

## **Field Measurements, Yield, and Grade of the U.S. Minicore under Water Deficit Stress.**

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The U.S. minicore collection was grown in replicated trials under water limiting conditions in Virginia, Oklahoma, and Texas in 2017, and in Virginia in 2018. Data on grade were taken in TX in 2017, and on 100 seed weight in TX and OK. Data collected during the growing season included flower count, SPAD chlorophyll meter reading (SCMR), normalized difference vegetation index (NDVI), canopy temperature, leaf closure rating, wilting rating, plant height and plant width. Pod yield was measured after harvest. Additional data on harvest index and ground penetrating radar were taken in 2018 and 2019. Significant differences were observed among genotypes for all traits measured. Many minicore accessions had consistent phenotypic responses across environments, and significant correlations among traits across locations were observed. Accessions with high yield, grade, and 100 seed weight were identified. Stepwise regression models to explain yield based on ground-based measurements were developed.