Screening for intra and inter specific variability for salinity tolerance in Pigeonpea (*Cajanus cajan*) and its related wild species

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Abstract

Pigeonpea is one of major legume crops grown in the semi arid tropics, particularly in India. Its high sensitivity to salinity poses a major constraint to crop production in certain areas. Salinity is an ever-increasing abiotic stress to the cultivated land, which affects plant growth, development and yield. Here, we have assessed the morphological and physiological variation in pigeonpea for salinity tolerance in 300 genotypes, including the mini core collection of ICRISAT, wild accession and landraces from putatively saline prone areas worldwide.

There was a large range of variation in salinity susceptibility index (SSI) and the percent relative reduction (RR %) in both cultivated and wild accessions .The amount of Na^+accumulation in shoot showed that more tolerant cultivated material accumulated less Na in shoot. Such relation was not true for wild species. Wild species *C. acutifolius*, *C. cajanifolius* and *C. lineata* are mostly sensitive, whereas *C.platycarpus*, *C.scarabaeoides* and *C. sericea* provided good sources of tolerance. It was interesting to notice that *C. scarabaeoides* also provided a large range of sensitive materials. The minicore collection of pigeonpea also provided a large range of variation for salinity tolerance.