

# SOIL DISRUPTION BY FIRE ANTS IN CONSERVATION AND CONVENTIONAL TILLAGE TREATMENTS

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## INTERPRETIVE SUMMARY

Fire ants are endemic to the southeastern Coastal Plains. As measured in this experiment, mound numbers ranged from 5 to 49/A. At the higher end of this range, ants could conceivably have a significant effect on soil properties, possibly causing more leaching of nutrients to the groundwater. We measured the amount of soil disruption for a conventional management system that used management techniques similar to practices traditionally used by producers in 1995 (disking fields and in-row subsoiled-planting) vs an innovative management system that used advanced management techniques (paratilling and planting into undisked stubble). We used soil strength probes with easily detachable handles to measure soil disruption within

the mounds. For comparative purposes, soil strength readings were also taken in undisturbed soil near the mounds. Our preliminary results show that the conventional treatment had a greater volume of soil disruption than the innovative treatment. However, depth of disruption was deeper in the innovative treatment. When readings taken in the mounds were corrected with data taken in nearby soil, depth and volume of disruption were greater for ant activity in the innovative vs the conventional treatment, probably because innovative tillage disrupted more of the hard subsoil than conventional tillage. Deeper disruption could lead to more leaching of nutrients to the groundwater. Tentative results indicate that innovative (conservation) tillage may be more susceptible to deep leaching of nutrients because of ant activity.

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