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Annual

NATIONAL PEANUT BOARD/SOUTHEAST PEANUT RESEARCH INITIATIVE
FINAL REPORT FOR WORK
DONE UNDER RESEARCH AGREEMENT-----
Quarter ending
December 31,2003

INSTITUTION: University of Georgia

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

RES. AGR. NO.: 25-21-RF332-507 PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31,2003
SPRI CONTACT: Emory Murphy NPB CONTACT: Stephen O'Brien

PROGRESS REPORT: Advanced germplasm from five different breeding programs was evaluated for disease susceptibility in 2003. Over 120 lines were screened in the greenhouse for resistance to peanut root knot nematode and *Cylindrocladium* black rot (CBR). Susceptibility of genotypes to root knot ranged from 1.2-4.8 on a 0-5 scale, with the only genotypes showing excellent resistance being those with known resistance genes such as Nematam. Root rot ratings from CBR ranged from 1.1-4.6 on a 1-5 scale, with some experimental lines being highly susceptible and some showing very good resistance. Additional plots in the field evaluated the susceptibility of 76 lines to white mold, tomato spotted wilt virus, and early and late leaf spot. The environment was very favorable and severe levels of disease developed. A wide range of susceptibility to stem rot was found with GA-02C and AP-3 having excellent resistance while some genotypes, primarily Virginia types, were highly susceptible. Leaf spot ratings ranged from 3.8-7.6 on the Florida 1-10 scale with Georgia Green being a 5.8. Clearly reduced inputs could be used with some of this germplasm. Symptoms caused by Tomato spotted wilt virus were also evaluated, but incidence was too low to be meaningful. In summary, some genotypes that performed well in other states were not suitable for widespread planting in the southeast. Other genotypes were very promising and will be evaluated in more detail. This information will be critical as breeders decide which germplasm to release, and it will help production specialists prescribe levels of input based on the susceptibility of each genotype.

NOTE - This research was funded for another year and will be repeated in 2004.