

SECTION D

D-14

PATTERN OF INHERITANCE OF FLOWERING IN *SESAMUM INDICUM* L. USING DIALLEL ANALYSIS

S. Aathiththan, K. Theivendirarajah

(Dept. of Botany, University of Jaffna)

and P. Ganesan

*(Agricultural Regional Research Station,
Karadian-Aru, Batticaloa)*

Varying concepts have been proposed to explain the pattern of inheritance of sesame and many disagreements existed regarding the control of flowering.

This investigation involved six varieties namely MI-3, JT-7, Kilinochchi local, GT, PT and AI of different origin.

The parents and the F_1 progeny of 36 diallel lines were tested under day-lengths of $10\frac{1}{2}$ h, $12\frac{1}{2}$ h and $14\frac{1}{2}$ h.

Data for reciprocal crosses studied separately did not present any evidence of maternal effects and hence reciprocal crosses were combined to give single values for each cross.

The regression line obtained by plotting Covariances and Variances from half-diallel table indicated that there is a significant regression of W_r on V_r , with slope value of 1.29 and S.E. of 0.29 and thus gives good evidence for dominance but it is only partially able to account for relationship observed between W_r and V_r .

There is no indication of non-allelic interaction since neither "b" value nor the "orientation of the regression line" reveal any interactions, but both reveal that there is partial additive effects. Thus the behaviour of genes controlling flowering at least in the varieties studied can be explained using Additive-Dominance model.

The validity of the above model was confirmed using $(W_r + V_r)$ and $(W_r - V_r)$ data.

It was also observed that the varieties used were of the Short Day types with varying sensitivity to photo-period and the variety AI was found to be the least sensitive one.

This work was supported by NARESA (Grant RGB/81/13).