

The Central Sericultural Germplasm Resources Centre (CSGRC), Central Silk Board, Hosur is an exclusive centre recognized as a National Active Germplasm Site (NAGS) for silkworm by the National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru. The Centre is conserving more than 450 *Bombyx mori* germplasm resources that include multivoltines, bivoltines and mutants.

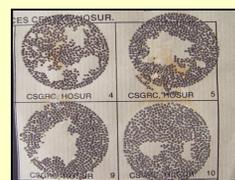
Although introduction of potential bivoltine breeds few decades ago resulted in many fold increase in silk production, to reach qualitative International Standards, productive bivoltine breeds / hybrids are essential. In this direction, evaluation of 369 bivoltine breeds and 20 bivoltine mutants was taken up by CSGRC, Hosur under the All India Silkworm Germplasm Evaluation Program (AISGEP-Phase-II) in collaboration with eight other Institutes of Central Silk Board (Central Sericultural Research and Training Institutes at Mysore, Berhampore, Pampore and CSGRC, Hosur; Regional Sericultural Research Stations at Jorhat, Kalimpong, Jammu and Sahaspur) under different agro-climatic zones during spring and autumn seasons.

The evaluation results revealed that, the bivoltine breeds identified viz., BBI-0348, BBE-0329 and BBE-0216 have exhibited quality performance in all the rearing economic parameters. BBI-0348 performed better in 7 centres; BBE-0329 in 5 centres and BBE-0216 in 4 centres during spring season. Similarly, BBI-0348 performed better in 6 centres, BBE-0329 in 5 centres and BBE-0216 in 4 centres during autumn season. Among the 10 bivoltine breeds, the accessions BBI-0348, BBE-0328 and BBE-0216 have recorded better performance for more number of economically important pre- and post-cocoon quantitative traits and hence are considered to possess greater economic value. These 3 breeds have been adjudicated as potential bivoltine breeds with wider adaptability under different agro-climatic zones during different seasons for use as breeding resource material to evolve improved hybrids.

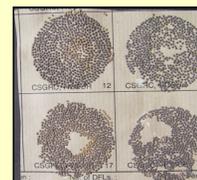
Zone-wise new bivoltine breeds identified are as indicated below.

Southern zone	Northern zone	Eastern zone
BBI-0348	BBI-0348	BBI-0348
BBE-0329	BBE-0329	BBE-0329
BBE-0216	BBE-0216	--

The stage-wise pictorial pre-cocoon profiles of the identified bivoltine new breeds is as shown hereunder.



BBI-0348



BBE-0329



BBE-0216

Layings



BBI-0348



BBE-0329



BBE-0216

Larvae



BBI-0348



BBE-0329



BBE-0216

Cocoons



BBI-0348



BBE-0329



BBE-0216

Moths

Economic parameter-wise profile of the identified bivoltine accessions is as indicated below.

Parameters	BBI-0348	BBE-0329	BBE-0216
Rearing Performance			
Fecundity	655	567	552
Hatching %	97.37	94.20	94.00
Larval weight (g)	4.283	4.19	4.07
Total larval duration (hrs)	575	534	640
Vage larval duration (hrs)	155	129	186
Yield/10,000 larvae (No.)	9725	9628	8905
Yield/10,000 larvae by wt. (kg)	20.6	19.00	19.18
Pupation rate	97.26	93.76	94.20
Single cocoon wt(g)	1.95	1.88	1.80
Single shell wt. (g)	0.38	0.38	0.34
Shell ratio (%)	19.49	20.83	18.89
Yield/100 dfls	82.31	78.95	76.90
Single cocoon Reeling performance			
Filament length (m)	882	987	848
Non breakable filament length (m)	704.27	945.68	843.50
Denier (d)	3.13	3.10	2.15
Reelability (%)	78.00	93.11	85.50
Renditta	5.89	5.60	5.90
Raw silk recovery (%)	84.19	75.97	86.95
Silk waste (%)	13.64	16.28	15.20
Raw silk (%)	16.99	14.88	16.96
Neatness (%)	89.50	96.00	91.50
Neatness (%)	80.00	80.00	87.50
Boil off loss (%)	21.26	19.15	23.02
Cleanliness (%)	97.00	91.00	96.00
Tenacity (g/d)	3.65	3.57	3.60
Elongation (%)	22.50	19.00	17.80
Cohesion (storkes)	64.00	82.5	5200

Thus, the three bivoltine accessions viz., BBI-0348, BBE-0328 and BBE-0216 can be utilized for breeding programmes as per the zone to evolve productive hybrids.

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Dr. Alok Sahay, Director
 Central Sericultural Germplasm Resources Centre
 Central Silk Board, Ministry of Textiles – Govt. of India
 P.B. No. 44, Thally Road, **Hosur** – 635 109

POTENTIAL BIVOLTINE GENETIC RESOURCES



**Veeranna Gowda, N. Balachandran, M. Muthulakshmi,
 S. Nivedita, Geetha N Murthy and Alok Sahay**



Central Sericultural Germplasm Resources Centre

Central Silk Board, Ministry of Textiles – Govt. of India
 P.B. No. 44, Thally Road, **Hosur** – 635 109
 Phone: 04344-222013, 221148, 221146, 221147, 220698
 E-mail : csgrchos.csb@nic.in, csgrchosur@gmail.com
 Website: www.csgrc.res.in