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2004

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

Quarter ending
Dec. 31, 2004

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-RF332-415 PROJECT LEADER: Dr. Tim Brenneman

EXPIRATION DATE: December 31, 2004
SPRI CONTACT: Emory Murphy NPB CONTACT: Stephen O'Brien

PROGRESS REPORT: Advanced germplasm from five different breeding programs was evaluated for susceptibility to our major peanut diseases in the southeast. Over 100 lines were screened in the greenhouse for resistance to peanut root knot nematode and *Cylindrocladium* black rot (CBR). Although differences were found, both of these trials had less pressure than was expected. Evaluations in the field were much more successful where severe leaf spot pressure was present and a wide range of susceptibility was observed (20-100% defoliation). This was also true for stem rot (white mold) susceptibility with some genotypes having little disease and some being severely affected (average disease site from 9-98 inches long). Sixteen cultivars were also evaluated in split plots either inoculated or not inoculated with *Rhizoctonia solani*. Significant *Rhizoctonia* limb rot occurred, and some genotypes had equal yields with or without inoculation, whereas other cultivars lost as much as 1000 lb/A. Tomato Spotted Wilt Virus was also evaluated, but disease severity was too low to be meaningful. Some lines were rated for damage from three-corner alfalfa hopper, and significant differences were found among cultivars. These data will be invaluable to breeders as they evaluate advanced germplasm, and will also be essential in the development of the Fungal Disease Risk Index which helps growers manage both foliar and soilborne diseases.