and Jharkhand and realized encouraging results. In West Bengal the season for seed cocoon generation falls in unfavourable climatic condition and thereby many a times quality seed cocoons of bivoltine in sufficient quantity was not generated and thereby the seed producers were compelled to purchase bivoltine seed cocoons from far off places especially South India which in turn incurred heavy expenditure and inferior quality seed cocoons due to transportation from such far off places. Therefore, as an alternative foundation crosses were tried and found easy for rearing in the seed cocoon generation seasons. In this direction, the foundation cross, SK6 x SK7 was well received and now a days the entire bivoltine seed cocoons generated for the production of multivoltine x bivoltine in West Bengal are of the foundation cross, SK6 x SK7.

**Based on the encouraging results obtained by the farmers, this foundation cross can be exploited on a large scale in the traditional sericultural states also for the production of multivoltine x bivoltine hybrids**


An ISO 9001:2008 Certified Institute

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# NEW PROMISING BIVOLTINE FOUNDATION CROSS SK6 x SK7

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Low temperature with low humidity during December and January severely affects the performance of P1 rearing. Besides, due to low production of mulberry leaf in low temperature regions, which affects the growth of silkworm resulting in poor performance of bivoltine P1 rearing. Though, February-March season is suitable for raising bivoltine as a P1 but subsequent commercial rearing for multivoltine x bivoltine is unpredictable due to prevalence of high temperature during late age rearing. Therefore, the silkworm egg producers have to depend on other parts of the country for bivoltine cocoons as P1 material. In West Bengal the bivoltine single parent rearing was found to be difficult during unfavourable season due to the prevalence of high temperature and high humidity. Therefore, this institute has identified a foundation cross, SK6 x SK7 to be used as a male component with Nistari. Initial field studies during unfavourable season indicated that the performance of this foundation cross was better than the single parent. Based on the seed crop and commercial crop results it can be concluded that the multi x bi hybrids N x (SK6 x SK7) & M6DP (C) x (SK6 x SK7) can be successfully raised and commercialized in the Eastern India.

Further bivoltine seed crop stabilization, which is bottleneck for the development of sericulture in the region, can also be solved by the introduction of foundation cross SK6 x SK7. Silkworm hybrid Authorization committee of CSB has authorized the multi x bi hybrid, Nistari x (SK6 x SK7) for use in the Eastern zone. Some more foundation crosses (Bi x Bi) were also identified as P1 and tested during adverse rearing seasons providing better performance and also under trial. This bivoltine foundation cross, SK6 x SK7 enhanced cocoon productivity from 40-45 kg (NB18 x P5) to 50 – 55 kg (SK6 x SK) kg / 100 dfls. Some more productive ones are in offing.

The characteristic features of SK6, SK7 and SK6 x SK7 are given below :

**SK6**

Larvae and cocoons of SK6

| Parameters | Season | |
|---|---|---|
| | Unfavourable | Favourable |
| Fecundity | 425 | 494 |
| Pupation rate ( %) | 60.0 | 82.1 |
| Yield/10000 Larvae (weight.) | 7.312 | 10.852 |
| Cocoon Weight.(g) | 1.207 | 1.273 |
| Shell percentage (%) | 18.2 | 18.6 |
| Filament length (m) | 765 | 803 |
| Gain in cocoon yield over check | 81.4% | 5.66% |

**SK7**

Larvae and cocoons of SK7

| Parameters | Season | |
|---|---|---|
| | Unfavourable | Favourable |
| Fecundity | 438 | 489 |
| Pupation rate (%) | 65.0 | 84.1 |
| Yield/10000 Larvae (weight.) | 7.810 | 10.921 |
| Cocoon Weight.(g) | 1.212 | 1.243 |
| Shell percentage (%) | 18.0 | 18.8 |
| Filament length (m) | 782 | 823 |
| Gain in cocoon yield over check | 93.8% | 7.02 |

**SK6 x SK7**

Larvae and cocoons of SK6 x SK7

| Parameters | Season | |
|---|---|---|
| | Unfavourable | Favourable |
| Fecundity | 473 | 525 |
| Pupation rate (%) | 80.5 | 90.5 |
| Yield/10000 Larvae (weight.) | 12.100 | 13.600 |
| Cocoon Weight.(g) | 1.316 | 1.453 |
| Shell percentage (%) | 19.3 | 20.7 |
| Filament length (m) | 884 | 910 |
| Gain in cocoon yield over check | 200.2% | 46.7% |

Based on the better performance in the laboratory, this foundation cross was subjected for multilocational trial at all the RSRSs and RECs under this institute. After the multilocational trial this hybrid was reared by farmers of West Bengal