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Title: Integrated management of TSWV, leaf spot, rust, stem rot, and *Cylindrocladium* black rot on peanut.

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Report: A multiyear study was conducted at the Wiregrass Research and Extension Center (WREC) to assess the impact of tillage, planting date, cultivar selection, and row spacing on the occurrence of foliar and soil diseases as well as on the yield of peanut in a one-year out rotation of peanut with cotton. In 2010, Here, tomato spotted wilt virus (TSWV) incidence was higher on conventional than conservation till Georgia Green but not Tifguard peanuts. Disease incidence was higher in the June rather than earlier planting dates regardless of tillage. Tifguard was less susceptible to TSWV than Georgia Green. While leaf spot pressure was low, disease intensity was highest at the June than two earlier planting dates, where lower ratings were recorded for Georgia Green than Tifguard. In contrast to the previous year, leaf spot intensity was lower under conventional than reduced tillage. Planting date impacted white mold incidence under reduced, where the highest disease incidence was found at the April but not later planting date, but not conventional tillage. Tifguard was less susceptible to white mold and root knot than Georgia Green. Root knot galling was higher at the June than earlier planting dates. As reflected in lower white mold and nematode damage, Tifguard had higher yields regardless of tillage and planting date than Georgia Green. Planting date significantly impacted yield of Tifguard but not Georgia Green. Yield declined with advancing planting dates for the reduced but not the conventional till peanuts. Impact of seeding rate as influence by planting date on the occurrence of TSWV, leaf spot, white mold, as well as the yield of selected peanut cultivars was conducted at WREC. Previously, TSWV incidence and subsequent yield losses rose as seeding rate declined. Due to low TSWV pressure, however, no conclusions could be drawn concerning the impact of seeding rate on TSWV incidence. Leaf spot intensity and white mold incidence were higher with increasing seeding rate. In contrast, yield was not influenced by seeding rate. Planting date impacted TSWV incidence and yield on only Georgia Green. Generally, Georgia-06G and Florida 07 suffered less disease damage and had higher yield than Georgia Green. Yield and disease response of commercial peanut cultivars to leaf spot diseases, TSWV, and white mold in a one-year out rotation with cotton when maintained with a standard and high-input soil disease fungicide programs was evaluated at WREC. Overall, no improvement in leaf spot or white mold control along with yield gains were obtained with the costly high input compared with the lower cost standard, season-long Bravo Weather Stik program. As noted in previous years, Georgia Green is noticeably more susceptible to TSWV than the recently released commercial peanut cultivars, such as Georgia Greener, Tifguard, Georgia-07W, Georgia-06G, and Florida 07, many of which also suffered little leaf spot or white mold damage. The latter cultivars also had among the highest yields as well. Impact of peanut cultivar selection and early season insecticide treatments, including Thimet 20G, Temik 15G, Orthene 90S, on thrips damage, as well as leaf spot intensity, incidence of TSWV and white mold, and yield was assessed in field maintained in a one-year out rotation with cotton at the WREC. Due to low TSWV pressure, only minor differences in disease incidence and yield were noted between all of the insecticide treatments and the non-treated controls. While significant differences in TSWV incidence were found, development of this disease was minor. Leaf spot intensity was also low. Despite the minor differences in leaf spot and TSWV, significant differences in yield were noted between peanut cultivars. Newer commercial cultivars Florida 07, Georgia-06G, Georgia-07W, and Georgia Greener yielded considerably higher than the industry standard Georgia Green. A study to validate the Peanut Disease Risk Index program for controlling leaf spot diseases and white mold as well as to assess program impact on the yield of two peanut cultivars was conducted at the Gulf Coast Research and Extension Center

(GCREC). Dry late summer and fall weather patterns suppressed late leaf spot and rust intensity. As a result, fungicide application interval had relatively little impact on the level of disease control with Bravo Weather Stik alone or the low and high rate Abound 2SC index or calendar programs. Since relatively little difference in disease control was noted between the high, medium, and low risk programs, which included 7, 5, and 4 total fungicide applications, yields for all fungicide programs did not significantly differ. In other words, yield response with four, five, and seven applications of Bravo Weather Stik were similar. The same relationship between the ratings for late leaf spot and rust with yield response with programs that included the low and high fluid ounce per acre rates of Abound 2SC was also seen. Impact of peanut cultivar selection and early season insecticide treatments on thrips damage, as well as on leaf spot and rust intensity, incidence of TSWV and white mold, thrips damage (TDR), and yield was done at the GCREC. Even when TSWV, leaf spot, and rust levels were low, significant differences in yield were noted between peanut cultivars. Florida 07 and Georgia-07W, which also had among the highest thrips damage rating, also had in contrast among the highest yields. Although all insecticides were effective in suppressing thrips damage, Thimet 20G and Temik 15G soil treatments had equally low TDR ratings. Yields were similar across all insecticide treatments. Higher TDR ratings also did not translate into lower yields for the thrips-sensitive peanut cultivars. Peanut cultivar screening studies as well as multiple fungicide trials were also conducted at the WREC, GCREC, Brewton Ag. Research Unit, and Plant Breeding Units.

Report prepared by Austin Hagan