16/1504 2017 GA

NATIONAL PEANUT BOARD/SOUTHEAST PEANUT RESEARCH INITITATIVE
QUARTERLY PROGRESS REPORT FOR WORK

Final Report, 2017
+ Summary

DONE UNDER RESEARCH AGREEMENT----------

INSTITUTION: University of Georgia

PROJECT TITLE: Regional screening program for genetic resistance to diseases

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RES. AGR. NO.: 2521RF332740 PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31, 2017
SPRI CONTACT: Joy Purvis NPB CONTACT: Bob Parker

PROGRESS REPORT: Advanced germplasm from five different breeding programs was evaluated for susceptibility to our major peanut diseases in the southeast. A total of 31 advanced lines plus 10 cultivars were planted in replicated field plots to evaluate white mold, TSWV, and leaf spot. The field site was fumigated prior to planting and 6 plants per plot inoculated with *S. rolfsii*. An extended-interval Bravo program was applied, but the extremely wet weather in June caused leaf spot to develop rapidly and resulted in the complete defoliation of very susceptible lines like GA-13M (rated 9 or above on Florida 1-10 scale). This no doubt affected their yield, and may have affected their reaction to white mold as well. Most entries scored in the 6-8 range on the Florida scale, but two entries from Dr. Jim Todd had ratings in the 4's, which were the best in the test. One of those lines (TD3) also had excellent resistance to white mold, as did one of Dr. Tillman's (FL6). The white mold resistance in GA-14N and TifNV-High O/L was evident, and GA-06G and Tufrunner 297 were highly susceptible, as has been seen previously. TSWV was not severe, but incidence was high enough to differentiate susceptibility of lines, with TifNV-High O/L having the least TSWV of commercial cultivars. There were some unusual pod rot symptoms observed that appeared to be Pythium pod rot. Isolations from the necrotic pods yielded cultures of *Pythium scleroteichum.* While this was probably an artifact related to the annual fumigation of this field with chloropicrin, a visual rating of the percent pods affected was made after digging. The mean severity ratings ranged from 2-40% with GA-14N having the highest among the commercial cultivars. Overall this was an excellent test to compare yield potential under reduced inputs and heavy disease presure, and some very promising germplasm was identified.