

Optimizing thrips management recommendations for Georgia peanut producers

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Tobacco thrips, *Frankliniella fusca*, is commonly found in Georgia peanut fields and is a serious pest because of its ability to transmit tomato spotted wilt virus (TSWV). Though the economic impact of tomato spotted wilt has been well documented, the impact of thrips feeding on peanut yield and time to maturity in the absence of the virus is not well understood. With the introduction and commercial adoption of peanut cultivars with high levels of field resistance to TSWV, growers are more likely to abandon some of the cultural practices that have been used to reduce the risk of thrips infestation and virus infection. For example, early planting and single row planting patterns are expected to become more common with the continued availability of high yielding TSWV resistant cultivars. These practices increase the risk of thrips infestation and direct feeding damage.

Nearly all Georgia peanut fields are treated with insecticide(s) for thrips control, and growers now have the option of using insecticide seed treatments, in-furrow and/or foliar insecticides. Choosing the best insecticide and optimizing its use depend on knowledge of the pest's biology and the expected efficacy of the management tool. The goals of our research were to: evaluate thrips infestations and feeding damage over a range of planting dates and insecticide treatments, evaluate the residual efficacy of insecticides targeting thrips over time, and to provide growers with real time information regarding thrips flight activity in the spring.

Thrips populations in the field followed a predictable pattern in each of the three planting date treatments. Initial adult infestation occurred soon after plant emergence. Immature thrips were observed in plots shortly thereafter, and generally peaked around 27 days after planting regardless of plant date. The latest plant date (13 May) sustained higher numbers of immature thrips in the untreated check longer than the two earlier plant dates, but maximum damage ratings were lower in the later planting. Phorate (Thimet) and imidacloprid (Admire Pro) treatments resulted in significantly lower maximum thrips damage ratings than the thiamethoxam seed treatment (CruiserMaxx Peanut) or the untreated check.

The residual activity of three insecticides commonly used for thrips management in peanut was evaluated against adult and immature thrips. Leaves were collected from field grown peanut seedlings and brought to the lab for testing. Immature and adult thrips mortality was significantly higher than the control in tests 9 and 10 days after planting but not in any subsequent tests. Adult and immature feeding damage was reduced by the insecticides compared to the untreated check for up to 31 days after planting. These results suggest that the insecticide treatments had sub-lethal effects on thrips that may explain why damage sometimes remains low in the field even when thrips are present.

A thrips trapping program was conducted in five Georgia counties for the second year in 2015 to provide growers with information about real time thrips dispersal. Thrips dispersal data were posted weekly to the UGA Peanut Entomology Blog. Trapping also provides data that help us better understand the biology of thrips and identify changes in dispersal patterns over time. These data may become even more important if current thrips control tools are lost to resistance or regulatory action, and growers are left to control thrips with well-timed and costly foliar insecticide applications.