

**MITIGATION OF THRIPS ON COTTON IN THE SOUTHEASTERN USA
USING WINTER COVER CROPS****Jeremy K. Greene****Michael W. Marshall****Ahmad Khalilian****Francis Reay-Jones****Clemson University****Blackville, SC****Michael Toews****Phillip Roberts****University of Georgia****Tifton, GA****Dominic Reisig****Alan Meijer****North Carolina State University****Plymouth, NC****Abstract**

Because thrips, predominantly tobacco thrips (*Frankliniella fusca*), are the most predictable and consistent insect pests of cotton in the southeastern USA, various strategies for mitigating their negative impacts in the crop are being explored in coordinated research efforts in the region. One of the approaches involves further investigation into the positive effects of reduced tillage and accumulated residue from cover crops grown during the winter months, as related to reduced populations of and injury from thrips reported from previous research. In experiments conducted to address the impact of tillage and cover-crop residue on populations of and injury from thrips in cotton, densities of thrips were statistically lowest in strip-tilled plots planted into rye established as a cover crop and rolled down prior to planting of cotton. Numbers of thrips were highest in the conventionally tilled plots that did not incorporate the use of rye as a cover. Cotton yields were numerically highest from plots planted using strip tillage and rolled rye for cover-crop residue at one location but were lower than those from conventionally tilled plots without cover in another location. Because aggressive tillage and lack of cover-crop residue usually result in lower yields when compared with reduced tillage and use of crop residue, putative interactions with fertility and environment were thought to be issues with decaying rye cover in this trial. Across many trials, rye appeared to be a valuable strategy to aid in minimizing the impact of thrips on cotton when used as a cover crop with reduced tillage, and this conclusion is consistent with the findings of numerous researchers. In addition to rye, wheat was useful in producing cover-crop residue when used in a relay intercropping strategy with cotton. With this approach, cotton was precision-planted into standing wheat 2-3 weeks before the wheat was harvested. After harvest of the wheat, the well-established crop of cotton experienced reduced populations of and injury from thrips. Cotton yields from relay intercropping of wheat and cotton were very similar to those from cotton planted alone in the trial. Because of numerous issues related to effective and economical control of thrips in cotton, such as product availability (e.g. shortage and reduced use of aldicarb), diminished insecticide efficacy (e.g. reduced susceptibility to thiamethoxam), and potential loss of convenient delivery systems (e.g. seed treatments), the use of cover crops should be considered by cotton producers as an integrated strategy to minimize the impact of thrips on the crop.