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HETEROSIS AND CORRELATION AMONG PLANT AND YIELD CHARACTERS IN OKRA (*Abelmoschus esculentus* (L) Moench)

BY

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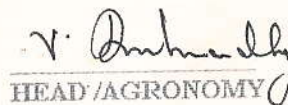
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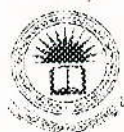
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ABSTRACT

A field experiment was carried out to study the heterotic effect for selected characteristics primarily of agronomic importance and also to estimate the correlation among the selected traits of okra (*Abelmoschus esculentus* (L) Moench) at the Eastern University, Vantharumoolai, located in the Eastern Sri Lanka, during the period of March to June 1993.

Three inbred parents HRB-10, MI-5 and MI-7, F_1 and F_2 generations of the crosses HRB-10xMI-5, HRB-10xMI-7 and MI-5xMI-7 were used in this study. One parent (HRB-10) was found to be tolerant to Yellow Vein Mosaic Virus (YVMV) and other two parental varieties MI-5 and MI-7 were found to manifest this disease under field conditions.

All entries tested were arranged in a Randomized Complete Block Design (RCBD) with three replicates. After the emergence of seedlings, data collection commenced and measurements as well as observations were made on plant height at first flowering, plant height at first harvest, plant height at last harvest, days to first harvest leaf hairiness, colour of the pods, width of the pods, weight of the pods, number of pods per plant, yield per plot and score on YVMV infection. The collected data were subjected to Analysis of Variance (ANOVA) and correlation analysis was also performed.

Statistically significant differences among the entries were observed for the traits such as plant height at first flowering, plant height at first harvest, pod weight and yield per plot.

Hybrid vigour was well noticed in plant height at first flowering, first harvest and last harvest, number pods per plant, pod weight, pod length and in yield in the F_1 cross of HRB-10xMI-5. The remarkable increment in yield per plot was observed in the F_1 generation of this cross which was 73.5 percent over the better parent MI-5 and 106.8 percent over the mid parent value.

In addition the F_1 generation of HRB-10xMI-7 also showed hybrid vigour (heterosis) in plant height at first harvest and plant height at last harvest and also in yield but not to a great extent. By and large the performance of the F_1 generation was better than the parents with respect to the plant height at first flowering, first harvest and at last harvest and declined in F_2 generation indicating an inbreeding depression as a result of selfing. The same trend was noticed in the yield as well.

A highly significant correlation and direct relationship were seen between yield and yield components such as pod length, pod weight and in improving one or more of the yield components may increase the yield to a satisfactory level.

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