

BREEDING STUDIES ON SOME FORAGE CROPS

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ABSTRACT

The study aimed to estimate the mean performance, genetic variance, and heterosis between seven parents of teosinte and maize varieties. The materials consisted of three accessions of teosinte (*zea mexicana*) and four accessions of maize (*zea mays L.*). A diallel cross set involving the seven parental varieties was made during 1999 season. In 2000, the seven parental varieties and their F₁ crosses were evaluated in a randomized complete blocks design with three replications. The measurements were recorded on five guarded plants from each plot. Growth and forage yield characters; physiological characters, grain yield and its components were studied. Analysis and interpretation of the variety cross diallel (analysis II) as described by **Gardner and Eberhart** (1966) were used to estimate varieties, average heterosis, variety heterosis and specific heterosis. Analysis of variance indicated significant differences among populations studied for all characters. The F₁ crosses between maize and teosinte varieties were grow faster in plant height character, had more leaves and more green and dry fodder yield than the maize varieties. These crosses could be cultivated directly and/or consider a source of selection new lines with highly significant combining ability for production new F₁ hybrids.

Key words:

Heterosis, maize, teosinte, diallel cross, average heterosis, variety heterosis, specific heterosis, forage yield, physiological characters and grain yield.

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