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Heterobeltiosis and inbreeding depression for fruit yield and its components in hot pepper (*Capsicum annuum* var. *annuum*)

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ABSTRACT : A diallel study was conducted during 2012 - 13, 2013- 14 at Horticultural College and Research Institute, Periyakulam, Tamil Nadu Agricultural University, India to assess the extent of heterosis and inbreeding depression in chilli. Five crosses namely, K 1 x Arka Lohit, LCA 625 x K 1, Pusa Jwala x K 1, Pusa Jwala x PKM 1 and K 1 x PKM 1 exhibited higher percentages of heterobeltiosis, revealing involvement of non - additive genes and these crosses may be considered as the promising crosses for yield. The crosses gave higher heterobeltiosis in F_1 which showed low inbreeding depression in F_2 generation. The desirable inbreeding depression that is negative in direction was observed in K 1 x PKM 1 and K 1 x Pusa Jwala for yield and yield contributing characters. Significant and positive heterosis with low inbreeding depression for yield and yield related traits were exhibited by Pusa Jwala x PKM 1, LCA 625 x K 1 and K 1 x Arka Lohit. The segregating materials generated in F_2 generation may be utilized for the identification and selection of desirable recombinants in advanced generations in order to develop high yielding varieties with specific attributes.

KEY WORDS : Better parent heterosis, Chilli, Inbreeding, Quantitative traits, Segregating generation

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