SOIL COMPACTION IN COTTON FIELDS IN MIDSOUTH

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Abstract

Preliminary data collected with a penetrometer in selected cotton fields in Arkansas and Missouri in 2007 through 2009 indicated that compaction levels were above the widely accepted threshold of 300 PSI of resistance. Additional post-harvest soil compaction data collected in various commercial fields in Arkansas indicated that compaction could be a widespread problem in the Mid-South Delta. The average soil compaction resistance in traffic and non-traffic area ranged from 256 to 490 PSI and 293 to 495 PSI, respectively. The compaction layers were shallow (up to 12 in. deep from the ground surface) in both traffic and non-traffic areas indicative of soil compaction due to field machinery traffic. The maximum thickness of hardpan was eight inches in both traffic and non-traffic areas. We hope that data presented raises awareness about soil compaction problems that may cause cotton yield reduction and stimulates thought processes about the need for timely alleviation of the negative impacts of soil compaction.