

VARIABLE RATE APPLICATION OF NEMATICIDES ON COTTON FIELDS: A PROMISING SITE-SPECIFIC MANAGEMENT STRATEGY

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ABSTRACT

The impact of two nematicides [1,3 – Dichloropropene (Telone® II) and Aldicarb (Temik)] applied at two rates on RKN population density and cotton (*Gossypium hirsutum* L.) lint yield were compared across previously determined RKN management zones (MZ) in commercial fields between 2007 and 2009. The MZ were delineated using fuzzy clustering of various surrogate data for soil texture. All treatments were randomly allocated among blocks that spanned the entire length of the fields. Experimental sampling plots (16 rows by 100 feet long) including the four treatments were also randomly selected within each zone to collect RKN population density and yield. A consolidated analysis of RKN population by zone-treatment showed that regardless of the zone there were no differences between Temik rates or Telone® II rates. The result across zones showed that Telone® II provided better RKN control compared to Temik in high risk zones, comprised of more coarse-textured, sandy soil. However, in low risk zones, which were comprised of relatively heavier textured soil compared to the high risk areas, the application of any of the treatments provided sufficient control to maintain RKN populations below the recommended threshold (100 juveniles 100 cc^{-1}). In these zones, a farmer would lose money if a high rate of Telone® II is applied. The results from this study clearly showed that RKN control and final yield varied with respect to the nematicide type and rate across management zones (MZ). These results are promising and support the idea of variable rate nematicide applications based on RKN risk zones.