WHITE CLOVER LIVING MULCH IMPACTS ON SOIL HEALTH IN COTTON PRODUCTION SYSTEMS OF GEORGIA Chandler E Gruener Matthew R Levi Nicholas T Basinger Nick S Hill Nandita Gaur University of Georgia Athens, GA

<u>Abstract</u>

The functionality of perennial cover crops growing year-round has the potential to improve soil quality and health indicators. The use of cover crops in cotton production has commonly been associated with annual cover crops of Crimson Clover *Trifolium incarnatum* and Cereal Rye *Secale cereale*) planted in the fall and terminated in spring. The utilization of White Clover (*Trifolium repens* var. 'Durana') as a 'living mulch' in a continual cotton production system provides the innovation to improve desired soil health properties in Georgia year-round. This research aims to assess the impacts of cover crops compared to bareground in a continual cotton system on the highly weathered Ultisols soils of the Georgia Piedmont. Some of the selected soil properties used to measure changes from cover crops include soil strength, bulk density, hydraulic conductivity, mineralizable C and N, total C and N, Mehlich 1 nutrients, and soil pH. Preliminary results indicate no significant change in bulk density between treatments over time. Soil strength shows a continual reduction over time as affected by the living mulch treatment. Living mulch as a viable management option for improving soil health indicators for cotton farmers has great potential for application.