

Evaluating Planting Arrangement, Herbicide Persistence, and Weed Management using Cereal Rye Cover Crop in GA Peanut

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The studies this year were conducted at the Jones Farm (Tifton, GA), and the Southeast Georgia Research and Education Center in Midville GA. At both locations, Georgia-06G was planted at 88,000 seeds/acre in plots that were 12' x 30'. Soil samples were collected at 0, 1, 3, 7, 14, 28, 56, 90, 120, and 150 days after planting for analysis of herbicide breakdown and residual soil activity. Weed ratings were conducted visually at 1, 2, 4, 8, and 12 weeks after planting, and biomass was collected before harvest. Weed control was similar across both locations with herbicide and covercrop treatments having the greatest effect. PRE herbicides had greater weed control than the non-treated check plot. Weed biomass was reduced at both locations with the inclusion of a PRE herbicide but was not affected by PRE herbicide combination. (Figure 1). However, plots with cover crops had significantly greater weed control (~6-10% greater) when a cover crop was present. PRE herbicide program (Valor vs. Brake) did not affect yield. However, the inclusion of an herbicide increased yield by 9% and 41%, at Tifton and Midville, respectively. When no herbicide was used, cover crops increased yield by 450 lbs/A at Midville, and 411 lbs/A at Tifton due to decreased weed pressure (Figure 2).

Planting arrangement (single vs. twin) did not affect any measured parameter except canopy cover. This project demonstrates that cover crops can reduce weed emergence, and do not negatively affect herbicide efficacy, or peanut yield. Additionally, this research demonstrates that floridone herbicide (Brake), can be used with cover crops without adverse effects on peanut productivity and weed control.

Furthermore, with cover crops, fewer weeds are exposed to POST herbicide applications slowing the development of herbicide resistance. Lab analysis related to herbicide longevity is being conducted during January/February of 2024. This research has been leveraged to apply for funding from the National Peanut Board to continue to support this project as part of a PhD student's dissertation (Hannah Lindell).

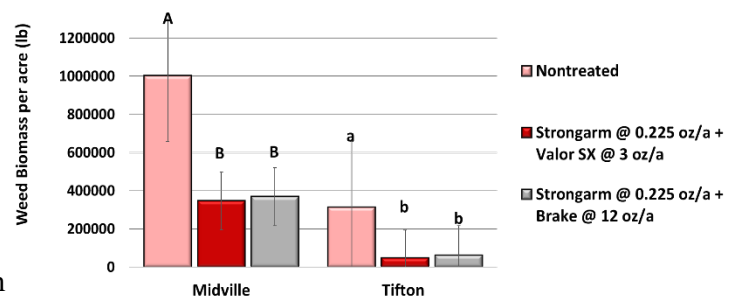


Figure 1. Weed biomass by location based on PRE herbicide treatment. 2023.

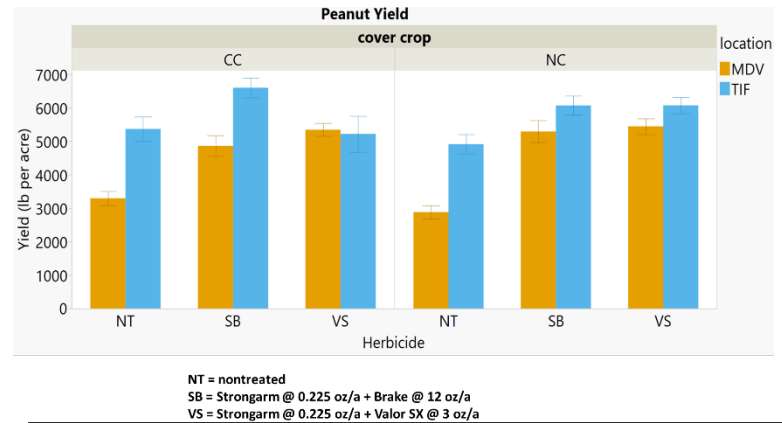


Figure 2. Yield by location and PRE herbicide treatment. 2023.