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**NATIONAL PEANUT BOARD / SOUTHEAST PEANUT RESEARCH
INITIATIVE**

FINAL REPORT for WORK DONE UNDER RESEARCH AGREEMENT #26-31-
RE671-353 RF GPC CALCIUM BEASL

ENDING: 30 June 2007

INSTITUTION: University of Georgia

PROJECT TITLE: Large Seeded Runner Cultivars Response to Supplemental
Calcium

RES. AGR. NO.: 26-31-RE671-353
PROJECT LEADER: Dr. John P. Beasley, Jr.

EXPIRATION DATE: 30 JUNE 2007

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FINAL REPORT: A trial was conducted in 2006 to determine if large-seeded runner peanut cultivars had a different calcium requirement than the medium and small seeded runner cultivars. All of the calcium response data was collected on Florunner, which had a seed size of approximately 750 seed per pound. Several of the recently released cultivars have a seed size of approximately 650 seed per pound. The objective of this trial was to determine if the current calcium recommendations based on a pegging zone sample were sufficient for these larger seeded runner cultivars. The current calcium recommendation is:

- a) apply supplemental calcium as landplaster or gypsum if the pegging zone level of calcium is less than 500 pounds per acre, or
- b) if the calcium to potassium ratio (Ca:K) is less than three to one (3:1).

The concern was that the 500 lbs/A level was not sufficient for larger seeded runner peanuts, or that it would require a higher Ca:K ratio to prevent calcium deficiency symptoms.

Trials were conducted on producers' fields in Berrien, Coffee, and Turner Counties. Large (18 rows) plots of at least 500 feet in length were established at each location. Two cultivars were planted at each location. These were: Georgia Green (the standard) and C-99R (the large-seeded runner) Gypsum treatments were: none, 1X rate (about 750-800 lbs of gypsum per acre), and 2X rate (1,500-1,600 lbs/A of gypsum). A pegging zone soil sample at the three-inch depth was taken shortly after planting, mid season, and just prior to harvest to monitor calcium levels during the season.

Berrien County - The table below is yield data for the cultivar by calcium rate interaction.

Cultivar	Gypsum Rate		
	None	1X	2X
Georgia Green	3105	3365	3311
C-99R	3419	3252	3459

Coffee County - The table below is yield data for the cultivar by calcium rate interaction.

Cultivar	Gypsum Rate		
	None	1X	2X
Georgia Green	3879	3900	3769
C-99R	4137	4135	3910

Turner County - The table below is yield data for the cultivar by calcium rate interaction.

Cultivar	Gypsum Rate		
	None	1X	2X
Georgia Green	3105	3365	3311
C-99R	3419	3252	3459

The calcium levels in the soils on the farms where the trials were conducted were not low enough to trigger a significant response to calcium applications.

The table below is the percent total sound mature kernels for the cultivar by calcium rate interaction when averaged over locations.

Cultivar	Gypsum Rate		
	None	1X	2X
Georgia Green	72	72	73
C-99R	73	74	74

There was no significant response in percent TSMK to gypsum rate for the larger seeded C-99R and Georgia Green.