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FINAL

We really appreciate the support of the Southern Peanut Research Initiative. As requested, we have placed below a final report for the project "Increasing the Efficiency of Pivot Irrigation Systems".

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NATIONAL PEANUT BOARD

Sincerely,
Craig Kvien

INCREASING THE EFFICIENCY OF PIVOT IRRIGATION SYSTEMS

Research Agreement # 25-21-RF324-193

Final Report to the National Peanut Board and the Georgia Peanut Commission on the Southern Peanut Research Initiative research project funded through the Certified Peanut Producer's Organizations (CPPO's) from NPB funds.

Principal Investigators:

Craig Kvien, Calvin Perry, Stuart Pocknee, George Vellidis, Mike Tucker, Dan Thomas, Kerry Harrison and Jim Hook (Univ. of GA), and cooperating growers in Screven, Cook, Colquitt and Miller counties.

Project period: Extended to 12/31/03.

Project Goal: To complete development of a new irrigation control system that will enable growers to increase pivot irrigation efficiencies through variable-rate water management.

Final Report:

To better place irrigation water where needed, when needed and at the needed rate this project has developed and has tested the effectiveness of a variable rate center pivot irrigation system at six sites in Georgia. In Screven County, Georgia the 87 acre pivot field saved 1,790,000 gallons of water. In Cook County the variable rate irrigation system saved 3,560,000 gallons per year by just controlling the end gun and last section of the 162 acre pivot. Near Arlington, GA the 30 acre pivot saved 1,680,000 gallons per year with the variable rate system. In Colquitt County 1,860,000 gallons per year were saved by using the variable rate system on a 32 acre pivot. With the variable rate system, boggy areas in a field can be watered less, while sandy areas get more, roads and waterways none and pivot overlaps can be without water overlaps. Cropping patterns in the field can be optimized, since you don't have to farm a pivot in half or quarter circles any more. The pivot covers the field at optimum speed as the controller can speed it over boggy spots and waterways and then automatically slow it down over the sandy spots. Poorly drained spots will be less boggy aiding production, tillage and spraying operations. More information on this system is available at <http://www.nespal.org/irreff>. The system is ready to be installed and, with cost-share help from the Flint River Basin Soil and Water Commission, NRCS and the Nature Conservancy, 20 additional units will be installed in this basin this coming year.

Along with the gathering of additional yield, quality and water savings data, improvements to the system continue, with a low-cost soil moisture sensor that can transmit data to the controller now under development.