

**SILKWORM SEED TECHNOLOGY LABORATORY
NATIONAL SILKWORM SEED ORGANIZATION, CENTRAL SILK BOARD,
KODATHI, BANGALORE – 35**

**PROCEEDINGS OF THE 52nd MEETING OF RESEARCH COUNCIL HELD ON 24TH
NOVEMBER, 2020 AT SSTL, BANGALORE**

At the outset Dr. K. M. Vijaya Kumari, Scientist- D & Head, SSTL, Kodathi, welcomed the Director, NSSO, RC Members and Scientists for the 52nd Research Council Meeting of SSTL. The list of participants is given at **Annex-1**. She emphasised that the scientists have proposed new projects and requested the Director to evaluate the new project proposals besides reviewing the progress of ongoing projects and Institute regular programmes.

Dr. R. K. Mishra, Director NSSO and Chairman of Research Council extended a warm welcome to the Scientists of SSTL for the meeting. In his opening remarks, while discussing the requirement of staff, he informed to identify the newly appointed Filed Assistant or Technical Assistant with graduation as qualification and posted elsewhere, who can be deployed for administrative work for strengthening admin section at SSTL. He would request the CSB for posting such persons to meet the administration staff requirement at SSTL. Informing the increased incidence of Muscardine in seed crops affecting the seed production by SSPCs and the requirement of quality cocoons free from formalin by the cosmetic/neutraceutical companies abroad, he suggested the scientists to take up a study on development of prophylactic measures to control Muscardine disease by alternative or eco- friendly approaches.

He later took up the meeting as per the agenda.

Item No. 1: Confirmation of the minutes of the 51st RC meeting

Since no comments were received from any of the members, the minutes of the last meeting were confirmed.

Item No. 2: Review of Follow-up action taken on the decisions/ suggestions of the last Research Council meeting

The RC reviewed the concluded project APS 3612: Development of seed preservation technology for Muga silkworm *Antheraea assamensis* Helfer (Collaboration with CMERTI, Lahdoigarh) and observed the following:.

1. Preserved Muga eggs hatching percentage 85% is acceptable though ERR percentage observed was less. This may be due to management lapses and thus the trials need to be repeated with more number of farmers/locations.
2. For repeating the cocoon preservation studies, to collect the information on date of brushing, spinning, harvest from CMERTI/MSSO during cocoon procurement. In view of such requirements and transportation issues, the Muga Cocoon preservation trials may be repeated at CMERTI.
3. Write a letter to CMERTI to get plan of work for cocoon preservation and combine with developed egg preservation schedule. SSTL to clearly mention the Muga egg preservation schedule to CMERTI to combine with the Cocoon preservation so that the final package may be recommended.
4. Advised Dr. Shailaja, Sc-C & PI of this project to visit CMERTI for finalization and planning of preservation and bioassay studies with the collaborating scientists there. A letter to be written immediately to the Director, CMERTI may be put up. It was suggested to fix a video conference for discussing the above issue with CMERTI, SSTL and NSSO.
5. The Director advised the PI to submit the Final report of the project in MIS Part 10 on or before 15th December 2020 to CO.

On the ongoing project APR 3635: Development of Seed cocoon and seed preservation technology for Tropical Tasar Silkworm *Antheraea mylitta* D. (Collaboration with BTSSO, Bilaspur), where similar seed preservation technology is being developed, the RC advised to consolidate the entire data and analyse the data statistically and to get information on practice of rearing package from BTSSO for dusting/disinfection methods during transfer of worms to the trees. The surface disinfection of worms with Labex during transfer prevents Virosis in tasar silkworm.

Item No.3: Review of Concluded Projects

The PI was on Medical leave, hence couldn't be presented. The Director observed that the CI of the project should have presented. He expressed that it was mandatory for the CIs of any project to fully involve in the project works and also be aware of the developments. In all future RC meetings, the absence of the PIs should not come in the way of review and CIs should be equally responsible.

Item No.4: Consideration of New Research Project Concepts for approval

Six new projects were presented by SSTL Scientists. The Committee made following comments and suggestions:

Concept 1: Evaluation of reproductive efficiency and Inter-Racial differences in pipeline breeds / hybrids of Mulberry Silkworm (*Bombyx mori* L- Dr. Veeranna Gowda, Scientist –D).

The Committee suggested modifying and revising the project on following lines.

1. To include Dr. C. R. Hegde as Co-investigator for the project.
2. To modify the project title by adding Bivoltine and Foundation crosses instead of pipeline breeds/hybrids.
3. To collect and highlight the field problems faced by the seed sector.
4. The proposed cocoon preservation and hibernation study is not required as availability of seed cocoons is not a problem.
5. To select the hybrids proposed for authorization, the seed production of which are taken up by SSPCs so that any grainage related issues are identified for further study. To discuss with SSPC Ramanagaram and Chinthamani for collecting the data/problems faced by the grainages on the new hybrids being processed by them and include one scientist as CI from SSPCs.
6. Advised to discuss with Dr. S. Manthira Moorthy, Scientist D, CSRTI, Mysore to get data on hybrids submitted by the Institute for authorization, which require any intervention for seed technology.
7. At present the Seed Rearers adopted by the SSPCs are facing issues in silkworm rearing especially during humid months. SSTL may suggest specific package for seed crop rearing of FC2.
8. A pilot study is required in support of this proposal.

Concept 2: Studies to prevent occurrence of non-diapause eggs in FC1 & FC2 breeds of bivoltine silkworm, *Bombyx mori* L- Dr. C.R. Hegde..

The Committee observed the following and suggested to modify the concept supported with relevant data.

1. Linkage of non- diapause character occurrence with different components like breed, rearing conditions, grainage operation should be established. The PI may also collect information on the level of non- diapause eggs production from SSPCs and Private producers. Come out with problems faced by seed producers due to non- diapause character.
2. Suggested to collect and analyse the data for 10 years on grainage behaviour (season wise, year wise and breed wise) from SSPCs and also for last 2-3 years from private RSPs for supporting the proposal/concept.
3. Outcome should be aimed at reducing the occurrence of non- diapause eggs to the minimum at grainage level.

Concept 3: Assessment of soil health and rectification in relation to Bivoltine seed crop performance in seed areas of Anekal and K.R. Pete - Dr. C.R. Hegde.

The RC did not consider the concept with following observations.

1. To analyse basic data of 10 years on soil health in Seed areas and also to discuss with SSPCs to get data of crop performances from ASRs in the seed areas and deterioration level of C, N, P and K. Information may be collected from CSR&TI, Mysore/Agriculture department/UAS, Bangalore/NBSSLUP, Bangalore.
2. The RC inquired about the recommendations on maintenance of garden for seed crop rearing developed previously by SSTL or CSR&TI, Mysore and its adoption in field.

Concept 4: Production of high active biomolecules from Endophytes for the management of Muscardine disease in silkworm *Bombyx mori*.L - Dr. R. Saravana Kumar, Scientist-B.

The RC approved the concept with following suggestions/incorporations :

1. To try with already identified endophytes which are showing antifungal activity against pathogens.
2. Advised to culture the identified endophytes for Muscardine disease control in silkworm.
3. Details on mode of action of molecules produced from endophytes, nature of the molecules, production methods and solubility, synthesis, etc. need to be collected and included in the concept.

Concept 5: Identification and development of plant volatiles/blends for enhancing egg laying in Tasar silk moth (*Antheraea mylitta* D) - Dr. K. M. Vijaya Kumari, Sc-D.

The RC noted that the works are similar to those taken up for mulberry and muga silkworms and approved the concept with the following suggestions:

1. Advised to include BTSSO/BSMTC, Bilaspur as collaborator instead of CTR&TI, Ranchi and to include test verification at DoS farms.
2. Committee agreed to engage JRF for assisting in this project.

The RC advised the concerned PIs to submit the approved concepts to central office (RCS) in the prescribed format for approval.

Concept 6: Improvisation, Evaluation and Development of Eri Silkworm, *Samia ricini* (Donovan) egg handling techniques- Dr. B. Sailaja, Scientist -C.

The Committee reviewed the concept in the light of previously concluded project by SSTL in collaboration with CMERTI, Lahdoigarh [APS-5859: "Development of egg preservation techniques for eri silkworm, *Samia ricini* (Donovan)"]. It observed that through preservation schedule was reported to be developed in the concluded project, the findings were not validated. The scientist from CMERTI associated in previous project (Dr. B.N. Sarkar, Sc-D) and now working at MSSO, Guwahaty was contacted over phone. He informed that due to non-installation of the CSP at Lahdoigarh, the outcome was not validated/adopted by seed sector.

The Chairman advised to immediately propose taking up validation of the findings of the concluded project APS- 5859 involving ESSPC, Hosur. Letter may be sent by the Director, NSSO to Scientist incharge, MSSO requesting for direction to ESSPC, Hosur for associating in the egg preservation validation with SSTL. The validation may be taken up as OST in collaboration with ESSPC, MSSO, Hosur. The draft letter with detailed proposal/work plan for OST may be put up to the Director for onward sending to MSSO. The cold storage facilities available at CSP, Hosur may be utilized for the validation.

Item No.5: Review of on- going projects and other SSTL Programmes

1. ARP 3634 - Microbial Transformation of Natural and eco-friendly chemical compounds for the management of Silkworm Diseases of *Bombyx mori* L. Presented by Dr. R. Saravana Kumar, Scientist -C.

The Committee reviewed the progress and suggested to make the blend of new compounds produced by conversion. It was suggested to make disease suppression percentage range separately for each pathogen. Activity of blend should be tested against individual and mixed Flacherie pathogens.

2. APR 3635- Development of Seed cocoon and seed preservation technology for Tropical Tasar Silkworm *Antheraea mylitta* D. (Collaboration with BTSSO, Bilaspur) - Presented by Ms. Khamar Taj, JRF.

The Chairman advised to analyze the data statistically. Percentage of Yellow fly infected cocoons should be recorded while calculating moth emergence percentage. Progress of the project should be reviewed again with analyzed data once the PI of the project reports for duty.

3. APS05001EF: Development of Technology for Enhancing egg laying in Vanya Silk moths by application of Host Plant Volatiles (Collaboration with CMERTI, Lahdoigarh and IIHR, Bengaluru) - Presented by Dr. K.M.Vijaya Kumari, Scientist D.

The Committee advised to discuss with MSSO for field trials and large scale studies at ESSPC, Hosur and supply of cocoons from Eri SSPC, Hosur for other studies by SSTL.

4. Dr. K. M. Vijaya Kumari, Scientist-D presented the progress of on-going programmes on human resource development, Joint Disease Monitoring Survey in Southern states, Extension and communication programmes, Race maintenance, Quarantine testing of Silkworm eggs and testing of disinfectants/chemicals. She requested the Director for posting administrative and technical staff at SSTL for accomplishing mandatory works.

The Chairman advised the SSTL Scientists that all project concept should be discussed in- house before sending to the Director. Also, before proposing the concepts, the names of the investigators should be finalized. The Director encouraged the JRFs to register for PhD at Jain University, Bangalore. The Director in his concluding remarks extended his thanks to all the members of Research Council, especially Dr. K.S. Nair, Scientist-D, NSSO for their active participation and constructive suggestions. He also suggested the Scientists of SSTL to incorporate all the suggestions / corrections by the RC and bring out the technologies in seed sector.

The meeting was concluded with thanks to the Chair and the members.



15.1.2021
(Dr. R. K. Mishra)

Director & Chairman, RC

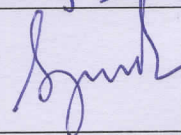
Annex-1

LIST OF PARTICIPANTS

52nd RESEARCH COUNCIL MEETING OF SILKWORM SEEDTECHNOLOGY LABORATORY

ATTENDANCE SHEET

Date: 24.11.2020

#	Names	Signature
1	Dr. R. K. Mishra, Director	 24.11.20
2	Dr. K.M.Vijaya Kumari, Scientist D	K.M.Vijaya Kumari
3	Dr. K. Sashindran Nair, Scientist D	
4	Dr. Veeranna Gowda, Scientist D	 24/11/2020
5	Dr. Chandrasekar R. Hegde	 24/11/20
6	Dr. B. Sailaja, Scientist C	on leave.
7	Dr. R. Saravana Kumar, Scientist B	R. Saravana Kumar
8	Ms. Khamar Taj, JRF	Ky 24/11/2020
9	Mr. R.Gokul Raj, JRF	R. Gokul Raj 24/11/20.