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2004
FINAL

NATIONAL PEANUT BOARD/SOUTHEAST PEANUT RESEARCH INITIATIVE
QUARTERLY PROGRESS REPORT FOR WORK DONE UNDER RESEARCH
AGREEMENT – 4th Quarter (Final)

INSTITUTION: University of Georgia

PROJECT TITLE: Development of Peanut Cultivars with Improved Water Use Efficiency
and Development of Peanut Cultivars with Resistance to the Peanut Root-
knot Nematode and TSWV

RES. AGR. NO.: 25-21-RF328-702

PROJECT LEADER: Dr. C. Corley Holbrook

EXPIRATION DATE: December 31, 2004

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NPB CONTACT: Stephen O'Brien

REPORT OF PROGRESS:

Numerous breeding lines from the peanut breeding programs for the USDA-ARS, and the University of Florida have been tested for resistance to the peanut root-knot nematode and TSWV. These lines have been evaluated in greenhouse and field trials. Breeding lines with moderated levels of resistance to both pathogens have been identified. These lines have good yield but relatively low grades. Research is ongoing to develop breeding lines with further improvements in resistances, yield, and grade. Progress in these breeding efforts can be accelerated through the use of marker assisted selection. We have developed primers and are testing these for use in conduct marker assisted selection for resistance to nematode.

Breeding lines have also been developed to attempt to improve the drought tolerance of peanut cultivars. These lines have been evaluated for yield and for physiological traits under drought stress conditions. Lines have been identified that have significantly higher yield than standard cultivars when grown under late-season drought-stress conditions.