Seed Treatment and Seeding Rate Interactions in Peanut Production

R.S. TUBBS*, and J.P. BEASLEY, JR., Department of Crop and Soil Sciences, University of Georgia, Tifton, GA 31793.

Fungicidal seed treatments are commonly applied prior to planting peanut (*Arachis hypogaea* L.), and are a very minor expense for the benefit they can provide. However, seed costs (on a weight basis) have greatly increased over the last five years, and the dominant runner-market peanut cultivars are much larger/heavier than the industry standard from five years ago (Georgia Green). Thus, growers are interested in saving costs at planting, and one potential method is through reduced seeding rates. The objectives of this study were to evaluate the effectiveness of a seed treatment (azoxystrobin) by applying or withholding at two seed seeding rates (12.5 and 18.8 seed m$^{-1}$) on Tifguard peanut. A randomized complete block with a 2x2 factorial arrangement was used in 2009-2011 at Plains, GA. Inclusion of the seed treatment did not impact the tested variables (plant stand, plant height at R7, yield, and grade) in 2009 or 2010, but did increase stand (48-64%), height (10-19%), and yield (8%) in 2011. The higher seeding rate improved plant stand every year over the lower seeding rate (24-42%), however yield was only influenced by seeding rate in 2009, when the higher seeding rate resulted in a 10% increase. While a statistical benefit was observed in only one year with a seed treatment in this test, the relatively low cost of the product should encourage its continued use since soil and climatic conditions are highly variable depending on the field and year in which peanut are planted. However, these are favorable results for growers interested in organic production where inorganic/synthetic seed treatments cannot be used. Seeding rate likewise only had one year where a statistical yield advantage was observed for the higher seeding rate, although the reduced seeding rate would have offset seed costs, keeping net revenue more balanced. Further economic analyses need to be conducted for verification. While nearly equivalent results were achieved with a seeding rate as lows as 12.5 seed m$^{-1}$ in this trial, it should be noted that extremely high quality (Foundation or Registered) seed were used in every year of this project. Since plant stands did drop below what is typically considered acceptable (despite minimal effects on yield), a seeding rate as low as 12.5 seed m$^{-1}$ should still be considered risky by growers.