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NATIONAL PEANUT BOARD / SOUTHEAST PEANUT RESEARCH INITIATIVE

FINAL REPORT for WORK DONE UNDER RESEARCH AGREEMENT # 26-31-RE671-575 GACCP PNUT MATRITY DET BEASL

INSTITUTION: University of Georgia

PROJECT TITLE: Implementation of the Peanut FARM website to deliver irrigation scheduling, improved methods of peanut maturity determination and remote sensing of field level harvest sequencing to peanut growers

RES. AGR. NO.: 26-31-RE671-575

PROJECT LEADER: Dr. John P. Beasley, Jr.

EXPIRATION DATE: 31 December 2014

SPRI CONTACT: Jamison Cruce

NPB CONTACT: Bob Parker

FINAL REPORT: The following trial was planted in Georgia in crop year 2013 evaluating improved methods for peanut maturity determination.

Planting Date X Harvest Date Trial

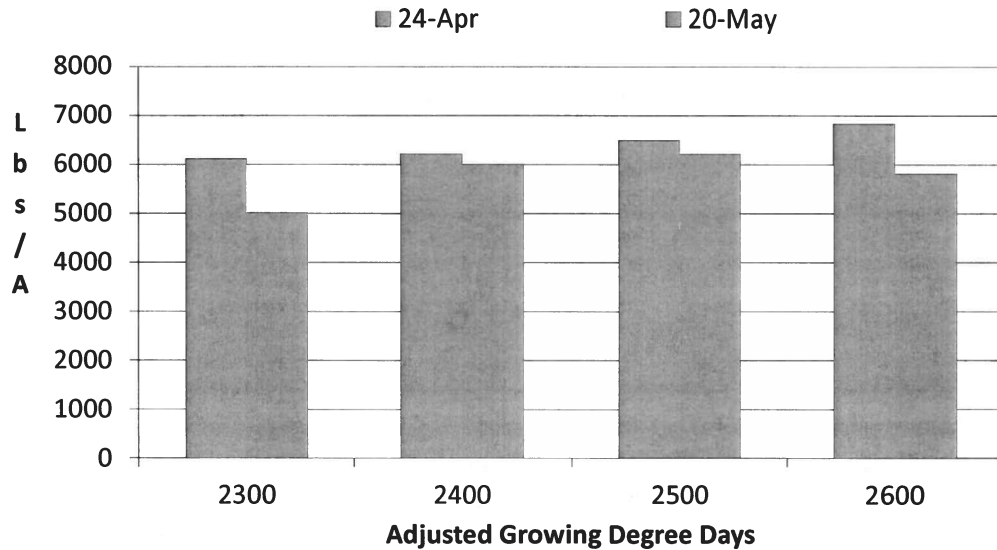
A trial was established to evaluate an adjusted Growing Degree Day (aGDD) model for peanut to improve the accuracy of maturity determination. The model was developed by Dr. Diane Rowland (currently peanut physiologist at the University of Florida) and Dr. Wilson Faircloth (currently with Syngenta) when they were research scientists with the USDA-ARS National Peanut Research Lab. The model is now being run as a part of the "Peanut FARM" web site.

This trial was established to evaluate the response of Georgia-06G, Georgia-09B, Georgia-12Y, and FloRun '107' cultivars to various harvest dates based on the adjusted Growing Degree Day model discussed above. There were two planting dates for each cultivar, April 24 and May 20. The four harvest dates were based on the following aGDD accumulations – 2,300, 2,400, 2,500, and 2,600. Based on earlier research the optimal harvest time, based on maximized yield and grade, is approximately 2,500 aGDD. The trial was blocked by planting date and the four harvest dates by four cultivars were established as a 2 X 2 factorial within each planting date. Individual plots were two rows (single row pattern) by 40 feet in length and there were 4 replications. Data to be collected include aGDD, Hull-Scrape Profile, yield, and grade factors.

Results – Data analysis indicated a three-way interaction between planting date, cultivar and harvest timing. The table below provides the yield data.

Cultivar	Planting Date = April 24				Planting Date = May 20			
	Adjusted Growing Degree Days				Adjusted Growing Degree Days			
	2300	2400	2500	2600	2300	2400	2500	2600
Georgia-06G	6128	6221	6504	6844	5026	6013	6220	5825
Georgia-09B	5915	6788	6606	6936	5674	5561	6001	5683
Georgia-12Y	5758	6722	7437	7267	5416	5544	5687	6297
FloRun '107'	5499	5517	6025	6439	5283	5694	5867	5455

Georgia-06G Response to Planting Date and Harvest Timing



The data indicate that for the predominant cultivar, Georgia-06G, the adjusted growing degree days target of 2500 is right on target for maximizing yield. The April planting date seemed to trigger a continual increase in yield even after reaching 2500 aGDD's. When planting as late as May 20, the aGDD accumulation wanes at 2600 level indicating it was getting too cool to mature the crop when planting that late.