New Agriculturist, **25**(2) : 185–188, 2014

# Heterosis and inbreeding depression in linseed, *Linum usitatissimum* L.

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Received April 23, 2014 and Accepted July 11, 2014

**ABSTRACT :** The research was carried out in the Department of Crop Improvement, CSK HPKV, Palampur and Research Stations Kangra and Kukumseri during the years 2007- 08 to 2010- 11 using generation means analysis derived from crosses of TL-11 x Him Alsi-2, Turkey x Binwa and TL-43 x Binwa to determine the components of heterosis in terms of gene effects. In the present study, some of the parents involved are the standard varieties. Therefore, it will be desirable to compare the potentiality of the crosses in relation to the standard varieties. Crosses with significant heterosis showed significant inbreeding depression in $F_2$ . The contradiction between heterosis and inbreeding depression for days to 50 per cent flowering, days to maturity, harvest index, plant height, per cent fibre for cross TL-11 x Him Alsi-2 could be due to the presence of linkage between genes. Negative value of heterosis for days to 50 per cent flowering is desirable in TL-11 x Him Alsi-2 since earliness is an important objective for linseed breeding. Significantly positive inbreeding depression were obtained for days to 50 per cent flowering, primary branches per plant, secondary branches per plant, capsules per plant, 1000-seed weight, plant height, technical height, straw weight, retted straw weight, total fibre, line fibre, per cent fibre, protein content in E1 and primary branches per plant, secondary branches per plant, capsules per plant, biological yield per plant and technical height in E2 in the above cross.

**Key Words:** Flax, *Linum usitatissimum* L., Heterosis, Inbreeding depression.