

## **MINUTES OF THE 47<sup>th</sup> RESEARCH COUNCIL MEETING HELD ON 18<sup>th</sup>, 20<sup>th</sup> AND 22<sup>nd</sup> NOVEMBER, 2017 AT CSR&TI, BERHAMPORE, WEST BENGAL**

The 47<sup>th</sup> Research Council meeting of CSR&TI, Berhampore was held on 18<sup>th</sup>, 20<sup>th</sup> & 22<sup>nd</sup> November, 2017 to review the progress of on-going and concluded research projects/ programmes of the Main Institute besides considering new research project/ programme proposals submitted by the scientists. The meeting was presided over by Dr. Kanika Trivedy, Director, and the Chairperson, Research Council (RC), CSR&TI, Berhampore.

Dr. D. Pandit, Scientist-D (PMCE) welcomed Dr. Kanika Trivedy, Director and the Chairperson, RC and all participant Scientists of the Institute in the 47<sup>th</sup> RC meeting. At the outset, he expressed sincere thanks to the Director for her dynamic leadership and inspiration to the scientists for their involvement in projects/ programmes for development of sericulture industry in the Eastern & North-Eastern regions. Thereafter, he requested the Chairperson to address the scientists and take up the agenda for discussion.

Dr. Kanika Trivedy, Director welcomed all participant scientists in the meeting. She expressed her happiness for scientists' commendable efforts and responsibilities to maintain the Institute as ISO standards & RFD score on R & D interventions. She stressed on importance of review of new project proposals. In this regards, a committee has been constituted to review and offer comments on the new project proposals. Accordingly, the scientists will modify their project proposals and will incorporate the suggestions made by the committee before placing in the Research Council meeting.

The list of the participants is appended in **Annexure - I.**

Agenda-wise discussions were held as follows:

### **ITEM NO. 1: CONFIRMATION OF THE MINUTES OF THE 46<sup>th</sup> RESEARCH COUNCIL MEETING HELD ON 12<sup>th</sup> – 13<sup>th</sup> June, 2017.**

Since no comments received, the minute was confirmed.

### **ITEM NO.2: REVIEW OF THE FOLLOW UP ACTION TAKEN ON THE DECISION OF THE 46<sup>th</sup> RESEARCH COUNCIL MEETING HELD ON 12<sup>th</sup> – 13<sup>th</sup> JUNE, 2017.**

Regarding the **quality control of the developed products** of the SW. Pathology Section, the in-charge was advised to write a letter to the concerned party based on the results obtained from the quality control parameters' test of the developed products immediately and also inform the same to the concerned DoTs (Seri), as suggested. It was also advised to test the quality control parameters' of the developed products twice in a year by out sourcing, if required.

**[Action: Shri Rahul. K., Sci-B, Silkworm Pathology Section]**

Regarding concluded programme **BPP (VP) 015: "Validation of E<sup>3</sup> WM © SH/PM Weed Mower cum Shoot Harvest / Pruning Machine"**, the chairperson advised Dr. R. Mahesh, Scientist-B to place a indent for new farm machineries along with specification obtained from GeM portal, as suggested.

**[Action: Dr. R. Mahesh, Sci-B, Mori-I]**

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**NOTE:** Research Council Meeting (RC) was scheduled to be held on 18<sup>th</sup> & 20<sup>th</sup> Nov., 2017 (Whole Day). But due to other urgent work of the Director, meeting of 20<sup>th</sup> Nov. was held in one half (2<sup>nd</sup> Half) instead of whole day. Thus pending portion was completed on 22<sup>nd</sup> Nov. (1<sup>st</sup> half) [As it is in-house meeting of Main Institute only]

Regarding the concluded project, **PPS 3504: "Study on root rot disease of mulberry ..... its control measures"**, the chairperson advised Shri Anil Pappachan, Sci-B to take up a new project as 2<sup>nd</sup> phase with respect to validation of pathogen at *in vivo*, as suggested. Accordingly, Shri Anil Pappachan, Sci-B should submit the proposal as II-Phase for getting necessary approval and code from CO. Furthermore, the PI was advised to submit the results as suggested in 46<sup>th</sup> RC for presentation in the forth-coming RCC meeting likely to be held in the month of February, 2018.

**[Shri Anil Pappachan, Sci-B, Mulberry Pathology Section]**

Regarding the project **PIB 3481: "Evaluation of mulberry varieties suitable for low input soil"**, the PI was advised to conclude the project as per the time schedule and submit its report in prescribed format along with RAC and Directors comments.

**[Action: Shri. D. Chakravarty, Sci-D, MBG section]**

Regarding the concluded project **AIB 3547: "Development of high temperature and high humidity tolerant bivoltine breeds of silkworm (*Bombyx mori* L.)"** the PI was advised to submit concluded report in prescribed format along with RAC comments. Furthermore, the PI was advised to take II-phase of this project, as suggested.

**[Action: Mr. N. Chandrakanth, Sci-B, SBG Section]**

Regarding the concluded project **AIB 3514: "Development of multivoltine based congenic /NIL breed of silkworm (*Bombyx mori* L.) through introgression of "Ia" gene and its uses"** the PI was advised to submit concluded report consisting of reeling data also in prescribed format along with RAC comments. Furthermore, the PI was advised to take II-phase of this project for large scale trail with control. In addition, the PI was advised to submit the results as suggested in 46<sup>th</sup> RC for presentation in the forth-coming RCC meeting likely to be held on the month of February, 2018.

Regarding the project **AIB 3545: "Authorization trial of silkworm hybrids in Eastern and North Eastern India"** the PI was advised to continue the project upto March 2018 as per the CO letter dt. 30.10.17, accordingly submit the monthly progress report upto March 2018.

**[Action: Dr. A. K. Verma, Sci-D, SBG Section]**

Regarding **target pending to Extension Communication Programme (ECP)**, the in-charge, Extension Division was advised to prepare event calendar and intimate the same to all nested units. Accordingly, incharge will monitor for conduct ECP that should be achieved as per the set target for 2017-18 within March, 2018.

**[Action: In-charge, Sci-D, Extn. & Publicity Division and all units]**

### **ITEM No.3: CONSIDERATION OF NEW PROJECTS:**

The following project proposals were discussed and decisions were as follows:

1. **Title: Identification of mulberry phylloplane microbes and leaf endophytes for management of leaf spot diseases**, presented by Mr. Anil Pappachan, Sci-B, Mulberry Pathology Section.

**Duration:** 3 Years

**Observations/ Suggestions:** Regarding the project proposal, the following suggestions were given by the House to PI:

- Identification of pathogenicity level in the silkworm side to be included in the methodology.
- Silkworm bioassay should be considered in the study.
- Commercially available cultures should be considered for the study.
- Revise the budget by inclusion of JRF/SRF.

**Decision:** Approved as a 3 years Project proposal. The PI was advised to consider aforementioned suggestions and submit the project in detail at the earliest, for sending to C.O., Bangalore for approval.

[Action: Mr. Anil Pappachan, Sci-B, Mulberry Pathology Section]

2. **Title:** Mass multiplication and maintenance of bio-control agent – *Scymnus pallidicollis* (Mulsant), presented by Dr. Subhra Chanda, Sci-D, Entomology Section.

**Duration:** 5 Years

**Observations/ Suggestions:** Regarding the project proposal, the following suggestions were given by the House to PI:

- Take the study for a period of 3 years instead of 5 years.
- It should be proposed as II-phase of "PRE 3508: Studies on standardization of mass multiplication and field efficacy of *scymnus pallidicollis* (Mulsant) for the eco-friendly management of Tukra" instead of proposing concept note.
- Advised to modify the title as "Mass multiplication and maintenance of biocontrol agent – *Scymnus pallidicollis* and its popularization at farmers' level" and accordingly modify the objectives, methodology and outcome of the study.
- JRF/SRF should be proposed and revise the budget accordingly.

**Decision:** Approved as a 3 years Project as II-phase. The PI was advised to consider afore-mentioned suggestions and submit the project in detail at the earliest, for sending to C.O., Bangalore for necessary approval and coding.

[Action: Dr. (Mrs.) Subhra Chanda, Sci-D, Entomology Section]

3. **Title:** Economics of Moriculture, Sericulture and Silk production in Eastern and North Eastern States, presented by Dr. Manjunatha, G. R., Sci-B, PMCE Division.

**Duration:** 3 Years

**Observations/ Suggestions:** Regarding the project proposal, the following suggestions were given by the House to PI:

**Decision:** Approved as a 3 years Project proposal. The PI was advised to consider aforementioned suggestions and submit the project in detail at the earliest, for sending to C.O., Bangalore for necessary approval.

[Action: Dr. Manjunatha, G. R., Sci-B, PMCE Division]

#### ITEM No.4: REVIEW OF CONCLUDED PROJECTS:

The following four projects and one pilot study were concluded during the period and presented in the meeting.

1. **Title of the project:** AIB3514: Development of multivoltine based Congenic / NIL breed of silkworm (*Bombyx mori*, L) through introgression of *Id* gene and its' uses.

**Duration:** July, 2014 to May, 2017

**Observation/Suggestion:** The project has been concluded as per the time schedule. However, the PI was advised that the hatching percentage (> 90% hatching) should be ensured and taken care of before

planning for a large scale trail with the hybrids (SK6 x SK7) and (B.Con.1 x B.Con.4). Furthermore, the PI was advised to submit concluded report in prescribed format along with RAC comments for onward transmission to CO.

[Action: Dr. A. K. Verma, Scientist-D, SBG Section]

**2. Title of the project: AIB 3547: Development of high temperature and high humidity tolerant bivoltine breeds of silkworm (*Bombyx mori* L.).**

**Duration:** July, 2015 to June, 2017

**Observation/Suggestion:** The project has been concluded as per the time schedule. The following observations were made

- Selection should not be solely based only on survivability and other important parameters such as fecundity and cocoon traits should also be taken into account
- Tolerance index should be quantified.
- Survival curve should be established for both male and female separately.
- These comments to be addressed in the concluded reports.

[Action: Mr. N. Chandrakanth, Scientist-B, SBG Section]

**3. Title of the project: PRE 3517: Population interactions of pests and natural enemies in mulberry ecosystem.**

**Duration:** Aug., 2014 to July, 2017

**Observation/Suggestion:** The project has been concluded as per the time schedule. The following observations were made

- Expenditure against budget allotted should be done.
- Compare these models with existing forewarning models.
- Advised to present in the forthcoming RAC meeting.
- Advised to submit concluded report in prescribed format along with RAC comments for onward transmission to CO.

[Action: Dr. (Mrs.) Subhra Chanda, Sci-D, Entomology Section]

**4. Title of the project: PIN 3587: Improvement of leaf quality and productivity through external application of seaweed extracts in mulberry.**

**Duration:** Oct., 2016 to Sept., 2017

**Observation/Suggestion:** The project has been concluded as per the time schedule. The following observations were made

- Advised to take II-phase of this project for large scale trail. Besides, find the active ingredients of the product for effective development and utilization of the product, followed quality control.
- Advised to present in the forthcoming RAC meeting.
- Advised to submit concluded report in prescribed format along with RAC comments for onward transmission to CO.

[Action: Mr. Anil Pappachan, Sci-B, Mul. Pathology Section]

5. **Title of the project: BPI(PS)-010: Identification of biochemical markers for thermotolerance in silkworm *Bombyx mori* L.**

**Duration:** October 2016 - September 2017

**Observation/Suggestion:** The Pilot study has been concluded as per the time schedule. The PI was advised to submit concluded report in prescribed format along with RAC comments for onward transmission to CO.

[Ms. Pooja Makwana, Sci-B, Biotechnology Section]

**ITEM No. 5: REVIEW OF THE PROGRESS OF THE ONGOING RESEARCH PROJECTS/ PROGRAMMES OF THE MAIN INSTITUTE:**

Progress of ongoing research projects/ prog./ pilot study of different sections of the Institute was reviewed critically and suggestions/ recommendations were as follows:

**MULBERRY BREEDING & GENETICS SECTION:**

Progress of following 05 ongoing research projects and 01 program was reviewed.

- **PIB 3481-** Evaluation of mulberry varieties suitable for low input soil,
- **PIB 3505-** Development of Drought Tolerant Mulberry variety for Rainfed Sericulture [Collaborative project with CSGRC, Hosur],
- **PIC 3554-** Candidate gene based molecular marker(s) for screening promising recombinants in mulberry,
- **PIB 3576-** Evaluation of New Mulberry Genotypes for Improvement in Productivity and Quality
- **PIB 3610 -** Preliminary evaluation of newly evolved mulberry genotypes for mulberry improvement
- **BPI (P) 025-** Maintenance of Mulberry Germplasm Bank at CSR&TI, Berhampore (WB)

Regarding the project **PIB-3481**, the package of practices of newly developed mulberry varieties such as C-2038 & Tr-23 should be taken up with new project by the Agronomy section by involving MBG, Entomology, Mul. Pathology and Soil science disciplines to exploit their full genetic potentiality.

Regarding the project **PIB 3576**, the PI was advised also to consider rooting trait while selection of genotypes in the study.

Progress of the remaining 03 projects & 01 programme [**PIB 3505, PIC 3554, PIB 3610 & BPI(P) 025**] were reviewed and found as per the milestones.

[Action: Shri. D. Chakravarty, Sc-D, and K. Suresh, Sc-B, MBG Section]

**MORICULTURE-I DIVISION:**

Progress of following 04 ongoing research projects was reviewed.

- **PPF 3585-** Application of Growing Degree Days as a model driver for developing mulberry yield weather model
- **PPF 3598-** Arsenic contamination in mulberry sericulture of Bengal Plain and its alleviation through application of zinc in soil
- **PPA 3588-** Evaluation of Low Cost Drip Fertigation Systems on Yield and Quality of Mulberry Leaves
- **PPS 3600-** Soil health card preparation for mulberry growing soils in Eastern and North-Eastern India, were reviewed and progress was as per the milestone.

Regarding the project **PPF 3585**, the PI was advised to estimate GDD for silkworm side with help of Shri G. C. Das, Sci-D, RTI Section.

[Action: Dr. Monica Chaudhuri, Sci-D, Mori-I Division]

Regarding the project **PPF 3598**, the PI was advised to present the results of potted experiment.

**[Action: Dr. Vijay. V, Sci-B, Mori-I Division]**

Regarding the project **“PPA 3588**: the PI was advised to recheck the protein analysis as the values were high. Furthermore, the PI was advised to check the working condition of existing drum kit drip irrigation system and also bring the system under running condition, if required, at RSRSS level (Koraput, Jorhat and Kalimpong) for its better usage.

**[Action: Dr. Mahesh. R., Sci-B, Mori-I Division]**

Regarding the progress of the project, **PPS 3600**, the PI was advised to expedite the work to achieve the set target.

**[Action: Dr. Monica Chaudhuri, Sci-D, Mori-I Division]**

### **SILKWORM BREEDING AND GENETICS SECTION:**

Progress of following 07 ongoing research projects and 01 ongoing programme was reviewed.

- **AIB 3602-** “Development of thermotolerant bivoltine breeds / hybrids of silkworm, *Bombyx mori* L through marker assisted selection”
- **AIB 3545-** “Authorization trials of silkworm hybrids in Eastern and North Eastern states”  
(Extended upto March 2018)
- **AIB 3577-** “Evaluation of multivoltine germplasm to identify potential parents for developing cross breeds suitable for Southern and Eastern India.”
- **AIB 3578-** “Evaluation of exotic bivoltine silkworm breeds to identify promising parental genetic resources”
- **AIB 3617-** "Identification of region specific bivoltine hybrids suitable for highly fluctuating and seasonally variable climatic conditions of eastern and North-Eastern India (Phase-II)"
- **AIB 3616-** "On farm trail of the multivoltine silkworm breeds/hybrids developed for high shell percentage and neatness of silk".
- **AIB 3619-** "Development of silkworm *Bombyx mori* L. Congenic breeds from a gene pool with higher genetic plasticity (Phase-II)
- **BAI(RP) 003-** “Maintenance of multivoltine and bivoltine germplasm”, were reviewed and progress was as per the milestones.

Regarding the project **AIB 3578** the PI was advised to give the list of breeds sent by collaborative institute.

Regarding the project **AIB 3616** the PI was advised to present reeling data of Bhandra region.

**[Action: Dr. A. K. Verma, Sci-D, SBG Section]**

Regarding the project **AIB 3602** the PI was advised to present the heterosis table along with the rearing data of the parents.

Regarding the project **AIB 3577** the PI was advised to share out the budget of this project allotted for this institute and present accordingly. Furthermore, the house considered Mr. G. C. Das, Sci-D as PI of this project in place of Mr. Zakir Hossain, Sci-D.

**[Action: Mr. N. Chandrakanth, Sci-B, SBG Section]**

Regarding the project **AIB-3617** the PI was advised to present the progress of other station data. Furthermore, it was advised to use image morphological analysis to count the egg hatching.

Progress of rest of 02 projects [AIB 3545 & AIB 3619] and 01 programme BAI(RP) 003 was found as per the milestones.

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

#### RTI & BV CELL:

Regarding ongoing research project PPA: 3499 "Evaluation of field level performance of Vishala mulberry variety in different locations under irrigated conditions in West Bengal", was reviewed and the PI was advised to conclude the project by the end of December 2017 and present the same in the forthcoming RAC meeting.

[Action: Shri G.C. Das, Scientist-D, RTI & Bv. Cell]

#### SILKWORM REARING TECHNOLOGY & INNOVATION & BV. CELL

Progress of following 02 ongoing research projects was reviewed.

- **AIT 3557-** "Multi locational field Trial on transgenic Bm NPV resistant Silkworm strains to establish their efficacy and generate data for their regulatory approval (Collab. CSGRC, Hosur)"
- **ARP 3605-** "Validation of the DNA markers in silkworm breed developed by introgression of DNA markers associated with NPV resistance using Marker Assisted Selection breeding and large scale field trial of the breed" [DBT funded Collaborative Project with Seri biotech Research Laboratory (SBRL), Bangalore, CSR&TI, Mysore & CSR&TI, Pampore]

Regarding the project AIB 3605 the PI was advised to present the rearing data of desired parameters and details of expenditure incurred against the budget received.

Regarding the project AIT 3557 the PI was advised to conclude the project and submit its concluded report in prescribed format along with RAC & Directors comments as it was concluded in month of August 2017. Accordingly, it should be presented in forthcoming RAC meeting.

Furthermore, the in-charge, SWRTI & BV Cell was advised to organize the Institute bio-safety meeting timely in co-ordination with PMCE Division, as suggested.

[Action: Shri G.C. Das, Scientist-D, RTI & BV Cell]

#### SILKWORM PATHOLOGY SECTION:

Progress of following two research projects and one programme was reviewed.

- **ARP 3522 -** "Isolation, cloning and characterization of antibacterial protein (s) from silkworm, *Bombyx mori* L"
- **ARP 3590-** "Studies on the efficacy of phototrophic bacterial extracts as feed supplement for management of diseases in silkworm, *Bombyx mori* L"
- **BAR (RP) 021-** "Survey, surveillance and monitoring of silkworm diseases in seed and commercial crops in Eastern and North Eastern India. (In collaboration with RSRs, RECs, DoS and NSSO)"

Regarding the project ARP 3522, the PI was advised to conduct testing of anti-bacterial activity of the recombinant protein expected to be developed from the study as per milestone of the project.

Regarding project ARP 3590, the PI was advised to check the toxicity of phototrophic bacterial extract on silkworm larvae alongwith the bioassay study for determining the optimum dosage of the extract.

[Action: Mr. K. Rahul, Sci-B, Sw. Patho. Section]

Regarding programme **BAR (RP) 021**, the PI was advised to write a letter to the concerned team leaders of the concerned district for timely submission of report.

[Action: Mr. Z. Hossain, Sci-D, Sw. Patho. Section]

### ENTOMOLOGY SECTION:

Progress of following 01 ongoing research projects and 01 ongoing programme was reviewed.

- **PRE 3533-** "Identification of whitefly in mulberry germplasm accessions".
- **BAR (RP) 022-** "Survey and Surveillance of Mulberry Pests in the Eastern and North Eastern regions of India", were reviewed and progress was found as per milestones.

Regarding the project **PRE – 3533**, the PI was advised to revalidate the stomata frequency with the help of advance microscope at Biotechnology section and present results accordingly, as suggested.

Regarding the programme **BAR (RP) 022** progresses was found as per the milestones.

Furthermore, the in-charge of Entomology section was advised to take-up a study on non-spinning of silkworm larvae giving more focus on the screening of new generation pesticides having low residual toxicity on silkworm

[Action: Dr. S. Chanda, Sci-D, Entomology Section]

### BIOTECHNOLOGY SECTION:

Progress of following 03 research projects was reviewed.

- **PIB 3521-** Assessment of promising powdery mildew resistance lines for perspective commercial use
- **PIB-3548-** Evaluation of bacterial leaf spot resistant improved progenies of mulberry for field utilization
- **PRE 3589-** Assessment of designed antimicrobial peptides for mulberry protection against brown leaf spot and root rot: a biotechnological approach

Regarding the project **PIB 3521**, the PI was advised to submit concluded project as per the milestone framed and present the same in the forthcoming 47<sup>th</sup> RAC meeting. Accordingly the PI advised to submit the concluded report in prescribed format along with RAC & Director's comments.

Progress of the remaining project [**PRE 3589**] was reviewed and found as per the milestones.

[Action: Dr. Soumen Chattopadhyay, Sci-D, Biotechnology Section]

### PROJECT MONITORING, CO-ORDINATION AND EVALUATION DIVISION

Progress of 01 ongoing research project "**MTS 3599** Study on mulberry sericulture production in West Bengal: A statistical approach" was reviewed and found as per the milestones.

[Action: Dr. Manjunatha, G.R., Sci-B, PMCE Division]

### EXTENSION AND PUBLICITY DIVISION:

Progress of 01 ongoing research project "**MOT-3601** Skill gap analysis and capacity building of sericulture extension workers and farmers in traditional and non-traditional states" was reviewed and found as per the milestones.

Regarding **Adarsh Resham Gram**, the PI was advised to take the institute code from PMCE Division for proper evaluation and monitoring of this programme. Further, it was advised to submit a success story under this programme for publications.

[Action: Mr. Shafi Afroz, Sci-B, Extn. Division]



Regarding the organizing of RKM of different states under this institute, the in-charge of Extension Division was advised to work actively with the in-charges of the nested units and achieve the set targets of Annual Action Plan 2017-18. Also, advised to invite the concerned State Directors of Sericulture Department to grace the occasion of concerned RKM along with the undersigned.

**[Action: Nodal officers of the concerned state and Dr. T. Dutta (Biswas), Sci-D, Extn. Division]**

Regarding **BV CPP**, the In-charge was advised to take the help of respective Nodal Officer for effective monitoring of the programme and present the state-wise progress data before placing to forth coming BV CPP meeting and the RAC meeting.

**[Action: Mr. G. C. Das, Sci-D, Bv Cell]**

## **TRAINING DIVISION:**

The activities of Training Division in organizing various training programmes under structured and Non-structured courses were reviewed and the in-charge was advised to present the clear cut progress achieved against the each targets set during the period along with necessary details. Furthermore, it was advised to present the other training programmes which approved separately from CO with budget & expenditure incurred. In addition to this, all SRCs progress should be submitted on monthly basis to PMCE division with necessary photographs, as suggested in the meeting.

### **General comments:**

1. All the PIs of the Project / Programmes / Pilot Study should be maintained a dairy for different activities, results, expenditure etc.
2. Concluded reports of the Project / Programmes / Pilot Studies should be submitted immediately after completion of the same for onward transmission to Central Office, Bangalore.
3. All PIs of the Project / Programmes / Pilot Studies were advised to submit the progress reports (monthly / quarterly / yearly) or concluded report in quantifiable forms.

**[Action: Scientists / P.I. / In-charges and All concerned]**

### **Change of P.I. / C.I. ::**

1. In the project **AIB-3577** Mr. G.C. Das, Scientist-D will be the P.I. in place of Mr. Zakir Hossain, Scientist-D
2. In the project **AIB-3577** Mr. G.C. Das, Scientist-D will be the P.I. in place of Dr. A.K. Verma, Scientist-D. In the project Dr. Verma will continue as C.I.
3. Regarding the project **PIB 3548**, the house considered Ms. Pooja Makwan, Sci-B as investigator of this project in place of Dr. Rita Banerjee, Sci-D due to her transfer from this institute.

At the end, the Chairperson expressed her satisfaction on the R&D progress made by the institute and advised the scientists to take need based projects/ programmes and identify the new potential areas for the benefit of the sericulture industry in the Eastern & North-Eastern regions.

Meeting ended with a vote of thanks to the Chair.

Sd/-

**(Dr. K. Trivedy)**  
Director & Chairperson,  
Research Council  
CSR&TI, Berhampore

## Annexure - I

### **List of the participants attended the Research Council meeting held on 18<sup>th</sup>, 20<sup>th</sup> and 22<sup>nd</sup> November, 2017 at CSR&TI, Berhampore**

1. Dr. (Mrs.) K. Trivedy, Director, CSR&TI, Berhampore – **Chairperson, Research Council**
2. Dr. D. Pandit, Scientist-D, PMCE Division, CSR&TI, Berhampore
3. Mr. N. B. Kar, Scientist-D, R & S Division, CSR&TI, Berhampore
4. Dr. Lakshmanan Velusamy, Scientist-D, Seri. Division, CSR&TI, Berhampore
5. Dr. (Mrs.) M. Choudhuri, Scientist-D, Mori-I Division, CSR&TI, Berhampore
6. Dr. (Mrs.) T. Dutta (Biswas), Scientist-D, Incharge, Extn. and Pub. & REC, Kamnagar, MSD
7. D.Chakravarty, Scientist-D, Mori-II Division, CSR&TI, Berhampore
8. Dr. (Mrs.) S. Chanda, Scientist-D, Entomology Section, CSR&TI, Berhampore
9. Dr. S. Chattopadhyay, Scientist-D, Biotechnology Section, CSR&TI, Berhampore
10. Dr. A. K. Verma, Scientist-D, CSR&TI, SBG Section, Berhampore
11. Md. Zakir Hossain, Scientist-D, Silkworm Pathology Section, CSR&TI, Berhampore
12. Shri D. Das, Scientist-D, Extension and Publicity Division, CSR&TI, Berhampore
13. Shri Gopal Chandra Das, Scientist-D, RTI & BV Cell, CSR&TI, Berhampore
14. Dr. Sukhabrata Sarker, Scientist-C, Training Division, CSR&TI, Berhampore
15. Dr. V. Vijay, Scientist-B, Mori-I Division, CSR&TI, Berhampore
16. Dr. Manjunatha G.R., Scientist-B, PMCE Division, CSR&TI, Berhampore
17. Dr. R. Mahesh, Scientist-B, Mori-I Division, CSR&TI, Berhampore
18. Shri Suresh, K, Scientist-B, MBG Section, CSR&TI, Berhampore
19. Shri Anil Pappachan, Scientist-B, Mul. Pathology Section, CSR&TI, Berhampore
20. Shri N. Chandrakanth, Scientist-B, SBG Section, CSR&TI, Berhampore
21. Ms. Pooja Makwana, Scientist-B, Biotechnology Section, CSR&TI, Berhampore
22. Shri Rahul, K, Scientist-B, Silkworm Pathology Section, CSR&TI, Berhampore
23. Md. Shafi Afroz, Scientist-B, Extension and Publicity Division, CSR&TI, Berhampore
24. Shri Akhil Roy, Tech. Asst, PMCE, CSR&TI, Berhampore
25. Shri Pradip Banerjee, Tech. Asst, PMCE, CSR&TI, Berhampore