

341
FL 75
1223

RESEARCHER: Barry Tillman

INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
AGRICULTURAL EXPERIMENT STATION

¹Check-OFF Funds – Final Report

Annual report + summary

UNIT: North Florida REC/ Agronomy

DATE: 11/18/2013

Breeding Nematode Resistant Peanut Cultivars and On-Farm Testing

OBJECTIVES: The following objectives are part of the on-going University of Florida-IFAS peanut breeding program and overall are the same as in recent years.

1. Identify nematode resistant genotypes with potential as cultivars.
2. Conduct on-farm demonstration/verification tests of variety performance.

BRIEF PLAN OF WORK:

1. Identify nematode resistant genotypes with potential as cultivars.
Breeding work to develop nematode resistant peanut cultivars will continue in 2013 and will include crossing, single plant selection, yield testing and genotypic and phenotypic screening for nematode resistance. Screening will include a cooperative disease nursery conducted in Georgia and funded by the National Peanut Board and genetic screening with the two nematode markers 197/909 and GM5765. We are unsure where this work will be done in 2013.
2. Conduct on-farm demonstration/verification tests of variety performance
We propose to continue conducting on-farm variety demonstration tests in Jackson, Columbia, Hamilton and Washington counties in Florida. The cultivars will likely include Florida-07, Georgia-06G, Georgia-07W, Georgia Greener, and Tifguard depending on seed availability and seed costs. Results from these tests help to confirm results from small plot tests and provide additional insight into variety performance.

Report of Accomplishments

1. In 2013, seven crosses were made using Tifguard as a parent. In addition, nine F₁, 313 F₂ plots, and 180 F₃ plots and 50 F₄ plots were grown which contain Tifguard or another nematode resistant parent in the pedigree. The F₄ lines are approaching the yield testing stage in 2014.
2. In 2013, three on-farm tests were conducted with the cooperation of county agents in Hamilton (Mr. Keith Wynn), Columbia (Mr. Mace Bauer), and Jackson (Mr. Josh Thompson) counties. A fourth location was in Washington County was not planted due to excessive rainfall in that area. Results are shown in Table 1 and show the yield performance of some new cultivars. Additionally, results from the previous two

season (2011 and 2012) are shown in Figure 1. Results indicate that the yield potential of new peanut varieties is exceptional. With the exception of Columbia County in 2013 where severe disease limited yields, the average yields were between 4000 and 6000 pounds per acre.

Table 1. Results from on-farm peanut variety tests in 2013 in three Florida Counties.

Cultivar	Columbia	Hamilton	Jackson	Average
	----- Yield (lbs./A) -----			
Georgia-06G	3033	5889	6303	5075
FloRun™ '107'	2550	5367	6203	4707
TUFRunner™ '727'	2369	5333	5725	4476
Florida-07	1970	5482	Not tested	

On-Farm Tests 2011-12

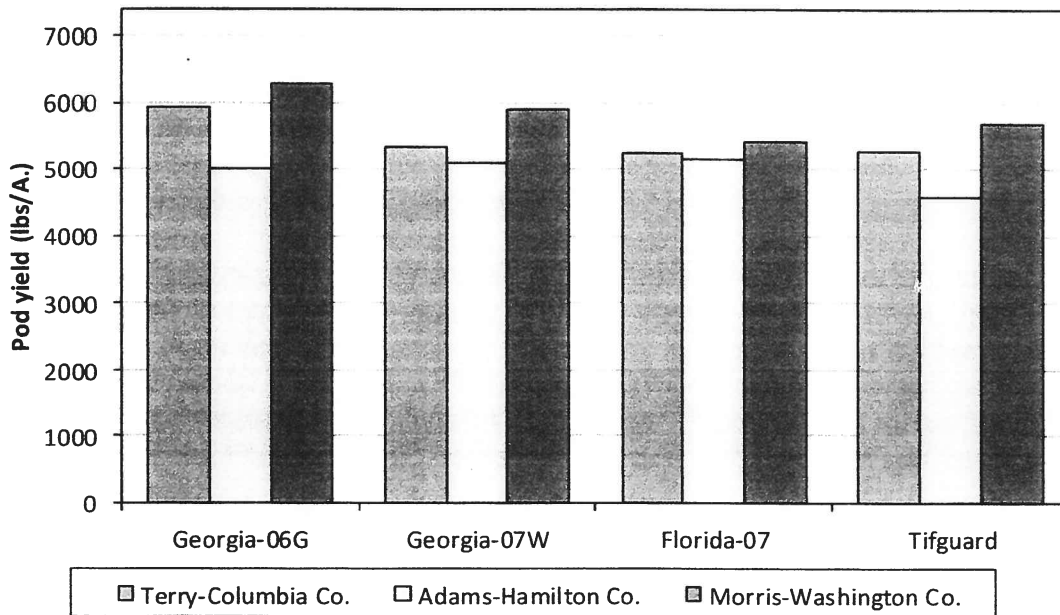


Figure 1. Results from 2011-2012 on-farm peanut variety tests in three Florida counties.