

MINUTES OF THE 59th MEETING OF RESEARCH COUNCIL HELD ON 20th January 2021 AT CTR&TI, RANCHI

The fifty-ninth meeting of Research Council of CTR&TI, Ranchi was held at the Institute under the Chairmanship of Dr. C.M. Bajpeyi, Director by following the COVID-19 protocol. At the onset, the Director welcomed all the Scientists. He observed that during 2021-22 five projects are going to conclude and to meet the target of new projects for the year, the scientists should come out with some practical proposals to address the field requirement of the industry. He stressed that projects of academic nature will not be allowed and to put more emphasis on Extension mechanism as from this year the OST & OFT will be in project mode.

The new proposals were further reviewed and revised proposals and proposals submitted by the scientists transferred from other Institutes to CTR&TI, Ranchi were evaluated in an extended RC meeting conducted on 24th June 2021 in Hybrid mode (Offline & Online) due to the restrictions imposed in the state under “Syasthya Suraksha Saptah” (partial lockdown) all indoor and outdoor congregations of more than 5 persons were prohibited.

AGENDA NO. 1: Confirmation of minutes of 58th RC Meeting held on 9th September, 2020.

The minutes of the 58th RC meeting were confirmed, as no comments or objections were received from any Scientist.

AGENDA NO. 2: Review of action taken on the recommendation/ decisions of the last RC meeting

Follow up Action taken on the decisions made during the previous RC meetings were reviewed. Director expressed his satisfaction over the actions taken.

AGENDA NO. 3: Concept notes of research projects for approval

As proposed in the Action plan of the Institute, new research proposals/ concept notes were discussed.

1. Diversity, yield loss and management of predatory wasps attacking *Antheraea mylitta* Drury [PI: Dr. A. H. Naqvi, Scientist-D]

Dr. H.S. Gadad, Scientist-B presented the concept note. Committee suggested to mention detailed methodology for collection of attractants in the lab. It also suggested to focus on repellent for management of wasp instead of attractants and to make sure that attractants & repellents will not affect the tasar silkworm. Concept was **approved**.

[ACTION: Dr. A H Naqvi, Scientist-D & PI]

2. Assessment of technologies adaption by farmers and their socioeconomic status of tasar farmers [PI: Mr. M.D. Tiwari, Scientist-D]

Mr. M. D. Tiwari, Scientist-D presented the concept note. The concept was **approved** with following suggestions-

- To use tasar culture instead of production in the objective
- To also include post cocoon technology in proposed project involving reeling and weaving clusters
- To prepare questionnaires for data collection and keep project period for at least 3 years.
- Categorize the technologies developed in last 5 years, 10 years and 20 years and screen out the valuable technology for evaluation in proposed project.
- To take large sample size i.e., 6000 farmers (1000 farmers from each state). Collect farmers' recommendations for higher crop yield.

[ACTION: Mr. M.D. Tiwari, Scientist-D & PI]

3. Conservation of wild Daba in their natural habitat. [PI: Dr. Niranjana Kumar, Scientist-D]

Dr. Niranjana Kumar, Scientist – D presented the concept note. The house suggested to use the term natural grown wild Daba instead of wild Daba conservation at natural habitat in title. It was also suggested to co-relate this to SNP marker of the ongoing project AIT-4727 (Sub project: 1). The committee expressed hope that the model will be useful for conservation. Concept was **approved**.

[ACTION: Dr. Niranjan Kumar, Scientist-D & PI]

- 4. Isolation and characterization of silk fibroin from waste eliminated during reeling for biomedical applications like wound dressing, hydrogel scaffold etc.** [PI: Mr. Debashish Chattopadhyay, Scientist-D]

Mr. D. Chattopadhyay, Scientist–D presented the concept note. Director observed that this proposal is not much different from the earlier proposal “Preparation and characterization of silk fibroin hydrogel from silk tasar waste for wound healing” which was turned down during the 3rd meeting of the Working Group on Sericulture By-product Utilization held on 09.12.2019 at CSB, Bangalore. Hence, Proposal is **not approved**.

[ACTION: Mr. D. Chattopadhyay, Scientist-D & PI]

- 5. Evaluation of selected hybrids of *Terminalia arjuna* × *T. tomentosa* and drought tolerant accessions *T. arjuna* in different agro-climatic regions of tropical tasar silkworm rearing in India.** [PI: Dr. Gandhi S. Doss, Scientist-D]

It was suggested to modify the title as “*Evaluation of identified hybrids of Terminalia arjuna × T. tomentosa and drought tolerant accessions of T. arjuna for their suitability in tropical tasar silkworm rearing.*”

The house observed that more references should be there and compliance of RAC recommendation should come under origin of the proposal.

Concept was **approved** with the suggestion to include Mr. M.D. Tiwari from ETT for coordination with the nested units.

The house also suggested that since this proposal is for comparative evaluation of findings of four concluded projects, this is like validation of food plant accessions identified or hybrid food plants developed under different projects which were already recommended by the referees and RACs of the Institute. Hence, after approval of the concept note, full project can be sent directly to CSB for administrative & financial approval and allotment of code number to save the time and start the work immediately.

- 6. Ectomycorrhizal Bio-inoculants for Improving the Growth, Leaf Yield and Nutrient Use Efficiency of *Terminalia arjuna* and *Terminalia tomentosa*** [PI: Dr. Aparna Kopparapu, Scientist-B]

It was suggested that title may be modified as “Studies on ectomycorrhizal bio-inoculants for improving nutrient utilization efficiency, growth rate and leaf yield of *Terminalia arjuna* and *Terminalia tomentosa*”. The house **approved** the concept note for submission to central Office and observed that as the whole study rely upon isolation and efficacy of Ectomycorrhizal to *T. arjuna* and *T. tomentosa*, a pilot study may be conducted parallel to generate some preliminary data.

7. Exploration of host plant leaf and Leaf surface microbial volatiles in enhancement of tasar silkworm fecundity [PI: Dr. Hanamant Gadad, Scientist-B]

The house suggested to improve the concept note and add more references. Further it was suggested that instead of taking a new project, it should be taken as a part of the ongoing project APS 04003 SI as midterm improvement of the project.

8. Studies on influence of seasons/crops and storage of tasar and muga cocoons on single cocoon quality characteristics, reeling performance and yarn quality [PI: Mr. Debashish Chattopadhyay, Scientist–D]

House observed that the main objective of this project proposal is to develop a package for storage period and conditions for better reeling performance and yarn quality hence pre cocoon information like fecundity, hatching %, larval wt. etc, are not required. It also observed that since tasar rearing is an outdoor activity and there is mainly one commercial crop which is reared during the same period every year study on impact of spinning conditions is also not required. Hence, pre-cocoon part may be dropped.

It was suggested to modify the title as “Studies on storage practices of tasar cocoons for better cooking efficiency, reeling parameters and yarn quality” and keep the project period for two years. There should be two objectives viz., i) To evaluate the effect of storage of tasar cocoons on cooking efficiency, single cocoon quality, reeling performance and yarn quality in three major commercial eco- races of tropical tasar.

ii) To study the effect of storage practices of tasar cocoons on sericin characteristics.

Further, as suggested by CSTRI, Bangalore, study on Tasar & Muga should be conducted separately in different projects, involvement of scientists on Regional Silk Technological Research Station, CSTRI, Khanapara, Guwahati is not required. With these suggestions the concept note is **approved**.

9. Validation of Technologies developed by CTR & TI, Ranchi – 2020-21 [PI: Dr. A.H. Naqvi, Scientist-D]

The proposal was discussed in the light of the different technologies being proposed for trial under the OST & OFT programme. The proposal was **approved** and it was suggested that the methodologies will be further fine tuned by the PIs and the proposal will be sent in the project proposal format (RMIS-02) for final approval and allotment of Code number.

AGENDA NO. 4: Review on concluded projects

- 1. [CED-4723] Studies on utilization of solar energy in tasar post-cocoon technology operations.** (October 2016 - September 2019) extended up to Dec, 2020, Funded by MNRE, Govt. of India, New Delhi. **[PI: Mr. Z.M.S. Khan, Scientist-D]**

Mr. D. Chattopadhyay, Scientist–D presented the concluded project. Director inquired about the quantum of energy saved by using the solar power and suggested to prepare the Techno-economic feasibility in tabular form.

[ACTION: Mr. Z.M.S. Khan, Scientist-D & PI]

- 2. [PIB 4697] - Development of superior hybrids of *T. arjuna* and *T. tomentosa* for higher leaf yield and quality. Sub-Project: Identification of hybrids by using molecular tools** [PI: Dr. Surendranath, Scientist-D].

Dr. Surendranath, Scientist –D presented the concluded project, Director agreed for submission of Final report of the sub-project by March, 2021.

[ACTION: Dr. Surendranath, Scientist-D & PI]

- 3. [PPA-4715] Effect of plant growth promoting rhizosphere microorganisms on leaf nutrient content of primary tasar host plants in forest and block plantation.** (October 2016 - September 2019) [PI: Dr. Manjappa, Scientist-C]

Dr. Manjappa, Scientist –C presented the concluded project and informed that only PSB azotobactor and pseudomonas will be used for pot experiment as due to unavailability of rhizobium, aspergillum and trichoderma in tasar food plants, these species were not included in the project.

[ACTION: Dr. Manjappa, Scientist-C & PI]

AGENDA NO. 5: Progress of on-going projects

A. Tasar Host Plant

4. [PIN 04001 SI] **Development of a package for optimum nutritional requirement of tasar host plants for producing quality tasar cocoons.** (February, 2020- January 2022) [PI: Dr. Jitendra Singh, Scientist-C]

Dr. Jitendra singh, Scientist – C presented the project progress house took note the progress.

B. Tasar Silkworm

5. [AIT 04002 SI] **Selection of stable thermos-tolerant line(S) of tropical tasar silkworm *Antheraea mylitta* through SCAR markers.** (February, 2019- January 2022) [PI: Dr. I. G. Prabhu, Scientist-C]

Progress of the project was discussed. The house took note of the progress.

6. [APS 04003 SI] **Studies on the reproductive potential of Tasar silkworm *Antheraea mylitta* D. with special reference to nutritional and mechanical indices.** (March, 2020- February 2022) [PI: Dr. Mala. N, Scientist-B]

Dr. K. Jena, Scientist-D presented the progress of the project. House expressed satisfaction over the progress.

7. [AIE 04004 CN] **Study on existence of tropical tasar silkworm ecoraces and their subsist places with the help of geospatial technology.**(March, 2020- February 2022) [PI: Dr. I. G. Prabhu, Scientist-C]

Progress of the project was discussed. The house took note of the progress.

8. [BPC 04005SI] **-Tasar waste to wealth by Cordyceps** (March, 2020- February 2022) [PI: Mr. M.M. Baig, Scientist-C]

Progress of the project was discussed. The house took note of the progress.

9. [ARE04006CN] **Management of important pests of tasar silkworm *Antheraea mylitta* (D) through botanical repellents** (April, 2020- March 2022) [PI: Dr. H.S. Gadad, Scientist-C]

Progress of the project was discussed. The house took note of the progress.

10. [AIE-3555] **Cryopreservation of Tasar Silkworm, *Antheraea mylitta* semen and its Artificial Insemination.** (February 2016 - extended up to Sept, 2021) [PI: Dr. J.P. Pandey, Scientist-D]

Dr. J.P. Pandey, Scientist-D presented the progress of the project. The Committee suggested that viability of cryo-preserved sperms is required to be checked at regular intervals. It also observed that solid work is required to conclude the project without further extension and stressed that in the projects which are going to be concluded updated status of the project should also be presented along with progress of the project.

[Action: Dr. J.P. Pandey, Scientist-D]

C. Collaborative Projects

11. [BPS 01013 CN]; **Utilization and diversification of silkworm pupae products for human & animal consumption and composting** (Oct, 2020 - Sept, 2022) [PI: Dr. K. Jena, Scientist-D]

Dr. K. Jena, Scientist-D informed the house that data collection regarding availability of Tasar, Muga and Eri waste pupae is under progress.

D. Externally Funded Projects

12. [AIT-4727] **Integrated biotechnological approach towards improvement of quality and productivity of tropical tasar silk.** (March, 2018- February 2021)

Project-1: Sequencing of whole-genome of tasar silkworm, *Antheraea mylitta* (in collaboration with NIAB, Hyderabad) (PI: Dr. J. P. Pandey) Funded by DBT, New Delhi

Project-2: Genetic characterization of tropical tasar silkworm, *Antheraea mylitta* through single nucleotide polymorphism based molecular barcode (in collaboration with University of Hyderabad) (PI: Dr. I. G. Prabhu) Funded by DBT, New Delhi

Progress of the project was discussed. The house took note of the progress.

13. [AIT-4728] Identification most-active cocoonase of sericigenous insects and its variant through molecular characterization. (in collaboration with IISER, Pune and BIT, Mesra) (March, 2018- February 2021) (PI: Dr. J.P. Pandey, Scientist-D) Funded by DBT, New Delhi

Dr. J. P. Pandey, Scientist-D presented the progress made in the project. The house took note of the progress.

AGENDA NO. 6: Trial of technologies (OSTs/ OFTs)

Trial of the following technologies were conducted during 2020-21. The house was briefed about the progress of the results.

A. On Station Trials (for validation of technology at CSB institutes/ RSRs/ DoS units etc.)

1. Validation of chemical trap for *Ichneumon* wasp.
2. Evaluation of IPM for control of gall fly.
3. Validation and popularization of cooking package developed for three eco-races.
4. Establishment and popularization of new Improved accession 102 and 123 of *Terminalia arjuna* and *Lagerstroemia speciosa*.
5. Evaluation of IPM package for control of stem borer in tasar food plants.

B. On Farm Trials (for demonstration of Technologies at farmers' level)

1. Management of abiotic factors using light reflector paints to reduce erratic and delayed emergence.

The house observed that due to the COVID-19 lockdown, the trials could not be conducted properly and suggested to repeat them again during 2021-22.

AGENDA NO. 7: Extension (ECP) and other programmes

Scientist-D, ETT Division informed the house that due to COVID-19 conditions, no ECP programme could be conducted during first two quarters. However, as the situation is getting eased with Unlock, the Units are conducting the programmes following the precautions and protocols as per guidelines and almost 45% target was achieved during the 3rd quarter.

AGENDA NO. 8: Training (CBT) and other programmes

Scientist-D, Training Division informed the house that due to COVID-19 conditions, no training programmes were conducted up to August 2021. However, CBT programmes started from Sept. 2020 and almost 40% target has been achieved. He further informed that online classes are under progress for PGDS (Vanya Silk) 15-months course for the Session 2020-21.

AGENDA NO. 9: Discussion on General Comments / Suggestions of RC:

Director suggested all the scientists to be simple and crisp in presentation. In view of the scientists joining the Institute on transfer from other CSB units, it was decided that Dr. Aparna Kopparapu, Scientist-B will be included as CI in the ongoing project PIN 04001 SI.

The meeting ended with a vote of thanks to the chair.

LIST OF PARTICIPANTS:

1. Dr. C. M. Bajpeyi, Director
2. Mr. Z.M.S. Khan, Scientist-D
3. Dr. Niranjana Kumar, Scientist-D
4. Dr. G.P. Singh, Scientist-D
5. Dr. A.H. Naqvi, Scientist-D
6. Dr. B. Surendranath, Scientist-D
7. Mr. M.D. Tiwari, Scientist-D
8. Dr. S. Gandhi Doss, Scientist-D
9. Dr Mir Nisar Ahmad, Scientist-D
10. Ms. Susmita Das, Scientist-D
11. Dr. J. P. Pandey, Scientist-D
12. Dr. K. Jena, Scientist-D
13. Dr. Vishal Mittal, Scientist-D
14. Mr. Debasish Chattopadhyay, Scientist-D
15. Mr. M.M. Baig, Scientist-C
16. Dr. Jitendra Singh, Scientist-C
17. Dr. D.I.G. Prabhu, Scientist-C
18. Dr. Manjappa, Scientist-C
19. Dr. Harendra Yadav, Scientist-C
20. Dr. Hanumant Gadad, Scientist-B
21. Dr. Aparna Koppurapu, Scientist-B