

## **SCREENING OF COWPEA (*Vigna Unguiculata* (L.) WALP.) GERMPLASM FOR SALINITY TOLERANCE**

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### **Executive Summary**

Cowpea is an important food and fodder legumes in the arid and semi-arid tropics of the world. Soil salinity adversely affect the seed germination, which ultimately reduces the production. A little is known about the salinity tolerance of cowpea in Bangladesh. Therefore, the present study was carried out to screen the cowpea germplasm and identify the salinity tolerant genotypes. Initially, an experiment with five salinity levels (0, 50, 100, 200, and 250 mM of NaCl) was conducted and the result showed that that 200 mM of NaCl concentration could be a sensible salinity stress to assess the salinity tolerance of cowpea genotypes. Afterwards, 29 cowpea genotypes were evaluated under 200 mM NaCl concentration. A significant variation was found for six parameters, including germination without stress (GC), germination with 100 mM of NaCl (GS), absolute decrease (AD), inhibition index (II), relative salt tolerance (RST) and salt tolerance index (STI) in responses to salinity stress among the cowpea genotypes. The results revealed that salinity stress significantly reduced the germination percentage in cowpea. A total of seven cowpea genotypes (G4, G9, G12, G15, G26, G32 and G27) were found to be salinity tolerant at germination stage. Furthermore, these seven genotypes were clustered together in the same cluster and they had the highest RST and STI under salinity stress. Moreover, the tolerant genotypes would valuable for cultivating in salinity prone areas and for developing salinity tolerant cultivars. Nonetheless, further research is required at vegetative and reproductive stages.

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