

Assessment of Drought Tolerance Maize Hybrids at Grain Growth Stage in Mediterranean Area

Authors : Ayman El Sabagh, Celaledin Barutçular, Hirofumi Saneoka

Abstract : Drought is one of the most serious problems posing a grave threat to cereals production including maize. Maize improvement in drought-stress tolerance poses a great challenge as the global need for food and bio-energy increases. Thus, the current study was planned to explore the variations and determine the performance of target traits of maize hybrids at grain growth stage under drought conditions during 2014 under Adana, Mediterranean climate conditions, Turkey. Maize hybrids (Sancia, Indaco, 71May69, Aaccel, Calgary, 70May82, 72May80) were evaluated under (irrigated and water stress). Results revealed that, grain yield and yield traits had a negative effects because of water stress conditions compared with the normal irrigation. As well as, based on the result under normal irrigation, the maximum biological yield and harvest index were recorded. According to the differences among hybrids were found that, significant differences were observed among hybrids with respect to yield and yield traits under current research. Based on the results, grain weight had more effect on grain yield than grain number during grain filling growth stage under water stress conditions. In this concern, according to low drought susceptibility index (less grain yield losses), the hybrid (Indaco) was more stable in grain number and grain weight. Consequently, it may be concluded that this hybrid would be recommended for use in the future breeding programs for production of drought tolerant hybrids.

Keywords : drought susceptibility index, grain growth, grain yield, maize, water stress

Conference Title : ICAHS 2015 : International Conference on Agricultural and Horticultural Sciences

Conference Location : Istanbul, Türkiye

Conference Dates : September 28-29, 2015