

Minutes of 52nd Meeting of Research Advisory Committee (28th January 2021 Virtual Meet)

52nd Research Advisory Committee meeting of CSRTI-Berhampore was held on 28th January 2021 on virtual mode to review the progress of R&D projects/programmes under the chairmanship of Dr. Chirantan Chattopadhyay, Former Vice Chancellor, Uttar Banga Krishi Viswavidyalaya, Coochbehar, West Bengal.

At the outset, Dr. D. Pandit, Scientist-D welcomed the Chairperson, all the esteemed members of New RAC (2021-23), invitees, scientists and other participants to the meeting.

Dr. V. Sivaprasad, Director, CSRTI-Berhampore and Member-Convenor, RAC presented the R&D highlights and other institutional activities. List of participants is appended in Annexure-I. Thereafter, agenda-wise items were taken up for discussion.

Dr. Chirantan Chattopadhyay, RAC-Chairman in his opening remarks greeted all the participants with new-year wishes. He expressed that he is glad to lead the meeting once again with an active, experienced and dedicated team. He admired Director and his team for focused R & D highlights during COVID-19 pandemic situation. He requested the participants for fruitful interaction and precise presentation through virtual platform.

ITEM NO.1: Confirmation of the minutes of 51st meeting of RAC held on 27th Jan 2020 at CSRTI-Berhampore.

As no comments received from any of the members of the committee, the minutes were confirmed.

ITEM NO.2: Review of follow-up action taken on the recommendations/ decisions of 51st meeting of RAC held on 27th Jan 2020.

The follow up action taken on the decision of the committee were reviewed and the progress was found satisfactory.

ITEM NO. 3: REVIEW OF CONCLUDED PROJECTS

Five projects were concluded during the period as per the time schedule. The following suggestions were made by RAC after presentation by the PI/CI:

1. PIB 3610: Preliminary evaluation of newly evolved mulberry genotypes for mulberry improvement

RAC advised the PI to cross check the yield levels in short-listed genotypes as the leaf yield improvement over existing controls is around 40%. The committee also recommended for further evaluation of genotypes for FYT.

[Action: Dr. K. Suresh, Scientist-C, MBG]

2. PIB 3576: Evaluation of new mulberry genotypes for improvement in productivity and quality

RAC suggested the PI to include the date of pruning/meteorological data during winter season in which early sprouting was observed for effective utilization of outcome in colder regions. The selected genotypes (C1 & C11) should be evaluated further as MLT.

[Action: Dr. K. Suresh, Scientist-C, MBG]

3. AIB 3617: Identification of region specific bivoltine hybrids for highly fluctuating and seasonally variable climatic conditions of eastern & NE

RAC advised the PI to compare the performance of new BHP-DH with existing DHs in addition to the foundation crosses for logical conclusion. Further, the leaf: cocoon ratio for newly developed hybrids should be determined. The committee also recommended for further evaluation of BHP-DH for OFT.

[Action: Dr. V. Lakshmanan, Scientist-D, SBG]

4. AIB 3619: Development of silkworm congenic breeds from a gene pool with higher genetic plasticity.

The committee noted that the newly developed congenic lines seems to performing better than the parental stocks and suggested the PI to continue evaluation of congenic multivoltine (28RY) hybrids in favourable seasons also.

[Action: Dr. Ranjitha Devi, Scientist-B, SBG]

5. ARP 3605: Validation of DNA markers in silkworm breed developed by introgression of DNA markers associated with NPV resistance using MAS Breeding and large scale field trial of the breed (DBT: Coll. of SBRL-Kodathi, CSRTI-Mysore, CSRTI-Pampore & NSSO-Bengaluru)

RAC observed that the identified hybrid combinations should be subjected to large scale trial at farmers' level in East & North Eastern zone as suggested by DBT.

[Action: Dr. Chandrakanth N, Scientist-C, SBG]

ITEM NO. 4: APPROVAL OF NEW RESEARCH PROJECT PROPOSAL

1. Title: Final Yield Trail (FYT) of newly identified mulberry genotypes for leaf productivity and quality.

Duration: 4 years

The project proposal was presented by the PI. After critical review/deliberations, the house suggested the following:

Observation/Suggestion: Important bio-chemical traits of promising genotypes under test should also be estimated during FYT.

Decision: The new project proposal was approved and PI was advised to revise the proposal as per suggestions.

[Action: Dr. Yallappa H, Scientist- B, Host Plant]

ITEM NO. 5. REVIEW OF PROGRESS OF ON-GOING PROJECTS

The progress of following 17 on-going research projects of main institute and nested units along with ToT/Extension/Training activities were presented by the PI/CI; reviewed by RAC and suggestions made were as follows:

1. PIB 3627: Development of superior mulberry (*Morus* spp.) genotypes through Polyclonal Seed Orchard

The progress of the project was found satisfactory and as per milestones. RAC suggested for maintenance of the polyclonal seed orchard for further utilization even after the completion of project.

2. PIE 02002 SI: Evaluation of performance of mulberry genotypes C-9 under red and laterite soils

The PI was advised to perform multi-location trial followed by GGE Biplot analysis of available data for appropriate / logical conclusion in line with the results presented in the concluded project.

[Action: Dr. K. Suresh, Scientist-C, MBG]

3. PRP 08002 MI: Identification of candidate genes based powdery mildew resistance for utilization in disease resistance breeding in mulberry. [Coll. project with SBRL-Kodathi]

RAC suggested for effective utilization of developed mapping populations further and the progress of project at CSRTI-Berhampore was found satisfactory.

4. PIB 02007 SI: Improvement of mulberry leaf longevity in E & NE states of India

RAC opined that the project was initiated very recently and the progress was satisfactory; and suggested PI for sticking to the milestones.

5. PPA 02005 SI: Optimization of spacing and nutrient dose for the newly developed high yielding mulberry variety (C2038) under irrigated condition

The PI clarified the treatments in the project. This project was also initiated recently and the progress made seems to be satisfactory.

6. PRP 02003 SI: Studies on the management of mulberry root rot disease in E & NE India.

RAC advised the PI to complete the targeted trials with the farmers and complimented for continuation of field trials during the pandemic situation.

7. AIB 3602: Development of thermo-tolerant Bivoltine Hybrids of Silkworm through MAS.

RAC suggested the PI to analyse the plausible reasons for low reelability recorded in the KDH hybrids. The committee also advised to present the data on performance of KDH hybrids separately for favourable & un-favourable seasons.

[Action: Dr. N. Chandrakanth, Scientist-C, SBG]

8. AIB 02009 MI: Authorization trials of silkworm hybrid, 12Y x BFC1 in E & NE India

RAC opined that the project was initiated very recently and expressed that authorization trials would be undertaken as per milestones.

9. AIE 06002 MI: Evaluation of bivoltine silkworm genetic resources for tolerance to abiotic stress in selected hotspots (Coll. project with CSGRC-Hosur)

The committee observed that the project was initiated recently and only one trial was completed.

10. AIB 01009 MI: Evaluation of new Bv Double hybrid, TT21 X TT56 at farmers level for authorization for commercial exploitation (Coll. project with CSRTI-Mys)

The authorization trials were initiated recently and only one crop was undertaken during Agrahayani season in West Bengal.

11. AIT 02008 SI: Identification of high humidity tolerant silkworm breeds/hybrids for E & NE India

RAC advised the PI to contact NBIAR @ Bangalore for information generated on *Trichogramma* parasitoids characterization for adverse climate conditions. The committee appreciated the molecular markers for high humidity tolerance in silkworm and its utilization to screen the silkworm genetic resources available at CSRTI-Berhampore.

[Action: Dr. Raviraj, Scientist-B, SBG]

12. AIB 02006 MI: Improvement of Nistari lines for survival & Silk productivity (with CSRTI-Mysore)

The PI was advised to present improvements recorded for all lines of Nistari separately. The committee felt that the progress achieved is good.

[Action: Dr. Ranjita Devi, Scientist-B, SBG]

13. AIC 02004 CN: Molecular characterization and assessment of the efficacy of low molecular weight peptides isolated from mulberry leaf against flacherie disease of silkworm (With UNB Siliguri)

RAC observed that the progress of the project was satisfactory and as per milestones.

14. ARP 3630: Evaluation of new room and silkworm bed disinfectants.

RAC advised the PI to compare the seasonal efficacy of room disinfectants (Nirmool & 5% bleaching powder).

15. AIT 08005 MI: Development and evaluation of Bidsenovirus resistant silkworm hybrids developed from marker assisted breeding lines-Phase II (Coll. of SBRL- Kodathi)

The committee advised the PI to contact SBRL for obtaining bidensovirus resistant silkworm hybrids developed for evaluation in West Bengal.

[Action: Dr. K. Rahul, Scientist-C, Silkworm Protection]

16. PRE 02001 SI: Management of Pink Mealy Bug *Maconellicoccus hirsutus* (Green) of Mulberry with barrier system

RAC advised to analyze the data for drawing logical conclusions while submitting the concluded report.

17. BPP 05014 CN: Standardization of Processing and Production of a Consumable Beverage from Mulberry leaves and Blending with Green Tea. (Coll. project with CSB-Bengaluru, AAU & TTTRI-Jorhat)

RAC observed that project progress was as per milestones.

The scientists also presented progress/achievements made with regard to OST, OFT, Extension and Training activities. The committee appreciated the team for satisfactory progress despite the pandemic situation.

General Comments of RAC Members & Chairperson:

- Protect intellectual properties as an outcome of concluded project(s), wherever is feasible. Sharing of royalty/lump sum fee of the commercialization with the contributors involved in product/technology development following government norms and established guidelines to encourage generation of such properties need to be duly considered.
- Focus on behavioral economics of product/technology developed/to be developed with help of social scientists.
- Interaction of young scientists with seniors in respective specializations for developing new ideas/concepts.
- Development of appropriate seed multiplication and seed production system for specific hybrid combinations. A collaborative project (Improvement of seed crop rearing performance of newly developed breeds in Eastern & North eastern India) to be taken up with NSSO-Bangalore & DoSs should be initiated with a focus on seed cocoon generation and egg productivity. Testing of any new breed(s) should preferably be done over locations and data be analysed by GGE bi-plot method to check stability in performance of the same.
- Adoption of multi-location trials for the promising mulberry varieties developed for specific conditions.

Mr. Bikas Chandra Roy (Rearer's representative) expressed that farmers are benefitted a lot with the crossbreed, Nistari x SK6.7 than Nistari x CSR breeds.

Shri Dipak Saha (Handloom Handicrafts & Sericulture-Tripura) expressed being part of the good technical/scientific deliberations. He also opined that the bivoltine double hybrids are performing better in adverse climate conditions of Tripura. The Improved crossbreed (12Y x BFC1) is also performing very well. DOS-Tripura would enlarge the field trials of these hybrids in Tripura.

Dr. Anath Nath Mondal (DoS-West Bengal) appreciated the efforts of CSRTI-Berhampore for undertaking project for the improvement of Nistari as it is highly necessary for Bengal sericulture.

Dr. Nirmal Kumar (RAC Member) opined that the scientific presentations especially MAS based silkworm breeding efforts & BmNPV resistance studies were impressive. He requested the scientists to consider determining leaf: cocoon ratio for newly developed hybrids and suggested for developing appropriate multiplication system for new parental breeds.

Prof. R Varatharajan (RAC Member) expressed his satisfaction being part of RAC and scientific discussion on various aspects of mulberry sericulture. He appreciated the progress made in various projects.

Dr. Debabrata Basu (RAC Member) expressed his gratitude to CSB for nominating to the RAC. He observed that B:C ratio and related economics should be estimated during transfer of technology in the field. He further suggested to adopt ICT for documenting feedback of extension/training programmes.

Dr. Somnath Bhattacharya (RAC Member) appreciated the scientific presentations made by CSRTI-BHP team and felt significant progress was made in all the research projects.

Dr. S Nair (NSSO-Bangalore) expressed his satisfaction for being part of scientific discussions. He suggested for planning of multiplication channels for parental breeds in E & NE region.

Dr. K. Vijayan (RCS-CO-Bangalore) expressed his happiness to be part of RAC meeting and suggested to develop products/technology for end-users.

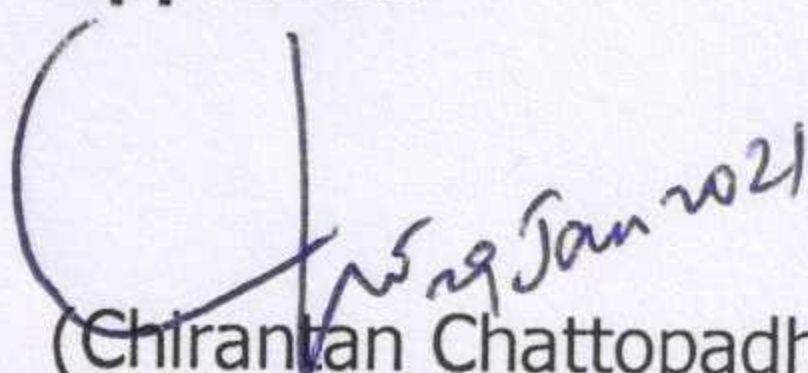
Dr. Sivaprasad V (Director-CSRTI-BHP) expressed his sincere thanks to the RAC-Chairman and all the members for guiding the R&D aspects appropriately. Further, he highlighted the plans to streamline the multiplication system of parental silkworm breeds/hybrids by initiating a project with NSSO & DoSs.

Dr. Chirantan Chattopadhyay thanked all the RAC members for constructive suggestions for R&D efforts of CSRTI-BHP. All Hon'ble Members of the RAC contributed significantly through active participation in deliberations. Recommendations of the RAC were taken up with seriousness, duly followed up, which has paid rich dividends towards significant improvement in the research programs, output thereof over the years. The RAC duly acknowledges the efforts of the team of Scientists of CSR&TI, Berhampore and its leadership of the Director for continuing its efforts in research and extension despite hurdles of COVID-2019. He acknowledged the CSB for providing an opportunity to learn and lead CSRTI-BHP once again. He appreciated the scientists for good scientific presentations, efforts to protect & commercialize developed products/technology and progress made.

[Action: Concerned scientists]

The meeting ended with the vote of thanks.

Approved


(Chirantan Chattopadhyay)
Chairperson, RAC
CSRTI-Berhampore

Date: 29 Jan 2021

ANNEXURE -I**LIST OF PARTICIPANTS IN THE 52ND MEETING OF RESEARCH ADVISORY COMMITTEE (RAC) HELD ON 28.01.2021 AT VIRTUAL MEET**

#	Name	Designation
1.	Dr. Chirantan Chattopadhyay, Chairman, Former Vice Chancellor, UBKV, Coochbehar, West Bengal	Chairman
2.	Dr. Somnath Bhattacharya, Professor, B.C.K.V. Mohanpur, Nadia	Member
3.	Prof. Debabrata Basu Dept. of Agril. Extension, BCKV	Member
4.	Prof. R. Varatharajan, Dept. of Zoology, Manipur University	Member
5.	Dr. S. Nirmal Kumar, Former Director, CSR&TI, Berhampore	Member
6.	Dr. K. Vijayan, Sc-D, Rep. Director (Tech.), RCS, CO, CSB, Bengaluru	Member
7.	Dr. K. Sathyanarayan, Sc-D, Head & RCS, CO, CSB, Bengaluru	Member
8.	Dr. S Nair, Sc-D, Rep. Director (NSSO), CO, CSB, Bengaluru	
9.	Shri Anath Nath Mondal, JD, Representative of DoS- West Bengal	
10.	Shri Bikas Chandra Roy, Rearers Representative	Member
11.	Shri Dipak Saha, SDO, Representative, Handloom Handicrafts & Sericulture, Govt. of Tripura	Member
12.	Shri Banti Debbaram, SDO, Representative, Handloom Handicrafts & Sericulture, Govt. of Tripura	
13.	Dr. V. Sivaprasad, Director, CSR&TI, Berhampore	Member-Convenor

Absentee:

1.	Director, DoS-Manipur	Member
2.	Md. Salauddin Momin, Reelers Representative	Member

LIST OF SCIENTISTS/ PARTICIPANTS ATTENDED THE MEETING

#	Name	Designation	Address
1.	Dr. T. Dutta (Biswas)	Scientist-D, SEEM	CSR&TI, Berhampore
2.	Dr. V. Lakshmanan	Scientist-D, Silkworm	
3.	Dr. S. Chattopadhyay	Scientist-D, Biotechnology /Host Plant	
4.	Dr. Dipesh Pandit	Scientist-D, PMCE	
5.	Shri Gopal Ch. Das	Scientist-D, SEEM	
6.	Dr. S Sarkar	Scientist-D, Training	
7.	Mr. Zakir Hossain	Scientist-D, RSRS	Kalimpong, WB
8.	Dr. P.Kumaresan	Scientist-C, RSRS	Jorhat, Assam
9.	Dr. Manjunatha, G. R	Scientist-C, PMCE	CSR&TI, Berhampore
10.	Dr. N. Chandrakanth	Scientist-C, Silkworm	
11.	Dr. Shafi Afroz	Scientist-C, SEEM	
12.	Dr. Suresh K.	Scientist-C, Host Plant	
13.	Dr. V. Vijay	Scientist-C, Soil Science	
14.	Dr. R. Mahesh	Scientist-C, Agronomy	
15.	Dr. Pooja Makwana	Scientist-C, Biotechnology	
16.	Dr. K. Rahul	Scientist-C, Silkworm Protection	
17.	Dr. Anil Pappachan	Scientist-C, Mulberry Protection	
18.	Dr. Mihir Rabha	Scientist-B, Silkworm Protection	
19.	Dr. Parameswara Naik.J.	Scientist-B, Training	
20.	Dr. Raviraj V.S.	Scientist-B, Silkworm	
21.	Dr. Thangjam Ranjita Devi		
22.	Dr. Deepika Kumar Umesh	Scientist-B, Host Plant	
23.	Mr. Yallappa Harijan		
24.	Shri Khasru Alam	Scientist-B, RSRS	Koraput, Odisha
25.	Shri P.K. Prasad	Dy. Director (Comp.)	CSR&TI, Berhampore
26.	Shri Subrata Sarkar	Technical Assistant, PMCE	
27.	Smt. S. Karmakar		
28.	Smt. M. Chattopadhyay		
29.	Mr. Srinivas	Jr. Engg.	
30.	Ms. T. Naga Teja Shirisha	Steno., PMCE	
31.	Shri Sahadeb Roy	SRF, Silkworm	
32.	Ms. Surabi Ghosh	JRF, Biotech	