CENTRAL TASAR RESEARCH AND TRAINING INSTITUTE
RANCHI – 835 303, JHARKHAND

MINUTES OF THE 48TH MEETING OF RESEARCH ADVISORY COMMITTEE (RAC) OF CTR&TI HELD ON 23rd JANUARY 2021 AT CTR&TI, RANCHI

The forty-eighth meeting of Research Advisory Committee (RAC) of CTR&TI, Ranchi was held on 23rd January 2021 under the Chairmanship of Dr. Onkar Nath Singh, Hon,ble Vice Chancellor, B.AU, Ranchi. At the outset, Dr. C.M. Bajpeyi, Director (I/C), CTR&TI welcomed the RAC Chairman, Dr. Onkar Nath Singh, Hon,ble Vice Chancellor, B.AU, Ranchi, Members of RAC and representatives from DOSs and Scientists present in the meeting.

As this was the first meeting of the reconstituted RAC, after brief introduction of the members and scientists, the Director (I/C), CTR&TI, Ranchi presented an overview of the Central Silk Board and Tasar industry to acquaint the member about tasar culture for fruitful discussion during the meeting.

Director (Tech.), C.O., Bangalore, welcomed all the participants and thanked the members for accepting the request for being an active part of development of tasar sector. He apprised the members about the terms of reference and responsibilities of RAC and expressed that the Institute with the priority of R&D is supported by Regional Stations which are responsible for the popularization of Technology in coordination with DOS. He stressed that RSRSs should also have their role in R&D and the projects should be based on field problems. He expressed his concern regarding under utilization of funds in R&D components as it creates problems in getting the funds/justifying the R&D status of the Institute. Scientists should propose the budget rationally while formulating a project. He stressed that outcome of the projects should be taken to the field and while formulating a project previous work should also be considered. The Bio-technology projects should also be for field application rather than generating information only. In future all Biotechnology projects should be taken in association with the SBRL, Bengaluru.

Dr. K. Satyanarayana, Scientist-D, C.O. presented the mechanism of project proposals, evaluation, approval and assigning of codes in CSB. He suggested the scientists to present achievements against the milestones and item wise budget and its utilization. He observed that RAC is the body to make recommendations for the projects and midterm corrections in terms of milestones, extension and budget.

The Chairman RAC welcomed all the members and participating scientists and expressed hope that this committee will work for betterment of the industry and its stakeholders. He suggested that while conceiving the projects, budget should be worked out carefully so

that the physical progress of the project is commensurate to financial progress. He also appealed to the scientists to focus on bringing out publications in reputed journals.

The meeting then proceeded as per the agenda.

Agenda No. 1: Confirmation of minutes of 47th RAC meeting held 18th January 2020.

Since no comments/suggestions have been received, the minutes of 47th RAC meeting were confirmed.

Agenda No. 2: Follow up Action on the General Recommendation/ Decisions of the Last RAC Meeting.

The follow-up actions on the general recommendation/decisions of last RAC meeting were discussed. The committee reviewed the action taken on the decisions made during the last RAC and expressed its satisfaction.

Agenda no. 3: Follow up Action Taken on the Project Specific Recommendation/ Decisions of the Last RAC Meeting

The follow-up actions on the recommendation/decisions of last RAC with respect to projects were discussed along with the progress and findings of the projects.

AGENDA NO. 4: REVIEW OF CONCLUDED PROJECTS

Findings of the Research Projects Concluded after 47th RAC meeting were reviewed in the light of their objectives and expected outcome.

1. **[ARP-4714]- Identification of early sprouting and fast growing genotypes of *Quercus serrata* for raising seed crop raising in North-West India** (March 2016- February 2020, extended up to August 2020) [PI: Shri A. S. Verma. Scientist-D, RSRS, Bhimtal]

   The house observed that in tree plants all the characters are not inheritable and suggested to take a pilot study of one year on different vegetative propagation methods at Ranibagh area (RSRS, Bhimtal) itself and then try the most suitable method at different attitude.

   (**ACTION:** Shri A. S. Verma, Scientist-D & PI)

2. **[CED- 4723]: Studies on utilization of solar energy in Tasar Post Cocoon Technology Operations (Funded by MNRE, Govt. of India, New Delhi)** (October, 2016 to September, 2019. (Extended up to December, 2020) [PI: Sri Z.M.S Khan, Scientist- D, CTR&TI, Ranchi]

   The house observed that while calculating expenditure of the project, year wise expenditure should be calculated and Techno-economic feasibility of every machine should be worked out. Reduction in drudgery and environmental implications are the USP of this project and it should be projected while going for its popularization. Final report of the project with statistically analyzed data should be submitted to R.C. by 20th of March 2021 and by 25th March, the report should be circulated among the RAC Members.

(**ACTION:** Sri Z.M.S Khan, Scientist- D & PI)

AGENDA NO. 5: CONCEPT NOTES OF NEW RESEARCH PROJECTS FOR APPROVAL

1. **Joint Project (PRADAN & CTR&TI-CSB) for implementation of "Bio-tech KISAN programme of DBT New Delhi in three Aspirational District of Jharkhand"**

   Dr. J.P. Pandey presented the Joint Project proposal (PRADAN & CTR&TI-CSB) under "Bio-tech KISAN programme of DBT New Delhi in three Aspirational District of Jharkhand" for DBT funding. The Committee **approved** the project proposal.

   [**ACTION:** Dr. J.P. Pandey, Scientist-D & CI]

2. **Region and season specific selection of pruning and brushing schedule for tasar food plants and silkworm protection.**

   Dr. Jitendra Singh presented the new research proposal on "Region and season specific selection of pruning and brushing schedule for tasar food plants and silkworm protection" It was suggested to include the TV crop along with BV crop under the project, merge the objective no. (i) & (ii) and remove the word "protection" as "pest management" is the secondary objective in this proposal. The expected outcome should be modified accordingly. House suggested for including project investigators from BTSSO and PRADAN and to consult with Director, BTSSO and Mr. Samsad Alam, TDF for finalization of location for brushing and pruning schedule. The Committee **approved** the project with the above suggestions.

   [**ACTION:** Dr. Jitendra Singh, Scientist-C & PI]

AGENDA NO. 6: REVIEW OF THE PROGRESS OF ONGOING RESEARCH PROJECTS

1. **[PIB-4697] Development of superior hybrids of *Terminalia arjuna* and *Terminalia tomentosa for* higher leaf yield and quality:** Sub-project: "**Identification of hybrids by using molecular tools**" (May 2012 to Sept. 2018, extended up to December, 2020) [PI: Dr. B. Surendranath, Sc-D]

   The committee observed that robust markers like Simple Sequence Repeats (SSRs) should have been used for the identification of real hybrids developed based on Grow Out Test (GOT) *i.e.*, based on morphological parameters. Regarding extension of the project period, the house declared the project closed. The chemical and other supplies, if required can be given under R&D code from Director's power. The PI was advised to submit the final report in MIS format by 30th April 2021.

   (**ACTION:** Dr. B. Surendranath, Sc-D & PI of Sub project)

2. **[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, extended till March, 2021) [PI: Dr. Manjappa, Scientist-C]

It was suggested to screen the isolates based on *in vitro* functional screening for pot experiment and evaluate them for their effect on plant growth and quality for longer time (>1 year). PI was suggested to go for the registration of individual/combination of few bacterial isolates as consortia of bacteria cannot be registered. Proportion of microbes in the consortia should be based on the availability of microbes in soils of that particular area/region. Request for exclusion of four microbial PGPR species viz., *Trichoderma,* Mycorrhiza fungi (VAM), *Azospirillum,* and *Rhizobium* from the project was considered.

(**ACTION:** Dr. Manjappa, Scientist-C & PI)

3. **[PIN04001SI]- Development of a package for optimum nutritional requirement of tasar host plants for production of quality tasar cocoons.**

   Dr. Jitendra Singh, PI presented the progress of project. It was suggested to monitor the sulfur content as Magnesium sulfate also contains sulfur. House also suggested to expedite the budget utilization.

   (**ACTION:** Dr. Jitendra Singh, Scientist-C & PI)

4. **[AIT04002SI] Selection of stable thermos-tolerant line(s) of tropical tasar silkworm *Antheraea mylitta* through scar markers.** (February, 2019 to January, 2022) [PI: Dr. I. G. Prabhu, Scientist-C]

   It was suggested to increase the temperature gradually during the exposure of cocoons at high temperature and identify the gene responsible for thermo tolerant characters. It was also suggested to utilize the whole genome sequence of *Antheraea mylitta* to develop an efficient marker for the existing lines of thermo-tolerant tropical tasar silkworm.

   (**ACTION:** Dr. I. G. Prabhu, Scientist-C & PI)

5. **[APS 04003 SI] Studies on the reproductive potential of tasar silkworm *Antheraea mylitta* D with special reference to nutritional and mechanical indices** (March, 2020 to February, 2023) [PI: Dr. Mala N. Scientist-B]

   Dr. K. Jena, Scientist – D presented the progress of project. The house took note of the progress and advised to keep the time line and financial expenditure in mind.

6. **[AIE 04004 CN] Study on existence of tropical tasar silkworm ecoraces and their subsist places with the help of geospatial technology** (March, 2020 to February, 2023) [PI: Dr. I. G. Prabhu, Scientist-C]

   The house suggested to conduct the survey and collection of representative population of tropical tasar moths and pests (silkworm and food plant) with the help of light traps as LiDAR drones are not advisable for the survey inside the forest and use of Radio transmitter is not feasible due to the cost involved. The PI was advised to decrease the sampling area and increase the sampling locations to cover maximum forest area and also to record GPS coordinates of every sampling location.

   (**ACTION:** Dr. I. G. Prabhu, Scientist-C & PI)

7. **[BPC04005SI] Tasar waste to wealth by Cordyceps.** (March, 2020 to February, 2023)

[PI:Mr. M.M. Baig, Scientist-C]

Mr. M.M. Baig, Scientist–C presented the progress of project. The house took note of the progress.

8. **[ARE04006CN] Management of Important Pests of Tasar Silkworm *Antheraea Mylitta* (D) Through Botanical Repellents** (April, 2020 to March, 2023) [PI: H.S. Gadad, Scientist-B]

The house suggested to go for all the objectives simultaneously. It observed that the Integrated Pest Management with the mechanical component is the best approach and suggested to start the botanical repellent screening experiment with direct spray by following choice and no choice assay in addition to olfactometer bioassay against targeted pests. It was also suggested for trying some kairmones identified from other pests against the predatory stink bug as an attractant.

(**ACTION:** Dr. H.S.Gadad., Scientist-B & PI)

9. **[AIE-3555] Cryopreservation of tasar silkworm, *Antheraea mylitta* semen and its artificial insemination.** (February 2016 – January 2019, extended upto, Sept, 2021) [PI: Dr. J.P. Pandey, Scientist-D]

Dr. J.P. Pandey presented the progress of the work done in the project. It was advised to repeat the insemination experiments in ensuing grainage in July and September 2021 for further confirmation.

(**ACTION:** Dr. J.P. Pandey, Scientist-D & PI)

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

Dr. K. Jena, Scientist – D presented the progress of project. The house took note of the progress.

(**ACTION:** Dr. K. Jena, Scientist-D & PI)

11. **[AIT-4727] Integrated biotechnological approach towards improvement of quality and productivity of tropical tasar silk.** (December, 2017- December 2020- extended up to June 2021) Funded by DBT, New Delhi.

Sub-Project-1: Sequencing of whole-genome of tasar silkworm, *Antheraea mylitta* (in collaboration with NIAB, Hyderabad) [PI: Dr. J. P. Pandey]

Dr. J.P. Pandey presented the progress of the work done in the project. The house took note of the progress made in the project.

Sub-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]

It was suggested to utilize the geodata of AIT-4727(Sub poroject:2) for the survey and collection of ecoraces in the project AIE 04004 CN.

(**ACTION:** Dr. Dr. I. G. Prabhu, Scientist-C & PI)

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

Dr. J.P. Pandey presented the progress of the work done in the project. The house suggested for popularization of cocoonase for softening of cocoons and it should be included under On Station Trial in the Annual Action Plan of the Institute for the year 2021-22.

(**ACTION:** Dr. J.P. Pandey, Scientist-D & PI)

13. **[AIB-4717] Improvements of tropical tasar silkworm Antheraea mylittta D for high silk yield through recurrent selection.** (October 2016-September 2019; Reopened on October 2020 till September 2022)

Dr. Niranjan Kumar, Scientist - D presented the progress of project. The house took note of the progress.

(**ACTION:** Dr. N. Kumar, Scientist-D & PI)

AGENDA NO. 7: R&D HIGHLIGHTS OF THE INSTITUTE UP TO DECEMBER 2020.

R&D Highlights of the Institute up to December 2020 was presented before the RAC. The committee took note of the progress.

AGENDA NO. 8: TRIAL OF TECHNOLOGIES (OSTs/ OFTs)

Progress of the five technologies tried under OST and one Technology under OFT was explained to the house. The committee observed that due to COVID-19 pandemic, the field validation could not be carried out as per the specified schedule. Hence, these should be repeated during 2021-22 also to get authentic results. The house observed that only statistically analyzed data should be presented before next RAC.

(**ACTION:** Head, SEEM Division)

AGENDA NO. 9: EXTENSION (ECP) AND OTHER PROGRAMMES

Progress of the Extension Communication Programmes conducted by the nested units was presented to the house. It was informed that the extension communication programme have been initiated in various units after Lockdown was lifted. Hence, the targets as allocated for the year shall be achieved.

AGENDA NO. 10: TRAINING (CBT) AND OTHER PROGRAMMES

The house was appraised regarding progress of the capacity building and training (CBT) up to December 2020.

AGENDA NO. 11: ANY OTHER POINTS FOR DISCUSSION

The funding process in CSB was explained to the house and house urged the scientists to carefully plan the budget while formulating the project and utilize it judiciously to

achieve the milestones. The Chairman observed that the project should be field problems oriented and targeted to improve the production & productivity, waste/by-product utilization and product diversification. Some product or technology should be developed out of a completed project which can be used by the stakeholders/farmers . He observed that like "Anndata", sericulture farmers are the "Reshamdatas" and our aim should be to increase their income to make tasar a sustainable occupation and Agro-forestry is the approach to achieve this.

AGENDA NO. 12: CONCLUDING REMARKS FROM RAC MEMBERS

Dr. Sunil C. Dubey, Principal Scientist, ICAR-NBPGR suggested that the project should be based on thrust areas.

Dr. N. Kulkarni, Director, Institute of Forest Productivity, Ranchi thanked the scientists for their continuous efforts towards development of tasar sector. He expressed that the comments given by the committee are for improvement of the projects.

Dr. P.K. Mishra, Member & Director, Tech., (Rtd.) observed that the molecular tools and biotechnology work started in 2012 has taken a strong foot in the Institute.

Dr. Srinivas, Director (I/C) urged the scientists, especially the new one to look for the interests of the end users. He stressed that projects should be conceived in labs but should always end up in the fields.

Shamshaad Alam, Coordinator, PRADAN expressed his gratitude for making him a part of this august body. He suggested for addressing the Wasp problem urgently as it is imposing havoc in some areas. Use of chemical fertilizers should be brought to the minimum. Popularization of Lagerstroemia should be expedited.

Sri A.K. Yadav, Director, Uttarakhand requested for establishing Seed Organization for Oak tasar on the line of NSSO, MSSO & BTSSO. He urged the scientists to work towards developing plants with higher leaf yield and some hardy race of Oak tasar silkworm to help the farmers of border areas to enhance their income.

Dr. Niva Bara observed that the reason behind non adoption of the technologies by the farmers should be find out. The possible reasons may be is cost effectiveness or the initial cost involved. She suggested that while conceiving the project, farmers should be consulted and their requirements should be taken care of. The technology developed should be simple and user/farmers friendly. The technology should be disseminated in local language and the ITC should also be in local language. She also opined that there is a vast scope of IT application and requested to give emphasis on commercialization of technologies & development of women entrepreneurs.

Dr. S. Kutala put emphasis on the technology dissemination. He suggested that findings of the earlier concluded projects which were not tried at field can also be included for TOT. In OFT there should be at least 10 farmers under five centers /

locations each (5x10=50 farmers). Mr. Shamshad Alam may be requested for supporting with infrastructure and plantation. He also expressed his concern to enhance the expenditure under R&D.

Dr. C.M. Bajpeyi, Director (I/C), CTR&TI, Ranchi thanked the members for their valuable suggestions. He stressed that extension should also be given priority to disseminate the technologies in the field. OST & OFT and popularization of Accession No. 102, 123 & *Lagerstroemia spaciosa* shall be given the same importance as R&D projects. Extension literature will be prepared in local languages and requested the Chairman to assign/allow KVKs for distribution of these literatures along with theirs. He urged the young scientists to visit the tasar clusters to get exposure of the field. He assured the DOS, Uttarakhand that this year RSRS, Bhimtal will work towards fully supporting the Oak tasar project.

The Chairman, RAC, Dr. Onkar Nath Singh expressed that the meeting was very useful and informative and thanked the members and scientists for their sincere participation. He suggested that while making survey or collection, if some genotypes is collected from a farmer's field his name should be mentioned so that he can get royalty in case of some G.I. tagging. He stressed that Agro-forestry is need of the hour and Agriculture and Tasar culture can flourish together. He also observed that expenditure in R&D component should be improved by following the norms/govt. regulations. He thanked the Director (I/C) for convening the meeting successfully.

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

24/03/2021

(Dr. Onkar Nath Singh)

Chairman, RAC

LIST OF PARTICIPANTS

CHAIRMAN:

1. Dr. Onkar Nath Singh, Vice Chancellor, Birsa Agricultural University (BAU), Ranchi

MEMBERS:

1. Dr. R.K. Mishra, Director (Tech), Central Silk Board, Bengaluru.
2. Dr. Nitin Kulkarni, Director, IFP, Lal Gutwa, Ranchi
3. Dr. Sunil C. Dubey, Head and Principal Scientist, ICAR-NBPGR, New Delhi
4. Dr. Niva Bara, Associate Professor, BAU, Ranchi.
5. Dr. P. K. Mishra, Rtd. Director (Tech), CSB, Deoria- (Uttar Pradesh)
6. Sri. A.K. Yadav, DOS, Govt. of Uttarakhand, Dehradun- (Uttarakhand)
7. Dr. Chinta Srinivas, Director (I/C), BTSSO, Bilaspur (Chhattisgarh).
8. Dr. K. Sathyanarayana, Scientist – D & Head, RCS, Bengaluru.
9. Dr. Kiran B. Malai, Scientist - D, CSTRI, Bengaluru.
10. Mr. Shamshad Alam, Integrator (PRADAN), Ranchi
11. Shri Anil Kumar, Dy. Director, DOS, Jharkhand
12. Sri. Lakshman Munda, Dy. Director, DOS, Odisha
13. Dr. C.M. Bajpeyi, Director, CTRT&TI, Ranchi (Jharkhand), **Member Convener**

SCIENTISTS - INSTITUTE	SCIENTISTS - NESTED UNITS / INVITEES
1. Mr. Z.M.S. Khan, Scientist-D	17. Mr. A.S. Verma, Scientist-D, RSRS, Bhimtal
2. Dr. Niranjan Kumar, Scientist-D	18. Dr. S. Giri, Sc-D, RSRS/P-4, Dumka
3. Dr. G.P. Singh, Scientist-D	19. Dr. P.K. Kar, Scientist-D, RSRS, Baripada
4. Dr. B. Surendranath, Scientist-D	
5. Mr. M.D. Tiwari, Scientist-D	
6. Ms. Susmita Das, Scientist-D	
7. Dr. J. P. Pandey, Scientist-D	
8. Dr. K. Jena, Scientist-D	
9. Dr. Vishal Mittal, Scientist-D	
10. Mr. Debasish Chattopadhyay, Sc-D	
11. Dr. Harendra Yadava, Scientist-C	
12. Md. Muzeruddin Baig, Scientist- C	
13. Dr. D.I.G. Prabhu, Scientist-C	
14. Dr. Jitendra Singh, Scientist-C	
15. Dr. Manjappa, Scientist-C	
16. Dr. Hanmant Gadad, Scientist-B	