Exploitation of heterosis and selection of superior inbreds in pearl millet

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ABSTRACT
Ten diverse inbreds were crossed in a diallel fashion, excluding reciprocals, to study the magnitude of heterosis and to identify new restorers in pearl millet. The degree of heterosis varied from cross to cross for all the characters studied. The high magnitude of heterobeltiosis was found for grain yield per plant, fodder yield per plant, plant height, number of effective tillers per plant, ear head weight, 1000 grain weight and harvest index, while moderate heterosis over better parent was exhibited for ear head girth, ear head length and number of nodes. Days to 50 per cent flowering and days to maturity displayed the least heterotic values. The maximum positive heterosis for grain yield per plant was observed to be 194.65 and 153.22 per cent over mid and better parent, respectively. The cause of heterosis in grain yield might be due to heterosis in its yield attributing traits, mainly, 1000 grain weight, fodder yield per plant, plant height, number of effective tillers per plant, ear head weight, ear head length, and harvest index. The crosses viz., J-2480 x D-23, J-2467 x J-2474 and J-2467 x D-23 depicted high heterosis, per se performance, coupled with high SCA and involved both or atleast one good combiner parents. Such crosses have potential to throw desirable transegresants in the segregating material for the development of high yielding inbred lines in pearl millet.

Key words: Pearl millet, Heterosis, Inbreds, Grain yield

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