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Summary
Southeastern Peanut Research Initiative
Final Report, Oct 24, 2019
On Progress on Research Supported by the 2017 Grant

"Integrated Management of Tomato Spotted Wilt, Leaf Spot, Rust, White Mold, and CBR in Peanut"

Leaf spot diseases were especially severe in some fields in 2017-18. The new cultivar "Georgia-13M" was extremely susceptible to late leaf spot. Numerous fungicides, including all of the strobilurin fungicides (such as Abound or Headline) we've tested and all but one of the sterol inhibitor fungicides (such as tebuconazole or Alto) are much less effective than they were a few years back. Mixtures of these fungicides with fungicides with chlorothalonil or micronized sulfur, however, can still provide adequate leaf spot control. Multiple new cultivars and experimental breeding lines have field resistance to Tomato spotted wilt that is better than that of Georgia-06G. Phorate (Thimet) remains the only insecticide available that helps suppress spotted wilt. In-furrow applications of provided substantial early season control of leaf spot. The new fungicide Miravis provided exceptional control of late leaf spot under extremely heavy disease pressure.

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Report to the
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Final Report, (For 2017-2018 project) Oct 24, 2019
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"Integrated Management of Tomato Spotted Wilt, Leaf Spot, Rust, White Mold, and CBR in Peanut"

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Update:

A. Multiple field trials were conducted in which we evaluated the effects of mixtures of various fungicides for leaf spot efficacy. Leaf spot epidemics were extremely severe. Reduction in efficacy has been observed for most strobilurin fungicides (e.g. Abound, Headline), and sterol inhibiting fungicides (e.g. tebuconazole, Quash, Alto) when applied alone. However, mixtures of these fungicides with fungicides with other modes of action (e.g. Priaxor, Elatus) have held up better. The new experimental fungicide adepidyn (Miravis) was evaluated in multiple trials. This fungicide has the best activity against early and late leaf spot we have seen. Various timings were evaluated to examine curative and protectant activity, as well as duration of control with Miravis. Also, alternation and mixtures were examined as ways to prevent development of resistance to this very effective fungicide. Miravis has little effect on Leaf spot epidemics were intense. Mixtures of reduced rates of Fontelis with Alto or Headline showed promise for improving leaf spot control. Also, mixtures of sulfur (Microthiol DispersS) significantly improved leaf spot control compared to Provost or Alto alone. Similar trials are planned for 2018 and will be planted soon.

B. A field trial was conducted at the UGA-CPES Lang Farm to determine the effect of in-furrow Thimet applications on tomato spotted wilt severity and yield in peanut cultivars Georgia-06G, Georgia-12Y, Georgia-13M, Georgia-14N, Georgia-16HO, TUF Runner 297, TUF Runner 511, FloRun 107, FloRun 157, TUF Runner 331, TifNV High O/L, and AU-NPL 17. TSW pressure was light early in the season, but more late-season symptoms were observed. FloRun 157, FloRun 107 and TUF Runner 511 had the highest incidence of TSW has the highest incidence of TSW in the trial, but responded well to Thimet insecticide for TSW reduction and yield increase. Georgia-12Y, Georgia-13M, Georgia-14N, Georgia-16HO, TifNV High O/L, and AU-NPL 17 had very low incidence of TSW with or without Thimet. Yields of Georgia-16HO were

especially promising, averaging over 7500 lb/A averaged across Thimet treatments. Similar trials with available cultivars are planned for 2018 and will be planted soon.

C. Field trials were planted in April or early-May to determine the effect of various insecticides, including the new aldicarb insecticide "AgriLogic" (same active ingredient as Temik) on thrips and tomato spotted wilt. Thrips pressure was light to moderate. Thimet, AgriLogic, and multiple imidacloprid treatments provided adequate thrips control. There was no indication that any insecticide other than Thimet provided suppression of spotted wilt. Similar trials are in progress for 2018.

D. Two trials were conducted in which multiple advanced peanut breeding lines from multiple breeding programs were evaluated for field resistance to TSWV. The trials utilized sparse seeding rates, and no insecticide for thrips control. Genotypes included lines that have both high-oleic oil chemistry and resistance to the peanut root-knot nematode. Disease pressure was light, but several lines show potential for improved resistance compared to Georgia-06G. A similar trial with various breeding lines from multiple breeding programs is now in progress.

G. Multiple fungicide trials were conducted in progress in which various labeled and experimental fungicides were evaluated on cultivar Georgia-13M or on Georgia-06G with Georgia-13M borders . In 2015-2016, this cultivar was observed to be very susceptible to late leaf spot. With its yield potential, resistance to TSWV, and high-oleic oil chemistry, this cultivar has great potential. However, it will require very effective fungicide programs to prevent problems with leaf spot. Most trials were planted in late May to ensure heavier leaf spot pressure. With the heavy pressure from late leaf spot, it was difficult with currently registered fungicides to obtain good control of leaf spot on Georgia-13M. Treatments that included the experimental fungicide Miravis, however, provided excellent control. Miravis may be labelled for the 2018 season. Multple trials are planned for 2018 that include Miravis and other promising new fungicides and will include trials a Tifton and Plains. These trials will be planted shortly.

H. A field experiment is in progress at the UGA Lang Farm in which cultivars Georgia-06G, TifNV High O/L, and Georgia-16HO were grown a) without foliar fungicides; b) with 4 fungicide applications; and c) full-season 7 fungicide applications. TifNV High O/L has shown reduced severity of leaf spot compared to Georgia-06G. Leaf spot severity was lower in TifNV High O/L than in Georgia-06G or Georgia-16HO with reduced fungicides or nontreated. Yields were similar for the three cultivars with the full fungicide regime, whereas yields were higher for TifNV High O/L in nontreated plots. This trial will be repeated in 2018, and will be planted shortly.

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