MONITORING INSECT PEST POPULATIONS ACROSS SOIL EC BASED MANAGEMENT ZONES IN MIDSOUTH COTTON WITH AND WITHOUT WHEAT COVER CROP

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Abstract

Cotton producers in northeast Arkansas typically plant cereal winter cover crops to protect cotton seedlings from damage due to blowing sand. Additional benefits from use of cover crops can include improvements in weed suppression, run-off water quality and arthropod management. An objective of this 2012 field study was to contrast infestation levels of cotton insect pests – thrips and sucking bugs - across spatially variable fields of cotton grown following winter wheat cover crop or winter fallow. Paired commercial fields, with and without a terminated wheat cover crop were separated into four management zones on three farms. A dual depth Veris® 3150 Soil Surveyor was used to classify zones based on soil electrical conductivity (EC) properties. Sample sites for insect and plant monitoring with COTMAN were established in early season; three sites per zone per field. Thrips infestations (tobacco thrips, *Frankliniella fusca* (Hinds), and western flower thrips, *Frankliniella occidentalis* (Pergande)) exceeded Extension-recommended action levels in the first three weeks following crop emergence on one of three farms. There were significantly fewer thrips associated with cotton grown with a wheat cover crop compared to cotton without wheat. Soil EC management zones did not appear to impact thrips distribution in the six fields. Tarnished plant bug, *Lygus lineolaris* Palisot de Beauvouis, numbers were low season-long and did not exceed the Arkansas action threshold prior to cutout. Plants in management zones with coarse sand or clay reached physiological cutout six days before plants in sand and sandy loam management zones, and fewer plant bugs were associated with these early maturing plants. Late season plant bugs numbers had no significant impact on yield; however, plant bug sample allocation among EC based management zones may be appropriate if maturity differences of plants among zones are worthy of the extra management time and effort required to monitor and manage multiple zones per field. The study will be repeated in 2013.