

MINUTES OF 65th RC MEETING OF CMERTI LAHDOIGARH (Date: 25.01.2023)

The 65th Research Council meeting of CMER&TI, Lahdoigarh was held on 25th January 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.

AGENDA NO. 1: CONFIRMATION OF PREVIOUS RC MEETING MINUTES

The minutes of the 64th RC meeting held on 13th December 2022 were circulated to all the scientists of main institute and its Nested Units. Since, no comments were received, the minutes were considered confirmed.

AGENDA NO. 2: REVIEW OF ACTION TAKEN ON THE RECOMMENDATION/ DECISIONS OF THE LAST RC MEETING

Project wise actions taken report on the decisions/ recommendations of last RC meeting were presented by the Concerned Scientists.

AGENDA NO.3: NEW CONCEPT NOTES FOR APPROVAL

#	DETAILS	
1.	Project title :	Studies on the etiology of co-infecting viral diseases in Oak Tasar silkworm and control measures through integrative approach
A	Investigators involved	Dr. Subadas Singh, PI;
B	Objectives:	<ol style="list-style-type: none"> 1. To study the etiology of viral co-infections in Oak Tasar silkworm, <i>Antheraea proylei</i>. 2. To confirm point of infection in all life stages of silkworm and mode of viral disease transmission (transovarial, transovum, cross transmission). 3. To study the gut microbiota of the silkworm to deduce its response to the infection and role in maintaining insect host resistance/resilience to viral co-infections 4. Development of standardized package of practices of Oak Tasar culture to curb viral diseases.
C	Methodology & work plan:	<ol style="list-style-type: none"> 1. To study the viral disease occurrence in respect to Environment, Host plant quality and feeding pattern, rearing of Oak tassar silkworm (<i>Antheraea proylei</i>) following eggs disinfection protocol at the climatic conditions of Manipur. 2. Isolation of virus from the host plant leaves, twigs and trunk of oak tree (<i>Quercus serrata</i>). 3. Profiling and identification of gut microbiota of oak tassar silkworm using metagenomics and Holo-seq RNA-seq and determining the microbial determinants associated with the viral co-infection.
D	Expected outcome and utilization:	<ul style="list-style-type: none"> • The studies will provide us knowledge on how the Tiger Band disease and other viral co-infection develop in Oak Tasar silkworm, the mode transmission of the disease, role of abiotic factors, cross transmission of the disease from other coexisting insects in the rearing fields. Formation of effective control measures against the viral infections will boost production and productivity of Oak Tasar silk in Manipur and other states. • Changes in gut microbiota of the silkworm in response to viral co-infection, will shed light on the interactions of the pathogen with the commensal

		microbiota that may be helpful in disease prognosis and the development of effective strategies for management of these economic silkworms. <ul style="list-style-type: none"> • Potential role and extent of microbial infection of egg embryo in viral co-infection in larvae.
E	Budget:	Total budget = Rs. 42.50 (in Lakh)
	65thRC Suggestions	<ul style="list-style-type: none"> • Reduce the number of objectives and the budget should be concise as per practical requirement. • More focus is needed on effective implementation of the outcome from the previous project on tiger band disease. • PI should consult other Scientist/experts to chalk-out the objectives and detailed plan of execution besides attempting to quantify/justify the magnitude of the problem and need/utility of the project. • Study the mechanism/reasons behind the continuous persistence of tiger band disease in the field (state to state & field to field), and the management practise to be designed to address such issues accordingly. • PI is advised to revise the project as per above suggestions and resubmit for consideration.

AGENDA NO.4: CONCEPT NOTES PRESENTED IN THE 64thRC MEETING

1. Identification and Standardisation of clonal propagation methods in Borpat (*Ailanthus grandis* L.) for its mass multiplication

65thRC Suggestions: Look for collaboration with AAU Jorhat and revise the concept as per 64th RC suggestions and submit the proposal immediately for onward submission to RCS, CO well before the upcoming Annual Action Plan meeting.

Action: Dr. O P Patidar, Sc-C& PI

2. Development of Mugaculture through technology intervention and supporting system for sustainable livelihood of rural people in Manipur

65thRC Suggestions: The PI is advised to revise the project and present the concept in next RC.

Action: Dr. Subadas Singh, Sc-C& PI

AGENDA NO. 5: REVIEW ON CONCLUDED PROJECTS

1	Project code and title:	AIT05016MI- Integrating genomic and transcriptomics resources for functional insight into the biology of muga silkworm <i>Antheraea assamensis</i>
A	Investigators	Dr. Arun Kumar K.P – PI
B	Project period:	2 Years (Jan. 2021 to Dec. 2022)
C	Objectives:	<ul style="list-style-type: none"> • Development of web accessible database ‘Mugabase’ to host the muga sequence data, initially within CSB and later for public access. • Refining of assembly and annotation of the whole genome and transcriptome sequence data. • Identification and validation of functional genes associated with insect behaviour, silk quality and immunity.

D	Progress achieved:	<ul style="list-style-type: none"> • Development of 'Vanya Silkbase' is completed. • Refining of assembly and annotation of whole genome and transcriptome sequence data is completed. • SNPs identified in both wild type and cultivar muga genome. • Experimental infection of muga silkworm is completed and tissues collected for gene regulation analysis. • 20 genes were selected for validation and their semi quantitative validation is being carried out.
E	Utility of outcome / Future course of action / impact on silk industry	<ul style="list-style-type: none"> • Vanya Silkbase, a virtual resource centre for genomics and transcriptomics studies of wild silkworms is developed. This will be useful in comparative genomics of Vanya silkworms & sequence similarity search against all the hosted genomes. • Vanya Silkbase is incorporated with gene expression data of <i>A. assamensis</i> in different tissues and genome viewer helps to visualize the genome and transcriptomes. • Assembly of <i>Antheraea assamensis</i> genome is refined and annotated. This resource can be used in studying genes involved in breeding characteristics and insect behaviour. • Around 0.5M SNPs detected in both Wild type and cultivar muga genome. The same can be utilized in Marker Assisted Breeding. • A homolog of gene linked to pupal hibernation has been identified in muga genome. It needs to be studied further to functionally annotate it through wet lab experiments.
F	Budget and expenditure:	Budget – 41.68 Lacs&Expenditure – 17.83 Lacs
65th RC Suggestions		PI is advised to work for proposing a larger programme for functional annotation studies as advised by 41 st RAC held on 24 th January 2023.

AGENDA NO. 6: PROGRESS OF ON-GOING PROJECTS

The progress of following Ongoing Research Projects was briefly discussed and the respective PIs were advised to complete the work as per milestones and as per the suggestions of 41st RAC held on 24th January 2023. The respective PIs were also advised to update the budget utilized in the projects and complete all the procurements within this financial year:

Sr. No.	Project Code and Title
1	MOE 05004EF:Adoption of improved sustainable technologies of muga culture for elevation of cocoon production in the tribal belt of Assam
2	PIB-05005-SI: Genetic enhancement of Castor (<i>Ricinus communis</i> L.) germplasm as a source material for development of productive perennial varieties.
3	AIB05006SI: Breeding of muga silkworms for improved silk quality and disease tolerance
4	APR05007SI: Standardization of chawki rearing practices for Eri silkworm, <i>Samia ricini</i> (Donovan)
5	AIB: 05009SI Isolation of thermo-tolerant line(s) of Oak tasar silkworm <i>Antheraea proylei</i> J.

Sr. No.	Project Code and Title
6	AIB 05012–SI: Inter and intra–Specific Hybridization for improvement of Eri Silkworm, <i>Samia ricini</i> Donovan
7	AIP-05013-SI: Impact of elevated CO ₂ and temperature on muga silkworm and its primary host plant
8	ARP05015SI, Development of chemical based control measures for management of pebrine disease in Muga silkworm, <i>Antheraea assamensis</i> Helfer
9	CFC5017MI: Exploration and adoption of novel muga cocoon cooking technology for increasing its reelability and raw silk quality.
10	APR05018MI- Effect of various host plants separately and in combination on Rearing and grainage performance of Muga silkworm, <i>Antheraea assamensis</i> Helfer
11	MF5019MI: Development of Honeycomb Mountages and Harvesting Technology for Muga Cocoon Production with Improved Uniformity and raw silk recovery.
12	APS 05020MI: Commercial egg production technology for ericulture
13	APS 05021EF: Studies on population diversity and role of host plant volatile cues for enhancing egg laying in temperate tasar (Vanya) silk moths <i>Antheraea proylei</i> .
14	MOE 05022 MI: Evaluation and popularization of improved technologies developed in the field of Muga, Eri and Oak sector for Northeastern India (On-station/On-farm Trials of CMER&TI, Lahdoigarh)
As CI with other Institutes	
15	BPS 01013CN- Utilization and diversification of silkworm pupae products for human & animal consumption and composting.

AGENDA NO. 7: Trial of Technologies (OSTs/ OFTs)

It was observed that the progress of OSTs/OFTs is poor. Hence, the PI and the CIs associated with individual OSTs/OFTs were advised to timely complete the targets. The budget utilization is also poor and it is observed that though physical progress has been achieved in some of the OSTs/OFTs without accounting the financial progress. The PI is advised to check the actual budget utilization for OSTs/OFTs during the year 2022-23.



(DR. K.M. VIJAYAKUMARI)
Director & Chairperson

Annexure-I**LIST OF PARTICIPANTS OF THE 65th RESEACH COUNCIL MEETING OF CMER&TI,
LAHDOIGARH HELD ON 25.01.2023**

#	Name & Designation
1.	Dr. K. M. Vijaya Kumari, Director, CMER&TI
2.	Dr. Y. Debraj, Scientist-D, RSRS, Imphal
3.	Sh. Suraj Pal, Scientist-D, REC, Fatehpur (UP)
4.	Dr. Reeta Luikham, Scientist-D, CMER&TI
5.	Dr. L. Somen Singh, Scientist-D, RSRS, Imphal
6.	Dr. D. Mech, Scientist-D, CMER&TI
7.	Sh. S A S Rahman, Scientist- D, RSRS, Boko
8.	Dr. T. James Keisa, Scientist-D, CMER&TI
9.	Dr. Aftab Ahmad Shabnam, Scientist-D, CMER&TI
10.	Sh. Bitupan Das, Scientist-D, CMER&TI
11.	Dr. S. Sobharani Devi, Scientist-D, RSRS, Imphal
12.	Dr. Arun Kumar K.P, Scientist-C, CMER&TI
13.	Dr. K. Subadas Singh, Scientist-C, RSRS, Imphal
14.	Dr. D. K. Jigyasu, Scientist-C, CMER&TI
15.	Dr. Vijay N., Scientist-C, CMER&TI
16.	Dr. Mahesh D.S., Scientist-C, CMER&TI
17.	Dr. Manjunath R.N., Scientist-C(R&S), CMER&TI
18.	Dr. Om Prakash Patidar, Scientist-C, CMER&TI
19.	Ms. Padmini Baruah, SRF, CMER&TI, Lahdoigarh
20.	Mr. Kalpajyoti Gogoi, JRF, CMER&TI, Lahdoigarh
21.	Ms. Lucu Moni Borah, JRF, CMER&TI, Lahdoigarh
22.	Mr. Jyoti Ranjan Mishra, JRF, CMER&TI, Lahdoigarh
23.	Ms. Priyanka Sahu, PA, CMER&TI, Lahdoigarh
24.	Ms. Priya Boro, PA, CMER&TI, Lahdoigarh
25.	Ms. W.Sapana Devi, PA, CMER&TI, Lahdoigarh
26.	Ms. Raisa Begum, PA, CMER&TI, Lahdoigarh
27.	Mr. Dibyajyoti Hazarika, PA, CMER&TI, Lahdoigarh