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## **Multidisciplinary Approach to Enhancing Sustainability in Cotton Production in the Southeastern USA.**

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Cotton is grown on over 28.6 million ha in the Southeastern USA but less than 25% is grown using conservation tillage. We conducted multidisciplinary on-farm research to improve understanding of system component effects on sustainable production used that information to promote and enhance adoption of conservation systems. We evaluated effects of different cover crops on crop production, insect dynamics, soil microarthropods, plant parasitic nematodes, soil quality, and economics. Companion studies on-station and in the greenhouse identified cover crops with the most potential to produce biomass, enhance biological diversity and reduce threats of plant parasitic nematodes. We showed a positive impact of a blend of legumes balansa clover, crimson clover and hairy vetch (*Trifolium michelianum* Savi, *T. incarnatum* L., and *Vicia villosa* Roth, respectively) plus rye (*Secale cereale* L.) on above and below ground biological populations. Cover crops increased soil biological diversity and microbial activity and in one year reduced the number of pesticide applications needed to control cotton insect pests. Plant parasitic nematodes were supported by cover crops in our system but other cover crops were found that did not support these pests. Partnerships with the Georgia Conservation Tillage Alliance, Seven Rivers RC&D, and Sunbelt Farm Expo helped facilitate successful outreach efforts in promoting sustainable farming practices in the Southeast.

[Handout \(.pdf format, 5345.0 kb\)](#)

See more of [Sustainable Cropping Systems: From Earthworms to Mapping Local Food Capacity](#)

See more of [A08 Integrated Agricultural Systems](#)

See more of [The ASA-CSSA-SSSA International Annual Meetings \(November 6-10, 2005\)](#)