

**Minutes of the 68th Research Council meeting held on 20/21.04.2022 at CSRTI-Mysuru
through Webex platform**

The 68th meeting of Research Council of CSRTI-Mysuru was conducted on 20th and 21st April 2022 through Webex platform to review the new concept notes, concluded research projects, progress of on-going projects, Extension Communication Programmes and Capacity Building Programmes of the Institute and progress of nested units. Scientists from main institute attended the meeting physically and scientists from nested units joined online through Webex platform. The list of the participants is appended at **Annexure - I**.

Chairperson of RC Dr. Babulal, Director CSR&TI, Mysuru welcomed all the Scientists from main institute and nested units for the meeting. In his opening remarks he requested all the scientists to interact and actively participate in the discussions for the improvement of proposals deliberated in the meeting. Further he requested all the PIs to present the progress of their projects as per the miletones for the reporting period and to inform the shortfall, if any. Meeting continued as per the agenda. The deliberations and suggestions in brief are as follows:

I. Confirmation of the minutes of the 67th meeting held on 25.11.2021

The minutes of the 67th meeting of RC were circulated among all the members, since no comments were received from any of the member, minutes were confirmed.

II. Review of follow up action taken on decisions of previous meetings

Dr. A. V. Mary Josepha Shery Sc-D, PMCE presented the follow up action taken on the decisions of last RC and RAC. The major decisions taken are as follows:

1. Identification of consistent poor sericulture performers vis a vis best performers to find out the reasons for failure and remedial measures to improve economy.

Decision: The committee advised Dr. M. Muthulakshmi, Sci-D, SEEM Division to prepare the concept note including the extension units and submit in RMIS - 01 format to forward to CO.

(Action: M. Muthulakshmi, Sci-D, SEEM Division)

2. Android Based Classification of Cocoons & Quality Assessment using Machine Learning for Mobile Application a concept note submitted in 65th RC

Decision: The PI has given letter for withdrawal of the concept note on 13.9.2021 which was approved by the house.

3. Studies on economic threshold level of pathogens causing major diseases in mulberry cluster and non cluster area farmers of Telangana

Decision: The committee after through discussion on the revised proposal did not approve the proposal as ETL is relevant only to pest.

(Action: Vinod kumar Yadav, Sci-C, RSRS, Mulugu)

4. AIT-3628: Assessment of SNP in silkworm (*Bombyx mori* L) by Genotyping by sequencing and genome-wide association mapping of important commercial traits (DBT funded project in collaboration with RVCE, Bengaluru).

Decision: Dr. Kusuma L, Sci-C has submitted the concluded report.

II. Review of new concepts/projects proposals of previous meeting

1. Studies on Zero budget Natural farming (ZBNF) in mulberry for sustainability

Decision: The committee advised PMCE to send a reminder request to get clearance of the concept note submitted to CO.

(Action:, Scientist-D, PMCE)

2. Studies on the fecundity enhancement by application of natural stimulants during oviposition in silk moth

Decision: The committee advised the scientist to submit the revised concept note in RMIS-01 format for submission to CO for clearance.

(Action: R. Bhagya, Sci-D, TVDC)

3. Evaluation of wild mulberry germplasm for physiological efficiency and metabolites specific to leaf nitrogen assimilation

Decision: The committee advised PMCE to send a reminder request to get clearance of the concept note submitted to CO.

(Action:, Scientist-D, PMCE)

4. Synthesis and characterization of mulberry carrier-based nano-fertilizers and nano pesticides and their evaluation in mulberry cultivation

Decision: The committee advised to have discussion with the collaborator and submit the revised concept note to forward to CO for clearance.

(Action: Dhaeshwar Padhan, Sc-B, Agronomy)

5. Development of process for production of Bioethanol/Biochemicals and Microbial fuel cell from silkworm rearing waste

Decision: The committee advised PMCE to send a reminder request to get clearance of the concept note submitted to CO.

(Action: Scientist-D, PMCE)

6. Green synthesis of nano particles by mulberry leaf stem and bark; Nano particles and biomaterial for wound healing

Decision: The committee advised to have discussion with the collaborator and submit the revised concept note to forward to CO for clearance .

(Action: Ravindra, Sc-C, SSC)

7. Use of earth worm and silkworm as testing tools of soil

Decision: The PI has not submitted the revised proposal for the pilot study.

(Action: R. Kulkarni, Sc-D, RSRS, Kodathi)

REVIEW OF ACTION TAKEN ON THE RECOMMENDATION/ DECISIONS OF THE 47th RAC MEETING HELD ON 24 & 25.01.2022 AT CSRTI-MYSURU

NEW PROJECTS FOR APPROVAL

Improvement of existing machines/ technologies for drudgery reduction in sericulture

Decision: The committee once again advised the PI to prepare details of the equipments to be developed taking inputs from the collaborator along with the designs and diagrammatic version of the equipments including low cost equipments for the benefit of the stake holders and submit the same to forward to CO for further action.

(Action: Mr. S. M. Hukkeri, Sci-D, SED)

Concept notes of research projects for approval

1. Development of customized fertilizer for higher mulberry productivity

Decision: The committee approved the concept note with a suggestion to clearly indicate the plan of work, study locations , effect of different types of soil and comparative economics of the customized fertilizer with the existing one.

(Action: R. Mahesh, Sci-C, Agronomy)

2. Improvement of mulberry leaf quality under moisture stress condition with plant growth promoting microbes

Decision: The committee approved the concept note with a suggestion to include already identified drought tolerant soil microbes from CSRTI Mysuru and other organizations in the study and also to include the commercially available consortium. It was suggested to include the location of the experiment.

(Action: Divya Singh, Sci-B, Mul Physiology)

3. Evaluation of short-listed mulberry genotypes for enhanced physiological efficiency and leaf yield.

Decision: The committee approved the concept note with a suggestion to take up the study as PYT with already short listed ten promising genotypes. Accordingly, the title and objectives may be modified.

(Action: Gayathri T, Sci-C, Mul Physiology)

4. Standardization of micro propagation protocol for AICEM-Phase IV mulberry genotypes

Decision: The committee approved the concept note which was prepared as per the recommendation of MVAC.

(Action: Tanmoy Sarkar, Sci-C, MBG)

5. Mapping QTLs for alkalinity tolerance in mulberry-Phase-II

Decision: The committee approved the concept note which is proposed as per the 47th RAC suggestion, as a continuation of the concluded project PIC 3615. Further, it was advised to include validation of the selected genotypes in the project proposal with modified title and objectives. It was suggested to explore the possibility of including locations in Tamil Nadu with alkaline soil. It was also observed that the molecular work can be included in the second phase of the network project.

(Action: Bhavya M. R, Sci-C, Mol.biol)

6. Development of customized ecofriendly nano particle based nutrient formulation to improve the quality parameters in silkworm, *Bombyx mori* through mulberry leaf enrichment

Decision: The committee approved the concept note with a suggestion to clearly spell out the objectives. Advised to take care of toxicity of nanoparticles to silkworm. It was also suggested to screen the commercially available formulations.

(Action: E. Bhuvaneswari , Sci-C, SW Physiology)

8. Genetic enhancement of mulberry by genomic approach: A multi component network project Phase -II

1. Validation of a high-density SNP genotyping array for QTL discovery by association mapping and bi-parental analysis in mulberry
2. Identification of QTLs for drought adaptive traits, yield associated traits, Nutrient Use Efficiency by association mapping and resistance to root rot disease by Linkage Mapping in Mulberry
3. Discovery and Validation of Growth and Abiotic Stress Related Genes in Mulberry by transcriptomics analysis
4. Event selection transgenic mulberry containing heterologous gene(s) under confined field trials

Decision: The committee approved the concept notes which are continuation of the earlier work in the network project which is suggested by 47th RAC.

(Action: Arunakumar G. S, Sci-C, Mol. Biol.)

9. Maintenance of bivoltine silkworm genetic resources confirming to their original characteristics

Decision: The committee approved the concept note and advised to make a similar proposal for multivoltine breeds.

(Action: M.S.Ranjini, Sci-C & K.B.Chandrashekar, Sc-D,BBL)

10. Immunomodulatory and Adjuvant effects of Chitosan Nanoparticles Extracted from *Bombyx mori*

Decision: The committee approved the concept note.

(Action: Madusudhan K.N, Sci-D, BBL)

11. Value addition of Cellulose and Chitin Isolated from Sericulture Waste for Advanced Packaging Applications

Decision: The committee approved the concept note.

(Action: Madusudhan K.N, Sci-D, BBL)

Review of concluded projects:

1.PIC-3620: Engineering photosynthesis in mulberry for resilience to climate change: A C4 approach.

Decision: Dr. Tanmoy Sarkar presented the concluding report and the committee noted the work done.

(Action: Tanmoy Sarkar, Sci-C, MBG)

2. PIB - 3631: Primary yield evaluation for identification of superior mulberry hybrids with drought adaptive traits under sub-optimal irrigated conditions

Decision: Dr Tanmoy Sarkar presented the concluding report and the committee noted the progress.

(Action: Tanmoy Sarkar, Sci-C, MBG)

3.PIC-3615- Mapping QTLs for alkalinity tolerance in Mulberry (*Morus spp.*)-

Decision: M. R. Bhavya presented the concluding report and the committee noted the progress.

(Action: M. R. Bhavya , Sci-C, Mol biol)

4. MFM 01020 CN - Development of artificial intelligence empowered multisensory approach for gender classification and separation of silkworm cocoons

Decision: Mr. S. M. Hukkeri presented the concluding report and the committee noted the progress.

(Action: S. M. Hukkeri, Sci-D, SED)

5.PIC 01008SI Isolation, characterization of chitin/chitosan from silkworm pupal exuviae/spent pupae and its commercial exploitation

Decision: Dr. Madhusudhan KN presented the concluding report and the committee noted the work carried out.

(Action: Madhusudhan KN, Sci-D, BBL)

6. PRE 01010SI : Development of Integrated Pest Management (IPM) module for leaf roller *Diaphania pulverulentalis* (Lepidoptera: Pyralidae) in mulberry - Dr. S. Mahiba Helen

Decision: Dr. S. Mahiba Helen presented the concluding report and the committee and the committee noted the work carried out.

(Action: S. Mahiba Helen, Sci-D, PML)

7. ARP 01012 SI : Development of a knowledge base on the silkworm diseases and pests and their management

Decision: Dr. Mary Josepha Shery A. V. presented the concluding report and the committee noted the work done.

(Action: A.V. Mary Josepha Shery, Sci-D, PMCE)

8. PIN-3563: Evaluation of improved mulberry genotypes for yield potential, nutrient uptake and nitrogen use efficiency under varied cultivation practices - Dhaneshwar Padhan

Decision: Dr.Dhaneshwar Padhan presented the concluding report and the committee noted the work done.

(Action: Dhaneshwar Padhan, Sci-B, Agromony)

9. PIC 01003 CN: Multi-Component Network Project Genetic enhancement of Mulberry through Genomic approaches

1.NW2a : Validation of a high-density SNP genotyping array for QTL discovery by association mapping and bi-parental analysis in Mulberry

2. NW2b. Discovery of QTL to drought adaptive traits by association mapping in Mulberry

3.NW 2C : Identification of QTLs for yield associated traits in mulberry

4.CN NW2d : Identification of QTLs for nutrient use efficiency

5.NW2e:Sustaining Mulberry Yield: Identification of QTLs Conferring Resistance to Root Rot Disease by Linkage Mapping and Trait Introgression

6.NW3b: Development of new generation transgenic mulberry for drought stress tolerance and characterization of existing transgenic mulberry for confined field trials

7.NW4a: Comparative quantitative and qualitative analysis of secondary metabolites for identification of biomarkers responsible for feed quality in mulberry

Decision: Dr. Aruna kumar G.S. presented the concluding report and the committee noted the progress.

(Action: Arun kumar, Sci-C, Mol. Biology)

Progress of on-going projects

1.PIB-3632: Evaluation of superior triploid genotypes for yield and adaptability under varied agro-climatic conditions

Decision: Dr. M.K. Raghunath presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: M.K. Raghunath, Sci-D, MBG)

2. PIE 01022 SI: Evaluation of promising mulberry genotypes for higher leaf yield and resistance to root rot and root knot diseases in Primary Yield Trial

Decision: Dr. Manjappa presented the progress and the committee noted the progress and advised to complete the work as per the pr mile stones.

(Action: Dr. Manjappa, Sci-C, MBG)

3. PIE 13001 (AICEM Phase-IV): All India Coordinated Experimental Trial in Mulberry Phase-IV

Decision: Dr. Manjappa presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr. Manjappa, Sci-C, MBG)

4. PPA 01016SI: Development of an agronomical package for tree mulberry cultivation for wide acceptance among the seri-farmers of Southern India

Decision: Dr. Dhaneshwar Padhan presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dhaneshwar Padhan, Sci-B, Agronomy)

5. PIC 01007 SI: Development of protocol for production of medically fit silk (cocoon, sericin, fibroin) for clinical purposes

Decision: Dr. Ravindra presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Ravindra, Sci-C, SSC)

6. PRP-01015 SI ; Identification, evaluation and inclusion of potential antagonistic microbes in Integrated Root Rot Disease Management in Mulberry

Decision: Dr. Aruna Kumar G. S. presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Arun kuamr, Sci-C, Mol biol)

7. PIB-3633- Development of highly productive and widely adapted mulberry using exotics and wild germplasm

Decision: Dr. Aruna kumar G.S. presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Arun kumar, Sci-C, Mol biol)

8. PIE-01014SI- Development of Distinctiveness, Uniformity and Stability (DUS) Descriptors for Mulberry (*Morus spp*) and their Validation - Phase III

Decision: Ms. Bhavya, MR presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Bhavya, MR, Sci-B, Mol biol)

9. AIB 01004 MI – Development of multivoltine breeds with improved silk quality utilizing indigenous and exotic bivoltine breeds.

Decision: Dr. K.B. Chandrashekar presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: K.B. Chandrashekar , Sci-D, BBL)

10. AIB:01011 SI – Development of Multivoltine Foundation Crosses for Productivity and high silk percentage

Decision: Dr. K.B. Chandrashekar presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: K.B. Chandrashekar , Sci-D, BBL)

11. AIE 01026 MI: Evaluation of new bivoltine double hybrid, BFC1xBFC10 at farmers level for authorization for commercial exploitation

Decision: Dr. K.B. Chandrashekar presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: K.B. Chandrashekar , Sci-D, BBL)

12. AIB 01009 MI: Evaluation of new bivoltine silkworm double hybrid TT21 X TT56 at farmers level for authorization and commercial exploitation

Decision: Dr. K. N. Madhusudhan presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: K. N. Madhusudhan , Sci-D, BBL)

13. AIC01023SI Development of Spectroscopic Tests for Insecticide Resistant Biomarkers in silkworm, *Bombyx mori*

Decision: Dr. Satish. L presented the progress to and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr. Satish. L Sci-C, S Pathology)

14. AIB 01024MI Development of productive, autosexing silkworm breeds/ hybrids of *Bombyx mori* L. in egg stage and separation of male silkworm population by optical sorting method for commercial exploitation

Decision: Dr. Kusuma L presented the progress to the committee and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr. Kusuma L, Sci-C, BBL)

15. BPS-01013-CN: Utilization and diversification of silkworm pupae products for human & animal consumption and composting

Decision: Dr. Y.Thirupathaiah presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr. Y.Thirupathaiah, Sci-D, BBL)

16. AIT-01019-SI: Screening of drugs/Inhibitors to inhibit the PI3K-Akt pathway in *Bombyx mori* for controlling Nuclear Polyhedrosis Virus infection.

Decision: Dr Mallikarjuna G presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr Mallikarjuna G, Sci-C, SWPathology)

17. PPF01017SI : Economics of Mulberry Sericulture in South India

Decision: Dr. M. Muthulakshmi presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Raveendra Mattigatti , Sci-D, SEEM)

18. PIN 01018 SI : Effect of potassium mobilising bacteria *Frateuria aurentia* on growth and development of mulberry

Decision: Dr. N.Dhahira Beevi presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: N.Dhahira Beevi , Sci-D, RSRS,Salem)

19. MOE 01021 SI: Evaluation and popularization of improved technologies developed in the field of mulberry sector for south India.

Component-1: Evaluation of Chawki Feed Supplement Formulation in Commercial chawki rearing centers. E. Bhuvanewari

Decision: Dr E. Bhuvanewari presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: E. Bhuvanewari, Sci-C, SW Physiology)

Component-2: Popularization of G11x G19 double hybrid in Kolar region of Karnataka

Decision: Dr. Madhusudhan.K.N presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Madhusudhan.K.N, Sci-D, BBL)

Component-3: Evaluation of productive double hybrid, DHP5 at farmers' level

Decision: Dr. R.Meenal presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Dr. R.Meenal, Sci-D, BBL)

Component-4: Evaluation of newly developed multiviral diseases tolerant bivoltine hybrid RDIN1

Decision: Dr. Satish. L presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Satish. L, Sci-D, SWPath)

Component-5: Evaluation of Cauvery Gold (MV1 × S8): An improved crossbreed for cocoon productivity and silk quality

Decision: Dr. Chandrashekar K.B presented the progress and the committee noted the progress and advised to complete the work as per the mile stones.

(Action: Chandrashekar K.B, Sci-D, MBL)

Component-6: Evaluation of Improved Pure Mysore PM-4 line at BSF of DOS Karnataka and crossbreed at farmer's level

Decision: Dr. Chandrashekar K.B presented the progress to the committee and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Chandrashekar K.B, Sci-D, MBL)

Component-7: Evaluation of robust bivoltine silkworm hybrids suitable for different regions of high temperature and high humidity conditions

Decision: Dr. R.Meenal presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: R.Meenal, Sci-D, BBL)

Component-8: Validation of the M-LAMP technology in Mulberry and Vanya sector

Decision: Dr. Mallikarjuna G presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: Mallikarjuna G, Sci-D, SW Path)

Component-9: Impact of Drip fertigation in mulberry productivity

Decision: Dr R. Mahesh presented the progress and committee noted the progress and advised to complete the work as per the mile stones.

(Action: R. Mahesh , Sci-B, Agronomy)

Pilot Studies

- 1. Pilot Study: Identification of candidate gene markers for the development of silkworm hybrid with longevity associated with stress tolerance and productive traits.**

Decision: Dr Ranjini M.S presented the progress and the committee noted the progress and advised to complete the work as mile stones and submit concluded report.

(Action: Ranjini M.S, Sci-C, BBL)

- 2. Standardization of hydroponics method for multiplication of mulberry**

Decision: Dr Divya Singh presented the progress to the committee and committee noted the progress and advised to submit concluded report.

(Action: Divya Singh , Sci-B, Mul Physiology)

3. Identification of endophytes for mulberry foliar diseases and plant growth promotion

Decision: Dr Satish. L presented the progress and committee noted the progress and advised to complete the work as per the mile stones and submit the concluded report.

(Action: Satish. L, Sci-C, SW Path)

4. Design & Development of 3-D fabric based mountages suitable for silk worm rearing

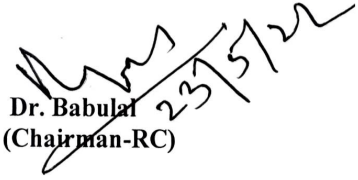
Decision: Sri. S. M. Hukkeri presented the progress and committee noted the progress and advised to submit concluded report.

(Action: S M Hukkeri, Sci-D, SED)

General Comments

- All report should be sent in time through the concerned Divisional Chiefs.
- Investigators name should be updated in the reports submitted

The meeting ended with the vote of thanks to Chair


Dr. Babulal
(Chairman-RC)

Annexure-I

List of participants attended the Research Council meeting held on 21st & 22nd April 2022 at CSRTI Mysore

#	Name & Designation		Name & Designation of Scientists linked with Webex from nested units
1	Babulal Director and Chairman, RC	39	Kulkarni,S.B. Scientist-D RSRS Kodathi
2	Dr. Mary Josepha A.V, Scientist-D	40	N. Dhahira Beevi Scientist-D RSRS Salem
3	K. B. Chandrashekar Scientist-D	41	K.P. Kiran Kumar Scientist-D RSRS Ananthapur
4	N. G. Selvaraju Scientist-D CSRTI, Mysore	42	K Praveen Kumar Scientist-D RSRS, Mulugu
5	Raghunath M.K. Sci-D CSRTI, Mysore	43	V.K.Yadav Scientist-C RSRS, Mulugu
6	R. Meenal Scientist-D CSRTI, Mysore	44	Vijay.V, Scientist-C SSBS conoor
7	Muthulakshmi Scientist-D CSRTI, Mysore		
8	Gayatri .T, Sci-C CSRTI Mysore		
9	Divya Singh Scientist B CSRTI, Mysore		
10	S. Mahiba Helen Scientist-D CSRTI Mysore		
11	Sobhana V Scientist-C CSRTI, Mysore		
12	Kusuma L. Scientist-C CSRTI, Mysore		
13	Bhuvaneshwar , E. Sci-C CSRTI, Mysore		
14	Ranjini M.S Sci-C CSRTI Mysore		
15	Bhavya M. R. Scientist B CSRTI, Mysore		
16	Ravindra Mathigatti Scientist-D CSRTI, Mysore		
17	Manjappa Sci -C CSRTI, Mysore		
18	Arun kumar Sci -C CSRTI, Mysore		
19	Tanmoy Sarkar. Sci-C CSRTI, Mysore		
20	K.N. Madhusudhan Sci -D CSRTI, Mysore		
21	Satish L Scientist-C CSRTI, Mysore		
22	Mallikarjuna G. Sci-C CSRTI, Mysore		
23	Ravindra Scientist-C CSRTI, Mysore		
24	Santh kumar Scientist-D CSRTI, Mysore		
25	Thirupathaiah Y. Sci-C CSRTI, Mysore		
26	R.Bhagya, Sci-D CSRTI Mysore		
27	S. Balasaraswathi Scientist-D CSRTI, Mysore		
28	Rekha M DD(Stats) CSRTI Mysore		
29	H.M.Munikrishnappa AD,CSRTI, Mysore		
30	M.N. Chandrashekar Sci - D, CSRTI Mysore		
31	Purushotham S. Sci-D CSRTI, Mysore		
32	Mahesh, R. Sci -C CSRTI, Mysore		
33	C.M.Babu Scientist-D CSRTI, Mysore		
34	Dhaneswar pradhan Sci -B CSRTI, Mysore		
35	S.M.Hukkeri, Sci -D CSRTI, Mysore		
36	Dayanada Sci -D P4BSF Hassan		
	JRF/SRFs		
37	Chaithra S. Project Asst. CSRTI, Mysore		
38	Chandini S. JRF CSRTI, Mysore		