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NATIONAL PEANUT BOARD/SOUTHEAST PEANUT
RESEARCH INITIATIVE
QUARTERLY PROGRESS REPORT FOR WORK
DONE UNDER RESEARCH AGREEMENT-----

Final Report *summary*

Feb 14, 2011

INSTITUTION: University of Georgia

PROJECT TITLE: Uniform screening program for genetic resistance to peanut root knot nematode, leaf spot, TSWV and soilborne diseases

RES. AGR. NO.: 25-21-RF332-577 PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31, 2010

SPRI CONTACT: Emory Murphy NPB CONTACT: Marie Fenn

FINAL REPORT: Advanced germplasm or recent releases from four different breeding programs were evaluated for susceptibility to our major peanut diseases in the southeast. A total of 62 genotypes were planted in replicated plots in a field previously fumigated with methyl bromide. Individual plants were inoculated with *Sclerotium rolfsii* and damaging levels of disease soon developed. Results were not as uniform and definitive as in some other years, but the range of disease severity demonstrated that germplasm is available with significant resistance to this damaging disease. Some genotypes demonstrated much lower levels of infection incidence. The Virginia-type cultivar Bailey was evaluated in this test for the first time and showed a very high level of resistance with 66% of the inoculated plants having no symptoms at all at harvest. Experimental line SEQ910 was similar, but all other entries were more susceptible. Leaf spot was also evaluated, but due to the dry weather overall disease levels were lower than normally seen. However, more susceptible lines were still readily identified. Levels of TSWV were all quite low and were not evaluated. Susceptibility to CBR was evaluated in paired plots in the field either inoculated or not inoculated. With the extremely high temperatures, disease levels were low and the epidemic developed late so that there was little yield loss. Georgia Greener had the least disease of the cultivars evaluated, verifying previous reports. The root knot nematode screen was conducted in the greenhouse. Overall infestation levels were lower than some previous years, but known susceptible and known resistant genotypes clearly separated. Several breeding programs appear to have successfully incorporated a high level of nematode resistance in their experimental lines. Some differences were noted in vigor and egg production among the other lines. Other useful data were collected on the relative disease susceptibility of the most recently released commercial cultivars. With the flood of new peanut cultivars being released, this data is needed each year to enable us to update the Georgia Fungal Disease Risk Index and help growers make the best disease management decisions.