

**Abstract:**

Field experiments were carried out at two locations (Shambat and Wad Medani) to estimate heterosis and combining ability in maize in season 1992/93. A set of 45 genotypes, comprising nine parental genotypes and their 36 F1 hybrids, was used in the study. The experiments were conducted under irrigation in a randomized complete block design with three replications. Heterosis and general and specific combining abilities for seven characters were estimated. The highest magnitude of heterosis over mid-and better-parent was expressed for grain yield (kg/ha) at both sites. Grain yield/ha and 100-grain weight were controlled mostly by additive gene action, whereas cob weight and grain yield/plant were controlled by both additive and non-additive gene effects. The commercial cultivars Giza 2 and Variety 113 ranked high in general combining ability among the parents, indicating their value in future population improvement programmes.