

عنوان مقاله:

Comparing the efficiency of the three heterotic-group and traditional two heterotic-group classifications for the hybrid maize breeding

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خلاصه مقاله:

Increasing the efficiency of the hybrid-based maize breeding program has highly contributed to the heterotic group classification. The present study was aimed to compare the breeding efficiency of the three heterotic-group (TriHG) classification [Lancaster Sure Crop (LSC), Reid Yellow Dent (RYD), CIMMYT] system and usual two heterotic-group (DiHG) classification (RYD, LSC) system. To accomplish this, specific breeding efficiency (SBE) and general breeding efficiency (GBE) were estimated for the grain yield. The mating design was a line \times tester scheme in which seven adapted tropical and subtropical lines were crossed to four testers. GBE increased by ۱۲۸% in the TriHG classification system as compared to the DiHG system while no significant loss was observed in SBE. It seems that the TriHG system was advantageous over the DiHG system by improving the maize breeding efficiency. Therefore, using one tester from each of the three heterotic groups (RYD, LSC, CIMMYT) could be more efficient in hybrid-based maize breeding programs in temperate regions, including Iran.

کلمات کلیدی:

DiHG, Heterotic group, Heterotic pattern, Line \times tester, TriHG

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