Evaluation of Root-Knot Nematode-Resistant Peanut Varieties in Seminole County
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My project consisted of two peanut nematode variety trials. The first trial contains four varieties, with an untreated GA 06-G being the control. The varieties consisted of GA 06-G without a nematicide, TifNV-HG, GA 22-MPR, and GA 23-RKN. The latter three varieties are resistant to root-knot nematodes. The second trial contained five varieties, with an untreated GA 06-G being the control. The varieties consisted of GA 06-G without a nematicide, TifNV-HG, GA 22-MPR, GA 23-RKN, and GA 24-NHO. Again, the latter four varieties are resistant to root-knot nematodes. I compared root-knot nematode assays pulled in the pre-planting, early growing season, and late growing season. At harvest, we compared the yields of each treatment and determined the yield benefits of root-knot nematode varieties versus 06-G without a nematicide.
In addition to looking at root-knot nematodes, this project looked at the population of lesion nematodes and their effects on the treatments. The root-knot nematode-resistant varieties do not have resistance to lesion nematodes, *Pratylenchus brachyurus*, and growers are no longer using nematicides when planting these resistant varieties. With the resistant varieties only being resistant to root-knot nematodes, I hypothesized that we would begin to see an increase in damage due to a population increase in lesion nematodes.

Initial yield data indicated a positive benefit to planting nematode-resistant varieties in fields with historical nematode populations. The 540-pound yield difference when comparing GA 06-G to TifNV-HG in the 3RT Farms – Jones 6 trial and a 1,397-pound yield difference in the 5 Gen Farms – Reinke West trial are excellent starting points for proving the positive benefit of using root-knot resistant varieties.

Nematode work can be difficult in trials, as you cannot guarantee that nematode populations will reach the threshold or beyond. We can conclude that there is a benefit to planting nematode-resistant varieties in fields with historical nematode issues, as the cost for the application of nematicides is greater than the yield difference in certain resistant varieties when compared to non-resistant varieties without a nematicide. This trial work will need to continue to compare nematode counts and yield results over multiple years to provide clear data about the benefits of nematode-resistant varieties. In future trials, I would like to directly compare GA 06-G to the nematode-resistant varieties when the non-resistant variety is protected using nematicides. This would allow us to compare the differences in yields and factors in additional economic data. Growers are looking to save where they can, and not using nematicides can save them roughly 100 to 200 dollars an acre. If the nematode-resistant varieties can yield as well or better than a GA 06-G with a nematicide, growers will greatly benefit economically.