

TITLE:

Pod yields of peanut from cultivar trials conducted in Gaines County Texas, 2011.

AUTHORS:

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MATERIALS AND METHODS:

Plot sizes: Small plot trial #1: 2-rows by 10 feet, with six replications
 Small plot trial #2: 2-rows by 40 feet, with four replications

Genotypes: ACI-149, Flavorruner 458, Georgia 09-B, McCloud, Red River Runner,
 Tamnut OL06, Tamrun OL02, Tamrun OL07, Tamrun OL11, TX-PR-2,
 TX-1304, TX-1816 and/or TX-1821

RESULTS AND DISCUSSION:

Harsh environmental conditions, negatively affected yield peanut yield potential across the state. There were a total of 105,000 planted acres with 97,000 acres harvested. The estimated state yield average was well below normal at 2,400 lb/A. Production issues such as declining irrigation capacity, the inability to retain humidity within the canopy and increased salinity lead to a late crop with delayed flowering, pegging and pod fill. High soil temperatures resulted in the abortion of pegs, thus reducing pod development. Differences in yield potential at the two small plot trials conducted in Gaines County were clearly influenced by irrigation capacity.

Small plot trial #1: Under lower irrigation capacity differences in the cultivars and breeding lines evaluated were observed (Table 1). Yields were greatest for the breeding line TX-1304 2836 lb/A compared to Flavorruner 458 (1928 lb/A). Yields for Tamrun OL07 were 1916 lb/A; whereas, yields for new cultivars ACI-149, Red River Runner and Tamrun OL11 (which was previously tested as TX-5308) were 2147, 2038 and 1953 lb/A. Due to the late pod set and maturity grades were relatively low <70% (data not shown).

Small plot trial #2: Yields increased by approximately 2340 lb/A in a similar trial where the irrigation capacity was much improved. In this trial, yields ranged from 2143 to 4813 (Table 1). In general, all runner type cultivars and breeding lines yielded more than Tamnut OL06. Yields were greatest for Red River Runner, TX-1304, ACI-149, Tamrun OL07 and Tamrun OL11. Differences in grade were also observed among entries (data not shown). The initial objective of this trial was to evaluate peanut cultivar response to Verticillium wilt and pod rot; however, very little disease was observed, due primarily to the hot, dry conditions.

Table 1. Yield performance of commercially available peanut cultivars and advanced breeding lines in two field trials conducted in Gaines County TX, 2011*

| Cultivar/Breeding line | Trial #1 | Trial #2 |
|-------------------------------|-----------------|-----------------|
| ACI-149 | 2147 b | 4048 a |
| Flavor Runner 458 | 1928 bc | 3829 ab |
| Georgia-09B | 1167 de | 3732 abc |
| McCloud | 1815 bc | 3836 ab |
| Red River Runner | 2038 bc | 4177 a |
| Tamnut OL06 | - - - | 2311 d |
| Tamrun OL02 | - - - | 3688 abc |
| Tamrun OL07 | 1916 bc | 3736 abc |
| Tamrun OL11 | 1953 bc | 3869 ab |
| TX-PR2** | 1563 cd | 3792 abc |
| TX-061816** | 813 e | 3223 c |
| TX-061821** | 1153 de | 3407 bc |
| TX-1304** | 2836 a | 4114 a |

* Means within a column followed by the same letter are not different according to Fisher's protected LSD (p-value =0.05). ** Represents advanced breeding lines.

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