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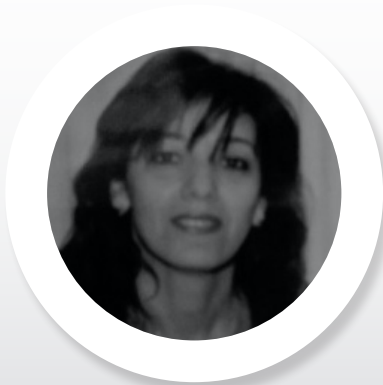
## Evaluation of drought tolerance indices and their relationship with yield performance of durum wheat under different levels of water stress

Drought is a global propagation problem with negative effects on durum wheat production in rainfed ecosystems. Therefore, adequate and effective selection criteria are needed to help develop new varieties that are better adapted to an unpredictable climate. Several drought tolerance indices based on mathematical relationships between yield under irrigated conditions and drought have been proposed to characterize, detect and evaluate the response of population in stressed and unstressed environments. To evaluate the effectiveness of several indices for the identification of durum wheat genotypes combining drought tolerance and high yield potential, the drought indices stress susceptibility index (SSI) and stress tolerance index (STI) used in plant breeding were calculated based on the combination between ( $Y_s$ ) and ( $Y_p$ ) under two contrasting environments (stressed and unstressed). A durum wheat population of 249 lines, selected for their wide variability in responses to water stress and grain yield, were grown in different contrasting environments (irrigated and rainfed) during two growing seasons. Principal components analysis showed associations between drought tolerance indices and grain yield, most of them caused by differences between environments. The results indicated that there was a positive and significant correlation between ( $Y_p$ ), ( $Y_s$ ) and (STI). The SSI index showed a negative correlation with the yield ( $Y_s$ ) under stress environment. These indices can be considered as suitable criteria for the selection of drought-tolerant and high-yielding genotypes under moderate stress in a Mediterranean environment.

### Biography

Chafia Larouk holds a diploma of state ingenerate in plant ecology at the age of 24 years. She carried out advanced training and training in the field of Plant Physiology and Biotechnology, in durum wheat lab markers assisted (experimentation in the field and laboratory) at the ICARDA, International Center for Agricultural Research in the Dry Areas, Aleppo Syria, after she pursued her studies in genetic improvement, Plant and Environment (stress abiotic), for obtaining her Master's degree in the University of Constantine with collaboration ICARDA, and now a Ph.D. student.

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