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NATIONAL PEANUT BOARD / SOUTHEAST PEANUT RESEARCH INITIATIVE

FINAL REPORT for WORK DONE UNDER RESEARCH AGREEMENT # 26-31-RE671-551 GACCP PNUT CULT RESP BEASL

INSTITUTION: University of Georgia
PROJECT TITLE: Peanut Cultivar Response to Insect Damage
RES. AGR. NO.: 26-31-RE671-551
PROJECT LEADER: Dr. John P. Beasley, Jr.
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SPRI CONTACT: Jamison Cruce / Emory Murphy
NPB CONTACT: Bob Parker

EXECUTIVE SUMMARY – There is limited data on the currently available runner-type peanut cultivars’ response to foliage feeding and soil-borne insects. A trial was established in 2012 at 5 locations (3 irrigated and 2 non-irrigated) in the Southeast (Marianna, FL; Headland, AL; Tifton, GA) to determine how the currently available cultivars respond to different insect species. As can happen when testing peanut against a biological system, you can have years in which an experiment will not live up to expectations due to the lack of one or more factors. In this case, there was only one location (irrigated trial in Georgia). The cultivars were planted in such a way that up to three insecticide treatments could be applied and compared to an untreated check. At the irrigation location in Georgia there was a late season population of fall armyworm that reached treatable levels. The other four locations ended up simply being a comparison of cultivars under either an irrigation or rain fed conditions. Weather conditions for the non-irrigated trial in Georgia prevented that trial from being harvested for yield. For the irrigated trial in Georgia, two different insecticides, Belt and Dimilin, were compared to an untreated check. Both insecticides provided 100% control of fall armyworm. The following cultivars had the highest yield at the different locations: Marianna, FL (irrigated) – TUFRunner ‘727’; Headland, AL (irrigated) – Georgia-06G; Headland (non-irrigated) – TUFRunner ‘727’; Tifton (irrigated) – Georgia-06G.

FINAL REPORT: The following trials were planted in Georgia, Alabama, and Florida in crop year 2012 evaluating peanut cultivar response to insect infestation and damage.

Trials were established at the University of Georgia’s Ponder Research Farm in Tift County, north of Ty Ty, GA; the ABAC Farm just north of Tifton, GA; the North Florida Research and Education Center near Marianna, FL; and the Wiregrass Research and

Extension Center at Headland, AL to evaluate peanut cultivar response to population levels and damage from foliage feeding and/or pod feeding insect species.

Multiple cultivars were planted at each of the locations. There was an irrigated and non-irrigated site at the Wiregrass Research Center in Alabama. The Ponder Farm near Ty Ty, GA was an irrigated site and the ABAC Farm near Tifton, GA was non-irrigated. The Florida trial is irrigated. The plots at each location were two rows spaced 36 inches apart in the single row pattern and 40 feet in length. The experimental design at each location was a split plot with cultivar as the main plot and insecticide treatment as the sub-plot. Each location had four replications of treatments. There were four sub-plots within each cultivar, which allows for an untreated check compared to three insecticide treatments in the event of an insect outbreak.

Cultivars planted at each location were:

Ponder Farm (GA) irrigated – Georgia-06G, Georgia-07W, Georgia-09B, Georgia Greener, Florida-07, Tifguard

ABAC Farm (GA) non-irrigated - Georgia-06G, Georgia-07W, Georgia-09B, Georgia Greener, Florida-07, Tifguard

Marianna (FL) irrigated – Florida-07, FloRun ‘107’, TUFRunner ‘727’, Georgia-06G, Georgia-09B, Tifguard

Headland (AL) irrigated and non-irrigated - Florida-07, FloRun ‘107’, TUFRunner ‘727’, Georgia-06G, Georgia-07W, Georgia-09B, Georgia Greener, Tifguard

Plots were monitored season long for foliage feeding and pod feeding insect populations. When treatment thresholds were met, insecticide treatments were applied and damage and insect control assessed.

RESULTS - As can happen when establishing trials for evaluation of a biotic type problem that may or may not occur, the 2012 growing season was a phenomenal one in regards to yield potential but with very minimal problems in regards to insect pressure. In fact, there were not enough insect problems or populations to trigger any insect damage, cultivar response for damage or injury, or to apply insecticide treatments at four of the five locations. Four of the eight-row plots were harvested for cultivar yield data at those locations. That data is in the table below. The only location that had any insect population high enough to trigger an insecticide application was the irrigated site at Tifton. Late in the season there was a population of fall armyworm that reached the economic threshold for triggering an insecticide application. The following insecticide applications were made: Belt at 3 oz/acre and Dimilin at 4 oz/acre. Three days following insecticide application there was 100% control of fall armyworm in both insecticide treatments while the population remained at or near 4 larvae per row-foot. Statistical analysis of the yield data indicated the insect population occurred too late in the season to make a difference in yield with there being no difference in yield between the untreated check and the two insecticide applications.

The table below has the yield data for the insecticide treatments for the insecticide treatments for the irrigated Tifton location.

Insecticide Treatment	Yield (lbs/acre)
Utreated Check	6248
Belt @ 3 oz/acre	6386
Dimilin @ 4 oz/acre	6425
LSD (0.05)	NS

The table below is the yield for each cultivar at the different locations, with the exception of the non-irrigated trial at Tifton which was not harvested for yield due to inclement weather at harvest.

Cultivar	Marianna	Headland	Headland	Tifton
	Irrigated	Irrigated	Non-Irr.	Irrigated
Florida-07	6251	5113	5002	6492
FloRun '107'	5566	5252	4608	
TUFRunner '727'	6357	4928	5151	
Georgia-06G	6076	5439	4630	6567
Georgia-07W		5075	4715	6282
Georgia-09B	5912	4837	4363	6184
Georgia Greener		5097	4335	6504
Tifguard	5946	5088	4756	6090
LSD (0.05)	615	391	419	528