Last update: 4th May 2016

Breeds / Hybrids developed by this institute

Silkworm hybrids under commercial exploitation:

West Bengal is having five distinct silkworm commercial crops, of which, three crops (February, April and November) are suitable for rearing of Multi x Bivoltine hybrids and remaining two crops (June - July and Aug. - Sept.) are suitable for Multivoltine hybrids due to adverse climatic condition. Besides, bivoltine hybrids can be reared only during November to February (*) months being favourable for bivoltine rearing.

Crop	Hybrid to be reared	Hybrids in vogue	Yield /100 dfls	Status	Remarks
Favourable seasons:					
Agrahayani (Nov.)* Falguni (Feb.)* Baisakhi (April)	**Multi x Bi.**	N x (SK6 x SK7)	**38-50 kg**	Ruling	Prior to development of improved silkworm breeds/ hybrids, only Nistari(N) was commercially exploited by the farmers with an yield potential of 18- 20 kg/ 100 dfls. After Nistari, Multi x Bi hybrid N x NB4D2 is introduced in the field having a production of 35-45kg/ 100dfls. Though the hybrid N x NB4D2 is performing well, but the rearing of seed crop of NB4D2 is almost impossible as a pure breed, especially during Sept. P1 crop due to prevalence of high temperature & high humidity, thus, for production of Multi x Bi hybrids, the LSPs, DoT(s), NSSO grainages of West Bengal are compelled to meet the entire requirement from the Southern States, which is the major constraint due to involvement of transport hazards and it is a long pending problem in the State. To fulfil the demand of bivoltine seed cocoons for preparation of Multi x Bi hybrids, this Institute has developed SK6 x SK7 as bivoltine foundation cross which could be reared successfully in all the seed crop seasons in West Bengal and neighbouring states, Odisha, Jharkhand, Mizoram, Meghalaya, Manipur, Nagaland, Sikkim and Assam. Director, NSSO, has already taken this activity for generation of bivoltine seed cocoons with SK6 x SK7 to fulfil the demand of West Bengal grainage for production of Multi x Bi hybrids. This hybrid is now authorized and ruling hybrid in the field and giving encouraging results by satisfying rearers/ reelers and State Government also.
		M.Con.1 x B.Con.4 M.Con.4 x B.Con.4	**45-54 kg** **45-55 kg**	Popularized in the field	These recently authorized hybrids (2010) are now popularized in the field. 75,000 dfls each of M. Con.1 x B. Con.4 and M. Con.4 x B. Con.4 were distributed among 150 farmers and recorded yield/100 dfls ranging from 45 to 50 kg. These hybrids with better yield potential is popularised as an alternative of the ruling hybrid, N x (SK6xSK7). These hybrids have been popularized through the Project "Post authorization trials of silkworm hybrids in eastern & north eastern India: June, 2012 – December, 2014 with a budget provision of 1.48 crores.
		M6DPC x (SK6xSK7)	**50-54 kg**	Under popularization	Besides, above M x B, one more M x B hybrid M6DPC x (SK6xSK7) has been developed by this Institute and found to realise better cocoon yield. This Hybrid is being popularised as commercial M x B hybrid, since one year with an aim to

					increase ICB cocoon production in West Bengal. Presently this hybrid is under post authorization trial in collaboration with State Govt., NSSO and LSPs / NGOs. (Post authorization trials of silkworm hybrids in eastern & north eastern India: June, 2015 – May, 2017 with a budget provision of 36 lakh).
	Bi. x Bi.*	SK6 x SK7	**48-53 kg**	Ruling	This hybrid is performing well in this fluctuating climatic condition due to its hybrid vigour as a Foundation Cross. Hence, it is widely accepted by the farmers. In the Cluster Promotion Programme, under the component of Bivoltine hybrid rearing programme the maximum yield observed was 65 kg / 100 dfls. in Kaliachak area of Malda district. **Now this hybrid is authorized and ruling bivoltine hybrid of this area.**
		B.Con.1 x B.Con.4	**52-55 kg**	Under popularization	Besides, SK6 x SK7, one more Bivoltine hybrid B.Con.1 x B.Con.4 has been developed by this Institute and found to realise better cocoon yield. This Hybrid is being popularised as commercial bivoltine hybrid, since one year with an aim to increase bivoltine cocoon production in West Bengal. Presently this hybrid is under post authorization trial in collaboration with State Govt., NSSO and LSPs/ NGOs. (Post authorization trials of silkworm hybrids in eastern & north eastern India: June, 2015– May, 2017 with a budget provision of 36 lakh).
Unfavourable seasons					
Shravani (June-July) Bhaduri/ Aswina (Aug.-Sept.)	**Multi x Multi**	N x M12W	**23-32 kg**	Ruling	It is presently the ruling hybrid, developed by this Institute and being reared during unfavourable months (May – September), though hitherto only the pure Nistari was reared by the farmers. The introduction and consistent performance of this hybrid has motivated the farmers to opt for this hybrid in place of pure Nistari. Presently this hybrid is well accepted and preferred by the farmers of West Bengal, especially during adverse seasons. So far, more than one crore dfls of this hybrid were distributed among the farmers through grainages of NSSO, LSPs and DoT(S) and realised an yield ranging from 23 to 32 kg/100 dfls.
		M.Con.1 x M.Con.4	**38–42 kg**	Popularized in the field	This recently authorized hybrid (2010) is now popularized in the field. 75,000 dfls of M. Con.1 x M. Con.4 were distributed among 150 farmers and recorded yield/100 dfls ranging from 38 to 42 kg. This hybrid with better yield potential is popularised as an alternative of the ruling hybrid, N x M12(W). This hybrid has been popularized through the Project "Post authorization trials of silkworm hybrids in eastern & north eastern India: June, 2012 – December, 2014 with a budget provision of 1.48 crores.
		Nistari x M.Con.4	**35–40 kg**	Popularized in the field	It is now being popularized in the field. So far, 1,38,763 dfls of Nistari x M. Con.4 were distributed among 694 farmers and recorded yield/100 dfls ranging from 38-40 Kg. This hybrid with better yield potential is popularised as alternative of the ruling hybrid, N x M12(W). This hybrid has been popularized through the Project "Post authorization trials of silkworm hybrids in eastern & north eastern India: Jun., 12 – Dec., 14 with a budget provision of 1.48 crores.

Developed Hybrids under trial					
Agrahayani (Nov.) Falguni (Feb.) Baisakhi (April)	Multi x Bi	M6DPC x D6PN M6DPCx(D6PN xSK4C)	**50-55 kg** **55-57 kg**	Under field testing (prior to authorization)	Tested more than 500 dfls (each hybrid) at DoS farms, W.B. and RECs (during favourable seasons, viz. Agrahayani, Falgooni & Baisakhi). Tested 1,0618 dfls to the farmers of West Bengal during 2008-2010.
		M6DPC x SK4C	**53-57 kg**	Authorized	Presently in the pipeline for commercialization.
Agrahayani (Nov.) Falguni (Feb.)	Bi x Bi	D6PN x SK4C	**52-55 kg**		Tested 660 dfls at RECs (during favourable seasons viz., Spring and Autumn)

Silkworm hybrids – At a glance

Combination	Hybrids	Yield/100 dfls	Status
Multi x Bi	N x (SK6 x SK7)	38-50 kg	Ruling hybrid. Popularized in the field
	M.Con.1 x B.Con.4	45-54 kg	Recently authorized (2010) and being popularized.
	M.Con.4 x B.Con.4	45-55 kg	-do-
	M6DPC x SK4C	53-57 kg	-do-
	M6DPC x D6PN	50-55 kg	In pipeline and being tested at DoS farms and REC in small scale.
	M6DPC x (D6 PN x SK4C)	55-57 kg	-do-
	M6DPC x (SK6 xSK7)	50-54 kg	Under authorization trial
Bi x Bi	SK6 x SK7	48-53 kg	Popularized in the field for generation of seed and commercial cocoons as an alternative for NB4D2.
	B.Con.1 x B.Con.4	52-55 kg	Large scale testing is in progress in the field. Under authorization trial
	D6PN x SK4C	52-55 kg	In pipeline and being tested at RSRSs & RECs in small scale.
Multi x Multi	N x M12(W)	23-32 kg	Ruling in the field as an alternative to Nistari
	M.Con.1 x M.Con.4	38-42 kg	Recently authorized (2010) and being popularized. Further, it is proposed to test this hybrid in large scale post authorization trial as per the guidelines given by C.O.
	N x M.Con.4	35-40 kg	-do-

Mulberry Varieties Developed

AUTHORIZED VARIETIES:

Year	Suitable agro climates	Variety	Recommendation/Description	Area covered
Prior to 1970 only local mulberry varieties such as, Kajli, Bombai local were available for cultivation by the farmers with a leaf yield potential of 8 – 10 mt/ha/ year.				
1970	For Gangetic alluvial soil (Irrigated & Rainfed conditions)	**S1**	28-29 mt/ha/yr (Irrigaded) and 16-18 mt/ha/yr (Rainfed) **(AICEM-I)**	Authorized for all Eastern and NE states
		S-799	24-25 mt/ha/yr **(AICEM-I)**	Authorized for Central India
1982-85	For Sub-tropical hills of Darjeeling and Sikkim	**Tr10**	13-14 mt/ha/yr **(AICEM-I)**	Hills of West Bengal and Sikkim
		BC259	16-17 mt/ha/yr **(AICEM-I)**	
1995	For irrigated conditions	**S1635**	40-45 mt/ha/yr **(AICEM-I)** *	All Eastern & NE states
1998	For red & lateritic soil & rainfed conditions	**C1730**	13-14 mt/ha/yr **(AICEM-II)**	Jharkhand, Odisha and Bihar
2005	For flood prone areas	**C2028**	35-36 mt/ha/yr **	under field trial in West Bengal

** Awarded as National Check by the AIMVAC; ** Under popularization in water logged areas.*

With the development of **S-1635** variety, mulberry leaf yield has been **increased** from **8-10 mt/ha/yr** (Kajli) to **40-45 mt/ha/yr** which is around 5 times productivity increase in leaf yield during last 6 decades.

UNDER AUTHORIZATION TRIAL

Year	Suitable agro- climates	Recommendation/ Description	Area covered/ Remarks
2011	For irrigated soil:	**C-2038 :** 54-55 mt/ ha/yr	Under AICEM Trial at **8** test centers *VIZ.*,RSRSs Kalimpong, Koraput, Ranchi & Jorhat; REC Imphal; DoT(Seri) West Bengal - Boswa and Ambarifalakata and CSRTI, Berhampore.
	For Sub-tropical hills: (Darjeeling and Sikkim)	**Tr-23 :** 24-25 mt/ ha/yr	RSRS Kalimpong & BSF and RSRS Shaspur.