CENTRAL SERICULTURE RESEARCH & TRAINING INSTITUTE (CSRTI), MYSURU

MINUTES OF 42nd RESEARCH ADVISORY COMMITTEE MEETING

27th & 28th NOVEMBER, 2017

The 42nd Research Advisory Committee meeting of CSRTI-Mysuru was held on 27th & 28th November 2017 at CSRTI-Mysuru for reviewing the progress of R&D activities of the Institute and its nested units (April, 2017 to October 2017) and new project proposals for consideration. The meeting was presided over by Prof. S.R. Niranjana, Vice Chancellor, Gulbarga University and the Chairman of newly constituted Research Advisory Committee (RAC). The list of members and participants who have attended the meeting is appended herewith in **Annexure-I**.

The Chairman and Members of the newly constituted Research Advisory Committee (RAC) visited all the laboratories and mulberry gardens before commencement of the meeting in the fore-noon. The activities undertaken by different labs of the institute and facilities available in the institute were informed to the RAC.

Dr. V. Sivaprasad, Director welcomed the newly constituted RAC Chairman and the members with flower bouquets on behalf of the CSB and CSRTI-Mysuru for the meeting and also welcomed the Scientists of CSRTI-Mysuru and its nested units for the meeting.

Prof. Niranjana, RAC Chairman in his opening remarks expressed thanks to CSB for identifying as RAC Chairman and recalled his close association with CSRTI-Mysuru scientists as Professor at University of Mysore for the last 25-26 years in the area of Botany/Bio-technology. He further informed the house that he attended the RCC meeting at CSB-Bangalore along with Director. Three-tier approval system *i.e.*, RC, RAC and RCC would be adopted by CSB for undertaking new projects in future and RAC would work in line with the system approved by RCC. He also said that research projects should be application-oriented; however, molecular approaches need to be undertaken to understand the basic mechanisms at work in silkworm and mulberry. He advised the Scientists to publish research papers in reputed journals which have impact factor and identify such journals in sericulture.

RAC-Chairman also informed that RCC opined that scientists need to formulate externally funded projects for strengthening the infrastructure required for development of the laboratories in CSRTI-Mysuru. He appreciated the efforts of CSRTI-Mysuru in developing good technologies/products for the benefit of farmers including commercialization and patents.

Later, all the participants introduced themselves to the RAC chairperson and members.

CONFIRMATION OF THE MINUTES OF 41st RAC MEETING HELD ON 20th & 21st APRIL 2017

The RAC confirmed the minutes of the previous meeting as no comments were offered by any of the members.

REVIEW OF FOLLOW-UP ACTION TAKEN ON DECISIONS OF RAC IN 41st MEETING

The follow-up actions taken on decisions taken in the previous meeting was presented by Dr. V. Sivaprasad, Director. The committee expressed satisfaction regarding the follow up action taken on the decisions and suggestions of previous RAC. The following suggestions were made by the committee:

- On the incidence of non-spinning larvae at the field level, the committee suggested undertaking EM studies on the status of spinnerets in spinning larvae.

[Action: SW Pathology, CSRTI-Mysuru]

- With regard to the development of silkworm rearing models for hot and dry and hot and humid areas, the committee suggested developing silkworm rearing house models suitable for all sessions or which can be inter-convertible as per the climatic conditions.

[Action: SED, CSRTI-Mysuru]

- With regard to the development of custom-hire centers for seri-equipments, the committee suggested to work in coordination with KVKs, which are already implementing similar system for agriculture equipments/machines.

[Action: SEEM, CSRTI-Mysuru]

HIGHLIGHTS OF RESEARCH PROGRESS

The highlights of research progress made by the Institute and its nested units during the reporting period was presented by Dr. V. Sivaprasad covering all the areas of Mulberry & Silkworm Production, Protection, Extension & Training activities. The team-effort of Scientists and Director on the R&D achievements of CSRTI-Mysuru was appreciated by Chairman and members.

REVIEW OF CONCLUDED PROJECT

During the reporting period, one research project was concluded and the same was reviewed by the committee.

ARP-3597: Standardization and validation of LAMP (Loop mediated isothermal amplification reaction) technique for the detection of *Nosema bombycis* infection in silkworm

The committee reviewed the performance of LAMP technique to detect pebrine and suggested to verify the technology in eri, muga and tasar silkworms. Further, RAC suggested to undertake large scale field trials of LAMP technique as a TOT project.

[Action: SW Pathology, CSRTI-Mysuru]

NEW RESEARCH PROJECT PROPOSALS FOR APPROVAL

The following new project proposals presented by the concerned scientists were critically reviewed by the committee on the basis of uniqueness of the proposal, research component and relevance of the project in mulberry sericulture.

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

Dr. T. Mogili, Sci-D and PI presented the project proposal along with referee's comments (referees recommended for implementation of the project). The committee reviewed the proposal critically and approved the project, since it is a follow-up of a previously concluded project with the following modifications/suggestions:

- To include evaluation of identified variety as one of the objective
- To document the pest and disease incidence during the evaluation and involve a plant pathologist and entomologist
- In addition to yield and other contributing factors, to record periodically data on soil properties like physical, chemical and biological components for correlation with other components to minimize error component.
- Screening of plantation materials for root rot and root knot diseases should be integral part of the experiment.
- Suggested to undertake paired-row plantation for optimal conditions and tree cultivation system under sub-optimal conditions.

[Action: Dr. T. Mogili, Sci-D, MBG, CSRTI-Mysuru]

2. Primary Yield evaluation for identification of superior hybrids with improved yield and adaptability from the progenies raised using drought adaptive traits under suboptimal irrigation conditions

Dr. Tanmoy Sarkar, Sci-B & PI presented the project proposal along with referee's comments (referees recommended for project implementation). The committee approved the project proposal, the project is the need of the hour for climate change to develop drought resistant variety and also as it is a follow-up of previously concluded project with the following suggestions:

- To utilize available molecular markers for categorizing and short-listing of mulberry genotypes
- Accordingly, to revise the budget for implementation of modified work plan

[Action: Dr. Tanmoy Sarkar, Sci-B, MBG, CSRTI-Mysuru]

3. Evolution of highly productive and widely adopted mulberry using exotic and wild germplasm

Dr. Vaijayanthi, Sci-B & PI presented project proposal and the Committee discussed the referees comments received on the project and approved the project, which involves new breeding programme for development of highly productive and widely adopted mulberry variety with the following suggestion:

- To restrict the current proposal upto hybridizations only for a period of 5 years, which later can be continued further as PYT.

[Action: Dr. Vaijayanthi, Sci-B, Mol. Bio. Lab-1, CSRTI-Mysuru]

4. Development of multivoltine breeds with improved silk quality, utilizing indigenous and exotic bivoltine breeds

Dr. K.B. Chandrashekar, Sci-D & PI presented the project proposal based on the recommendations of Breeders meet and also presented the referees comments received on the project. The committee reviewed critically and approved the project, which aims to develop improved crossbreed to produce above 3A grade silk, which is the need of the hour as 80% of Indian silk production is still crossbreed-oriented with the following suggestions/modifications:

- To include grainage performance of evolved lines over generations in general (emergence pattern and egg yield), floss percentage as well as uniformity in shell thickness and silk quality parameters

[Action: Dr. K.B. Chandrashekar, Sci-D, MBL, CSRTI-Mysuru]

5. Industry sponsored project: Ultra-Phen, a phenolic compound for effective disinfection in Sericulture

Dr. Mary Josepha, Sci-D & PI presented the industry sponsored research proposal and the Committee discussed project and approved the proposal as the entire cost is funded by the industry sponsor, which is useful for sericulture industry and farmers with the following modifications/suggestions:

- To verify the Ultra-Phen efficacy along with cost-effectiveness and user-friendliness
- To quantify the minimum and effective concentration of disinfectant
- To include Chlorine Dioxide and Decol as controls

[Action: Dr. Mary Josepha, Sci-D, SW Pathology, CSRTI-Mysuru]

TOT Projects

1. Popularization of G4 mulberry variety in South India

The Committee discussed the TOT project presented by Dr. B.T. Srinivas, Sci-D & PI as the continuation programme of Mulberry Variety Authorization Programme (G4 was authorized for commercial exploitation in South zone on 25th Oct. 2017) by CSB. The proposal aims establishing sufficient G4 seed gardens with CSB/DoSs and popularizes G4 variety in southern states, which was approved by the committee and appreciated for the faster implementation.

[Action: Dr. B.T. Srinivas, Sci-D, FMS, CSRTI-Mysuru]

2. Demonstration and popularization of pheromone trap against silkworm uzi fly, *Exorista bombycis* (Collaboration with NBAIR-Bangalore)

The Committee discussed the TOT project presented by Mr. J.B. Narendra Kumar, Sci-D & PI based on the outcome of the recently concluded project for large scale evaluation of the technology developed for the management of perennial uzi problem in mulberry sericulture. The committee approved the project with the following suggestions/modifications:

- To specify important parameters in the methodology for evaluation such as number of crops/rearing house, trap location, size of the trap, colour of the trap, height of placing trap,

dispense rate etc.

- Advised to keep the cost of trap in comparison to similar traps in other horticultural crops such as mango
- To record observations on spent Uzi flies and categorization of trapped uzi flies into male and female
- To include an objective for the product commercialization and estimate cost-benefit ratio

[Action: Mr. J.B. Narendra Kumar, Sci-D, CSRTI-Mysuru]

3. Evaluation of new bivoltine hybrid, TT 21 x TT 56 at farmers level during summer season in southern states

The Committee discussed the TOT project presented by Dr. S. Manthira Moorthy, Sci-D & PI based on the outcome of recently concluded project for development of robust bivoltine hybrids of silkworm tolerant to high temperature environment in the tropics through DNA marker assisted selection. The committee approved the project with the following suggestion:

- To calculate leaf-cocoon ratio, record data on disease incidence and environmental conditions during each crop

[Action: Dr. S. Manthira Moorthy, Sci-D, BBL, CSRTI-Mysuru]

REVIEW OF PROGRESS OF ONGOING PROJECTS

The committee reviewed the progress of the following on-going projects and suggested the investigator to continue the projects as per milestones:

1. PIB-3457: Development of disease resistant and productive mulberry genotypes with special reference to root rot and root knot diseases suitable for seri-zones of south India

The committee suggested to include photographs concerned with the observations on project, while presenting the concluding report and analyse data statistically.

[Action: Dr. S. Gandhi Doss, Sci-D, MBG, CSRTI-Mysuru]

2. ARP-3519: Silkworm Disease Monitoring of Seed and Commercial Crop Rearing of South Indian States

The committee commented that the presentation is not exactly good and suggested to present the compiled data year-wise with seasonal effects and for graphical representation of data with conclusive statements.

[Action: Dr. Mary Josepha, Sci-D, SW Pathology, CSRTI-Mysuru]

3. PPA-3549: Evaluation of modified spacing with special reference to planting geometry for sustainable mulberry leaf

The committee observed and suggested to present statistically analyzed data.

[Action: Mr. V.K. Yadav, Sci-C, Agronomy, CSRTI-Mysuru]

4. PRE 3546: Identification, characterization, synthesis and field evaluation of sex pheromone of the mulberry leaf roller, *Diaphania pulverulentalis* (Lepidoptera : Pyralidae) [In collaboration with NBAIR, Bangalore]

The committee noted the field evaluation data and advised to present the final data with photographs while presenting the concluding report.

[Action: Mr. J.B. Narendra Kumar, Sci-D, PML, CSRTI-Mysuru]

5. PIP 3592: Identification of indices for abiotic stress tolerance in mulberry with special reference to moisture & alkalinity stress

The committee noted the presentation and advised to undertake experiments to achieve the proposed objectives as per milestones.

[Action: Dr. T. Gayathri, Sci-B, MBG, CSRTI-Mysuru]

6. PRP 3591: Identification of resistance in mulberry germplasm for root knot nematode disease

The committee appreciated the systematically prepared presentation and suggested to continue the good work to achieve the proposed objectives as per milestones.

[Action: Dr. G. S. Arunkumar, Sci-B, Mol. Biol. I, CSRTI-Mysuru]

7. AIT: 3593: Transcriptome analysis of silkworm for identification of molecular markers for silk quality

The committee noted the presentation and advised to follow-up with the out-sourcing agency for transcriptome data and analyze for achieving the proposed objectives.

[Action: Dr. L. Kusuma, Sci-B, Mol. Biol.II, CSRTI-Mysuru]

8. MOE 3595: Development of business models for enterprises in pre-cocoon sector of Sericulture

The committee appreciated the presentation and suggested to present comparative chart of economical models for better understanding of the business models being proposed.

[Action: Ms. Joycy Rani, Sci-B, SEEM, CSRTI-Mysuru]

9. AIP-3568: Development of value added products from spent pupae of mulberry silkworm, *Bombyx mori* L (In collaboration with NIANP)

The committee noted the presentation and progress of the project and suggested to use the infra-structure facilities available at IOE-Univ. of Mysuru for characterizing the oil and proteins.

[Action: Dr. Y. Thirupataiah, Sci-B, SW Physiology, CSRTI-Mysuru]

Other On-going projects:

With regard to the on-going research projects on silkworm breeding, the committee advised the investigators to present the research progress as on date to Dr. Chandrashekharaiah, RAC Member & Expert on Silkworm breeding for critical review and suggest further follow-up action. The committee noted the progress achieved on the remaining on-going projects and advised the investigators to adhere to the proposed objectives and milestones.

[Action: All the Concerned PIs, CSRTI-Mysuru]

REMARKS OF RAC MEMBERS & CHAIRMAN

- Director, CSTRI-Bangalore suggested undertaking projects on improvement of filament length in silkworm breeds/hybrids, which would take care of size deviation for silk quality improvement in bivoltine hybrids. He also requested for communicating information on newly developed hybrids/ breeds developed by the institute.
- RAC-Chairman appreciated the presentations made by the investigators and suggested to interact with each other and work for undertaking multi-disciplinary research projects in future.
- As a whole, the RAC members suggested that the investigators should properly compile and statistically analyze the data and improve the project presentations.
- The committee advised all the PI's of new research and ToT projects to prepare the full projects as per proforma keeping in view of suggestions/modifications suggested by the committee for further processing by CSB and RCC.
- The RAC observed that less-efforts have been made by the scientists to publish the research works carried out. The filing of patents and commercialization of technologies/products is also equally important to utilize the research outcomes.

The meeting ended with vote of thanks to the chair.

Sd/-
CHAIRMAN

Annexure-I

LIST OF MEMBERS ATTENDED
42nd RAC MEETING HELD ON 27th & 28th NOVEMBER 2017

#	Name of the Member	
1	Prof. S .R. Niranjana, V C, Gulbarga University	Chairman
2	Dr. V. Sivaprasad, Director, CSRTI-Mysuru	Member Convener
3	Dr. Chandrasekharaiah, Director (Rtd.), APSSRDI-Hindupur	Member
4	Dr. A. Ramesh Sundar, Scientist, ICAR, Coimbatore	
5	Dr. K. C. Narayanaswamy, UAS, GKVK, Banaglore	
6	Dr. K. Mandal, Director (Tech), CSB, Bengaluru	
7	Dr. P. Jayarama Raju, Sci-D, RCS, CSB	
8	Dr. V. Subhas Naik, Director CSTRI, Bengaluru	
9	Mr. Narayana Swamy, DD, Mysuru (Rep Commissioner DOS, Karnataka)	
10	Smt. P. Arul Mani, DD (Seed) (Rep DOS, TN)	
11	Dr. P. J. Raju. Director, APSSRDI, Hindupur (Rep DOS, AP)	
12	Sri. Pratap Goud, Farmer, Telangana	
Members who sought leave of absence		
13	Prof. Ranganathan Ramani, Director (Rtd.) (IINRG)	
14	The Commissioner of Rural Development, Govt. of Kerala	
15	The Commissioner of Sericulture, Govt. of Madhya Pradesh, Bhopal	
16	The Director DOS , Maharashtra, Nagpur	

List of Participant Scientists CSRTI, Mysuru and its nested units for 42nd RAC

Name	Designation	Section/Unit
Dr. Satish Verma	Scientist-E	CSRTI, Mysuru
Dr. Vineet Kumar	Scientist-D	CSRTI, Mysuru
Dr. Sreenivas, B. T	Scientist-D	CSRTI, Mysuru
Dr. M. A. Shanthan Babu	Scientist-D	RSRS Anantapur
Dr. S. Rajakumar	Scientist-D	RSRS Salem
Dr. Jalaja S. Kumar	Scientist-D	RSRS Kodathi
Dr. K. Praveen Kumar	Scientist-D	RSRS Shadnagar
Dr.Mogili, T.	Scientist-D	CSRTI, Mysuru
Dr.Gandhi Doss, S.	Scientist-D	CSRTI, Mysuru
Dr. B. Mohan	Scientist-D	SSBS,Conoor
Dr.A.M.Babu	Scientist-D	REC,SU-Avinashi
Dr.Mary Josepha, A.V.	Scientist-D	CSRTI, Mysuru
Anuradha H Jingade	Scientist-D	CSRTI, Mysuru
Dr.Santha, P. C.	Scientist-D	CSRTI, Mysuru
Munikrishnappa, H. M.	Scientist-C	CSRTI, Mysuru
Dr.R.Meenal	Scientist-D	CSRTI, Mysuru
Dr. Dhahira Beevi	Scientist-D	RSRS Salem
Dr. S. Balasaraswathi	Scientist-D	RSRS Salem
Dr. S. Mahiba Helen	Scientist-C	RSRS Salem
Kruthika, H. S.	Ph.D. Scholar	CSRTI, Mysuru
P. Sowbhagya	SRF	CSRTI, Mysuru
Dr. P. V. Vaijayanthi	Scientist-B	CSRTI, Mysuru
Dr.Gayatri, T.	Scientist-B	CSRTI, Mysuru
Dr.Bhuvaneshwari, E.	Scientist-B	CSRTI, Mysuru
Dr. Ranjini M.S.	Scientist-B	CSRTI, Mysuru
P.V.Soudamini	Scientist-D	CSRTI, Mysuru
Dr.V.Nishitha Naik	Scientist-D	P4BSF Hassan
Dr.S.N.Pallavi	Scientist-D	RSRS,Ch.nagara
Dr.Geetha, G. S.	Scientist-C	CSRTI, Mysuru
Joycy Rani, D.	Scientist-B	CSRTI, Mysuru
Ravindra Mathigatti	Scientist-D	REC,SU,Kudalgi
Dr.Sumathy, R.	Info. Officer	CSRTI, Mysuru
Shobhana V	Scientist-B	CSRTI, Mysuru
Dr. Kusuma L.	Scientist-B	CSRTI, Mysuru

Name	Designation	Section/Unit
Sneha M.V.	JRF, SS&C	CSRTI, Mysuru
Rajashekar.K	Scientist-D	CSRTI, Mysuru
Dr . K. B. Chandrashekar	Scientist-D	CSRTI, Mysuru
Dr . C.M. Kishore Kumar	Scientist-D	CSRTI, Mysuru
Dr.S.Purushotham	Scientist-D	CSRTI, Mysuru
B.Vijaya Naidu	Scientist-D	RSRS,Anantapur
Dr.Somaprakash, D. S.	Scientist-D	CSRTI, Mysuru
J.B.Narendra kumar	Scientist-D	CSRTI, Mysuru
Kulkarni, S. B.	Scientist-C	CSRTI, Mysuru
Dr.Pratheesh Kumar, PM.	Scientist-D	CSRTI, Mysuru
M. N. Chandrashekar	Scientist-D	CSRTI, Mysuru
Dr.Sibayan Sen	Scientist-C	CSRTI, Mysuru
Vinod Kumar Yadav	Scientist-C	CSRTI, Mysuru
Dr.Mallikarjuna, G.	Scientist-B	CSRTI, Mysuru
Dr.Tanmoy Sarkar.	Scientist-B	CSRTI, Mysuru
Dr.Thirupathaiah, Y.	Scientist-B	CSRTI, Mysuru
Dr.A.R. Narasimah Naik	Scientist-D	CSRTI, Mysuru
K. Vedvyas	Scientist-D	REC-SU Tumkuru
Sri. Shivakumar Hukkeri	Scientist-D	CSRTI, Mysuru
Dr. Ramesh Kumar	Scientist-C	REC,SU,Bidar
Arunakumar G. S.	Scientist-B	CSRTI, Mysuru
Dr. Satish, L.	Scientist-B	CSRTI, Mysuru
Dr.Madhu sudhan	Scientist-C	CSRTI, Mysuru
Paramesha B.P.	JRF	CSRTI, Mysuru
Ravi Kumar R	JRF	CSRTI, Mysuru
Dr.Manthira Moorthy, S.	Scientist-D	CSRTI, Mysuru
Rekha M	AD(Stats)	CSRTI, Mysuru
C. Avinash	Com Optr	CSRTI, Mysuru
Kiran kumar	JE,(Maint)	CSRTI, Mysuru
B.Lakshmikanthamma	Steno	CSRTI, Mysuru
C.Parameshwar	Scientist-D	CSRTI, Mysuru
Dr.V.Girish Naik	Scientist-D	RSRS,Ch.nagara