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

Final Report

Summary
April 6, 2009

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-RF332-455 PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31, 2008

SPRI CONTACT: Emory Murphy NPB CONTACT: Marie Fenn

FINAL REPORT: Advanced germplasm or recent releases from five different breeding programs were evaluated for susceptibility to our major peanut diseases in the southeast. A total of 58 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, 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. For example, on Georgia Green none of the inoculated plants had no disease, and the average disease locus was 58 cm long. With York, one of our most resistant cultivars, 21% had no disease and the average locus was only 14 cm long. Some of the advanced lines had disease levels similar to York. Large differences were also documented in leaf spot susceptibility, with Florida 1-10 ratings ranging from 2.2 – 5.6 representing a good range of susceptibilities. Levels of TSWV were generally low with the best entries having almost no symptoms, compared to the current standard Georgia Green which had over 10% incidence. Susceptibility to CBR was evaluated in the greenhouse, and again a range of susceptibilities was identified. Some very susceptible lines had only 7% retained root mass when inoculated with *C. parasiticum*, whereas other lines had no root mass reduction. Georgia Greener and GA-06G were two of the best commercial lines evaluated with 85 and 72% root mass retention, respectively. The root knot nematode screen was conducted again also and showed the excellent resistance of Tifguard, and the susceptibility of most of the other germplasm evaluated, although there were big differences in egg production on susceptible 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 is needed each year to enable us to update the Georgia Fungal Disease Risk Index and help growers make the best disease management decisions.