

Minutes of 51st Meeting of Research Advisory Committee (27th January 2019 at CSR&TI, Berhampore, West Bengal)

51st Research Advisory Committee (RAC) meeting of CSRTI-Berhampore was held on 27th January 2019 to review the progress of R&D under the Chairmanship of Dr. Chirantan Chattopadhyay, Vice-Chancellor, *Uttar Banga Krishi Viswavidyalaya*, Coochbehar, West Bengal.

At the outset, Dr. D. Pandit, Scientist-D welcomed the Chairman, all the esteemed Members of RAC, invitees, scientists and other participants to the meeting and presented the Action Taken Report (ATR) of 50th meeting of the RAC. Dr. Chirantan Chattopadhyay, RAC-Chairman in his opening remarks, greeted all the participants with best wishes for new year 2020, International Year of Plant Health. He expressed that he is glad to lead the meeting with an active and dedicated team. He admired the Director and his team for bringing out focused agenda for the meeting. Further, congratulated the scientists for their promotions; award of PhD degrees and various awards achieved and advised to continue efforts for the development of sericulture industry, which covers few of the sustainable development goals of United Nations especially, Good Health & Well-Being, Responsible Consumption & Production, Climate Action, etc. He requested the participants for fruitful interaction and precise presentation.

Dr. V. Sivaprasad, Director, CSR&TI, Berhampore and Member-Convenor, RAC presented the research highlights including extension & CBT, publications, achievements of scientist and other institutional activities. List of participants is appended in Annexure – I. Thereafter, agenda-wise items were taken up for discussion.

ITEM NO.1: Confirmation of the minutes of 50th meeting of RAC held on 11th July 2019 at CSRTI-Berhampore.

As no comments were 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 50th meeting of RAC held on 11th July 2019.

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

Nine projects were concluded during the period as per the time schedule. The following suggestions were made after the presentation by the scientists followed by deliberations on the outcome and its future utilization:

1. PIB 3505: Development of Drought Tolerant Mulberry variety for Rainfed Sericulture.

RAC advised the PI to utilize five genotypes (PYD-08, 01, 21, 04 & 07) for FYT. Further, observed that the utilization of budget in the project seems to be low.

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

2. PPS 3600: Soil health card preparation for mulberry growing soils in E & NE India.

RAC suggested the PI to prepare state-wise achievement against the target in the final report. The recommendation of fertilizer application for each state has to be prepared and communicated to farmers through DoS. Mapping of soil fertility levels should be documented for future reference.

[Action: Dr. V. Vijay, Scientist-C, Agronomy & Soil Science]

3. AIB 3616: On-farm trial of the multivoltine silkworm breeds/ hybrids developed for high shell percentage and neatness of silk filament.

RAC advised the PI to present CD values, while inferring the results and to document budget utilized against the approval. The promising combination (12Y x BV) should be evaluated under hybrid authorization programme.

[Action: Dr. A.K. Verma, Scientist-D, SBG (MV)]


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- 4. PRE 3589:** Assessment of designed antimicrobial peptides for mulberry protection against brown leaf spot and root rot: a biotechnological approach.

RAC advised the PI to file application for process patent based on the outcome *i.e.*, Potential synthetic AMP PRE2. Further, suggested discussing with Dr. Kaushik Banerjee (ICAR-NRC Grapes, Pune) and Dr. Irani Mukherjee (ICAR-IARI, New Delhi) for further exploration of synthetic peptide.

[Action: Dr. S. Chattopadhyay, Scientist-D, Biotechnology]

- 5. ARP 3590:** Studies on the efficacy of phototrophic bacterial extracts as feed supplements for management of diseases in silkworm *Bombyx mori* L.

RAC observed that the outcome from the study does not have any practical utility as feed supplements did not suppress all the pathogens of silkworm. PI was advised to publish the results.

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

- 6. PPA 3622:** Popularization of high bush mulberry plantation techniques in Majuli river island of the Brahmaputra, Assam.

As advised by RAC in the last meeting, the project was terminated as mid-term closure and the house suggested popularization of the flood-tolerant variety, C2028 in Majuli region (Assam) as a ToT in association with DoS-Majuli and monitor the plantations already undertaken.

[Action: Dr. P. Kumaresan, Scientist-C, RSRS-Jorhat]

- 7. PPA 3613:** Studies on Drum kit drip irrigation with Hydrogel on yield & WUE of mulberry.

As per suggestion of last RAC, the project was terminated as mid-term closure. RAC suggested to utilize the outcome of project/technology among the farmers through ECP/ToT programmes in association with DoS-Odisha. Further, Pusa hydrogel developed by ICAR-IARI (Dr Anupama) could be used in place of regular hydrogel.

- 8. AIB 3614:** Evaluation and identification of suitable bivoltine hybrids for Odisha.

RAC suggested the PI to popularize the hybrid (FC1 x FC2) in Odisha through ToT programme in association with DoS-Odisha.

[Action: Sri. K. Alam, Scientist-B, RSRS-Koraput]

- 9. AIB-3578:** Evaluation of exotic bivoltine silkworm breeds to identify promising parental genetic resources.

RAC advised the PI to scrutinize the data presented, as it seems fallacious and should be in more presentable form.

[Action: Sri. G.C. Das, Scientist-D, Extension/RTI/SBG]

ITEM NO. 4: APPROVAL OF NEW RESEARCH PROJECT PROPOSAL

Three new research project proposals were presented by the PIs and RAC critically reviewed the proposal. The decisions are as follows:

- 1. Title: Identification of high humidity tolerant silkworm breeds/hybrids for E & NE India.**

Duration: 4 years

Observation/Suggestion:

- Highlight the temperature limit in the methodology
- JRF & equipment proposed for the research are recommended

Decision: Approved and PI was advised to revise the proposal as per suggestions and submit for necessary approvals.

[Action: Dr. V.S. Raviraj, Scientist- B, SBG(BV)]


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2. Title: Improvement of Nistari lines for survival and silk productivity (in coll. with CSRTI-Mysore)

Duration: 4 years

Observation/Suggestion:

- Hybridization potential should be evaluated before recommending the improved lines
- Enhance population size from 5 dfls to 10 dfls
- Role of CSRTI-Mysore to be clearly defined

Decision: Approved and PI was advised to revise the proposal as per suggestions and submit for necessary approvals.

[Action: Dr. T. Ranjita Devi, Scientist- B, SBG(MV)]

3. Title: Improvement of mulberry leaf longevity in E & NE states of India.

Duration: 4 years

Observation/Suggestion:

- Leaf palatability to silkworm should be main focus as longevity may hinder leaf palatability
- Make provision to conduct trials at farmers level with the best outcome

Decision: Approved and PI was advised to revise the proposal as per the suggestions and submit for necessary approvals.

[Action: Dr. Deepika K U, Scientist- B, MBG]

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

The progress of following 15 on-going research projects of main institute and nested units were reviewed and suggestions were made as follows:

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

The plantations were established and the progress is as per milestones.

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

The plantations were established and the progress is as per milestones.

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

The investigator was advised to utilize the mapping population for screening with MLOs.

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

The PI was advised to collect the seeds at appropriate time and continue the study.

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

Experimental plantations were established at different test centres.

6. AICEM-IV: All India Co-ordinated Experimental Trial for Mulberry Varieties (AICEM)- Phase IV

The above projects were initiated recently and plantations were established as per the plan.

[Action: Sri. D. Chakravorty, Sci-D & Dr. K. Suresh, Scientist-C, MBG]

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

The project was initiated recently, and the plantations were established.

[Action: Dr. R. Mahesh, Scientist-C, Agronomy]

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

The PI was advised to evaluate the root rot management strategies at farmers level.

[Action: Dr. A. Pappachan, Scientist-B, Mulberry Pathology]

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

RAC suggested the PI to highlight the data for favourable & un-favourable conditions clearly. Base population size may be increased further for effective MAS selection.

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

10. AIB 3617: Identification of region specific bivoltine hybrids suitable for highly fluctuating and seasonally variable climatic conditions of E & NE India (Phase-II).

RAC advised the PI to reason-out poor survival of FC1xFC2 during Agrahayni. Further, data of FC1xFC2 has to be collected from the secondary source (annual reports) and compared with BHP double hybrids for logical conclusion. Also suggested to expedite the field trials of BHP double hybrids.

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

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

RAC observed that target of congenic breeds has already been achieved and advised the PI to finalize the results and initiate field evaluation in comparison to ruling breeds.

[Action: Dr. A.K. Verma, Scientist-D, SBG (MV)]

12. ARP-3605: Validation of the 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 [Coll of SBRL, Bangalore; CSRTI-Mysore & Pampore; DBT funded]

RAC advised the PI to scrutinize the data presented, as it seems fallacious and should be in more presentable form.

[Action: Sri G.C. Das, Scientist-D, Extension/RTI/SBG]

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

The project was initiated recently and progress found as per milestone.

[Action: Dr. Pooja M, Scientist-C, Biotech]

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

RAC advised the PI to test new general disinfectant "NIRMOOL" at farmers level before recommending for large scale evaluation.

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

15. PRE02001SI: Management of Pink Mealy Bug *Maconellicoccus hirsutus* (Green) of Mulberry with barrier system

The project progress was as per milestones and satisfactory.

[Action: Dr. P. Kumaresan, Scientist-C, RSRS-Jorhat]

General Comments of RAC Members & Chairperson:

Md. Ebarat Ali, Reeler's representative

Expressed concern about the reduction in reeling activity in Malda region as Malda cocoons are being procured by reelers from Bangalore at high prices.


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Mr. Samsul Haque, Rearer's representative

Appreciated the efforts of CSRTI-Berhampore and farmers benefitted a lot utilizing the technology developed by the institute. Farmers are realizing more money with less investment by adopting shelf rearing for late-age worms.

Dr. D.C. Ghosh, Member RAC

A series of projects concluded with valuable outcome during the tenure of current RAC and advised the scientists to percolate the outcome to end-users effectively. He also expressed concern on altering greenness in mulberry may not hold freshness & palatability to silkworms.

Dr. K. Satyanarayana, Sci-D, Rep. Director (Tech.), CO-Bangalore

Expressed that the meeting was a learning experience and the Institute is conducting systematic research from soil to silk and appreciated the way the progress is reported. Advised the young scientists to visit the field regularly and propose need-based projects for end users and stressed on the necessity of co-operation of DoS to percolate the outcome as vital.

Dr. Nirmal Kumar, Member RAC

Appreciated the scientists for tremendous improvement in presentations with minimal slides. Advised the scientists to focus research on thrust areas such as decreasing cost of production, value chain utilization, rescheduling of existing crop schedule, adaptation strategies for climate change, etc. Data presentations should include statistical interpretation.

Mr. Sourav Majumder, Member RAC

Expressed his happiness to be part of RAC and advised to include more post cocoon ToT programs to popularize the reeling technologies developed by the institute for the improvement of quality and quantity of silk.

Shri Subrato Mukhopadhyay, Member RAC

Advised the scientists to develop farmers' advisory app for the farmers. He opined that soil mapping under mulberry is necessary for right recommendations utilizing huge data base available.

Dr. Somnath Bhattacharya, Member RAC

Expressed his satisfaction on being part of RAC for CSRTI-Berhampore. Most of technologies developed by the institute have been disseminated at field level. He also pointed out about the high-quality research publications during the tenure. He urged the young scientists to interact with the farmers' community.

Dr. Chirantan Chattopadhyay

The RAC-Chairman expressed his happiness to be part of majority meetings and greatly acknowledged CSB for providing an opportunity to learn and lead. He appreciated the scientists for targeted presentations under vibrant leadership Dr. V. Sivaprasad. Further, he advised that

- Intellectual properties to be protected
- Focus on behavioral economics of product developed or to be developed with help of social scientists
- Young scientists should utilize this platform to interact with seniors for evolution of new ideas.

[Action: Concerned scientists]

The meeting ended with the vote of thanks.

Approved


(Chirantan Chattopadhyay)

Chairperson, RAC

CSRTI-Berhampore

Date: 17 Feb 2020.

ANNEXURE -I**LIST OF PARTICIPANTS IN THE 51ST MEETING OF RESEARCH ADVISORY COMMITTEE (RAC)
HELD ON 27.01.2020 AT CSRTI-BERHAMPORE, WEST BENGAL**

#	Name	Designation
1.	Dr. Chirantan Chattopadhyay, Chairman, Vice Chancellor, Uttar Banga Krishi Viswavidyalaya, Pundbari, Coochbehar, West Bengal	Chairman
2.	Dr. V. Sivaprasad, Director, CSR&TI, Berhampore	Convenor
3.	Dr. S. Nirmal Kumar, Former Director, CSR&TI, Berhampore	Member
4.	Dr. Dulal Chandra Ghosh, Former Prof. of Agronomy, Viswa Bharati University, WB	Member
5.	Dr. Somnath Bhattacharya, Professor, B.C.K.V., Mohanpur, Nadia	Member
6.	Dr. S. Mukhopadhyay, Principal Scientist, ICAR-NBSS&LUP, WB	Member
7.	Dr. K. Satyanarayana, Sc-D, Rep. Director (Tech.) CO, CSB, Bangalore	Member
8.	Shri Sourav Majumder, Sc-D, RSTRS, Malda.	Member
9.	Shri Uday Pratap, IAS, Director, DHS&H-Jharkhand	Member
10.	Mr. L.N. Sherpa, WBCS (Exe.), Rep. Commissioner, WB	Member
11.	Md. Samsul Haque, Rearing's representative, Nabagram, Murshidabad, WB	Member
12.	Md. Ebarat Ali, Reelers' representative, Kajigram, Malda, WB	Member

Absentee:		
1.	Director, DOS, Odisha	
2.	Director, Directorate of Sericulture, DoS, Mizoram	Member
3.	Director, DoS- Bihar	Member
4.	Director & Shri H.K. Hazarika, DD, DoS- Assam	Member
5.	Director of Sericulture, BTC Assam	Member
6.	Director, Directorate of Sericulture, DoS, Chattisgarh	Member
7.	Director, Directorate of Sericulture, DoS, Manipur , Imphal	Member
8.	Director, DoS, Gangtok, Sikkim	Member
9.	Director of Sericulture & Weaving, Government of Meghalaya , Shillong	Member
10.	Director of Handloom, Handicrafts & Sericulture, Govt. of Tripura , Agartala, Tripura	Member
11.	Director of Textiles and Handicrafts, Government of Arunachal Pradesh , Itanagar	Member
12.	Director of Sericulture, Government of Nagaland , Kohima	Member

LIST OF SCIENTISTS/ PARTICIPANTS ATTENDED THE MEETING

#	Name	Designation	Address
1.	Dr. T. Dutta (Biswas)	Scientist-D, Extension & Pub. Division	CSR&TI, Berhampore
2.	Dr. V. Lakshmanan	Scientist-D, SBG Section	
3.	Dr. S. Chattopadhyay	Scientist-D, Biotechnology Division	
4.	Dr. A. K. Verma	Scientist-D, SBG Section	
5.	Dr. Dipesh Pandit	Scientist-D, PMCE Division	
6.	Shri D.Chakravarty	Scientist-D, Moriculture Division	
7.	Shri Gopal Ch. Das	Scientist-D, SW Phy& RTI and BV- Cell	
8.	Shri Gautam Mitra	Scientist-D, R & S	
9.	Mr. Zakir Hossain	Scientist-D, RSRS	Kalimpong, WB
10.	Dr. P.Kumaresan	Scientist-C, RSRS	Jorhat, Assam
11.	Dr. Manjunatha, G. R	Scientist-C, PMCE Division	CSR&TI, Berhampore
12.	Dr. N. Chandrakanth	Scientist-C, SBG Section	
13.	Dr. Shafi Afroz	Scientist-C, Extension Division	
14.	Dr. Suresh K.	Scientist-C, MBG Section	
15.	Dr. V. Vijay	Scientist-C, Soil Sci. Section	
16.	Dr. R. Mahesh	Scientist-C, Agronomy Section	
17.	Dr. Pooja Makwana	Scientist-C, Biotechnology Division	
18.	Dr. K. Rahul	Scientist-C, Silkworm Pathology Section	
19.	Dr. Anil Pappachan	Scientist-B, Mulberry Pathology Section	
20.	Dr. Mihir Rabha	Scientist-B, Silkworm Pathology Section	
21.	Dr. Aparna Kopparapu	Scientist-B, Biotechnology Division	
22.	Dr. Parameswara Naik.J.	Scientist-B, Training Division	
23.	Dr. Raviraj V.S.	Scientist-B, SBG Section	
24.	Dr. Thangjam Ranjita Devi		
25.	Dr. Deepika Kumar Umesh	Scientist-B, MBG Section	
26.	Mr. Yallappa Harijan		
27.	Mrs. Radha, M. B.	Scientist-B, Entomology Section	
28.	Dr. Harish Babu	Scientist-B, RSRS	Kalimpong, WB
29.	Shri Khasru Alam		Koraput, Odisha
30.	Shri P.K. Prasad	Dy. Director (Comp.)	CSR&TI, Berhampore
31.	Shri Subrata Sarkar	Technical Assistant, PMCE Division	
32.	Smt. S. Karmakar		
33.	Smt. M. Chattopadhyay		
34.	Smt. Pampa Ghosh		
35.	Ms. T. Naga Teja Shirisha	Steno., PMCE Division	
36.	Ms. Surabi Ghosh	JRF, Biotech	
37.	Shri Sahadeb Roy	JRF, SBG Section	