

CHAPTER-IX

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Evaluation of Bi x Bi hybrids in pooled spring seasons, in pooled autumn seasons (commercial seasons) and Multi x Bivoltine hybrids in pooled spring seasons (commercial seasons):

In subtropical climate of Assam, the temperature ranges from 8°C to 38°C and relative humidity ranges from 38% to 98%, it became very essential to develop bivoltine hybrids which can be successfully reared in the commercial rearing seasons (Spring and Autumn) with hot and humid condition.

In multiple trait evaluation index scoring (Mano *et al.*, 1992) the bivoltine hybrids performance was ranked based on respective scores. The average index value fixed for the selection of a hybrid was above 50 and the breed showing higher average index value above 50 only was considered to possess greater economic value over multiple traits studied and accordingly the hybrids with Evaluation index in descending order were ranked. The higher performer possessed higher Evaluation Index (E. I.).

ANOVA for different qualitative and quantitative traits of six Bi x Bi and Multi x Bi hybrids and their correlation were done. The coefficient of correlation (C.C) are calculated on the basis of Pearson's coefficient of correlation and the significance of the coefficient of Correlation (C.C.) between the various characteristics were based on t-test (Two tailed). Again the Null Hypothesis (N.H). is considered as

H₀ : $\rho=0$, i.e. the correlation coefficient is not significant.

Among the six Bi x Bi hybrids i.e SLD4 x SLD8, Dun17 x Dun 18, CSR2 x CSR4, APS105 x APS 126, APS45 x APS126 and CSR46 x CSR47 highly significant differences ($P<0.01$) were found for ERR/ number, ERR/ weight, fecundity, filament

length, filament size, filament weight, hatching percentage, cocoon yield , raw silk, single shell weight and single cocoon weight.

The ANOVA table indicates that there was less significant among the performances of various groups of bivoltine x bivoltine hybrids with respect to the characteristics reelability, boil-off and SR was less significant between the groups.

In the present study, among the six bivoltine x bivoltine hybrids of mulberry silkworm CSR46 X CSR47 (EIV60.7208) and CSR2 x CSR4(EIV 52.55673)are the most promising with better rearing performances compared to the other bivoltine x bivoltine hybrids in pooled spring and pooled autumn data respectively. On the other hand APS45 x APS12 (EIV44.80614) and APS105×APS106(EIV 42.57) showed poor rearing performances in spring and autumn seasons.

The study also deals with the performance of a few newly evolved productive multi x bivoltine in spring seasons (commercial seasons).

Among the four multivoltine x bivoltine hybrids evaluated the EIV ranges from 48.26 to 53.01 registering highest evaluation index value of 53.01 in PM x CSR2 hybrid and lowest EIV in MC1 x BC4 (EIV 49.10) in 15 quantitative traits.

Among Multi x Bi hybrids i.e MC1 x BC4, MC4 x BC4, N x NB4D2, PM x CSR2 during spring season was highly significant differences ($P < 0.01$) were found for effective rate of rearing by number, effective rate of rearing by weight, filament length, filament size, hatching percentage, cocoon yield, raw silk, reelability and single cocoon weight.