عنوان مقاله:

Estimation of Combining Ability and Gene Action in Maize Using Line × Tester Method under Three Irrigation Regimes

محل انتشار:

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خلاصه مقاله:

This study was conducted to estimate combining ability, gene action and proportionalcontribution of cross components in some maize genotypes under different irrigation conditions.In 2007 in Research Farm of Islamic Azad University, fifteen maize inbred lines as parents,consist of twelve females (No:4-15) and three males (NO:1-3) were crossed to produce 36 F1hybrids. Parents and their 36 F1 hybrids were evaluated in a RCB design with three replicationsunder irrigation after 70, 90 and 110 mm evaporation from a class A pan in 2008.Results showed both additive and dominance variances were important under drought stressconditions. Gene expression increased with intensify of drought stress. Proportionalcontribution of lines ,testers and their interactions revealed that female line contributed highercompared to male line under drought stress conditions in all studied traits and maternal parentsplay the most important role under drought stress conditions. The ratio of GCA to SCAvariances was less than unity for all studied traits and showed the predominant role of nonadditive action in the inheritance. In conclusion, it can be suggested that female parents shouldbe considered more for a successful plant breeding programs under drought stress conditions .

کلمات کلیدی:

Maize, Drought stress, Line × tester, Combining ability, Proportional contribution,Gene action