

A STUDY ON HETEROSIS AND COMBINING ABILITY IN A HYBRID POPULATION OF SUNFLOWER (HELIANTHUS ANNUUS L.)

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ABSTRACT

Twenty eight sunflower hybrids derived from seven cytoplasmic male sterile (CMS) lines and 4 restorer (RHA) lines were grown alongwith 11 parents in a Randomized Complete Block Design during summer 1995 to estimate heterosis and combining ability. The heterosis and combining ability for all investigated characters were estimated by a LinexTester Analysis. The average heterosis varied from 14.28 % for plant height to 87.00 % for seed yield. The results of LinexTester Analysis indicated that both the general and the specific combining ability effects on the seed yield, seed weight per head and 1000-seed weight were significant; only general combining ability effect for the plant height and head diameter was significant. The parent CMS 42 had the highest general combining ability for seed yield and yield components. On the other hand, CMS 63, CMS 132, CMS 482 and RHA 684 parents showed positive and high general combining abilities for seed yield. Hybrid combinations: CMS 63 X RHA 684, CMS 121 X RHA 684, CMS 132 X RHA 892, CMS 482 X RHA 703 and CMS 472 X RHA 803 in terms of the seed yield revealed positive and high specific combining abilities. CMS 42 X RHA 684, CMS 42 X RHA 892 and CMS 482 X RHA 684 were also good.