POTENTIAL BIVOLTINE SILKWORM GERMPLASM OF CSGRC

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INTRODUCTION

Evaluation of silkworm genetic resources is the ultimate aim of its utilisation in breeding programme. Evaluation of silkworm genetic resources of CSGRC in varied agro-climatic regions helps to identify the region-specific germplasm, germplasm with wider-adaptability for abiotic stresses. With this concept, evaluation of bivoltine silkworm germplasm was undertaken with network centres of Central Silk Board as 2 projects viz., "All India Mulberry silkworm germplasm evaluation programme (AIMSGEP)" and "Evaluation of silkworm genetic resources for biotic and abiotic stresses in hotspots".

PROJECT IMPLEMENTATION

The programme was implemented with collaboration of 8 networking centres of Central Silk Board representing temperate (CSR&TI Pampore, RSRS- Kalimpong and SSBC- Coonoor), sub-tropical (RSRS Jammu, RSRS-Sahaspur and CISR-Jorhat and tropical (CSR&TI-Mysore, CSR&TI-Berhampore and CSGRC Hosur) climatic zones.

METHODOLOGY

Twenty short-listed bivoltine germplasm accessions were evaluated for 3 years for rearing and post-cocoon parameters. Best performed germplasm for wider adaptability and productivity and germplasm suitable for autumn crop of Jammu and Sahaspur regions where high temperature with high humidity prevails.

SCIENTISTS INVOLVED

1. CSGRC- Hosur - S..Radhakrishnan, B.Mohan, M.Muthulakshmi, N.Balachandran and S.A.Hiremath
2. CSR&TI, Pampore Mir Nisar Ahmad and S.M.Quadir.
3. CSR&TI-Berhampore M.Z.Khan
4. CSR&TI - Mysore - K.S.Chandrakanth and P.G.Joge
5. RSRS- Jorhat M.D.Senapati, S.Gupta, Y.R.Singh and R.Chakravoty
6. SSBC- Coonoor V.Lakshmanan and P.Rajalakshmi
7. RSRS Jammu S.K.Raina and Pankaj Tewari
8. RSRS Sahaspur T.P.S.Chauhan and A.A.Siddiqui

RESULTS

A. All India Silkworm Germplasm Evaluation Programme

Based on Mano's evaluation index, top-performed bivoltine germplasm for each climatic zone were identified as below:

Temperate Zone	
CSR&TI Pampore	- BBE-197, BBE-222, BBE-262
RSRS- Kalimpong	- BBE-183, BBE-197, BBE-187
SSBC- Coonoor	- BBE-183, BBE-197, BBE-222
Sub-tropical Zone	
RSRS- Jammu	- BBE-183, BBE-197, BBE-222
RSRS- Sahaspur	- BBI-6, BBE-187, BBE-197
CISR-Jorhat	- BBE-187, BBE-50, BBE-13
Tropical Zone	
CSR&TI Mysore	- BBE-183, BBE-50, BBE-187
CSR&TI-Berhampore	- BBE-50, BBE-183, BBE-187
CSGRC-Hosur	- BBE-197, BBE-183, BBE-187

Overall analysis of AIMSGEP data, based on rearing and post-cocoon parameters showed that BBE-222 & BBE-183 performed well in temperate regions, BBE-197 for sub-tropical regions and BBE-183 & BBE-187 for tropical regions. Accession BBE-183 showed wider adaptability for all climatic conditions.

B. Evaluation for Autumn Crop Rearing

Germplasm identified for Jammu Region

Germplasm BBE-178 performed better than local control (JAM-25) while BBE-266 and 178 better than common control CSR-2 for all the rearing parameters. Germplasm BBE-198 and BBE-266 performed better than both the controls for reeling parameters.

Germplasm identified for Sahaspur Region

Germplasm BBE-0266 and BBE-178 performed better than local (SH-6) and CSR-2 for rearing parameters while BBE-0186, BBE-189, BBE-192 and BBE-198 performed better than both controls for reeling parameters.

RECOMMENDATIONS

*Germplasm **BBE-183** can be utilised as the germplasm for wider adaptability combined with superior cocoon and post-cocoon traits for breeding programme. Similarly, germplasm BBE-**266** and **BBE-178** can be utilised to overcome the high temperature-cum- high humidity conditions prevails during autumn season of Jammu and Sahaspur, where leaf availability can be exploited fully and rearing failures can be overcome.*

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Published by: Dr. C.K. Kamble, Director CSGRC - Hosur