

HETEROSIS AND COMBINING ABILITY FOR YIELD AND YIELD COMPONENTS IN LINSEED (*LINUM USITATISSIMUM* L.)

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Abstract: Five linseed genotype namely KL-31, LCK-9216, LMH-16-5, Bellinka and Viking were crossed in a diallel fashion. The ten F₁ hybrids along with their five parents were sown in RBD with two replications in each of two environments viz, E₁ (Normal irrigation) and E₂ (limited irrigation). Analysis of variance indicated that significant variability was present among parents and hybrids in individual as well as pooled over the environment.

The highest heterotic cross was LMH-16-5 x Bellinka (77.55) followed by Kl-31 x Bellinka (44.79), LCK-9216 x Bellinka (27.87) and Bellinka x Viking (11.08). Their performance was consistent in individual as well as pooled over both the environment for seed yield and its contributing characters. In combining ability analysis, the magnitude of gca variance was higher than sca variance for all the characters, indicating preponderance of additive gene effects for these traits. Parents, KL-31, LMH-16-5 and LCK-9216 were good general combiner for seed yield and one or more other characters. Hybrids, LMH-16-5 x Bellinka, KL-31 x Bellinka and LCK-9216 x Bellinka exhibited high sca effects for seed yield and one or more other characters. These hybrids also exhibited higher magnitude of heterosis, heterobeltiosis and high mean performance. These crosses could be utilized for exploitation of heterosis and transgressive segregants.

Keywords: Heterosis, Combining ability, Environment, Genetic effects

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