

## COMBINING ABILITY AND HYBRID PERFORMANCES IN SUNFLOWER

(*Helianthus annuus L.*)

*Nazan DAĞÜSTÜ      Abdurrahim Tanju GÖKSOY*

*Uludag University, Faculty of Agriculture, Department of Field Crops, Bursa*

### ABSTRACT

The objective of the study was to determine combining ability, heterosis and heterobeltiosis values for six traits in sunflower. Five cytoplasmic male sterile (CMS) and five restorer (RHA) lines were crossed according to line x tester analysis method to select the suitable parents and promising hybrids with high specific (sca) and general combining abilities (gca).

The research was conducted at Uludag University, Agricultural Faculty, Field Crops Department, Research and Training Centre in 2000 and 2001. First year, 25 experimental hybrids were obtained from manual crosses between five CMS and five RHA lines. Second year, CMS, RHA and experimental hybrids were grown in randomised complete blocks design with three replications.

The results indicated that the parents CMS-1 and RHA-7 had higher general combining ability values in terms of seed yield and some yield components. Hybrid combinations 5x9 and 3x10, revealed positive and significant specific combining ability values and were found to be promising hybrids. Significant positive heterotic effects for all examined components were observed in this research. The highest heterotic effects were obtained from hybrids including CMS (1) and CMS (5) lines.

*Key words: Sunflower, combining ability, heterosis and heterobeltiosis, line x tester*