

Traditional breeding methods employed during the last few decades has resulted in the development of a number of productive silkworm breeds/hybrids which have contributed significantly in maximizing the silk production in India. Of late, major thrust has been given for quality rather than quantity of silk produced. Quite a good number of bivoltine breeds/hybrids were developed at CSRTI, Mysore and were authorized for commercial exploitation by Central Silk Board.

However, only two bivoltine silkworm hybrids, CSR2 x CSR4 (single hybrid) and the double hybrid, (CSR6 x CSR26) x (CSR2 x CSR27) are popular in the field and are commercially exploited all over the country. The commercialization of another single hybrid, CSR16 x CSR17 is initiated after wide scale testing (Post-Authorization Tests) in southern states with farmers (2012-14). Further, two more productive bivoltine hybrids, CSR50 x CSR51 (tolerant to high temperature) and a double farmers hybrid, (CSR50 x CSR52) x (CSR51 x CSR53), which are authorized in 2013 are currently being popularized among the farmers.

Continuous breeding programmes are envisaged at CSRTI, Mysore to develop more number of bivoltine hybrids for high raw silk recovery/shell percentage so as to reduce the renditta at commercial level. Although silkworm breeds/hybrids with shell content of 22-24% and renditta of 5.5-6.0 were evolved, the shell percentage realized with the farmers is only 20-21% and renditta of 6.5 to 7.5. It indicates that there was reduction in shell

percentage (2-3%) and renditta (1.0 to 1.5). Better shell percentage results in higher raw silk recovery and there by reduction in renditta influencing the reeling costs. Keeping this in view, a new highly productive single hybrid, S8 x CSR16 was developed by improving the cocoon and silk quality traits of S8 by out crossing with the productive breed, CSR27 followed by systematic selection for high productive traits.

Laboratory Performance

Hybrid	Pupa-tion (%)	Yield/ 10,000 larvae (kg)	Cocoon wt. (g)	Shell wt. (g)	Shell ratio (%)	Raw silk (%)	Filament length (m)	Neat-ness (p)
S8 x CSR16	96.0	21.0	2.12	0.502	23.7	19.5	1175	95
CSR2 x CSR4	95.6	19.14	2.01	0.472	23.5	18.5	1050	94

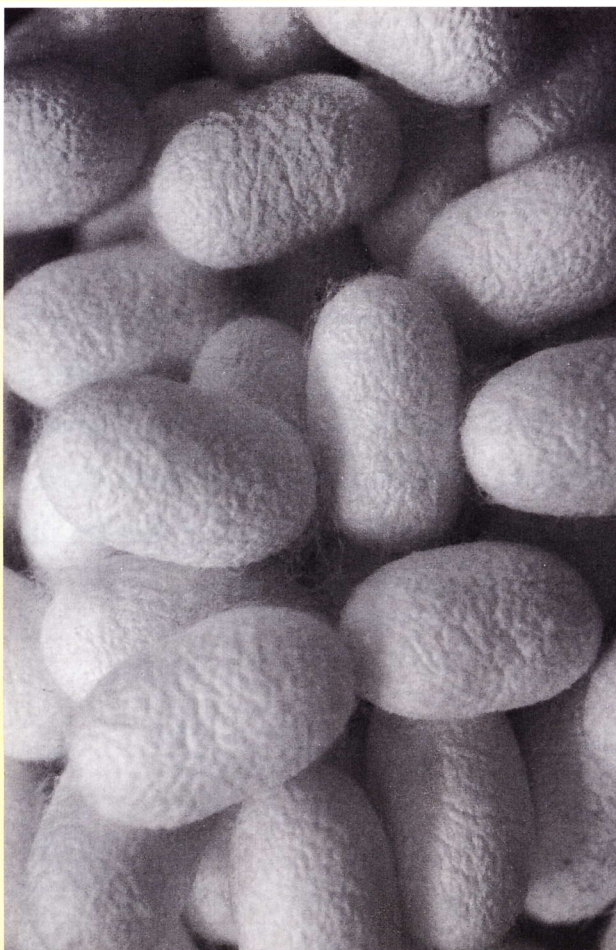
Field Performance

State	Dfls Tested (No)	Farmers (No)	Cocoon Yield/ 100 dfls (kg)	Cocoon wt. (g)	Shell wt. (g)	Shell ratio
Karnataka	41400	239	76.5	1.875	0.414	22.1
Andhra Pradesh	11900	64	62.9	1.864	0.413	22.2
Tamil Nadu	10550	58	71.3	1.760	0.382	21.7
Total / Avg.	63850	361	71.0	1.787	0.398	22.0
CSR2xCSR4	32800	175	64.5	1.765	0.364	20.6

The hybrid S8 × CSR16 is characterized by higher cocoon weight (2.12 g), shell weight (0.502 g @ 23.75%) and better fibre characteristics (filament length: 1175 m; reelability: 90%; neatness: 95 p) with better raw silk recovery (19.5%) and renditta. The field trials so far undertaken with the farmers in South India are very encouraging for a single hybrid with renditta of 5.5-6.0.

Salient features of S8 × CSR16

- Productive hybrid easy to rear by farmers
- Rearing during favourable months
- Marked larvae with bluish white body
- Bright white cocoons with intermediate shape and medium grains
- High cocoon shell percentage (23-24%)
- High raw silk recovery (19-20%)
- Better fibre characteristics
- Longer filament length (1175 m)
- Reelability (90%)
- Neatness (95 p)
- Better returns for cocoon producers and reelers
- Cocoon Yield: 70 - 75 kg /100 dfls
- Fibre quality: 2A~3A
- Renditta: 5.0 - 5.5



Contributors

V. Sivaprasad, N. Mal Reddy and S. M. Moorthy

For further details Contact:

DIRECTOR

Central Sericultural Research & Training Institute
(ISO 9001 : 2008 Certified)

Central Silk Board, Min. of Textiles
Govt. of India, Srirampura, Mysuru-570 008

Tel: 0821-2362757, 2362406

Fax: 0821-2362845

Web: www.csrtimys.res.in

Email: csrtimys.csb@nic.in

S8 × CSR16 NEW BIVOLTINE SILKWORM HYBRID FOR HIGHER COCOON YIELD & SILK PRODUCTIVITY



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Mysuru-570 008