

Georgia Peanut Commission Research Report – Feb 2021

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Project title: Evaluating peanut seedling development to plant growth regulators and flumioxazin

To increase peanut yield, proper weed control and the use of plant growth regulators (PGR's) can provide improved plant establishment and development within the season. This study aimed to evaluate the effects and interaction of flumioxazin and treatments with plant control regulators (3-indolebutyric acid plus cytokinin and gibberellic acid) in six peanut cultivars (TifNV-HO, GA 142728, GA 14N, GA 06G, GA 16HO, GA 18RU). Experiments were conducted in 2020 in Plains and Ty Ty GA. A split split-plot in a completely randomized block comprising the treatments of 6 cultivars, 3 plant growth regulators as seed treatment (non-treated control, 3-indolebutyric acid (IBA) and cytokinin, gibberellic acid), and herbicide (non-treated control and flumioxazin). Seed were PGR treated one day before planting. Measures included injury (0 – 100%), stand counts (1 meter of row), plant height and width, and yield. Physiological measurements including intercellular CO₂, stomatal conductance, and electron transport using a Li-COR 6800.

Peanut at Ty Ty and Plains showed no differences in terms of emergence among the treatments and injury regarding herbicide treatments. Stand counts, plant height and width, and yield differences were observed at both locations, with peanut planted in Ty Ty demonstrating greater differences in the measurements evaluated. In Plains, no differences were observed for intercellular CO₂, stomatal conductance, and electron transport. However, in Ty Ty, all parameters showed differences in at least two evaluations during the season. The interaction of flumioxazin with the plant growth regulators varied across the locations tested and the cultivars used. This study will be repeated in 2021.