

[P2] Farming System

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 2 (Poster) (Farming System)

12:15 PM - 1:00 PM

[P2-21] *In Vitro* Screening and Morphological Trait Assisted Selection for Salinity Tolerance in Wheat Genotypes at Seedling Stage

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Salinity is the primary threat to wheat production in the world. Genetic diversity is a pre-requisite to creating new varieties for salt tolerance. Therefore, this experiment was operated to evaluate the level of genetic diversity among 44 (22 Bangladeshi and 22 exotic) wheat genotypes for salinity tolerance at seedling stage in Hydroponic culture. All the genotypes were examined at 12 dS/m and 15 dS/m NaCl stress. ESWYT accession P-37 is the most salts tolerant at 12dS/m NaCl stress, whereas BAW accession 1262 and BAW accession 1284 are the most salts tolerant at 15dS/m NaCl stress. High heritability and positive phenotypic-genotypic correlations suggested that all the 6 morphological trait are associated with salt tolerance and could be used as selection criteria. In another experiments, we studied the in vitro response of three highly regenerative wheat genotypes viz., BARI Gom-27, BARI Gom-31 and BARI Gom-32 for salt tolerance selection. Callus was initiated in MS medium with 3 mg/l 2,4-D and different concentration of NaCl (0, 9, 12 and 15 dS/m) were added with the medium to create salt stress. Among the three genotypes studied BARI Gom-27 was significantly superior for callus induction with 41.2 per cent. When the callus for genotypes were transferred to regeneration media in the same level of NaCl stress highest level of regeneration was showed in BARI Gom-27 (51.6 per cent). The genotypes identified as salt-tolerant in this study may be used as parents to incorporate salt tolerance in the future wheat breeding program.