

**Studies on heterosis in F1 hybrids of the autogamous crop brinjal (*Solanum melongena* L.)**

This study was undertaken to estimate the heterotic effect of selected important agronomic characteristics, more specifically yield and fruit number in F1 hybrids under green house conditions. The F1 hybrids are crosses between two local varieties of brinjal (*Solanum melongena* L.) namely palugamam purple (PP) and Palugamam white (PW) with two exotic varieties Slimjim and SM -6-6 received from AVRDC, Taiwan, originated from Italy and India, respectively.

This experiment was conducted during the period of July-November 1998 in the green house of Eastern university in which the four parental varieties and eight F1 hybrids (crosses and reciprocals) were planted singly in 60 equal sized pots (15 cm diameter and 25 cm, height) and arranged in complete randomized design (CRD), with five replicates.

Significant yield increase of F1 hybrids over their better parents was evident ( $p < 0.05$ ) which can be attributed to the strong heterotic effect and heterobeltiosis. Most of the F1 hybrids produced intermediate number of fruits per plant. The fruit number of F1 hybrids of the crosses between PP x SM6-6, SM6-6 x PP, PW x SM 6-6, and SM 6-6 x PW exceeded their mid parent value and rest of the F1 hybrids were very closer to the mid parent which can be influenced by additive gene effect. All F1 hybrids and intermediate fruit weight, length and girth than the mid parent values and these characteristics may be influenced by incomplete dominance gene effect.

Yield was positively correlated with weight, girth and length of fruit. Heterosis may be exploited for yield, fruit number and fruit size in an autogamous crop like brinjal when varieties of diverse origin are used in the crosses. Therefore the development of hybrid varieties in brinjal to increase the production potential is possible.