CENTRAL SERICULTURAL RESEARCH AND TRAINING INSTITUTE, MYSORE

MINUTES OF 69th RESEARCH COUNCIL MEETING HELD ON 16.12.2022 CSRTI-MYSURU

The 69th meeting of Research Council of CSRTI-Mysuru was conducted on **16.12.2022** 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 and nested units attended the meeting. The list of the participants is appended at **Annexure - I.**

Chairperson of RC Dr. Mary Josepha (Shery) A.V., Director (i/c) CSR&TI, Mysuru welcomed the special invitees Dr. S.B. Dandin, Dr. H. K. Basavaraja and all the scientists from main institute and nested units for the meeting. Dr. Mary Josepha (Shery) A.V., Director (i/c) presented the challenges and opportunities in sericulture and the mandate of the institute and nested units before the committee as per the RCC decision for further discussion in the RC for fine tuning. The suggestion given were noted and the final copy sent to Dr.Mahadev B. Chetti, RAC, Chairman for approval.

Dr. S.B. Dandin advised to introduce integrated farming in sericulture for enhance the economics from unit area. Dr. H. K. Basavaraja informed the house that in the changing climatic scenario, the high humidity is affecting silkworm rearing especially in 4th and 5th age posing danger than the temperature. As management of humidity plays an important role for successful crop harvest, he suggested taking up more studies on this challenging issue. Dr. S. B. Dandin advised to refer the National silk policy document and consider the points while finalizing the challenges and opportunities in sericulture.

(Action: Sci-D and Head, PMCE)

Regarding reframing of mandate of institute/RSRSs/RECs, the committee suggested few modifications like, using the word improvement of technology than development in the institute mandate. Development of package of practices for host plant, silkworm rearing, post cocoon technology and its dissemination and .Commercialization of new products and technologies instead of meagre commercialization of products & technologies and industry interface. Since collaborative research program is an approach only, it can be removed from the mandate. It was also suggested to remove the word technical and retain only providing consultancy services. From the mandates of RSRSs, the coordination of cluster promotion programme, soil health analysis and data base maintenance of sericulture farmers can be deleted as it comes under activities. Meeting continued as per the agenda. The deliberations and suggestions in brief are as follows:

CONFIRMATION OF THE MINUTES OF THE 68th MEETING HELD ON 20/21.04.2022

The minutes of the 68th meeting of RC were circulated among all the members, since no comments were received from any of the member, minutes were confirmed.

REVIEW OF FOLLOW UP ACTION TAKEN ON DECISIONS OF PREVIOUS MEETINGS

Dr. S. Balasaraswathi Sci-D, PMCE, Head 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 suggested to identify ten farmers each from RECs and RSRSs who are regularly loosing the crops and to record the factors responsible for the crop failures. Based on the observations made, the farmers may be given necessary technical guidance to improve their crop yields in general**.**

(**Action**: All RSRSs and RECs in co-ordination with SEEM Division)

REVIEW OF NEW CONCEPTS/PROJECTS PROPOSALS (68th RC)

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

Decision*:* The committee suggested to change the concept as low budget natural farming through microbial consortium and *in situ* mulching of crop residues present in the unit area for crop sustainability.

(**Action**: C.M. Babu, Sci-D,Agronomy)

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

Decision: The committee advised to be very clear with the nomenclature wild and cultivated mulberry germplasm while selecting germplasm for evaluation.

(**Action**: Gayathri T,Sc-C, Mulberry Physiology)

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

Decision: The committee suggested to collect some basic information on the economics and feasibility of the process.

(**Action**: Y. Thirupathaiah, Sci-C, Silkworm Physiology)

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

Decision: The committee suggested to see the fecundity and optimum number of eggs retained in the ovary.

(**Action**: R.Bhagya, SEEM and Bhuvaneswari E. Silkworm Physiology)

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

Decision: The committee suggested to finalize the collaborative project concept with TNAU.

(**Action**: Dhaneshwar Padhan, Sc-C,Agronomy)

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

Decision: The committee suggested to present the concept with relevant details pertaining to wound healing characteristics.

(**Action**: Ravindra, Sc-C, Soil Science)

REVIEW OF ACTION TAKEN ON THE RECOMMENDATION/ DECISIONS OF THE 48th RAC MEETING HELD ON 28-29 SEPTEMBER 2022 AT CSRTI-MYSURU

The committee noted the action taken on the decision of previous RAC meeting. It was suggested to make the title simple and meaningful to convey the meaning of the project.

CONCEPT NOTES OF RESEARCH PROJECTS FOR APPROVAL

1. Final yield evaluation of F_1 mulberry progenies for leaf yield under optimal and sub-optimal input conditions

Decision: The concept is approved with a suggestion to modify the title as "Final yield evaluation of mulberry genotypes for leaf yield under optimal and sub-optimal input conditions". It was suggested to keep V1, G4 and RC1 as checks for both the conditions

(**Action**:Tanmoy Sarkar,Sc-C, MBG)

2. Evaluation of mulberry varieties for morpho-physiological responses under water logging stress conditions

Decision: Water logging stress condition needs to be well defined. The mulberry area under water logged stress condition in southern India seems to be meager and hence the results may not have practical utility.The committee did not approve the concept.

(**Action**: Gayathri T, Sc-C,Mul Physiology)

3. Studies on the effect of weather on the physiology of the silkworm, Bombyx mori.

Decision: The committee approved the concept with the suggestion that the proposal needs to be revised specific to temperature and humidity in the changing climatic condition. The methodology also needs to be revised. Further, it was suggested that the maintenance of optimum temperature and humidity aspects inside the rearing house can also be included in the study.

(**Action**: E. Bhuvaneswari, Sc-C,Silkworm Physiology)

4. Synthesis and characterization of cellulose carrier-based nano-nitrogen fertilizer and its evaluation in mulberry cultivation

5. Development of customized eco-friendly nanoparticle-based nutrient formulation to improve the quality parameters in silkworm, Bombyx mori through mulberry leaf enrichment

Decision: The committee approved the concept and suggested to combine the above two concepts notes. It was suggested that toxicity of the nanoparticles against the silkworm to be taken care while developing nano particle based nutrient formulation.

(**Action**: Dhaneshwar Padhan, Agronomy,Sc-C and E. Bhuvaneswari, Sc-C,S.W Physiology)

6. Effect of environmental factors on silkworm larvae, microbial composition, growth and cocoon productivity

Decision: The proposal was not accepted by the committee as the works in same line have been done earlier.

(**Action**: Thirupathaiah Y, Sc-C, Silkworm Physiology)

7. Physiological evaluation of mulberry germplasm accessions for thermo-tolerant genotypes and adaptive traits under high temperature conditions

Decision: The committee approved the concept and advised to record the data season-wise and specify the ambient temperature.

(**Action**: Divya Singh, Sc-C,Mul. Physiology)

8. Assessment of yield performance and genotype fitness of mulberry under changing climatic conditions

Decision: The committee approved the concept. Further, it was suggested to discuss with CIs and finalise the objectives to be studied. The study may be split in to two parts, first to study the effect and then identify ameliorative measure for resilient It was also suggested to select the genotypes for studies based on bench mark values of morpho-physiological traits of existing mulberry varieties and to refer the similar works being carried out by other CSB research institutes.

(**Action**: Divya Singh, Sc-C, Mul. Physiology)

9. Effect of intercropping on mulberry leaf yield and silkworm rearing with oil palm

Decision: The committee suggested to submit the revised concept note.

(**Action**: V.K. Yadav, Sc-C,RSRS Mulugu)

REVIEW ON CONCLUDED PROJECTS:

1. PIN 01018 SI: Effect of potassium mobilizing bacteria Frateuria aurentia on growth and development of mulberry.

Decision: The committee advised to take up large scale trials to take forward the findings of the study.

(**Action**: N.Dhahira Beevi, RSRS Salem)

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

Decision: The committee suggested to identify a male component for pure mysore since CSR2 is being extensively used for cross breed layings preparation.

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

PROGRESS OF RSRS/P4 HASSAN/SSBS COONOOR

RSRS Salem

Dr. Dhahira Beevi, Scientist D presented the progress. The committee observed low performance of survival and yield of the hybrid DHP5 under under ToT project - Component 7: "Evaluation of robust bivoltine silkworm hybrid suitable for different regions of high temperature and high humidity conditions" and suggested to conduct one more trial with 500 dfls.

RSRS Ananthapur

Dr. K.P. Kiran Kumar presented the progress. The committee noted the progress.

RSRS Kodathi

Dr. V. Lakshmanan presented the progress. The committee noted the progress.

RSRS Mulugu

Dr. Vinod Kumar Yadav presented the progress. The committee noted the progress.

P4 BSF Hassan

Dr. Dayananda presented the progress and the committee noted the progress.

SSBS Coonoor

Dr.V. Vijay presented the progress and the committee noted the progress

PROGRESS OF ON-GOING PROJECTS

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

Decision: The committee noted the progress.

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: The committee noted the progress.

3.PIE 13001MI: All India Coordinated Experimental Trial in Mulberry Phase-IV

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

5.PIC01007SI: Development of protocol for production of medically fit silk (cocoon, sericin & fibroin) for clinical purposes

Decision: The committee noted the progress.

6. MTL01025MI -Life cycle assessment of mulberry silk: A National Assessment

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

11.AIB 01 009MI: Evaluation of new bivoltine silkworm double hybrid TT21 X TT56 at farmers level for authorization and commercial exploitation

Decision: The committee noted the progress and suggested to complete the work within the extended period. The committee also suggested to present the comparative rearing data along

with reeling data of TT21 x TT56 with ruling double hybrid and egg recovery percentage of single hybrid over the double hybrid after analysis.

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

12.BPS 01027CN:Immunomodulatory and Adjuvant effects of Chitosan Nanoparticles Extracted from Bombyx mori

Decision: The committee noted the progress.

13.BPS 01028 CN: Value Addition of Cellulose and Chitin Isolated from Sericulture Waste for Advanced Packaging Applications

Decision: The committee noted the progress.

14.AIC01023SI :Development of Spectroscopic Tests for Insecticide Resistant Biomarkers in silkworm, Bombyx mori

Decision: The committee noted the progress and suggested to conduct an experiment with different doses of insecticides to find out its effects on causing non-spinning syndrome in silkworm.

(**Action**: Satish. L, Sc-D,Silkworm Pathology)

15.AIB01024MI: Development of productive, auto sexing silkworm breeds/ hybrids of Bombyx mori L. in egg stage and separation of male silkworm population by optical sorting method for commercial exploitation

Decision: The committee noted the progress.

16.AIE01026MI: Evaluation of new bivoltine double hybrid, BFC1xBFC10 at farmers level for authorization for commercial exploitation

Decision: The committee noted the progress.

17.ARE01029MI: Recommendations of novel fungicidal and insecticidal applications for mulberry

Decision: The committee noted the progress.

18.PRE01030CN: Development of an integrated management package for the broad mite, Polyphagotarsonemus latus (Acari: Tarsonemidae), in mulberry

Decision: The committee noted the progress.

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

Decision: The committee noted the progress.

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

Decision: The committee noted the progress presented by Dr. K.N. Madhusudhan.

21.PPF01017SI : Economics of Mulberry Sericulture in South India

Decision: The committee noted the progress.

22.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

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

Component3: Evaluation of productive double hybrid, DHP5 at farmers' level.

Component-4: Evaluation of newly developed multiviral diseases tolerant bivoltine hybrid RD1N1.

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

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

Component-9: Impact of Drip fertigation in mulberry productivity

Decision: The committee noted the progress presented by the respective CO-PIs

23.MOE01031CN Technology demonstration and evaluation of rearing performance of Bivoltine mulberry sericulture in Navsari district (Gujarat)

Decision: The committee noted the progress

CONCLUDING REMARKS:

The committee suggested to circulate the new concepts notes one week before among the scientists of CSRTI Mysuru and nested units for fruitful discussion in the RC meeting.

(**Action**: PMCE)

The concept notes should have short title with well defined objectives that can be achived with the available facility. Scientists were advised to refer to the similar works done by other researchers in various fields of sericulture. The outcome of the study must be validated in the field.

(**Action**: All scientists)

The committee advised to include the response of the plant to mulberry pests along with yield parameters while evaluating mulberry genotypes.

(**Action**: DC Mori)

Instead of testing many combinations under ToT trials, the committee suggested to decide on a single breed on priority basis to be taken to the field immediately. It was strongly recommended to have a project on evaluation of bivoltine breeds to supplement CSR2 as a male component.

(**Action**: DC Seri)

09/01/2023

[Dr. Mary Josepha (Shery) A.V.]
Chairman RC

Annexure-I

List of participants attended Research Council meeting held on 16.12.2022 at CSRTI Mysore

#	Name & Designation		Name & Designation
1	Mary Josepha A.V, Director (i/c) and Chairperson RC	33	Dhaneswar pradhan Sci -C CSRTI, Mysore
2	S.B. Dandin, invitee	34	Mahesh, R. Sci -C CSRTI, Mysore
3	H.K. Basavaraju, invitee	35	Kusuma L. Scientist-C CSRTI, Mysore
4	R.Bhagya, Scientist-D CSRTI, Mysore	36	Bhuvaneshwari , E. Sci-C CSRTI, Mysore
5	V. Nishitha Naik, Sci-D, REC Bidar	37	Ranjini M.S Sci-C CSRTI Mysore
6	V. Lakshmanan, Scientist-D, RSRS Kodathi	38	Bhavya M. R. Scientist B CSRTI, Mysore
7	Kulkarni,S.B. Scientist-D RSRS Kodathi	39	Shivakumar, Scientist-C, CSRTI, Mysore
8	JB Narendra Kumar, Scientist-D, REC Madivala	40	Manjappa Scientist -C CSRTI, Mysore
9	N. Dhahira Beevi Scientist-D RSRS Salem	41	Arun kumar Scientist-C CSRTI, Mysore
10	K.P. Kiran Kumar Scientist-D RSRS Ananthapur	42	Tanmoy Sarkar. Scientist-C CSRTI, Mysore
11	Y. Humayun Sharief, Scientist-D, REC Baramati	43	Satish L Scientist-C CSRTI, Mysore
12	P. Samuthiravelu, Scientist-D, REC Udumalpet	44	Ravindra Scientist-C CSRTI, Mysore
13	Y. Srinivasulu, Scientist-D, REC Chitradurgha	45	Thirupathaiah Y. Scientist-C, CSRTI, Mysore
14	M. Venkatachalapathy, Scientist-D, REC Palamner	46	Amit Kumar, Scientist-C, CSRTI, Mysore
15	Dayananada, Scientist-D, P4 Hasan	47	Rekha M DD(Stats) CSRTI Mysore
16	V. Vijay, Scientist-C, SSBS Coonoor	48	H.M.Munikrishnappa AD,CSRTI, Mysore
17	Vinod Kumar Yadav, Scientist-C, RSRS Mulugu	49	Ravindranath HR, PA
18	K.B. Chandrashekar Scientist - D, CSRTI Mysore	50	Gowtham K, JRF
19	Raghunath M.K. Scientist-D CSRTI, Mysore	51	Kuldeep B, PA
20	R. Meenal Scientist-D CSRTI, Mysore	52	Kishore kumar B, PA
21	M. Muthulakshmi Scientist-D CSRTI, Mysore	53	Mahesh M.R. JRF
22	S. Balasaraswathi Scientist-D CSRTI, Mysore	54	Sahana K.P. JRF
23	Anuradha J Scientist D	55	Nisarga N.R. JRF
24	Ravindra Mattigatti, Scientist-D	56	Nayashree, PA
25	Babu C.M. Scientist-D	57	Megha H.T. PA
26	Sanath Kumar Scientist-D	58	Rashmitha R, PA
27	S. Anand Kumar, Scientist-D	59	Chandini S, PA
28	S.M. Hukkeri Scientist-D	60	Shruthi R, PA
29	S. Mahiba Helen Scientist-D	61	Sindhu B.C. PA
30	K.N. Madhusudhan Sci -D CSRTI, Mysore	62	Chaithra S, PA
31	Gayatri .T, Sci-C CSRTI Mysore	63	Harshitha K.M. PA
32	Divya Singh Scientist B CSRTI, Mysore	64	Chandana R, PA