

# MINUTES OF 67<sup>th</sup>RC MEETING OF CMERTI LAHDOIGARH

(Date:25.07.2023)

The 67<sup>th</sup> Research Council meeting of CMER&TI, Lahdoigarh was held on 25<sup>th</sup> July 2023 under the Chairmanship of Dr. K.M. Vijaya Kumari, Director at conference hall of the Institute. The list of participants is enclosed as Annexure-I. The meeting was conveyed as per the agenda and explanatory notes.

## AGENDANO.1: CONFIRMATION OF PREVIOUS RC MEETING MINUTES

The minutes of the 66<sup>th</sup>RC meeting held on 28<sup>th</sup> March, 2023 were circulated to all the scientists of main Institute and its Nested Units. Since, no comments were received, the minutes may be confirmed.

## AGENDANO.2: REVIEW OF ACTION TAKEN ON THE RECOMMENDATION/ DECISIONS OF THE LAST RC MEETING

Project wise actions taken report on the decisions/recommendation so last RC meeting will be presented by the Concerned Scientists.

## AGENDANO.3: NEW CONCEPT NOTES FOR APPROVAL

#		DETAILS
1.	<b>Project title</b>	<b>Introduction and Popularization of Ericulture in castor growing areas of Gujarat</b>
A	Investigators involved (PI & Co-I's)	<b>CMERTI, Lahdoigarh:</b> Coordinator: Dr. K.M. Vijayakumari, Director 1. Dr. Mahesh, Scientist-C-PI 2. Mr. Suraj Pal, Scientist-D-CI 3. Dr. Mech, Scientist-D-CI <b>Supporting team from Kalyan Foundation, Palanpur:</b> 1. Dr R.K.Mishra- Seri-Expert & Coordinator 2. Mr. Satish Singh, General Manager 3. Mr. Nitin Jaimini, Member
B	Objectives:	<ul style="list-style-type: none"><li>• Introduction of Ericulture technologies in the castor growing areas of Gujarat state.</li><li>• Popularization of Ericulture in the castor growing areas of Gujarat state to enhance the farmers income.</li></ul>
C	Methodology & work plan:	The project is planned for implementation, demonstration and popularization of CMER&TI technologies in Ericulture with main aim of producing eri silk in the State and increasing the income of castor farmers. Following plan of work is proposed:  <b>Demonstration-cum-Capacity building to progressive farmers on ericulture technologies:</b> Educating the farmers on the suitable ericulture technologies (as listed in the current status) would be taken up through the SRCs. However, to provide hands on training and skill improvement of the farmers in rearing of Eri- silkworm, establishment of low-cost demo-centers of eri chawki and late age rearing in the four locations with SRCs is proposed. This will enable quick spread of the eri-technologies among the farmers in the area, with extension support of Kalyan Foundation. Scientists from CMERTI would provide all the technical guidance including demonstration / trainings to the Project Assistants, lead farmers and staff of the collaborating partner, who

		<p>in turn would take up similar demonstrations in all four locations and with farmers.</p> <p><b>Development of region-specific low-cost technologies:</b> Suiting to the regional needs, R&amp;D would be taken up to develop low-cost technologies, especially low-cost rearing house/ chawki rearing house using the locally available resources. All technical guidance would be provided by CMERTI, Lahdoigarh. Based on the comparative assessment, these improved technologies would be tried on large scale in the State.</p> <p><b>Studies on bioformulations and biocontrol agents and for pest management:</b> Since castor crop is preferred by most of the insects and that is leading to use of excess quantity of chemical pesticides for pest management. Use of bio-controls (predators &amp; parasitoids) and bioformulations would be tried. This will facilitate rearing of eri silkworms without any mortality.</p> <p><b>Introduction of Kesseru plantation as border crop in the castor plantation areas / fallow land planting:</b> Since only about 25-30 % leaf of castor would be used for silkworm rearing, the brushing size and frequency would be limited. By introducing Kesseru, which is a secondary food plant for eri silkworm, as border crop or bund plantation (as medium trees) around the castor plots and also as medium tree in surrounding fallow lands the brushing size as well as frequency of rearing can be increased. Thus, the castor farmers would utilize the rearing facilities effectively throughout the year or silk production. This will lead to higher returns/ income. To avoid pest attack on Kesseru plants, the pruning/training and biocontrol agent support would be resorted to contain the pest attack.</p> <p><b>Popularization of silkworm rearing at Farmers' place:</b> To popularize the rearing of the eri silkworm at farmers' place with adoption of proven technologies.</p>
D	Expected outcome and utilization:	<ul style="list-style-type: none"> <li>• Onsite training, demonstration and implementation of the improved technologies of eri silkworm rearing utilizing the castor leaves, it is possible to introduce eri silkworm rearing to the castor farmers in the State to produce eri silk.</li> <li>• Demonstrations and hands on training would enable strengthening the castor farmers with eri-technologies and improve their skills in silkworm rearing.</li> <li>• Establishment of Eri chawki centres would be a boon to improve eri silk productivity and production.</li> <li>• Adoption of integrated castor cultivation practices involving various eco-friendly pest and disease management approaches and appropriate agronomic practices would lead to preponed sowing of castor.</li> <li>• This in turn would benefit the castor production and also increase the eri silkworm egg consumption and rearing cycles per unit area.</li> <li>• Use of bioformulations or bio-control agents in castor integrated with non-chemical approaches would benefit eri silkworm rearing besides saving the castor yields.</li> <li>• With introduction of Ericulture in non-traditional state with the support of required ericulture technologies, the total raw silk production can be increased. This will not only improve the raw silk production of the State and the Country, but will economically benefit the silk value chain.</li> </ul>
E	Budget:	<b>42.90 Lakhs</b>
	<b>RC Suggestions</b>	1. Cordination with surrounding SAUs & other R&D Institutes can be worked for catering bio-control agents/bio-formulations for management of castor

		<p>pests.</p> <ol style="list-style-type: none"> <li>2. Number of farmers that will be selected/adopted through SRCs and accordingly the budget should be reflected with justification.</li> <li>3. Use of bio-control agents/bio-formulations to be mentioned and possible sources can be searched for regular supply of the same in prior.</li> <li>4. The concept of Micro-chawki rearing centre can be removed as there are no specified recommendations for the same, instead the chawki rearing facility creation can be done in nearby SRCs.</li> <li>5. Role of Manpower to be clearly justified.</li> <li>6. Eri &amp; Castor seed yield economics to be included.</li> <li>7. Concept note approved and the PI is advised to revise and submit the concept note incorporating all the suggestion made for onward submission to CO, CSB</li> </ol>
<b>2.</b>	<b>Project title</b>	<b>Development of Suitable Technique/device to produce Eri Flat Silk</b>
A	Investigators involved	PI: Roshan Lal Meena, Scientist-B CI: Dr. Manjunath R. N, Scientist-C
B	Objectives:	<ol style="list-style-type: none"> <li>1. To design and develop suitable technique/device for producing Eri flat silk.</li> <li>2. Quantification &amp; qualification of silk produced by Eri silkworms using the developed technique and compare it to the yield from traditional cocoon silk production.</li> </ol>
C	Methodology & work plan:	<ul style="list-style-type: none"> <li>➤ <b>Research and Background Study:</b> To conduct comprehensive review on previous techniques developed on similar lines for producing mulberry silk webs. Eri silkworm behavior, silk production process, and the properties of Eri flat silk and cocoon silk.</li> <li>➤ <b>Fabrication:</b> Based on the research findings, design a specialized device that allows Eri silkworms to produce flat web silk. Experiment with different material substrates and orientations to identify the ideal conditions for silk spinning by the Eri silkworms.</li> <li>➤ <b>Web Spinning and Behavior Recording:</b> Introduce mature Eri silkworm larvae into the fabricated device and allow them to produce flat web silk. Record the behavior of the silkworms during the spinning process for any difficulties or adjustments needed.</li> <li>➤ <b>Comparative Analysis of Silk Properties:</b> Harvest both Eri flat silk and cocoon silk under controlled conditions and Conduct a comparative analysis of the silk properties, including but not limited to: Color and appearance of the silk, chemical composition (e.g., sericin content), Physical and mechanical properties: Denier, Strength and elongation etc</li> </ul>
D	Expected outcome and utilization:	<ul style="list-style-type: none"> <li>• The challenges of laborious cocoon cutting and opening during pupal expulsion, can be addressed through quick and easy pupal expulsion at any stage of spinning, thus simplifying the harvesting process.</li> <li>• Flat silk can be directly used as raw material for processing spun silk products, which provides feasible idea for the high-value utilization.</li> <li>• significant promise for increased silk recovery and the progressive advancement of the sericulture industry</li> </ul>
E	Budget:	8.80 Lakhs
	<b>RC Suggestions</b>	1. Behavioral aspects of eri silkworm to spin silk in flat format and associated

		<p>effects on quantity &amp; quality of silk production to be studied.</p> <p>2. Application of flat silk webs in non-textile applications can also be explored.</p> <p>3. Try to conduct a preliminary study by producing eri flat silk sheets besides studying the behavioral aspects of the silkworm and properties of the silk web for future exploitation.</p> <p>4. Concept note approved for pilot study with a duration of 3 months to execute the activities as mentioned in suggestion no.3 and come up with a full project proposal upon considering the outcome &amp; recommendations/modifications of the preliminary study.</p>
<b>3.</b>	<b>Project title</b>	<b>Texturization of Muga silk Yarn an its evaluation for improving the comfort and handle of Muga woven fabrics</b>
A	Investigators involved	PI: Dr. Manjunath R. N, Scientist-C CI: Sh. Roshan L Meena, Scientist-B
B	Objectives:	<ul style="list-style-type: none"> <li>• To produce texturized muga silk yarns through suitable texturizing method.</li> <li>• To comparatively evaluate their physical and structural properties of textured and non-textured muga silk filaments</li> <li>• To produce woven fabrics from the textured filaments and analyze the science of clothing comfort in comparison to regular (non-textured) silk fabrics.</li> </ul>
C	Methodology & work plan:	<ul style="list-style-type: none"> <li>• Production of Muga Silk ( Untwisted of 40D-120D)</li> <li>• Texturizing of silk yarn through outsourcing (PSG Coimbatore, DKTE Kolhapur)</li> <li>• Comparative evaluation of Physical properties in textured and non-textured silk yarns (CSTRI)</li> <li>• Production of woven fabrics from textured yarns and compare their clothing and comfort properties with regular non-textured filament yarns.</li> </ul>
D	Expected outcome and utilization:	<ul style="list-style-type: none"> <li>• Suitable technique for the production of texturized muga silk yarn, accentuating its unique surface characteristics</li> <li>• Understanding the structural and Physical properties of textured muga silk yarns for further utilization.</li> <li>• Database on Science of clothing comfort in fabrics made from textured silk filaments</li> <li>• Wide spectrum of apparel applications, fostering innovation in the muga silk sector</li> </ul>
E	Budget:	<b>6.50 lakhs</b>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>1. Explore the possibility to include eri-silk and its blending with other natural fibers so as to study their resulting science of clothing comfort.</li> <li>2. Application prospective of the resultant textured yarns/fabrics to be included.</li> <li>3. In addition to texturization, other possible ways may also be explored to improve the softness/handle properties of the muga fabrics and accordingly budget can be revised/allocated.</li> <li>4. Concept note approved and the PI is advised to revise and submit the concept note incorporating all the suggestion made for onward submission to CO, CSB</li> </ol>
<b>4.</b>	<b>Project title</b>	<b>Comparative Rearing performance of Eri silkworm, <i>Samia ricini</i> (Donovan) on different varieties of castor in Manipur.</b>

Investigators	Dr. Kh. Subadas Singh, RSRS Imphal
Objectives:	<ul style="list-style-type: none"> <li>To find out suitable castor variety for Eri chawki rearing and late age rearing.</li> </ul>
Methodology & work plan:	<ul style="list-style-type: none"> <li>Experimental procedure: <ul style="list-style-type: none"> <li>Healthy disease free layings of eri silkworm, <i>Samia ricini</i> (Manipur local) will be utilized for experiment.</li> <li>Fiver commonly available varieties of castor plants Viz., Non-bloomy red (NBR), Non-bloomy green (NBG), Bloomy red (BR), Bloomy green (BG) and Manipur local red (MLR) will be selected for the study as the food plants of eri silkworm for the experiment.</li> <li>The experiment will be conducted in RBD and treatments will be in three replicates. In each replication, 100 worms will be used and allowed to complete the larval period on the selected four varieties of castor plants.</li> <li>Disinfection of rearing room, equipments and rearing trays.</li> <li>Fresh leaves will be collected daily and preserve in the plastic container covering with water soaked black cloth.</li> <li>Tender leaves of castor will be provided four times daily until the larvae ends 2nd instar and semi tender leaves to 3rd instar, while more matured leaves will be fed to 4th and 5th instar larvae.</li> <li>Proper observation will be conducted for both chawki worms and late stage worms for all four different castor varieties.</li> <li>Economic parameters to be observed:Fecundity, Hatching (%), Larval weight (g), Larval duration (days), ERR (%), Pupation (%), Cocoon yield, Cocoon weight (g), shell weight (g), shell ratio (%) and Silk yield.</li> <li>Compilation of data and preparation of final report.</li> </ul> </li> </ul>
Expected outcome and utilization:	<p>To find out suitable castor variety for chawki and late age rearing of eri silkworm at farmer's level.</p> <p>To increase production and productivity of eri silk by increasing rearing capacity using different suitable castor varieties.</p>
Budget:	Total budget = Rs. 50,000/-
<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>The genotypes proposed to given in the field are unknown and accessions that are not registered cannot be called as varieties.</li> <li>The genotypes must be first collected, conserved, characterised and verified scientifically.</li> <li>Concept note not approved at this state/stage and the PI is advised to give more focus on chemical/biological measures for control of disease &amp; pest attack on castor.</li> </ol>

#### AGENDANO.4: CONCEPT NOTE PRESENTED IN LAST 64<sup>th</sup> MEETING

#	DETAILS	
1.	<b>Project title :</b>	<b>Adoption of Improved Technologies of Muga culture for Enhancing Cocoon Production in Manipur</b>
A	Investigator s involved (PI& Co-I's)	Dr. Kh. Subadas Singh, RSRS Imphal(PI) Dr. L. Somen Singh, RSRS Imphal (CI ) Dr. Vijay N., CMERTI, Lahdoigarh (CI )
B	Objectives:	<ul style="list-style-type: none"> <li>To promote adoption of improved Muga rearing technologies among rearers.</li> <li>To improve the socio-economic status of rural population of Manipur by enhancing cocoon production through improved muga culture.</li> </ul>

	Suggestions of Last RC Meeting	<ul style="list-style-type: none"> <li>The PI is advised to carry out a baseline survey of the adopted areas to acquire preliminary information on present status and prevailing problems.</li> <li>Concentrate more on one or two districts of Manipur where Muga culture is presently in practise.</li> <li>Specify the number of farmers to be adopted under the project with full technological support and no. Of farmers expected to be trained under the project.</li> <li>Modify the budget and objectives accordingly.</li> <li>The concept note is approved subject to the incorporation of suggestions made and the PI is advised to submit the revised concept note within 15 days for onwards submission to CO, CSB for obtaining concept note approval.</li> </ul>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>The baseline survey/preliminary data to be generated as per standard questionnaire considering the number of farmers, present production, adopted farmers and their knowledge adoption level etc.</li> <li>The number of beneficiaries to be increased to at least 50 farmers and the necessary baseline line data of all selected farmers to be documented and included in the concept note.</li> <li>PI is advised to revise and submit the concept note incorporating all the suggestion made for onward submission to CO, CSB</li> </ol>
<b>2.</b>	<b>Project title :</b>	<b>Genetic enhancement of Castor (<i>Ricinus communis</i> L.) germplasm as a source material for development of productive perennial varieties-Phase-II</b>
	A) Investigators involved	Dr. Aftab Ahmad Shabnam (PI), Dr. Om Prakash Patidar (CI) Dr. D.K. Jigyasu (CI)
	B) Objectives:	<ul style="list-style-type: none"> <li>Genetic enhancement of castor germplasm.</li> <li>Development of pre-bred intermediate castor with perennial characteristics.</li> </ul>
	Suggestions of Last RC Meeting	<ul style="list-style-type: none"> <li>PI is advised to maintain the germplasm accessions and perennial lines selected in first phase of the project.</li> <li>Concept note is approved and the PI is advised to submit the concept note within 15 days for onwards submission to CO, CSB for obtaining approval.</li> </ul>
	<b>RC Suggestions</b>	PI is advised to submit the concluding report of the Phase-1 of the project as soon as possible followed by submission of Phase-2 proposal for onward submission to CO, CSB
<b>3.</b>	<b>Project title :</b>	<b>Evaluation of suitable model for Muga &amp; Eri based integrated farming system</b>
	A) Investigators involved	Dr. D Mech, PI; Dr. Vijay N, CI;
	B) Objectives:	<ul style="list-style-type: none"> <li>To identify the existing muga and eri based IFS in different locations</li> <li>To ensure optimal utilisation of available resources in existing IFS for different farming situations</li> <li>To assess economics of different components of IFS for evaluating suitable IFS model comprising with muga/eri enterprises</li> </ul>
	Suggestions of Last RC Meeting	<ul style="list-style-type: none"> <li>Along with field model, development of one IFS model at CMERTI farms for demonstration to be included and accordingly revise the budget with appropriate fund allocation under different heads.</li> </ul>

		<ul style="list-style-type: none"> <li>• 02 Project Assistants may be included instead of JRF as the proposed work is associated with more of field related works.</li> <li>• Concept note approved and the PI is advised to submit the concept note within 15 days for onwards submission to CO, CSB for obtaining concept note approval.</li> </ul>
	<b>RC Suggestions</b>	Concept note submitted to CO, approval from RCS awaited.
<b>4.</b>	<b>Project title :</b>	<b>Cost benefit analysis of Tapioca for Eri Rearing</b>
A	Investigators	Dr. Vijay N, PI; Dr. D Mech, CI
B	Objectives:	<ul style="list-style-type: none"> <li>• To study the cost benefit analysis of tapioca with respect to eri rearing</li> <li>• To study the rearing performance of the eri silkworms</li> </ul>
	Suggestions of Last RC Meeting	<ul style="list-style-type: none"> <li>• The title, objectives and methodology must be revised by considering the present status of tapioca and Ericulture in BTC and Nagaland.</li> <li>• Project Assistant may be included instead of JRF as the proposed work is associated with more of field related works.</li> <li>• Revise the concept note to bring in more clarity and present within 07 days for re-consideration.</li> </ul>
	<b>RC Suggestions</b>	PI presented the revised concept note and the Concept note is approved and the PI is advised to submit the concept for onward submission to CO, CSB
<b>5.</b>	<b>Project title :</b>	<b>Identification and Standardization of clonal propagation methods in Borpat (<i>Ailanthus grandis</i>L.) for its mass multiplication</b>
A	Investigators involved	Dr. Om Prakash Patidar, PI Dr. Aftab A. Shabnam, CI Dr. Dharmendra Kumar Jigyasu, CI
B	Objectives:	To evolve a simple, rapid and inexpensive clonal propagation technique for mass multiplication of Borpat.
E	Suggestion of last RC meeting	Submit the updated concept note within 10 days for onwards submission to CO, CSB for obtaining concept note approval.
	<b>RC Suggestions</b>	Concept note submitted to CO, approval from RCS awaited.

#### AGENDA NO. 6: PROGRESS OF ON-GOING PROJECTS

#		DETAILS
<b>1</b>	<b>Project code and title:</b>	<b>AIB:05009SI : Isolation of thermo-tolerant line(s) of Oak Tasar silkworm <i>Antheraea proylei</i> J.</b>
A	Investigators	Dr. Y. Debaraj, PI, Dr. Subharani Devi, CI, Dr. Arun Kumar, CI
B	Project period:	October 2019 –September 2022 (Extended upto Sept.2023)
C	Objectives:	<ul style="list-style-type: none"> <li>• To isolate the tolerant line of oak tasar silkworm, <i>A proylei</i></li> <li>• Characterization of Heat shock protein gene in 7nfesti tolerant line.</li> </ul>
D	Progress achieved:	<ul style="list-style-type: none"> <li>• During spring crop 2022 reared <i>A. proylei</i>, RTRS-1 and C27 after inducing heat stress at different temperatures 32 °C to 38°C in 5th instar larvae and recorded decreased ERR % with increase in heat stress. Repeated protein profiling studies in heat treated larvae of <i>A. proylei</i>, RTRS-1 and C27. Cloning of PCR amplified random segments of genomic DNA is carried out in the Dept. of Biotechnology, Manipur University, however, the experimental work could not be completed due to closure of Manipur University since 3rd May 2023 violence and riots that broke out on 3rd May 2023. Heat treated seed cocoons of <i>A. proylei</i> are under preservation for maintaining the generation.</li> </ul>

E	Specific outcome:	A. proylei, RTRS-1 and C27 after inducing heat stress at different temperatures 32 °C to 38°C in 5th instar larvae and recorded decreased ERR % with increase in heat stress. . Heat treated seed cocoons of A. proylei are under preservation for maintaining the generation for further studies.
F	Budget and expenditure	Rs. 21.90 lakhs and 8.178 lakhs
G	Suggestion of last RC/RAC meeting:	<p><b>41<sup>st</sup>RAC comments:</b></p> <ul style="list-style-type: none"> <li>Repeat the SDS PAGE analysis for bringing in more clarity.</li> <li>Dr. Arun Kumar to provide the necessary technical support in conducting the experiments.</li> <li>Since the work proposed under the project is not yet completed, the committee recommends 6 more months' extension for drawing meaningful conclusions.</li> </ul> <p><b>66<sup>th</sup> RC comments:</b> Continue the project as per milestones and utilize the budget effectively.</p>
H	Follow-up action taken on last RC/RAC meeting:	<p><b>Action taken against RAC comments:</b></p> <ul style="list-style-type: none"> <li>SDS PAGE analysis will be repeated as suggested.</li> <li>Consulted Dr. ArunKumar for technical support.</li> <li>Project extended for another six months within the sanctioned budget.</li> </ul> <p><b>Action taken against RC comments:</b> Complied as suggested</p>
I	Suggestions of RCS	<ul style="list-style-type: none"> <li>To conduct experiments as per the set work plan.</li> <li>To complete and conclude project as per the approved project period.</li> <li>Report submitted in the current quarter same as the last quarter</li> </ul>
J	ATR on suggestion of RCS	<p>As suggested, the experiments of the project are conducted as per the set work plan</p> <p>As suggested in the 41<sup>st</sup> RAC meeting, to repeat the protein profiling experiments, it is requested to extend the project period for another six months.</p> <p>During the Quarter (June-September) conducted protein profiling studies and sequencing studies for detection of heat shock proteins.</p> <p>During the Quarter (October-December) Isolated DNA from three heat treated breeds, A. proylei, C27 and RTRS-1 and development of SCAR marker under progress.</p>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>Present year-wise rearing data in RAC to infer whether the lines are stabilizing or depleting.</li> <li>Since, some of the scheduled activities of the project were hampered due to violence in Manipur, the PI may seek extension if required well in advance for completion of the pending analysis work.</li> </ol>
<b>2</b>	<b>Project code&amp; title:</b>	<b>AIB05012–SI: Inter and intra–Specific Hybridization for Improvement of Eri Silkworm, <i>Samia ricini</i> Donovan</b>
A	Investigator involved	PI – Dr. Reeta Luikham, Sc-D, CI- Dr. Aftab Ahmad Shabnam, Sc-D
B	Project period:	04 years (March, 2020 – February, 2024)
C	Objectives:	<ul style="list-style-type: none"> <li>To develop improved cross breeds/hybrids of Eri silkworm with higher fecundity and silk yield for commercial exploitation.</li> </ul>



D	Progress achieved:	<ul style="list-style-type: none"> <li>As per the 66<sup>th</sup> RC meeting suggestion, repeating of 07 cross combination for fecundity line selection. Crossed F1 grainage activities, composite rearing of worms in 03 replication and cocoon assessment were done.</li> <li>Selfed F2 grainage was carried out to produce F2 seed is completed. During grainage, Fecundity lines were selected for breeding program. Rearing and cocoon assessment were done.</li> <li>Grainage, rearing and Cocoon assessment of three hybrids C2 x B YP, B YP X T GBP and G YP X T GBP was done to confirm the selection of superior hybrid.</li> <li>Inter-specific hybridization was repeated with domestic female parent B yp, G yp and C2 breed. Grainage activities and rearing was done.</li> </ul>
E	Specific outcome:	Selection of hybrid lots with desired traits will lead to evolution of improved Eri silkworm hybrid/breed.
F	Budget and expenditure :	Budget: Rs. <b>23.15</b> lakhs & Expenditure: <b>13.29</b> lakhs
G	Suggestion of last RC/RAC meeting:	<b>66<sup>th</sup> RC:</b> <ul style="list-style-type: none"> <li>PI is advised to repeat the cross combinations for fecundity line selections.</li> <li>Increase the population for getting desired results.</li> </ul>
H	Follow-up action taken on last RC/RAC meeting	<b>66<sup>th</sup> RC:</b> <ul style="list-style-type: none"> <li>07 cross combinations rearing is being continued for fecundity line selections.</li> <li>Population size is increased with three replications</li> </ul>
I	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>After the transfer of the Dr. Reeta Luikham, PI and as per the suggestions of RCS, the project is to be handled by the next CI i.e Dr. Aftab A Shabnam, Sc-D.</li> <li>Since, Dr. Aftab A Shabnam, Sc-D is on leave, Dr. Mahesh D S, Sc-C has taken over the project documents/materials from the PI.</li> <li>Dr. Mahesh D S, Sc-C is included as CI of the project with an advise to manage the materials under the project, since Dr. Aftab is pre-occupied with PMCE and other assignments of host plant division.</li> <li>CI has reported the incidence of Pebrine in the stocks which is the first such report under this project and the earlier PI has remained silent on pebrine outbreak. This has been reviewed seriously by RC.</li> <li>The PI/CI is advised to discard the full pebrinized stock and maintain the proper records of the same.</li> <li>It has come to the notice of RC for the first time that the pure lines/parental strains have been given to farmers for maintenance/multiplication which is gross violation of stock maintenance protocol. RC reviewed this seriously, and advised the present PI/CI of the project to recheck the purity of the strains and do proper pebrine check before going forward for preparation of recommended hybrids.</li> <li>As advised by CO, the investigators should carry our the hybrid evaluation (provided the pure line parental stock is available) and conclude the project without seeking any extension.</li> </ol>
<b>3</b>	<b>Project code and title:</b>	<b>AIP-05013-SI: Impact of elevated CO<sub>2</sub> and temperature on muga silkworm and its primary host plant</b>
A	Investigators involved	Dr. D. K. Jigyasu (PI, w.e.f. 01.08.2022), Dr. Amit Kumar (PI up to 31.07.2022 & Co-PI w.e.f. 01.08.2022); Dr. Aftab Ahmad Shabnam (CI);

		Dr. G. Subramanyam, (CI up to 26.07.2021)
B	Project period:	March 2020-Feb 2023
C	Objectives:	<ul style="list-style-type: none"> <li>To assess the influence of elevated CO<sub>2</sub> and temperature on growth and yield attributes of primary host plant (Som).</li> <li>To assess the impact of elevated CO<sub>2</sub> and temperature on muga seed crop production, cocoon characteristics and fecundity.</li> <li>To design strategies for adoption in muga silk worm rearing under the changing environmental scenario in Assam</li> </ul>
D	Progress achieved:	<ul style="list-style-type: none"> <li>Imposing treatment of elevated CO<sub>2</sub> at 550 ppm concentration and elevated temperature (ambient +1.5 °C) on Som plants is in progress.</li> <li>The treatments are presently going on as per plan and constant monitoring and data recording is going on.</li> <li>The 1<sup>st</sup> seed crop rearing was completed on treated som plants after six months treatment. Assessment of fecundity, hatching % and grainage activity has been recorded.</li> <li>Data compilation and statistically data comparison of biochemical analysis of treated Som plants was completed.</li> <li>Analysis of biochemical constituents of muga silkworm was not conducted due to high mortality of muga silkworm under OTCs. It will be repeated in next seed crop rearing.</li> <li>Project is running as per revised milestones.</li> </ul>
E	Specific outcome:	Exposure of Som plants to eCO <sub>2</sub> and varied temperature regimes to assess the impact on plant growth, biochemical attributes and feeding behavior of muga silkworm.
F	Budget and expenditure:	<b>Budget:</b> Rs. 44.72 lakh <b>Expenditure till June, 2023:</b> 34.55 Lakh
G	Suggestion of last RC/RAC meeting:	<b>66<sup>th</sup> Suggestions:</b> <ul style="list-style-type: none"> <li>Continue the project as per milestones</li> </ul>
H	Follow-up action on last RC/RAC meeting:	<b>66<sup>th</sup> RC Follow-up:</b> <ul style="list-style-type: none"> <li>Project is running as per revised milestones.</li> </ul>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>The PI was advised to recheck the data and present the inferences drawn from the data generated. The PI may take help of Co-PI, Dr. Amit Kumar, Sc-C for the same.</li> <li>The Co-PI Dr. Amit Kumar must attend the next RC/RAC meeting through virtual mode to draw the inferences on the actual impact &amp; outcome of the project</li> <li>Continue the project as per the milestones.</li> </ol>
<b>5</b>	<b>Project code and title:</b>	<b>ARP05015SI, Development of chemical based control Measures for management of pebrine disease in Muga silkworm, <i>Antheraea assamensis</i> Helfer</b>
A	Investigators	Dr. Arun Kumar K.P, (PI)
B	Project period:	Jan2021 – Dec2023
C	Objectives:	<ul style="list-style-type: none"> <li>Effect of different chemical disinfectants and antifungal Substances on survivability and infectivity of microsporidian spores</li> <li>Efficacy analysis and field application of chemical disinfectants suitable for management of pebrine disease.</li> </ul>

D	Progress achieved:	<ul style="list-style-type: none"> <li>• Taxonomic and evolutionary relationship of microsporidian pathogen of Muga silkworm with other microsporidian pathogens.</li> <li>• Egg washing studies with different chemicals and optimization of protocol to avoid transovum infection. OST trails at research extension stations of CMER&amp;TI and MSSO units.</li> </ul>
E	Specific outcome:	<ul style="list-style-type: none"> <li>• ITS based PCR was performed and the microsporidian pathogen was identified to be <i>Nosema assamensis</i>. For the evolutionary relationship between microsporidian species collected from Muga and Eri, whole genome sequencing was performed. The sequences have been received and analysis is in progress.</li> <li>• Egg washing studies with different chemicals to avoid transovum infection. Large scale field trial was carried out at Farm3, CMER&amp;TI. Of the conducted egg washing experiment a total of 201 cocoons were obtained of which 136 adult moths emerged. Maximum number of cocoons were obtained in NaOCl treated batch i.e, 117 cocoons. The pebrine percentage was decreased by 49.12%.</li> <li>• Another set of experiment with reduced concentration of 2% Nirmool treated eggs was repeated, as previously 3% Nirmool affected the hatching percentage of the treated eggs. Hatching percentage was improved as well as significant decrease in pebrine occurrence was observed.</li> </ul>
F	Budget and expenditure :	Budget: 19.92 lakhs Expenditure: 10.051 lakhs
G	Suggestion of last RC/RAC meeting:	<b>66<sup>th</sup> RC Suggestions</b> <ul style="list-style-type: none"> <li>• Continue the project as per milestones and objectives</li> </ul> <b>41<sup>st</sup> RAC suggestions</b> <ul style="list-style-type: none"> <li>• Continue the project as per milestones and objectives</li> </ul>
H	Follow-up action taken on last RC/RAC meeting:	<b>ATR on 66<sup>th</sup> RC suggestion</b> <ul style="list-style-type: none"> <li>• Project is being continued as per milestone.</li> </ul> <b>ATR on 41<sup>st</sup> RAC suggestion</b> <ul style="list-style-type: none"> <li>• Project is being continued as per milestone.</li> </ul>
	<b>RC Suggestions</b>	<b>1.</b> Continue the project as per the milestones.
<b>6</b>	<b>Project code and title:</b>	<b>APR05018MI-Effect of various host plants separately and in Combination on Rearing and grainage performance of Muga silkworm, <i>Antheraea assamensis</i> Helfer</b>
A	Investigators involved	DK Jigyasu (PI w.e.f. 1 <sup>st</sup> July, 2022), Kh. Subadas Singh (PI up to 30 <sup>th</sup> June, 2022), S. A. S. Rahman (CI), Vikram Kumar (CI), D. Mech (CI, w.e.f. Nov., 2022)
B	Project period:	3 Years (March, 2021 to Feb, 2024)
C	Objectives:	<ul style="list-style-type: none"> <li>• To study the effect of various host plants separately and in combination on rearing performance of muga silkworm.</li> <li>• To study the effect of various host plants separately and in combination on grainage performance of muga silkworm.</li> </ul>

D	Progress achieved:	<ul style="list-style-type: none"> <li>• Muga silkworm rearing on different host plants and its combinations is conducted in Seed (Chatua) and Commercial (Jethua) crops.</li> <li>• Chotua and Jethua rearing shows that Som host plant exhibited better performance in terms of short larval duration, larval weight, cocoon weight, shell weight, and ERR% as compared to other food plants.</li> <li>• Highest fecundity was recorded in Soalu solo rearing in Chotua crop.</li> <li>• Highest mortality was recorded in Soalu and its combination during the rearing of Chatua crop.</li> <li>• Highest mortality is found in the silkworm reared on Mejankari and its combination during Jethua crop.</li> <li>• During Jethua crop, pairing of moths was recorded less in all the treatment therefore grainage of Jethua crop was not completed.</li> </ul>
E	Specific outcome:	Assessment of Muga silkworm rearing on different host plants in Jarua pre-seed crop.
F	Budget & expenditure	<b>Budget: Rs. 15.42 lakh</b> (CMER&TI: 7.62 lakh), Total Expenditure till <b>June, 2023: Rs. 5.73 Lakh</b>
G	Suggestion of last RC/RAC meeting:	<b>66<sup>th</sup> RC Suggestions:</b> <ul style="list-style-type: none"> <li>• Continue the project as per set work plan and milestones.</li> </ul>
H	Follow-up action on last RC/RAC meeting:	<b>66<sup>th</sup> RC Follow-up:</b> <ul style="list-style-type: none"> <li>• Project is running as per milestones.</li> </ul>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>1. Recheck the data pertaining to larval weights and other rearing parameters to avoid ambiguity in the final inference.</li> <li>2. Results furnished by RSRS Boko to be rechecked as the data reported seems to be dubious.</li> <li>3. The PI is advised to present the statistically analysed season wise/year wise pooled data.</li> <li>4. There are differences observed on the data generated from Som plants. Possible reasons can be different ploidy levels in the Som plants. The PI may look into it and explore the possible reasons.</li> </ol>
<b>7</b>	<b>Projectcode and title:</b>	<b>APS05020MI: Commercial egg production technology for Eri culture</b>
A	Investigators involved	Dr.Mahesh DS, Sc-C (PI), Dr. Lalith Natarajan, Sc-D, EBSF, Topatoli, (Co-PI) Dr. ArunkumarKP, Sci-D(CI)
B	Projectperiod:	February 2022toJanuary2024
C	Objectives:	<ul style="list-style-type: none"> <li>• Standardization and selection of suitable eggglaying device for commercial loose egg production in eri.</li> <li>• Synchronization of hatching and subsequent rearing.</li> <li>• Popularization of loose egg production in Ericulture.</li> </ul>

D	Progress achieved:	<ul style="list-style-type: none"> <li>• Studies on black boxing schedule and synchronization of hatching two days and three days layings are being continued for conclusive results.</li> <li>• At EBSF, large-scale commercial loose egg production trials by using selected egg laying devices are being continued during the commercial grainage period for further standardization of commercial loose egg production technology in coordination with CMER&amp;TI.</li> <li>• All the grainage techniques for the shortlisted egg laying device are being standardized.</li> <li>• Economics and commercial egg production package with descriptor will be prepared once the synchronization of hatching finalized of different days laid eggs which reduces the cost of production in grainage.</li> </ul>
E	Specific outcome:	<ul style="list-style-type: none"> <li>• New commercial loose egg production techniques in Ericulture</li> </ul>
F	Budget and expenditure :	Total budget is 14.65 Lakhs (8.15 L for CMER&TI & 6.50 L for EBSF) Expenditure is 8.00 Lakhs (CMER&TI -5.28 L and EBSF- 2.72 L)
G	Suggestion of last RC/RAC meeting:	<p><b>66<sup>th</sup> RC comments:</b></p> <ul style="list-style-type: none"> <li>• PI is advised to recheck the black boxing schedule and synchronization.</li> </ul> <p><b>41<sup>st</sup> RAC comments</b></p> <ul style="list-style-type: none"> <li>• Continue the work as per milestones.</li> </ul>
H	Follow-up action taken on last RC/RAC meeting:	<p><b>ATR on 66<sup>th</sup> RC comments</b></p> <ul style="list-style-type: none"> <li>• Suggestions complied. Studies on black boxing schedule and synchronization of hatching two days and three days layings are being continued for the conclusive results.</li> </ul> <p><b>ATR on 41<sup>st</sup> RAC comments</b></p> <ul style="list-style-type: none"> <li>• Project is being continued as per the milestone.</li> </ul>
	<b>RC Suggestions</b>	1. Continue the work as per milestones.
<b>8</b>	<b>Project code and title:</b>	<b>APS05021EF: Studies on population diversity and role of host plant volatile cues for enhancing egg laying in temperate tasar (Vanya) silkmoths <i>Antheraea proylei</i>.</b>
A	Investigators involved	Dr. S Subharani Devi (PI), Dr. Y. Debaraj (Co-PI) Dr. K M Vijaya kumari(PI)
B	Project period:	Jan2022-Dec.2024
C	Objectives:	<ul style="list-style-type: none"> <li>• To survey and establish population diversity of oak tasar silk Moths across NER.</li> <li>• To establish potent food plants (Host) for oak tasar silk moths, <i>Proylei</i> for egg production.</li> <li>• To isolate and evaluate highly suitable host plant volatiles to activate/increase egg laying in oak tasar silk moth.</li> <li>• To standardize the synthetic oviposition stimulant blends to enhance egg production in oak tasar silk moths and establishing the efficacy of developed technology.</li> <li>• To evaluate the synthetic volatile blend in large scale at oak tasar seed production centers.</li> </ul>

D	Progress achieved:	Surveyed and collected 5 (five) live <i>Antheraea frithi</i> cocoons from Kangpokpi district of Manipur. Cocoons of <i>A.proylei</i> and other <i>Antheraea</i> sp. Had been supplied to other collaborating Institutes viz. Manipur University for molecular characterization and IIHR for GC-EAD studies. Supplied seed cocoons to IIHR, Bangalore to identify the egg laying of <i>A.proylei</i> through Gas chromatography – mass spectroscopy (GC-MS-EAD) from different host plant leaf as well as stem volatiles. The elemental composition of <i>A. proylei</i> cocoons collected from different NE states by EDX technique showed the character spectrum of the elements of Carbon ©, Oxygen (O), Nitrogen (N), Calcium (Ca), Magnesium (Mg), Sulphur (S), Sodium (Na) Aluminium (Al), Chlorine (Cl), Phosphorus (P) and Potassium (K). It was found that carbon © showed the highest percentage (53.13 to 60.70) % of all the elements.
E	Specific outcome:	Surveyed and collected 5 (five) live <i>Antheraea frithi</i> cocoons from Kangpokpi district of Manipur. Identified elemental composition of different host plants of <i>A. proylei</i> through Gas chromatography – mass spectroscopy (GC-MS-EAD). It was found that carbon © showed the highest percentage (53.13 to 60.70) % of all the elements.
F	Budget & expenditure:	Rs.122.49 lakhs & Rs. 5.817 lakhs
G	Suggestion of last RC/RAC meeting:	<b>41<sup>st</sup>RAC comments:</b> Continue the work as per milestones <b>66<sup>th</sup> RC Comments:</b> <ul style="list-style-type: none"> <li>• Progress under the project is satisfactory.</li> <li>• Continue the project as per the milestones.</li> </ul>
H	Follow-up action taken on last RC/RAC meeting:	<b>Action taken against RAC comments:</b> As suggested the project will be continued as per the milestone <b>Action taken against RC comments:</b> <ul style="list-style-type: none"> <li>• Suggestion complied</li> <li>• As suggested the project will be continued as per the workplan.</li> </ul>
I	Suggestions of RCS	<ul style="list-style-type: none"> <li>• To utilize the budget allocated under efficiently.(less than 15%).</li> <li>• Report submitted in the current quarter same as the last quarter</li> </ul>
J	Follow up action taken on suggestion of RCS	Total Budget for 1 <sup>st</sup> year (RSRS, Imphal) is 14.08 lakhs. Total budget utilized is 5.81 lakhs. Utilization % is 41 percent. Due to sudden deactivation of PFMS to infesting all grants-in-aid (GIA) operations to a new fund flow system implemented by the GoI, the payment for the committed expenditures are pending till date. Otherwise the total budget utilization is more than 75% along with the committed expenditures.
		<b>During the Quarter (June-September)</b> <ul style="list-style-type: none"> <li>• Surveyed and collected oak tasar silkmoths across NER and transported samples to other collaborating Institutes for molecular characterization.</li> <li>• Reared <i>Antheraea proylei</i> on different food plants during 2<sup>nd</sup> crop to study the rearing and grainage performance.</li> <li>• Studied the impact of different food plants on the egg laying potential of <i>A. proylei</i>.</li> </ul> <b>During the Quarter (October-December)</b> <ul style="list-style-type: none"> <li>• Survey and collection of oak tasar silkmoths continued and transported cocoon samples to other collaborating Institutes</li> <li>• Rearing of <i>Antheraea proylei</i> on different food plants continued and studied the rearing and grainage performance.</li> <li>• Studied the impact of different food plants on the egg laying potential of <i>A. proylei</i> continued from erratically emerged moths.</li> </ul>

	<b>RC Suggestions</b>	1. Continue the work as per milestones.
<b>9</b>	<b>Project code and title:</b>	<b>MOE-05022MI: Evaluation and popularization of improved technologies developed in the field of Muga, Eri and Oak sector for Northeastern India (OST/OFT of CMER&amp;TI, Lahdoigarh)</b>
A	Investigators involved (PI & Co-I's)	Dr D. Mech, CMERTI, (PI w.e.f. 01.07.2023), Dr. D K Jigyasu, CMERTI (PI up to 30.06.2023), Sri Suraj Pal, REC-Fatehpur (CI), Dr. James T Keisa, CMERTI (CI), Dr. Y Debaraj, RSRS-Imphal (CI), Dr. L. Somen Singh, RSRS-Imphal (CI), Sri. B N Choudhury, RSRS-Boko (CI), Sri SAS Rahman, RSRS-Boko (CI), Dr. Aftab A Shabnam, CMERTI (CI), Dr. S. Subharani Devi, RSRS-Imphal (CI), Dr. Arun Kumar KP, CMERTI (CI), Dr. Kh. Subadas Singh, RSRS-Imphal (CI), Dr Vijay. N, CMERTI (CI), Dr. Mahesh D S, CMERTI (CI), Dr. Manjunath R N, CMERTI (CI), Mr. Abhishek Singh, MESSO (CI)
B	Project period:	February 2022 to January 2024
C	Objectives:	<ul style="list-style-type: none"> <li>To popularize various technologies in different stages developed by the Institute.</li> <li>To further create awareness for technological intervention among the farmers and beneficiaries.</li> <li>To increase the overall cocoon production.</li> </ul>
D	Progress achieved:	<ul style="list-style-type: none"> <li>Superior host plants of muga and eri silkworm have been supplied to 09 farmers.</li> <li>Second lot of 08 kg Borpat seeds were collected for raising borpat seedlings and 43 borpat seedling were supplied to 5 farmers.</li> <li>Kesseru seedlings of HF005 and HF008 were raising for supply in nursery and 200 seedlings were supplied to 2 farmers.</li> <li>4 kg Castor seeds was supplied to 4 farmers.</li> <li>100 kg Castor seeds were supplied to DoS, Mizoram 10 kg castor seeds were supplied to DoS, Pathankot, Punjab.</li> </ul>
E	Specific outcome:	Awareness and popularization of technologies in muga, eri and oak tasar.
F	Budget and expenditure:	<b>Budget: Rs. 8.84 lakh (Expenditure till June, 2022: 0.65 Lakh (OFT of Host Plant)</b>
G	Suggestion of last RC/RAC meeting:	<b>66<sup>th</sup> RC Suggestions:</b> <ul style="list-style-type: none"> <li>It is observed that the progress of various OSTs/OFTs is very poor.</li> <li>All the CIs associated with different OSTs/OFTs are advised to achieve the set targets as per action plan/project milestones.</li> <li>PI to update the OSTs/OFTs to be included in action plan 2023-24.</li> <li>Dr. D. Mech, Scientist-D and Head of the SEEM division is advised to take over the project as PI from Dr. D.K. Jigyasu w.e.f. 01.04.2023 for better coordination.</li> </ul>
H	Follow-up action taken on last RC/RAC meeting:	<b>66<sup>th</sup> RC Follow-up:</b> <ul style="list-style-type: none"> <li>Suggestion noted. As most of OSTs/OFTs are seasonal specific so it will be carried out as per plan.</li> <li>Suggestion noted.</li> <li>All ToT programmes have been updated.</li> <li>Suggestion complied. Handed over the ToT project to Dr. D. Mech, Scientist-D on 30.06.2023.</li> </ul>
	<b>RC Suggestions</b>	1. Host plant Division to keep ready the seedlings/saplings of superior accessions for supply to farmers during the forthcoming plantation seasons. 2. The CI responsible for cooler region muga rearing is advised to plan and monitor the rearing activities proposed in Mizoram, Arunachal Pradesh,

		<p>Meghalaya, Andhra Pradesh &amp; Orissa effectively.</p> <p>3. The respective Cis of concerned OST/OFT are advised to statistically analyze the data, draw the inferences and prepare their respective slides for further compilation by PI.</p> <p>4. All other OST/OFT should be completed timely as per the Annual Action Plan 2023-24.</p>
	<b>Project code and title:</b>	<b>ARP05023CN: Muga and Eri silkworm disease monitoring in north eastern states of India</b>
	Investigators	<b>Shri Bitupon Das, Scientist-D</b>
	Objectives	To monitor silkworm diseases during grainage and rearing and its management with respective DoS in North Eastern states
	Work carried out during the month*	<p>Works initiated for procurement of equipment and correspondence made to all concerned DoS.</p> <p>Sample of disease worms collected from Morigaon District.</p> <p>Training conducted for Scientists and nominated Officers from DoS, at MESSO, Guwahati on 01-06-2023.</p>
	Expenditure during the month	0.25 lakh.
	<b>RC Suggestions</b>	<p>1. The investigators are advised to initiate the activities under the project as per set milestones and time schedule.</p> <p>2. The PI is advised to conduct the working group (Scientists/DoS representatives) meeting cum hands on training for Upper Assam as early as possible.</p>
10	<b>Project code and title:</b>	<b>AIT 5024EF – Advanced level Institutional Bio-tech Hub at CMERTI, Jorhat (Phase II)</b>
	Investigators involved	Dr. Arun Kumar K P (P.I), Sh. Bitupan Das (C.I), Dr. Mahesh DS (C.I), Dr. Reeta Luikham (C.I)
	Project period	3 Years, February 2023 – February 2026
	Objectives	<ul style="list-style-type: none"> <li>• Collection and maintenance of different ecoraces and strains of eri silkworms.</li> <li>• Genotyping by Sequencing of selected ecoraces and strains of eri silkworms.</li> <li>• Analysis of SNP data for use in different downstream applications for the improvement of eri silkworm.</li> </ul>
	Progress achieved	<ul style="list-style-type: none"> <li>• Three Eri ecoraces were collected: Lakhimpur (SR012), Kokrajhar (SR014) and Borduar (SR001).</li> <li>• Rearing and grainage of collected ecoraces for strain purification is going on.</li> </ul>
	Specific outcome	• Rearing for one generation is completed for Lakhimpur, Kokrajhar and Borduar ecoraces. Grainage for next generation is ongoing.
	Budget and expenditure	Budget – 57.81 Lacs Expenditure – .51 Lacs
	Suggestion of last RC/RAC meeting	<b>66<sup>th</sup> RC Comments:</b> No Comments <b>41<sup>st</sup>RAC Comments:</b> No Comments
	Suggestions of RCS (if any indicated in quarterly progress report)	<ul style="list-style-type: none"> <li>• Full project proposal submitted to DBT New Delhi for funding through e-ProMIS was not submitted to CO along with current proposal.</li> <li>• Some of the observations raised by RCS vide ltr dtd 02.02.2021 were not clarified properly which need to be attended.</li> </ul>



		<ul style="list-style-type: none"> <li>As project sought for funding pertaining to Advanced-level Biotech Hub under DBT-New Delhi, much more focus need to be given to infrastructure development and training for researchers/professional/students etc in the field of seri-biotechnology.</li> </ul>
	Follow up action taken on suggestion of RCS	<ul style="list-style-type: none"> <li>The final revised proposal submitted to the DBT has been submitted to CO, CSB.</li> <li>The observations raised by RCS have been considered while revising the proposal. More stress will be given for training seri-biotech related aspects. Also, as many ecoraces/strains of eri silkworm as possible will be included in the GBS analysis.</li> <li>The suggestions will be incorporated in the project.</li> </ul>
	<b>RC Suggestions</b>	<ol style="list-style-type: none"> <li>Investigator to maintain the collected eco-races and carry out the planned survey for collection of rest of the eco-races.</li> <li>Investigators are also advised to maintain the strain wise purity of the collected the eco-races.</li> <li>The investigators are advised to initiate the all other activities under the project as per set milestones and time schedule.</li> </ol>

#### AGENDA NO. 06: TRIAL OF TECHNOLOGIES (OSTS/ OFTS)

Covered under the project MOE5022MI ToT project.

#### AGENDANO. 07: EXTENSION COMMUNICATION PROGRAMMES

#	Program	Target for the 2023-24			Target for the Month			Achievement during the month			Achievement upto the end of the Year		
		Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.in Lakh)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.in Lakh)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.in Lakh)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.in Lakh)
1	Krishimela / Reelers mela-cum-exhibition	3	800	4.5	0	0	0	0	0	0	0	0	0
2	Farmers Field Day	8	250	0.75	1	50	0.15	0	0	0	0	0	0
3	Awareness programme	30	1500	3.0	3	150	0.30	2	147	0.20	3	207	0.30
4	Tech. demonstrations / Enlighten programmes	30	750	0.30	4	100	0.04	2	147	0.02	3	173	0.03
5	Workshops/ Seminars/ Conferences	2	200	2.0									
6	Field Visits*												
7	Other activities*												


#### AGENDA NO. 08: CAPACITY BUILDING AND TRAINING PROGRAMME

SI	Particulars	Target									Achievement					
		Annual target			During the Month			Up to the end of the Month			During the Month			Up to the end of the Month		
		Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.)	Physical (Nos.)	Beneficiaries (No.)	Financial (Rs.)
3	Structured Training Course*															
	Farmers skill training	18	450	20.25	0	0	0	0	0	0	0	0	0	0	0	0
	Technology Orientation Programme	10	250	9.50	0	0	0	0	0	0	0	0	0	0	0	0
	Training under PCT Sector	6	150	5.40	0	0	0	0	0	0	0	0	0	0	0	0
	Sericulture Resource Centres	45	900	2.70	0	0	0	0	0	0	1	20	0	1	20	0

Sl	Particulars	Target									Achievement					
		Annual target			During the Month			Up to the end of the Month			During the Month			Up to the end of the Month		
		Physi cal (Nos.)	Benefi ciaries (No.)	Finan cial (Rs.)	Physi cal (Nos.)	Benefi ciaries (No.)	Finan cial (Rs.)	Physi cal (Nos.)	Benefici aries (No.)	Finan cial (Rs.)	Physic al (Nos.)	Benefi ciaries (No.)	Finan cial (Rs.)	Physica l (Nos.)	Benefi ciaries (No.)	Finan cial (Rs.)
	Training for Adopted Seed Rearers (ASRs)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Training to Pvt. Graineurs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Other Need Based Training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	PGDS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Non-CBT: Training *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Training under SAMARTH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

#### AGENDA NO. 09: ANY OTHER POINTS –

1. The minutes of Annual Action Plan of CMER&TI, Lahdoigarh for the year 2023-24 and 67<sup>th</sup> RCC meeting were discussed and the respective activities/scientific responsibilities/ procurement works etc were assigned to concerned Scientists/officials for timely implementation of the action plan.
2. The PIs were advised to effectively utilize the budget under the projects.
3. The Division Heads were advised to hold the weekly review meeting of the activities carried out by the Division.

  
 निदेशक / Director  
 के. मू. ए. अ. बप्र.स. / CMER&TI  
 केन्द्रीय रेशम बोर्ड / Central Silk Board  
 भारत सरकार / Govt. of India  
 जोरहाट ( असम ) / Jorhat, Assam

**Dr. K M Vijaya Kumari**  
**Director & Chairman**

**Annexure-I**

**LIST OF PARTICIPANTS OF THE 67<sup>th</sup> RESEARCH COUNCIL MEETING OF  
CMER&TI, LAHDOIGARH HELD ON 25.07.2023**

#	Name & Designation
1.	Dr. K. M. Vijaya Kumari, Director, CMER&TI Lahdoigarh
2.	Dr. Y. Debraj, Scientist-D, RSRS, Imphal
3.	Sh. Suraj Pal, Scientist-D, EREC Fatehpur
4.	Dr. D. Mech, Scientist-D, CMER&TI Lahdoigarh
5.	Dr. Aftab Ahmad Shabnam, Scientist-D, CMER&TI ( <i>attended online</i> )
6.	Sh. Bitupan Das, Scientist-D, CMER&TI Lahdoigarh
7.	Dr. S. Subharani Devi, Scientist-D, RSRS, Imphal
8.	Dr. Arun Kumar K.P, Scientist-C, CMER&TI Lahdoigarh
9.	Dr. K. Subadas Singh, Scientist-C, RSRS, Imphal
10.	Dr. D. K. Jigyasu, Scientist-C, CMER&TI Lahdoigarh
11.	Dr. Vijay N., Scientist-C, CMER&TI Lahdoigarh
12.	Dr. Mahesh D.S., Scientist-C, CMER&TI Lahdoigarh
13.	Dr. Manjunath R.N., Scientist-C(R&S), CMER&TI
14.	Dr. Om Prakash Patidar, Scientist-C, CMER&TI
15.	Sh. Roshan Lal Meena, Scientist-B, CMER&TI
16.	Ms. Lucu Moni Borah, JRF, CMER&TI, Lahdoigarh
17.	Ms. Padmini Baruah, SRF, CMER&TI, Lahdoigarh
18.	Ms. W.Sapana Devi, PA, CMER&TI, Lahdoigarh
19.	Sh. Suraj Kumar Saha, JRF, CMER&TI, Lahdoigarh
20.	Sh. Kalpajyoti Gogoi, JRF, CMER&TI, Lahdoigarh