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Performance of chlorophyll fluorescence to drought stress tolerance in different constructs of transgenic maize

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Drought is a major environmental factor that harshly lowers plant production worldwide. Globally, maize (*Zea mays* L.) is a major crop seriously affected by drought. Previously, we cloned a transcription factor ABP9 from maize that its overexpression in Arabidopsis confers tolerance to multiple abiotic stresses including drought. To examine its function transgenic maize plants *ABP9* were generated. In this research, we evaluated the performance of the transgenic maize plants of the four constructs of ABP9 under the control of different promoters, namely Pabp9-ABP9.1A, Pubi-ABP9.1B, Pubi-ABP9.2 and Pubi-ABP9-3xFLAG under both drought at vegetative and reproductive stages and well watered conditions in the field and identified several transgenic events showed high level of tolerance to drought stress. This research confirms that those transgenic maize events (201, 206, 212 and 214 of Pabp9-ABP9.1A), (604, 606, 611, 612 616 and 617 of Pubi-ABP9.1B), (702, 705, 713, 714 and 717of Pubi-ABP9.2) and (809 and 815) Pubi-ABP9-3xFLAG acquired higher chlorophyll fluorescence is key parameter for drought tolerance at vegetative stages compared to the non-transgenic controls in field. Moreover, this investigation will serve as a preliminary study for chlorophyll fluorescence parameters in order to understand the genetic and physiological background of *ABP9* to drought stress tolerance in transgenic maize.

Biography

Javed Hussain Umrani is working as a Teaching Assistant at Sindh Agriculture University, Tandojam, Pakistan and PhD scholar at the Biotechnology Research Institute (BRI), Chinese Academy of Agricultural Sciences, Beijing, China. He has published papers in reputed journals.

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