

Exploitation of Variability for Salinity Tolerance in Maize Hybrids (Zea Mays L.) at Early Growth Stage

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Abstract : Salinity is extremely serious problem that has a drastic effect on maize crop, environment and causes economic losses of country. An advance technique to overcome salinity is to develop salt tolerant geno types which require screening of huge germplasm to start a breeding program. Therefore, present study was undertaken to screen out 25 maize hybrids of different origin for salinity tolerance at seedling stage under three levels of salt stress 250 and 300 mM NaCl including one control. The existence of variation for tolerance to enhanced NaCl salinity levels at seedling stage in maize proved that hybrids had differing ability to grow under saline environment and potential variability within specie. Almost all the twenty five maize hybrids behaved varyingly in response to different salinity levels. However, the maize hybrids H6, H13, H21, H23 and H24 expressed better performance under salt stress in terms of all six characters and proved to be as highly tolerant while H22, H17 H20, H18, H4, H9, and H8 were identified as moderately tolerant. Hybrids H14, H5, H11 and H3 H12, H2, were expressed as most sensitive to salinity suggesting that screening is an effective tool to exploit genetic variation among maize hybrids and salt tolerance in maize can be enhanced through selection and breeding procedure.

Keywords : salinity, hybrids, maize, variation

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