

### B-03

#### **A study on the heterotic effect of some important agronomic characteristics in *Solanum melongena* L (Brinjal)**

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

This experiment was conducted during the period of July - November 1998 at the Eastern University in the Batticaloa district (DL2) in which four parental varieties and eight F1 hybrids (crosses and reciprocals) were arranged in a randomized complete block design, with three replicates.

Significant yield increase of F1 hybrids over their parents were evident and the increase was found to be more than their better parents values ( $p < 0.05$ ) and it may be attributed to the strong heterotic effect and heterobeltiosis. All F1 hybrids produced intermediate number of fruits per plant but very closer to the mid parent value and hence influenced by additive gene effect. All F1 hybrids had fruits of intermediate weight, length and girth but higher than the mid parent value as influenced by incomplete dominance gene effect. It is noteworthy to indicate that the parents with bigger fruits per plant. This is the reason that F1 hybrids with intermediate number of fruits and size showed higher yields than their better parents.

F 1 hybrids of Slimjim X Palugamam F 1 hybrids of Slimjim X Palugamam purple and Palugamam purple X Slimjim appeared to possess moderate resistance to shoot and fruit borer, based on the score used in this evaluation. Yield is positively correlated with weight, girth and length of fruit and height at first flowering and last harvest. Hence, selection based on high value of these characteristics would lead to yield increase in brinjal when varieties of diverse origin, are used in the crosses. The hybrids showed earliness in bearing habit which is considered a genetic advantage.