Wheat, being a staple food for many, faces a major challenge in the form of salinity stress, which hinders its production globally. This study focused on the genetic improvement of wheat for salinity tolerance using mutations. Seven wheat accessions, including the original variety Sakha 8 and six M5 derived mutants, were evaluated for their salinity tolerance. Mutants 1, 2, 3, and 5 exhibited remarkable tolerance, while other genotypes showed good tolerance as well. These promising genotypes demonstrated high genetic stability, displaying desirable agro-morphological and physiological traits related to salinity tolerance. The genetic advance values, although low, indicated the success of mutation breeding in achieving relative salinity tolerance. Molecular marker analysis using ISSR primers revealed significant genetic diversity among the six mutants and the original variety. The high degree of polymorphism (93.06%) confirmed the distinct genetic profiles of the mutants. Overall, the study highlighted the potential of mutation breeding for developing wheat genotypes with enhanced salinity tolerance.

Summarized by © lakhasly.com