



RESEARCH ARTICLE :

Heterosis analysis for grain yield traits in maize (*Zea mays* L.)

■ **Y. SRINIVASA REDDY, V. KRISHNAN, V. VENGADESSAN, K. PARAMASIVAM AND A.L. NARAYANAN**

ARTICLE CHRONICLE :

Received :

13.07.2017;

Accepted :

28.07.2017

SUMMARY : We undertook 6 Inbreds as parents and made crosses in all possible cross combination in full diallel fashion to obtain total 30 possible F_1 hybrids. These 30 F_1 's are subjected to heterosis analysis using midparental, heterobeliosis and standard heterosis, where 900M a prominent hybrid was used as standard check. For judging good F_1 hybrids, negative heterosis was considered to be better for five traits (days to tasseling, days to silking, anthesis silking interval, days to maturity and plant height), while positive heterosis was considered to be desirable for the remaining traits (ear length, ear girth, number of kernel rows per ear, number of kernels per row, ear weight, shelling per cent, 100 grain weight and grain yield per plant) A perusal of standard heterosis revealed that out of 30 crosses studied, none of the hybrids were found to possess significant standard heterosis for all the traits studied. A total of eight hybrids have exhibited significant and favourable standard heterosis for grain yield and its component traits. Among the eight hybrids, the hybrid UMI 133 x UMI 122 for seven traits and the remaining hybrids viz UMI 112 x UMI 66, UMI 112 x UMI 122, UMI 112 x UMI 133, UMI 122 x UMI 66, UMI 133 x UMI 112, UMI 133 x UMI 213 and UMI 213 x UMI 112 for five traits have recorded significant and favourable standard heterosis and these could be adjudged as the best hybrids. Though the hybrids UMI 213 x UMI 176, UMI 133 x UMI 66 showed significant and favorable standard heterosis for maximum number of seven traits, they were not considered as best ones due to the non significant standard heterosis of those hybrids for most important trait grain yield per plant. The extent of heterosis for grain yield per plant over check hybrid was found to be the maximum followed by ear weight. The heterosis over check hybrid recorded for anthesis silking interval was the maximum among the traits for which negative heterosis was favourable and was followed by plant height.

KEY WORDS :

Maize, Heterosis, Diallel, Inbred, Standard heterosis

Author for correspondence :

Y. SRINIVASA REDDY

Department of Genetics and Plant Breeding,
Pandit Jawaharlal Nehru College of Agriculture and Research Institute,
Karaikal, PUDUCHERRY (U.T.) INDIA
Email : sri.yerva@gmail.com

See end of the article for authors' affiliations

How to cite this article : Reddy, Y. Srinivasa, Krishnan, V., Vengadessan, V., Paramasivam, K. and Narayanan, A.L. (2017). Heterosis analysis for grain yield traits in maize (*Zea mays* L.). *Agric. Update*, **12**(TECHSEAR-3) : 784-789; DOI: 10.15740/HAS/AU/12.TECHSEAR(3)2017/784-789.