

## **Evaluation of a Drought Tolerant, High Oleic, Disease Resistant Runner Population**

**J. CHAGOYA\***, Texas A&M AgriLife Research, Lubbock, TX 79403; R. KULKARNI, Texas Tech University, Lubbock, TX 79409; M. BARING, Texas A&M AgriLife Research, College Station, TX 77843; J. CASON and C. SIMPSON, Texas A&M AgriLife Research, Stephenville, TX 79401; and M. BUROW, Texas A&M AgriLife Research, Lubbock, TX 79403 and Texas Tech University, Lubbock, TX 79409.

A population was developed from a cross between a drought tolerant minicore accession and a disease resistant, high oleic breeding line. The population was evaluated as  $F_2$  single plants under drought stress in the field in 2013, and with molecular markers for drought tolerance, nematode resistance, and the high oleic trait. The population was then grown in replicated drought tests as  $F_{2:4}$ ,  $F_{2:5}$ , and  $F_{2:6}$  breeding lines in 2015, 2016, and 2017, respectively. Many breeding lines consistently out-yielded check varieties across years. Additionally, selected  $F_{2:6}$  breeding lines were grown in a separate drought test, an irrigated test, and a Sclerotinia blight test in 2017. Some breeding lines out-yielded check varieties under irrigation; however, no statistically significant difference was observed among selected genotypes for yield under drought. Some breeding lines showed moderate resistance to Sclerotinia. Single plant selections have been made from these lines utilizing marker-assisted selection for future evaluation. Selections from these lines have potential for profitable peanut production under reduced irrigation.