AIE-3542: COLLECTION, CHARACTERIZATION, EVALUATION, CONSERVATION AND SUPPLY OF SILKWORM GENETIC RESOURCES (PHASE VIII)

Period : April, 2015 – March, 2018

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Introduction:

The collection, characterization, evaluation and conservation of silkworm germplasm is a continuous programme which is the main mandate of the centre and silkworm *Bombyx mori* accessions have been characterized using set descriptors, evaluated for important economic parameters and conserved following different conservation crop cycles every year. All the 475 silkworm germplasm accessions data on the characterization and evaluation have been updated in the SGIS database. The accessions are conserved following different conservation protocols as per the voltinism for promoting utilization for crop improvement and supply of the materials to the users.

Objectives:

- To collect silkworm genetic resources
- To characterize silkworm genetic resources for utilization
- To document silkworm genetic resources
- To supply silkworm genetic resources for better utilization

Outcome:

- Nine new collections included four bivoltine breeds, two new multivoltine breeds as well as three mutant breeds. Exhibit great variability in terms of origin, nature of breed as well as qualitative and quantitative traits with unique characteristics
- 475 silkworm germplasm accessions were evaluated and maintained true-to-type as per catalogue data.
- Systematic documentation of evaluation data for the 12 rearing and 16 post cocoon traits in the Silkworm Germplasm Information System (SGIS).
- Collected the wild species of mulberry silkworm *viz*. *Bombyx huttoni* from the Ziro valley of Arunachal Pradesh through explorative survey.
- The multivoltine accession BMI-0082 has been identified as best performer for 8 rearing traits followed by BMI-0074, BMI-0081, BMI-0080, BMI-0078 and BMI-0076 for 7 traits and BMI-0077, BMI-0067 for 6 traits and BMI-0079 for 5 traits.
- The bivoltine accession BBI-0377 has been identified as best performer for 4 rearing traits followed by BBI-0070, BBI-0345, BBE-0035, BBI-0068, BBI-0059 and BBI-0344 for 3 traits and BBE-0034, BBE-0036 and BBI-0303 for 2 traits.

Recommendations/Utilization

- ✓ 451 silkworm genetic resources supplied, majority were utilized by various CSB R&D institutes (86%).
- ✓ Collection of the wild species of mulberry silkworm *viz. Bombyx huttoni* from the Ziro valley of Arunachal Pradesh provides a basis for taking up studies on their conservation.
- ✓The identified top performing multivoltine and bivoltine accessions for various parameters can be utilized for crop improvement programs.