Tillage, Planting Date, Cultivar, and Row Pattern impacts Diseases and Yield of Peanut.

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Impact of tillage, planting date, cultivar, and row pattern on peanut yield as well as on the severity of tomato spotted wilt virus (TSWV), leaf spot diseases, and stem rot was evaluated on a site maintained in a peanut – cotton – peanut rotation. Rows for the conservation tillage plots were laid out in rye killed with Roundup in early March with a KMC subsoiler + coulter + rolling basket rig. Conventional tillage plots were turned with a moldboard plow and worked to seed bed condition with a disk harrow. Peanut cultivars Georgia Green and Tifguard were planted on April 24, May 14, and June 2, 2009. Row spacing included single 36-in or twin rows spaced 7 in apart on 36-in centers. The experimental design was a split-split-split plot with tillage as the whole plot, planting date as the split plot, peanut cultivar as the split-split plot and row spacing as the split-split-split plot, which consisted of four 30-ft rows in four replications. All plots received seven applications of Bravo Weather Stik 6F at 1.5 pt/A at 2-wk intervals for leaf spot control. While TSWV hit counts and leaf spot severity was assessed just prior to plot inversion, stem rot incidence was determined immediately after plot inversion. While TSWV was similar across all planting dates on conventional-till Georgia Green and Tifguard peanuts, disease incidence was lower on both cultivars under conservation tillage on the June 2 compared with the April 24 planting date. TSWV incidence was significantly lower for the twin than single row conventional-till peanuts but disease ratings for conservation-till single and twin row peanuts were similar to the single row conventional-till peanuts. While tillage did not have a significant impact on leaf spot severity on Tifguard, higher leaf spot ratings were seen for the conventional- than conservation-till Georgia Green peanuts. Regardless of tillage practices, Tifguard had lower leaf spot ratings than Georgia Green. In addition, higher leaf spot ratings were noted for conventional- than conservation-till peanuts at the May 14 but not the other planting dates. For the conventional-till peanuts, leaf spot ratings were higher at the May 14 than April 24 planting date but were similar across all planting dates for the conservation-till peanuts. On Georgia Green, stem rot incidence declined at each successive planting date, while Tifguard had less stem rot damage at the later two compared with the April 24 planting date. Stem rot incidence was lower on Tifguard than Georgia Green as well as under conservation than conventional tillage. Yield of Georgia Green and Tifguard varied by tillage practices and planting date. When under conventional tillage, Tifguard had higher yields than Georgia Green at the April 14 and June 2 but not at the May 14 planting date but yields of both cultivars under conservation tillage, which were usually lower compared with the same cultivars under conventional tillage, were similar at April 14 and June 2 planting dates. Higher yields were obtained with the twin compared with single row peanuts. The combination of the least disease and highest yields would likely be realized by planting Tifguard on twin rows in late May or early June using conventional tillage.