

Field performance of Nistari x (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 in the year 2013. Starting from February-March 2008 to February-March 2013, NSSO has supplied around 27 lacs of this hybrid and realized an average yield of 44.9 kg/100 dfls as against 35.1 kg/100 dfls realized for the control hybrid, Nistari x NB4D2. Besides, crores of dfls of this hybrid have been distributed by DoT (seri) West Bengal realizing an appreciable yield at the farmers' level. At present, this hybrid is well accepted by the stakeholders and as on date crores of dfls of this hybrid have been successfully reared by the

Comparative performance of N x (SK6 x SK7) in different commercial crops

Combination	No. of dfls	Yield/100 dfls	Yield range
N x (SK6 x SK7)	2654750	44.9 kg	30-62 kg
N x NB4D2 (Control)	177600	35.1 kg	22-50 kg

Based on the encouraging results obtained by the farmers, this hybrid is exploited on a large scale in the Eastern and North-Eastern states of India.



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NEW PROMISING MULTIVOLTINE X BVIOLTINE HYBRID NISTARI x (SK6 x SK7)



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Eastern India is generally characterized by luxuriant growth of mulberry for its highly fertile soil and rainfall. But, rearing of productive silkworm breeds and hybrids are restricted due to highly variable climatic situation, which causes poor larval growth, moulting disorder and severe mortality of silkworm caused by diseases and ultimately leading to low cocoon yield. In this region, fluctuating climate restricts rearing of highly productive good quality bivoltine breeds because of poor survival and as a result, stakeholders are compelled to rear hardy multivoltine silkworm strain (Nistari) with extremely poor productivity and quality, thus leaf conversion efficiency into good quality cocoons becomes very poor. Besides, because of high temperature and humidity as well as rainfall, most of the rearers prefer to rear indigenous multivoltine strain, Nistari, which although are the poor silk yielder has a tremendous ability to survive under extreme tropical conditions. During unfavourable season, because of high temperature and high humidity as well as rain, most of the farmers are compelled to rear multivoltine x multivoltine hybrids. In eastern and north eastern part of India, during favourable season multivoltine x bivoltine hybrids could be reared. Earlier many productive multivoltine breeds were developed and combined with bivoltines for rearing during favourable seasons. However, none of these breeds could sustain in the field due to various reasons. Therefore, Nistari x NB4D2 continued to dominate the uptake of dfls by the farmers.

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 hybrid N x (SK6 x SK7) can be successfully raised and commercialized in the Eastern India. Further, bivoltine seed crop stabilization, which is the bottleneck for the development of sericulture in the region, can also be solved by the introduction of foundation cross SK6 x SK7.

The characteristic features of Nistari, SK6xSK7 and Nistari x (SK6xSK7) are given below:

NISTARI



Larvae and cocoons of Nistari

- Indigenous race quite popular with the farmers of West Bengal
- Low productive race
- Characterized by golden yellow spindle shaped cocoons

- Characterized by golden yellow spindle shaped cocoons
- Suitable for subsistence farming condition and reared during unfavourable seasons
- More floss percentage (18-22%)
- Very poor post cocoon quality parameters with high renditta (11-12)
- More tolerant to silkworm diseases
- High survivability under poor hygienic conditions.
- Suitable for rearing under fluctuating high temperature and high humidity conditions.

SK6 x SK7 (Popular Foundation Cross)



Larvae and cocoons of SK6 x SK7

Parameters	Season	
	Unfavourable	Favourable
Fecundity	473	525
Pupation rate (%)	80.5	90.5
Yield/10000 Larvae (kg)	12.100	13.600
Cocoon Weight(g)	1.316	1.453
Shell percentage (%)	19.3	20.7
Filament length (m)	884	910

Nistari x (SK6xSK7) (Popular hybrid)



Larvae and cocoons of Nistari x (SK6 xSK7)

Parameters	Values
Shell percentage (%)	15.0-18.0
Filament length (m)	650-700
Renditta	8.5-9.0
Yield/100 dfls (kg)	45.0-55.0
Rearing condition	Temp. 25-31°C; Humidity 75-80% (October- April)