

## IDT7-111 | Elasticity of drought tolerance among Indian peanut cultivars during rainy season

Singh A.L.<sup>1\*</sup>, Zala P.V.<sup>1</sup>, Kalariya K.A.<sup>1</sup>, Chakraborty K.<sup>1</sup>, Patel C.B.<sup>1</sup>, V Chaudhari<sup>1</sup>

ICAR-Directorate of Groundnut Research, PB 5, Junagadh-362 001, India  
\*E-mail: alsingh16@gmail.com

Peanut is grown mostly under rain fed conditions in India. By now, India has about 200 cultivars of peanuts, but hardly 40 are under cultivation and most of these have not been tested for drought. Ninety six peanut cultivars were evaluated for their elasticity for drought tolerance under various conditions in two experiments, each conducted for two consecutive years during *Kharif* season, and the promising ones were identified. First, 60 cultivars were grown under protective irrigation (P) and rain-fed (RF) conditions and compared for physiological and yield attributes. In the second experiment, 36 cultivars were grown under P, RF as well as mid-season drought (MSD, 40-70 DAS), and late season drought (LSD, 70-90 DAS). The RF crops faced sufficient drought and hence three to four irri-

gations were provided in the P crop. The study reveals several interesting results. LSD was the most detrimental. Though varietal differences were noticed, drought delayed flowering and maturity, causing reduction in flowers, pods and yield, but the SCMR increased. The cultivars with early flowering, high SCMR, high yield, high HI, and early maturity escaped LSD and were highly suitable for RF conditions. Among various botanical groups, Spanish bunch was more suitable with desirable traits compared to Virginia bunch and runner, and Valencia. The cultivars Kadiri 7, GG 20, GG 16, HNG 123, RG 510, RG 578, ICGS 5, JGN 23, AK 265, AK 159 were more suited to RFH however under MSD, Pratap 1, GJG 9, JL 501 RG 425, RG 510, RG 578 and HNG 123 were promising.

## IDT7-112 | Wheat pre breeding for drought prone environments

Sukhwinder Singh<sup>1\*</sup>, Prashant Vikram<sup>1</sup>, Carolina Paola Sansaloni<sup>1</sup>, Kevin Pixley<sup>1</sup>

<sup>1</sup>International Maize and Wheat Improvement Center, México  
\* E-mail: suk.singh@cgiar.org

Landraces, wild relatives and other traditional cultivars represent an important reservoir for improvement of wheat varieties targeting rain-fed ecosystems of the world. However, considering the challenges in handling GeneBank resources for practical purposes, a systematic and strategic approach is required. CIMMYT's Seeds of discovery project has initiated efforts towards large-scale characterization of wheat GeneBank (WGB) accessions. Till date 40% of the CIMMYT's WGB has been genotyping-by-sequencing. Phenotypically, approximately 100K WGB accessions have been characterized for one or the other traits. These efforts were followed by systematic and strategic mobilization of WGB to the breeding pipelines. So far, over 1000 exotics have been mobilized to the breeding pipelines after a

thorough evaluation of the segregating pre-breeding populations under drought stress. In the first year evaluation trial, better performing pre-breeding lines have been identified under drought stress. In addition, minor haplotypes were found on chromosome 4A using GWAS analysis of the pre-breeding population (1000 lines) which were contributed by exotics. Pre-breeding germplasm is shared with partners in South Asia, Africa and Americas for thorough evaluation, thereby, ensuring strategic support to drought breeding through deploying GeneBank resources. Better performing lines have also been identified based on multi-location evaluation. The ongoing CIMMYT's wheat pre-breeding efforts need to be scaled up for leveraging resource and deliver significant impact at the farmer fields.