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

**FINAL REPORT** for WORK DONE UNDER RESEARCH AGREEMENT # 26-31-  
RE671-498 GACCP PNUT AGR MGT BEASL

INSTITUTION: University of Georgia  
PROJECT TITLE: Peanut Response to Agronomic Management  
RES. AGR. NO.: 26-31-RE671-498  
PROJECT LEADER: Dr. John P. Beasley, Jr.  
EXPIRATION DATE: 30 June 2010  
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**FINAL REPORT:** The following trials were planted in Georgia in crop year 2009 evaluating peanut response to various agronomic management factors.

- 1) **Effect of Planting Date on Cultivars**
- 2) **Irrigated and Non-Irrigated Cultivar Trial**
- 3) **Row Pattern and Seeding Rates**
- 4) **Cultivar X Row Pattern**
- 5) **Cultivars following Onion Harvest**
- 6) **Georgia-02C Maturity Evaluation**
- 7) **Cultivar X Row Pattern X Tillage**
- 8) **On-Farm Trials**

**Effect of Planting Date on Cultivars** – Four planting date trials were planted in Georgia to evaluate the response of cultivars to various planting dates. Trial locations were: Attapulugus Research and Education Center, Southwest Georgia Research and Education Center near Plains, Southeast Georgia Research and Education Center near Midville, and the Coastal Plain Experiment Station at Tifton. Planting dates at Attapulugus were: April 10, May 11, and June 10. Cultivars in this trial are: Georgia Green, Georgia Greener, Georgia-02C, Georgia-03L, Georgia-06G, Georgia-07W, Florida-07, AP-4, McCloud, York, AT 3085RO, and Tifguard. Experimental design is a split plot with planting date as the main plot and cultivar as the sub-plot. Plots are 2 rows by 40 feet in length and there are 6 replications. The trial was planted in the twin row pattern.

At the Southwest Georgia Research and Education Center near Plains in Sumter County, the following cultivars were planted on April 21, May 13, and June 3: Georgia Green, Georgia Greener, Georgia-02C, Georgia-03L, Georgia-06G, Georgia-07W, Florida-07, AP-4, McCloud, York, AT 3085RO, and Tifguard. The experimental design is a split plot

with planting date as the main plot and cultivars as the sub-plot. Plots are 2 rows by 40 feet in length and there are 5 replications. The trial was planted in the twin row pattern.

At the Southeast Georgia Research and Education Center near Midville in Burke County the following cultivars were planted on April 22 and June 1: Georgia Green, Georgia Greener, Georgia-02C, Georgia-03L, Georgia-06G, Georgia-07W, Florida-07, AP-4, McCloud, York, AT 3085RO, and Tifguard. The experimental design is a split plot with planting date as the main plot and cultivars as the sub-plot. Plots are 2 rows by 40 feet in length and there are 6 replications. The trial was planted in the twin row pattern.

At the University of Georgia's Coastal Plain Experiment Station's Ponder Farm near Ty Ty the following cultivars were planted on April 20, June 8, and June 22: Georgia Green, Georgia Greener, Georgia-02C, Georgia-03L, Georgia-06G, Georgia-07W, Florida-07, AP-4, McCloud, York, AT 3085RO, Tifguard, AT 215, and EXP 271516, an experimental line out of Dr. Charles Chen's USDA-ARS peanut breeding program. The experimental design is a split plot with planting date as the main plot and cultivars as the sub-plot. Plots were 2 rows by 40 feet in length and there were 6 replications. The trial was planted in the twin row pattern.

Stand counts (plants per 10 row-feet) were taken at a random location within each plot at approximately 30 days after planting on all planting dates. Spotted wilt virus ratings were made within a few weeks of harvest. Yield and grade data were collected at harvest.

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**Irrigated and Non-Irrigated Cultivar Trial** – Four cultivars were planted at the University of Georgia's Stripling Irrigation Research Park and were compared in an irrigated versus non-irrigated trial. The four cultivars were: Georgia Green, Georgia Greener, Georgia-06G, and Georgia-02C. The objective was to determine which cultivars responded best to non-irrigated production. The trial was planted on May 8. The experimental design was a randomized complete block. The plots were ten rows by 55 feet in length and there were 4 replications. The two center rows within the ten-row plot were harvested for yield.

The Stripling Irrigation Research Park site received approximately 25 inches of rainfall from July 1 until harvest began on September 25. Analysis of yield data indicated no interaction between cultivars and irrigation treatments. When averaged over cultivars there was no difference in yield between the non-irrigated and irrigated comparisons. In fact, the irrigated treatment yielded only 17 pounds per acre better than the non-irrigated treatment.

**Row Pattern and Seeding Rates** – Trials were initiated at the UGA Attapulgus Research and Education Center and the Southeast Georgia Research and Education Center evaluating the response of peanut to seeding rates on the twin row pattern. A trial was initiated at the Southwest Georgia Research and Education Center evaluating the response of peanut to seeding rates on both twin and single row patterns. At Attapulgus

the following cultivars were included in the trial: Georgia Green, Georgia-06G, Tifguard, Florida-07, York, Georgia-02C, C-99R, and Georganic. These cultivars were planted on the twin row pattern at the following seeding rates: 2.6, 3.1, 3.5, 4.1, and 4.4 seed per foot on each twin row. The trial was planted May 11. The experimental design was a Group Balanced Block in a split plot design with 4 replications. Plots were two rows by 40 feet in length. At the Southeast Georgia Research and Education Center the following cultivars were included in the trial: Georgia Green, Georgia-06G, AT 3085RO, and Tifguard. These cultivars were planted on the twin row pattern at the following seeding rates: 2.2, 2.6, 3.1, and 3.5 seed per foot on each twin row. The trial was planted June 1. The experimental design was a randomized complete block with 4 replications. Plots were two rows by 40 feet in length. At the Southwest Georgia Research and Education Center the following cultivars were included in the trial: Georgia-06G, Georgia-07W, C-724-19-25 (experimental line from USDA), and Exp 271516 (experimental line from USDA). These cultivars were planted on the twin row and single row patterns at the following seeding rates: 2.6, and 3.1 seed per foot on each twin row and 5.3 and 6.0 seed per foot on each single row. The experimental design was a randomized complete block with 4 replications. Plots were two rows by 40 feet in length. The trial was planted May 13. Yield, grade, and spotted wilt disease ratings were collected at all three locations.

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**Cultivar X Row Pattern** – Ten cultivars were planted on twin and single row patterns at the Darrell Williams Research Farm at the Sunbelt Expo in Colquitt County, GA. The cultivars were: Georgia Green, Georgia Greener, Georgia-03L, Georgia-06G, Georgia-07W, Florida-07, McCloud, AT 3085RO, Tifguard, and AP-4. The experimental design was a randomized complete block with 4 replications. Plots were 2 rows by 300 feet in length. The trial was planted on May 6. Seeding rate was 6 seed per foot of row on the single row pattern and 3 seed per foot of row on the twin row pattern. Yield, grade and spotted wilt disease severity ratings were collected.

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**Cultivars following Onion Harvest** – Eight cultivars were planted on the Vidalia Onion and Vegetable Research Farm in Toombs County, Georgia following onion harvest. This trial was initially targeted as a planting date trial with four cultivars with a May 15 and June 5 planting date comparison. Wet weather caused us to miss the first planting date. Instead, the trial was increased to eight cultivars with one planting on June 2<sup>nd</sup>. The objective was to determine which cultivars perform best following onions, a common practice in a 13-county area of southeast Georgia. The cultivars were: Georgia Green, Georgia Greener, AP-4, Georgia-06G, Georgia-07W, Florida-07, AT 3085RO, and Tifguard. The experimental design was a randomized complete block. Plots were two rows, 40 feet in length and there were 4 replications.

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**Georgia-02C Maturity Evaluation** – A trial was set up to determine harvest timing of Georgia-02C in order to optimize yield and grade. The trial was established at the Southeast Georgia Research and Education Center near Midville. Georgia-02C was planted on May 13. The planned harvest timing was to begin at 135 days after planting and continue in one-week intervals for a period of eight weeks. Rainfall interrupted the planned harvest interval and only five of eight harvest dates were accomplished. The harvest rows were determined at random and there were four replications per harvest. The plots were two rows by 300 feet in length. Maximum yield and the highest percentage of pods in the brown and black categories on the Hull-Scrape Maturity Profile Chart occurred at 167 days after planting.

**Cultivar X Row Pattern X Tillage** – Ten cultivars and two advanced breeding lines from USDA were planted on twin and single row patterns and in conventional and strip tillage on May 14 at the University of Georgia's Coastal Plain Experiment Station's RDC Pivot. The experimental design was a split-split plot with tillage as the main block, cultivar as the sub-plot, and row pattern nested within cultivar. Plots were 2 rows by 40 feet long and there are 4 replications. The cultivars were: Georgia Green, Georgia Greener, Georgia-02C, Georgia-06G, Georgia-07W, Florida-07, McCloud, AP-4, AT 215, and Tifguard. The two advanced breeding lines were: Exp 27-1516 from Dr. Charles Chen's program at the National Peanut Research Lab in Dawson and C-724-1925 from Dr. Corley Holbrook's program in Tifton. Data collected include tomato spotted wilt virus ratings, yield, and grade.

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**On-Farm Trials** – As a part of this overall project, there were nine on-farm trials scattered across the state of Georgia in cooperation with county Extension agents. There were five (5) irrigated cultivar trials. These trials are in Berrien, Coffee, Early, Irwin, and Jefferson Counties. There were three (3) non-irrigated cultivar trials in the following counties: Jeff Davis, Jefferson, and Thomas Counties. All of these trials are large plots with multiple replications. Plot size was dictated by size of harvest equipment (4 or 6-row combine) and length of field. Another trial was established in Tift County on a field with a known history of peanut root-knot nematode (*Meloidogyne arenaria*). In that trial six (6) cultivars were planted in two-row plots, approximately 800 feet in length with 4 replications. The cultivars in this trial were: Tifguard, Georgia Greener, Georgia-06G, Georgia-07W, Florida-07, and AP-4.

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