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2016

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

Final Report, 2016

DONE UNDER RESEARCH AGREEMENT-----

INSTITUTION: University of Georgia

PROJECT TITLE: Regional screening program for genetic resistance to diseases

RES. AGR. NO.: 2521RF332705

PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31, 2016

SPRI CONTACT: Joy Purvis

NPB CONTACT: Bob Parker

PROGRESS REPORT: Advanced germplasm from four different breeding programs was evaluated for susceptibility to our major peanut diseases in the southeast. A total of 32 advanced lines plus 9 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*. Significant levels of leaf spot occurred and resulted in the complete defoliation of very susceptible lines like GA-13M and Tufrunner 511 (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 5-7 range on the Florida scale, but one entry from Dr. Kim Moore had a rating of 3.5, by far the best in the test. That same line also had only 4% TSWV, while all other entries except GA-12Y were in double digits, with some reaching nearly 50%. The weather was very favorable for white mold and the resulting disease was severe in susceptible lines. Dr. Moore's line also had the highest percent of plants with no white mold (46%). Standard susceptible cultivar Georgia 06G had 100% infected plants. The current standard resistant line, GA-12Y, had one of the lower levels of disease, but was not as resistant as observed in some earlier trials. Both GA-14N and TifNV-HiOL had numerically less white mold than did GA-12Y. Some other advanced lines had good resistance to white mold, especially those from Dr. Jim Todd, but none were better than the line from Dr. Moore. With the minimal fungicide program used, Dr. Moore's line had a yield of 5389 lb/A. The closest commercial cultivars were GA-12Y (4833 lb/A) and TifNV-HiOL with 5348 lb/A. This was an excellent test to compare yield potential under reduced inputs, and some very promising germplasm was identified.