

**PROCEEDINGS OF THE 36<sup>TH</sup> RESEARCH ADVISORY COMMITTEE MEETING OF CSGRC  
HOSUR HELD ON 14<sup>TH</sup> FEBRUARY 2018**

The 36<sup>th</sup> meeting of the Research Advisory Committee [RAC] of CSGRC, CSB, Hosur was convened on 14<sup>th</sup> February 2018 under the Chairpersonship of Dr.Chandish R. Ballal, Director, National Bureau of Agricultural Insect Resources [NBAIR], Bengaluru and Members Dr.Modhumita Dasgupta and Dr.Anita Koduru (representing Dr.Sarat Babu). Dr.Abraham Varghese and Dr.S.B.Dandin, Members of RCC of CSB were the invitees. Due to other important pre-occupations, Dr.Varaprasad, Member sought leave of absence.

At the onset, Dr.Gargi welcomed the Chairperson, Members, Invitees and scientists to the meeting (list of participants enclosed as Annex) and thereafter, invited the Chairperson, Dr. Ballal for offering opening remarks. Dr. Ballal expressed happiness that as a follow up of one of the decisions of the previous RAC/ RCC meetings, CTR&TI, Ranchi had sent details of all the tasar accessions available with them for registration with NBAIR. However, the information provided by them was different from that given for mulberry silkworm by CSGRC, Hosur. She expressed that uniformity in passport data of all silkworms was preferable and requested CSGRC Hosur to examine the same and inform. She appreciated that as per suggestions, the list of publications of CSGRC was circulated to all the members. Thereafter, the agenda points were discussed and deliberated and decisions taken are as follows:

**ITEM NO. I: CONFIRMATION OF MINUTES OF THE 35<sup>th</sup> RAC MEETING HELD ON 7<sup>th</sup>  
September, 2017**

The Chairperson confirmed the minutes of the 35<sup>th</sup> RAC meeting by the committee as no comments were received.

**ITEM NO. II: REVIEW OF FOLLOW-UP ACTION TAKEN ON THE DECISIONS OF THE 35<sup>th</sup>  
MEETING OF RAC**

1. The mandate of the Centre has been revised as discussed in the last RAC meeting. However, the Committee suggested that, the second mandate need to be further modified by removing the terms 'hybrid' and 'combinations'.
2. The information generated by the germplasm indentors must be shared with CSGRC Hosur and an additional undertaking to this effect may be added in the indent form. It should be ensured that CSGRC, Hosur is acknowledged as the parent provider especially in case of development of hybrids.
3. The budget may be indicated under each project in the Agenda and Explanatory notes in future.

**ITEM NO.III: REVIEW OF FOLLOW-UP ACTION TAKEN ON SUGGESTIONS /  
RECOMMENDATIONS OF THE 60<sup>TH</sup> MEETING OF THE RESEARCH  
COORDINATION COMMITTEE OF CENTRAL SILK BOARD HELD ON 23<sup>rd</sup> & 24<sup>th</sup>  
OCTOBER, 2017 AT CSB, BANGALORE**

- Regarding classification of various projects clarity will be sought from the RCC in its next meeting to be scheduled shortly.

- The training needs of the Scientists may be identified in the beginning of each year and scientists can also opt for overseas training in relevant fields for which extra mural funding can be explored.
- Scientists can apply for DBT/DST funds to attend conferences abroad.
- Research projects can also be proposed in collaboration with R&D Institutes outside CSB.
- CSGRC, Hosur needs to take precaution regarding viral infections while importing germplasm, especially from China.

#### **ITEM NO. IV: OUTCOME OF CONCLUDING RESEARCH PROJECTS.**

The progress of concluding projects of the institute was presented by the respective Principal Investigators which are as per milestone and the decisions taken are as indicated below:

##### **PIE-3541: Collection, characterization, evaluation, conservation and supply of mulberry genetic resources (Phase VIII) (Apr.15 – Mar.18)**

The progress of the project was presented by Dr. P.K.Ambika, Scientist D of Mulberry Division and the various works carried out were explained in detail.

##### **Recommendations**

- Collection of new mulberry trees may be taken up in areas not previously covered under survey.
- Cytological characterization for understanding ploidy number may be outsourced and flow cytometry can be adopted for determining ploidy level.
- The parameters for characterization need to be focused on few major traits that would offer better information on the diversity and focus on minor traits could be discontinued.
- Characterization of fruit mulberry accessions need to be carried out and it was suggested to make use of chloroplast instrument.
- Analysis of digital images using open source softwares can be adopted for accurate and quick morphological and anatomical characterizations.
- The data on mulberry genetic resources need to be analyzed by calculation of Mano Index.
- DNA profiling is essential for identification of duplicates to cull out redundant accessions and reduce the cost of maintenance. This will also aide in understanding the genetic diversity of accessions for subsequent breeding programs.
- In order to control stem borer in mulberry garden at the Centre, the organic sealer cum healer developed by NBAIR, Bengaluru can be tried, since the pest could develop resistance to dioclorophos through repeated usage.
- The presentations should also indicate scientific names of the pests / pathogens.

**The RAC recommended continuation of the project for the next phase i.e. Phase IX.**

##### **AIE- 3542: Collection, Characterization, Preliminary Evaluation, Conservation and Supply of Silkworm Genetic Resources (April 2015 – March 2018)**

The progress of the project was presented by Dr. N. Balachandran, Scientist D of Silkworm Division explaining in detail the various works carried out.

## **Recommendations**

- Any germplasm going out or coming into the country should be through CSGRC, Hosur or CSGRC, Hosur should be in partnership with the Institute receiving or sending the germplasm as is the practice of import or export of germplasm being followed in the case of rice, groundnut, banana etc.
- The pure lines OR parental hybrids of hybrids / Fixed pure lines of mulberry and silkworm genetic resources should be accessioned only at CSGRC, Hosur.
- Hybrids cannot be conserved and named as accessions. Such cases may be corrected in catalogue / website of CSGRC / NBAIR.
- Accessions with larval duration shorter than that of Nistari should be identified for utilization in race improvement by other Institutes.
- DNA profiling of all important silkworm races to be carried out through outsourcing.
- Top performing accessions may be highlighted in the catalogues and website.

**The RAC recommended continuation of the project for the next phase i.e. Phase IX.**

## **ITEM NO. V: PROGRESS OF ON-GOING RESEARCH PROJECTS**

The progress of ongoing projects was presented by the respective Principal Investigators and the details are as indicated below:

### **PIE-3566: Evaluation of core set of mulberry germplasm for physiological efficiency and leaf quality** Mar.16 – Feb.19

Dr. K. Jhansi Lakshmi, Scientist D of Mulberry Division presented the progress of the project. The RAC observed that the progress is as per targeted milestones.

### **PIE-3575: Evaluation of mulberry genetic resources for functional traits for resilience to climate change** May'16 – Apr.19

Dr. K. Jhansi Lakshmi, Scientist D of Mulberry Division presented the progress of the project. The RAC observed that the progress is as per targeted milestones and suggested to include duration and rate of sprouting as well as rate of leaf desiccation for data analysis.

### **3. PIB-3505: Development of drought tolerant mulberry variety for rainfed sericulture** (Collaborative project of CSRTI, Berhampore with CSGRC) Feb.14 – Dec.19

Dr. K. Jhansi Lakshmi presented the progress. The RAC suggested analysis of location specific/ soil specific moisture content in view of water shortage. The RAC observed that the progress is as per targeted milestones.

### **PIB-3586: Development of superior mulberry varieties through controlled hybridization for North-West Indian states** (Collaborative project of CSRTI, Pampore with CSGRC Hosur) Sept.16 – Aug.21

Dr. K. Jhansi Lakshmi presented the progress of the project. The RAC suggested to study the fruit parameters also instead of only leaf parameters and observed that the progress is as per milestones

### **AIB-3577: Evaluation of multivoltine germplasm to identify potential parents for developing cross breeds suitable for southern and eastern zones** Jun.16 – May'19

Dr. N. Balchandran presented the progress of the project. The RAC suggested to be clear in achieving the objectives.

**AIB-3578: Evaluation of exotic bivoltine silkworm breeds to identify parental genetic resources** Jun.16 – May'19

Dr. M. Muthulakshmi, Scientist-D presented the progress. During the course of discussions, it was suggested to register parental lines that are used by other Institutes for developing hybrids and not just the hybrids so that CSGRC Scientists also get credit. Necessary modifications may be incorporated in the present system which may be discussed in the forthcoming RCC meeting.

**AIE- 3555: Cryopreservation of Tasar silkworm, *Antheraea mylitta* semen and its artificial insemination** (Collaborative project with CTR&TI, Ranchi) Jun.16 to May'19

Dr. G. Lokesh, Scientist-C presented the progress. The RAC opined that the need of the hour is to undertake molecular characterization of tasar eco-races to identify eco-races with genetic differences for further studies. Since the Centre is conserving silkworm germplasm, it was suggested to continue the said project work at CTR&TI, Ranchi and not at CSGRC Hosur.

**ITEM NO. VI: PROGRESS OF NEW RESEARCH PROJECTS**

The two new concepts approved by the RAC in its last meeting was formulated into full fledged projects incorporating the modifications suggested and presented by the respective PIs along with referee comments.

**Evaluation of fruit yielding mulberry accessions for fruit and foliage yield – 4yrs.**

The project was presented by Shri G.Thanavendan, Scientist-B. After due deliberations, the RAC suggested to remove “Under rainfed condition” from the title of the project and enhance the budget proposed. It was also suggested to include fruiting season / period, shelf life of fruits, suitability for wine, juice, jam, etc. under evaluation. Further, it was also suggested to include fruit fly, bird and pest management as a part of the project. The project should study the difference between fruits of *Morus alba* and *M. indica* and the negative effects, if any on extra intake by human beings.

**The RAC approved the project with above suggestions for forwarding to CO, CSB, Bengaluru for approval of RCC and allotment of code.**

**Evaluation of Bivoltine silkworm genetic resources for tolerance to abiotic stress in selected hot spots – 5yrs**

The project was presented by Dr.M.Maheswari, Scientist-D. The RAC suggested modification of Objective 2 as ‘to target selected hotspots only’. Further, it was suggested to target accessions with higher ERR first for molecular study.

**The RAC approved the project with above suggestions for forwarding to CO, CSB, Bengaluru for approval of RCC and allotment of code.**

## ITEM NO.VII: ANY OTHER POINTS WITH PERMISSION OF THE CHAIR

The Chairperson, RAC requested the members and invitees for their suggestions and the same are as indicated below:

**Dr.Abraham Verghese, Invitee** suggested encouragement of M.Sc / Ph.D students to take up work related to research projects of the Centre and to reflect the research output of the students in the presentations.

**Dr.K.Mandal, Member** suggested to project the Centre as an elite one and also to pursue registration of the Centre for Ph.D studies under Mysore University or any other University in Tamil Nadu.

**Dr. S.B. Dandin, Invitee** opined that, CSGRC, Hosur has an important mandate which may be displayed in the office so that it is known to all visitors and suggested to focus future research on climate change, farm upliftment, nutritional benefits etc. He also suggested inclusion of an undertaking in the germplasm supply format that the Center will be identified as the source of germplasm whether primary or secondary.

**Dr.Modhumita Dasgupta, Member** suggested inclusion of studies on ploidy levels with the use of Flow cytometer which can aid in better and accurate characterization of the germplasm. She also suggested documentation of DNA profiles for future applications and utilize digital platform for easier and precise characterization.

**Dr. Anita Kodaru, Representing Dr. Sarat Babu, Member** appreciated the efforts of the scientists and mentioned that it was a learning experience for her. She suggested that acquiring elite materials from other countries should be through NBPGR, New Delhi following legal procedures and to approach pathologists from other institutes for evaluations on biotic stress. She also suggested provision of enhanced budget for such outsourcing studies.

**Dr.Chandish Ballal, Chairperson** appreciated the work done by the Centre and suggested the following:

- To have collaborations with other R&D Institutes outside CSB in areas of pest management and nutrition management.
- To increase the publications in impact factor journals
- To explore extra mural funds for attending conferences abroad
- The scientists to visit NBAIR, Bengaluru to learn about the new technologies developed by them
- CSGRC Hosur must get credit for the germplasm supplied to other Institutes / Universities for which a policy intervention is needed which will be proposed in the next RCC meeting.
- CSGRC Hosur may have a re-look on the essential characteristics to be included in the passport data for silkworms which can be limited to 10 to 12 traits.
- Molecular characterization is needed for future use.
- CSGRC may organize an open Germplasm Day to create awareness and enhance utilization of the genetic resources and this can be included in the action plan with budget provision.
- Lateral funded projects with JRFs to be proposed with higher budget.

After the deliberations, the Chairperson, RAC honoured Dr.K.Mandal, Director (Tech), CSB Bangalore who will be superannuating in February 2018 and Dr.Gargi Director, CSGRC Hosur who will be superannuating in May 2018 on behalf of the Committee and wished them a peaceful retired life.

The meeting ended with vote of thanks by Dr. Geetha N. Murthy, Scientist-D.



**DIRECTOR &  
CHAIRPERSON  
RESEARCH ADVISORY COMMITTEE  
CSGRC HOSUR**

निदेशक/ Director  
राष्ट्रीय कृषि कीट संसाधन बुजुरो  
ICAR National Bureau Of Agricultural Insect Resources  
डाक पेटी सं २४९१/Post Bag No. 2491  
एच. ए. फार्म पोस्ट/H.A. Farm Post  
बेल्लरी रोड/Bellary Road  
बंगलूरु -५६००२४/Bagalore-560024

**List of participants for the 36<sup>th</sup> Research Advisory Committee Meeting of CSGRC, Hosur convened on 14/02/2018**

Dr. Chandish R. Ballal, Director, NBAIR, Bengaluru, Chairperson.

Dr. Kalidas Mandal, Director (Tech), Central Silk Board, Bengaluru, Member .

Dr. Modhumita Dasgupta, Scientist F, ICFRE, Coimbatore, Member.

Dr. Anitha Kodaru, Principal Scientist, NBPGR, Hyderabad [representing Dr. Sarat Babu, Member).

Dr. S.B. Dandin, Liaison Officer, Biodiversity International , Bengaluru, Invitee.

Dr. Abraham Verghese, Director, GPS Institute of Agricultural Management, Bengaluru, Invitee.

Dr. Gargi, Director, CSGRC, Hosur, Member Convener

Dr. Geetha N. Murthy, Scientist D, CSGRC, Hosur

Dr. M. Maheshwari, Scientist D, CSGRC, Hosur

Dr. S. Nivedita, Scientist D, CSGRC, Hosur

Dr. K. Jhansilakshmi, Scientist D (R&S), CSGRC, Hosur

Dr. P.K. Ambika Scientist D, CSGRC, Hosur

Dr. N. Balachandran, Scientist D, CSGRC, Hosur

Dr. M. Muthulakshmi, Scientist D, CSGRC, Hosur

Dr. G. Lokesh Scientist C, CSGRC, Hosur

Shri. G. Thanavendan Scientist B, CSGRC, Hosur

Dr. S.S. Chauhan, Scientist D, CSR&TI, Pampore

Shri. Pawan Sinha, Scientist B, CSR&TI, Pampore

Shri. S. Sekar A.D (Comp), CSGRC, Hosur

Shri. M. Jagajeevan, A.D (Admin), CSGRC, Hosur