



Research Paper

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Estimation of heterosis for yield and yield contributing traits in bottle gourd [*Lagenaria siceraria* (Molina) Standl]

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ABSTRACT : Fifteen parental lines and their 36 F₁ hybrids of bottle gourd obtained from line x tester analysis were studied to investigate the extent of heterosis for yield and its contributing traits. The cross combination DK x NDBG-104 over standard variety and PBOG-22 x Pusa Naveen over better parents showed negative and significant heterosis for early germination. The cross combination VRBG-18 x NDBG-104 over standard variety and DK x Pusa Naveen over better parents showed negative and significant heterosis for early days to first male flower anthesis. The cross combination VRBG-105 x PSPL over standard variety and VRBG-18 x NDBG-104 over better parents showed negative and significant heterosis for early days to first female flower anthesis. Cross combination VRBG-18 x NDBG-104 over standard variety and DK x PSPL over better parents showed negative and significant heterosis for early node number to first male flower. Cross combination PBOG-22 x NDBG-104 showed negative and significant heterosis over standard variety and better parents for early node number to first female flower, the negative and significant heterosis is desirable for above traits. The cross combination AD-1 x NDBG-104 over standard variety and better parents showed positive and significant heterosis for vine length. Cross combination VRBG-1 x PSPL over standard variety and AD-1 x Pusa Naveen showed positive and significant heterosis for number of primary branches per plant. The positive and significant heterosis was recorded for the length of fruit in cross combination VRBG-44 x PSPL over standard variety and VRBG-112 x PSPL over better parents, respectively. The cross combination VRBG-148 x NDBG-104 over standard variety and better parents showed positive and significant heterosis for weight per fruit. The cross combination DK x Pusa Naveen showed positive and significant heterosis over standard variety and better parents for number of fruits per plant. The cross combination VRBG-44 x Pusa Naveen showed positive and significant heterosis over standard variety and better parents for fruit yield per plants. So, these crosses can be used as direct selection for commercial cultivation and exploitation of hybrid vigour.

KEY WORDS : Heterosis, Yield, Traits, Bottle gourd

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Bottle gourd [*Lagenaria siceraria* (Molina) Standl] belongs to the family cucurbitaceae which comprises of 120 genera and 825 species out of which 36 genera and 100 species are available in India. In this family approximately 38 species are economically important and its cultivation is done throughout the world from tropical, subtropical and even to temperate zones. Many cultivated and wild species of cucurbitaceae dates back to prehistoric times and is supposed to be the first plant used by man. Mostly cucurbits have its importance mainly in the areas of their

occurrence due to climatic change, physiographic diversity and adaptation. In the Indian sub-continent cucurbits have tremendous scope of acclimatization and they have not only contributed towards the food and but also a rich wild gene pool for several important traits. Bottle gourd is one of the most important cucurbits cultivated in India. It is grown in rainy season and as well as summer season vegetable. It is also known as white flowered gourd.

Heterosis refers to the superiority of F₁ hybrid in one or more characters over its parents. In other words, heterosis