

Host Plant Improvement and Protection

Thrust Areas:

1. Acquisition, characterization and utilization of temperate mulberry genetic resources in breeding programmes.
2. Improving foliage productivity and nutritional quality: Exploitation of exotic and indigenous temperate mulberry germplasm accessions using appropriate breeding strategies.
3. Development of early sprouting and delayed senescence mulberry varieties
4. Abiotic stress resistance: cold, drought, salinity, heat
5. Biotic stress resistance: leaf spot, powdery mildew, tukra and leaf webber

Research Projects

#	Project Code and Title	Duration	Objective	Total Budget	Expected Outcome
Ongoing Research Projects					
1	PIE13001MI: All India Coordinated Experimental Trials for Mulberry (AICEM Phase – IV)	2019-2024	Identification of suitable mulberry variety for regional, zonal and national use based on their performance.	Rs. 17.98 Lakhs	Mulberry varieties suitable for north and north-west Indian states
2	AIB03006CI: Indo-Uzbekistan	2020-2026 (Revised upto 2030)	1.To identify silkworm breeds / hybrids and mulberry varieties/ lines that are suitable for the temperate regions of India and the sharply continental climate of Uzbekistan. 2. To use exotic breeds to produce silkworm hybrids (<i>Bombyx mori</i> L.) to increase the silk content in cocoons and their productivity. 3. To utilize and develop exotic mulberry (<i>Morus</i> spp.) varieties/ lines	Rs. 22.50 Lakhs	

			for high leaf nutrients and yield.		
Concluded research Project					
	PIB-3586:	Development of superior mulberry varieties through controlled hybridization for North-West Indian states	1. Identification of desired parents from germplasm CSR&TI, Pampore and CSGRC, Hosur 2. Hybridization among selected parents with specific targeted traits 3. Evaluation of different F ₁ s cross combinations	Rs. 35.00 Lakhs	Superior Mulberry progenies with targeted traits
Continuous Programme					
	PIB-Pam1	Acquisition, conservation, Characterization and utilization of mulberry germplasm under temperate conditions	1. Collection of diverse genetic stocks 2. Conservation and evaluation 3. Documentation and utilization in varied breeding programmes	-----	

Mulberry Genetic Resources

The temperate mulberry germplasm bank of CSR&TI, Pampore maintained 87 accessions (EC: 37 and IC: 50). Besides this, a total of 273 breeding lines (PIB-3392: 58 mulberry selections and PIB-3586: 215 hybrid mulberry progenies) evolved through hybridization have been maintained in breeding plots.

Mulberry Varieties Developed/Recommended

Mulberry Varieties	Leaf Yield	Recommended Region
Goshoerami, Ichinose, KNG and TR-10	16 – 17 MT/ha/year (under rainfed condition)	Temperate region (Kashmir valley)
TR-10, S-146, S-1635 and Vishala	14 – 19 MT/ha/year (under rainfed condition)	Sub-tropical region of North West zone
PPR-1	15 – 18 MT/ha/year (under rainfed condition)	Temperate region and hilly areas of Uttarakhand

PPR-1: Newly Evolved Mulberry Variety

#	Traits	PPR-1	Goshoerami
1.	Stem diameter of primary branches (cm)	1.86	1.52

2.	No. of primary branches/plant	39.0	32.0
3.	Length of longest branch (m)	2.60	1.90
4.	Sprouting of winter buds by the end of March (%)	54.79	1.10
5.	Leaf Moisture (%)	80.38	75.79
6.	Leaf moisture retention capacity (%)	84.68	77.58
7.	Rooting ability by stem cuttings (%)	95.00	18.67
8.	Frost damage (%)	7.41	15.99
9.	Leaf yield / plant (kg)	4.329	3.802
The PPR-1 variety is under AICEM Phase – IV testing at 20 Test Centers across the India			