soil at 0.9 kg a.i./ha. The treatments were evaluated on the *M. incognita*-susceptible cotton cultivar Stoneville 4892 BGRR. The microplots were infested by mixing sufficient inoculum into the soil to give approximately 4,000 *M. incognita* eggs and juveniles per 500 cm^3 soil. Two seedlings were removed from the microplots at 5, 8, 11, and 14 days after planting (DAP) and were cleaned of all soil debris and stained using acid fuchsin. The stained roots were then examined with a dissecting scope to determine the number of nematodes per root. The study was repeated three times (June, July, and August, 2003). Root damage was also evaluated for each treatment at 45 DAP. Ten seedlings were removed from the microplots and rated for galling due to *M. incognita* based on the root gall index where 1=no galling visible, 1=1-10% of roots galled, 2=11-25% of roots galled, 3=26-50% of roots galled, 4=51-75% of roots galled, and 5= >75% of root system showing galls. Root evaluations were repeated two times (August and October, 2003). Plants from Stan-treated seed showed lower numbers of *M. incognita* throughout the 14-day sampling period than plants from untreated seed. Nematode numbers were similar in Stan-treated plants and in plants that received Temik. Root galling severity was lower with both Stan and with Temik than with the untreated controls, and galling severity was comparable for Stan and Temik. These results showed that Stan as a seed treatment may have potential for managing *M. incognita* in cotton.