MINUTES OF THE 55th MEETING OF RESEARCH COUNCIL HELD ON 25 - 26, NOVEMBER 2013 AT CSR&TI, MYSORE

The 55th meeting of the Research Council of CSR&TI, Mysore was held on 25-26th , November, 2013 to review the progress of on-going and concluded research projects/ programmes of the Main Institute & its nested RSRSsô besides considering new research project/ programme proposals submitted by the scientists. The meeting was presided over by Dr. B. B. Bindroo, Director of the Institute and the Chairman, Research Council (RC). The list of the participants is enclosed in **Annexure-I**

Dr. S. K. Ashwath, Scientist-D (DC, PMCE) welcomed Dr. B. B. Bindroo, Director and the Chairman, RC and all participant scientists of the Institute & nested units attending the meeting. He requested the Chairman, RC for his opening remarks and sought permission to take up the agenda points.

Dr. B.B. Bindroo, Director & Chairman RC while welcoming all the participants appreciated the efforts of the scientists of the Institute and its nested units for continuing their efforts in fulfillment of the research mandates. The Chairman congratulated the team of PMCE for the preparation of a orderly compilation of agenda and explanatory notes for the meeting.

Thereafter, agenda-wise discussions were held as follows:

ITEM NO. 1: CONFIRMATION OF THE MINUTES OF THE 54th MEETING HELD ON 20th – 21st MAY, 2013

As no comments were received from any of the members, the minutes of the 54th RC meeting were taken as confirmed.

ITEM NO. 2: REVIEW OF THE FOLLOW UP ACTION TAKEN ON THE DECISION OF THE 54th MEETING OF RESEARCH COUNCIL HELD ON 20th – 21st MAY, 2013

Regarding preparation of a pamphlet on ready reckoner for fertilizer recommendation to the mulberry soils of southern states in English & Kannada, it was suggested to bring out the same within a weeks time.

[Action: Head, Soil Science Lab and Sc-C (Publicity)]

Regarding the quality tests of the products of the Institute, it was impressed up on that the firms should be reminded periodically to make them understand the importance of quality check which is a mandatory. It was also suggested to make a ready reckoner on the status of renewal of license by the manufacturers.

[Action: DC, PMCE]

With regard to L14 x CSR2 reeling package, Chairman enquired about write up for publication and the status on the action taken on the comments of the C.O for taking up field trials. It was suggested to submit a technical write up of about 4ï5 pages on the package, in local language and English for publication within a week time.

[Action: Head, Post coon evaluation unit]

With regard to the project **"Isolation, purification and characterization of anti-microbial peptides from Indian strains of the silkworm *Bombyx mori* L."**, a collaborative proposal with SBRL, Bangalore, in view of the lack of required facilities at this Institute to carry out the study and also as SBRL, Bangalore is not keen in pursuing the proposal, it was suggested that this study may be dropped.

[Action: Head, Silkworm Pathology Lab]

Regarding the new programme proposal ñ**Analysis of inbreeding depression on fitness and quantitative traits in near isogenic lines of silkworm *B. mori*"**, Dr. K.K. Sharmila was advised to submit the revised programme so that decision can be taken on the investigators who can take up the study.

[Action: Dr. K. K. Sharmila, Sci-C, Silkworm Genetics Lab]

Chairman enquired regarding the status on the repair of photosynthetic meter and suggested to pursue the matter with C.O.

[Action: Dr. M. K. P. Urs, Sci-C, MBG and Ms. Sabita, Sci-C, Mul. Phy]

With regard to the status on the maintenance of green house, DC, Host plant informed that they have replaced the broken glasses and the painting work has to be undertaken. In this regard Chairman suggested to expedite the same at the earliest.

[Action: DC(Host plant) / Sci-C Agronomy]

Chairman advised to update the document on the pedigree of silkworm breeds.

[Action: Sci-C, SWBL-1 & DC(Silkworm)]

Regarding the testing of new ICBs, the Chairman advised the concerned to go ahead with testing of new ICBs at the farms of RSRSs/RECs and DOS as desired by C.O.

[Action: DC(Silkworm)]

While discussing the maintenance programme at P4, BSF, Hassan, Chairman advised all breeders to follow the strategies/guidelines issued by Mr. A. Yamaguchi, JICA Expert for maintaining the bivoltine silkworm breeds without any deviation and also suggested all the breeders to hold a meeting for implementing the recommendations.

[Action: All the breeding Scientists, DC(Silkworm)]

Regarding the supplying of P1 layings to NSSO under PAD programme, Chairman advised DC Silkworm to collect the schedule of requirement of P1 dfls from NSSO, Bangalore. Accordingly action plan may be drawn to supply the layings and supply the dfls in time without any deviation.

[Action: DC(Silkworm), Sc-D, SBSS, Coonoor and Sc-C, P4 Hassan)]

With regard to improvement of Pure Mysore for neatness, cleanliness and cohesion characters, it was observed that no action has been initiated in this direction. He advised all the breeders of main Institute / Coonoor /Hassan / Kodathi to discuss and come out with a programme within one month.

[Action: All the breeding Scientists and DC(Silkworm)]

Chairman highlighted the importance of knowing the level of adoption of various technologies at different places. He suggested the Extension division to have a regular data feed back from nested units and the compiled data on the % of adoption level, technology wise and reasons for non adoption which needs to be presented.

[Action: DC(Extension) & RSRSs]

Regarding ISDS training programmes conducted at main institute and RSRS, the chairman informed that feed back from the participants of different programmes is very much important and advised all the concerned to collect the information as per the format and see that the targets set for 2013-14 are achieved.

[Action: DC(Trg) & RSRSs]

The Chairman appreciated the Engineering Division for their impressive progress on patenting and commercialization of seri heater, chawki dusting machine and cocoon harvester.

Wile discussing the design and development of rearing houses suitable for different agro-climatic zones, it was suggested that the Engineering and Extension division should formulate a project of 3-4 year duration. The study may include surveying of existing models which are adopted by the farmers in southern states. Subsequently, the identified models can be evaluated for their suitability for rearing for a period of one year keeping all parameters constant and come out with a model which performs better. The selected model can be recommended to the funding agency for implementation.

[Action: SED & DC(Extension)]

Regarding publications, Chairman suggested that, all the scientists should submit their publications and writ ups on technology in the form of leaf lets, pamphlets, brochures, etc. to PMC which will be documented in the register with due credit and copyright to the concerned.

[Action: All concerned & DC, PMCE]

The Chairman suggested that only authorized breeds and those proposed for authorization may be maintained at SSBS, Coonoor. The remaining breeds should be shifted to CSGRC, Hosur and get them registered.

With regard to the experiment on FCs, it was suggested to discuss with CSRTI, Berhampore to have a collaborative programme on the use of FCs as male parents for development of hybrids suitable for harsh climates.

Action: SSBS Coonoor and DC(Seri)]

Regarding the follow up action taken on the decision of the 36th RAC meeting held on 19th July 2013 at CSRTI, Mysore, the Director informed that the next RAC meeting can be fixed during January 2014 clubbing with Krishimela. He suggested all the concerned scientists to update the follow up action on the decisions of RAC to be included in the agenda.

[Action: All Concerned]

ITEM NO. 3: REVIEW OF THE PROGRESS OF THE ON-GOING RESEARCH PROJECTS/PROGRAMMES OF THE MAIN INSTITUTE/RSRSs

I. MAIN INSTITUTE

HOST PLANT DIVISION

HOST PLANT IMPROVEMENT

Progress of four projects **PIB 3268** ñDevelopment of superior mulberry varieties suitable for moisture stress environments (Phase-I)ò , **PIB 3370** ñDevelopment of superior mulberry varieties by exploitation of hybrid vigour based on molecular marker diversity of parental linesò, **PIB 3457** ñDevelopment of disease resistant and productive mulberry genotypes with special reference to root rot and root knot diseases suitable for seri-zones of south Indiaò , **PIB 3172** ñAll India Co-ordinated Experiment Trail for Mulberry [AICEM Phase-III]ò and one programme **MIP 0001,** Maintenance of mulberry germplasm, mother culture and demonstration plot and also a new project (to be coded) ñDevelopment of Distinctiveness, Uniformity and Stability (DUS) descriptors for mulberry (*Morus* spp.) and its validationò were reviewed. RC noted the progress which were as per the milestone. It was suggested to submit a proposal on large scale multiplication and supply of Vishala and Ananhta as followed for G4 variety.

[Action: DC(Host plant)]

MOLECULAR BIOLOGY LAB-I

Progress of the project **PIE 3451** ñDNA marker aided analysis of mulberry gene bank towards a core assembly for sustainable conservation and enhanced utilization in crop improvementò and **PIG 3502** ñSustaining mulberry yields: Identification of QTLs conferring resistance to root rot disease by Linkage Disequilibrium mapping and trait introgression (Phase I)ò were reviewed and RC noted the progress which was found as per the milestone.

HOST PLANT PRODUCTION

AGRONOMY

Progress of the project **PRP 3462** ñBiological control of fungal root disease of mulberry by endophytic bacteria *Burkholderia cepacia* and *Bacillus subtilis* strainsò was reviewed and noted the inference drawn from the study as the project will be concluded in December 2013. While presenting the progress of the programme **MPR**

0047 "Effect of conjunctive use of nitrification inhibitors for the efficient utilization of nitrogenous fertilizers for the sustainable mulberry productionò, the Chairman asked the PI to present the comparative economics of different treatments during the next meeting.

SOIL SCIENCE & CHEMISTRY

The progress of programme **MPR 0005 "**Soil fertility management of mulberry gardens and quality control of disinfectantsò was reviewed. It was suggested to collect the feed back from the field on the recommendations made as per the format. He advised Dr.M. Munirathnam reddy, to associate with the quality analysis of Poshan and micronutrient analysis in soil science lab also in addition to his assignment at S.W.Physiology.

[Action: Soil Science & Chemistry, Dr. Munirathnam reddy, S.W. Phys. & DC(Host plant)]

While presenting the soil testing data of RSRS, Kodathi, the Chairman enquired about the action taken on repair of photo flame meter and suggested to sort out the issue with DD(A&A) Stores. Further, RSRS, Salem was suggested to go for a fresh proposal for the purchase of photo flame meter and atomic absorption meter by calling fresh quotations.

[Action: Sc-D, RSRS, Kodathi and Salem]

HOST PLANT PROTECTION

MULBERRY PATHOLOGY

The progress of project **PRE 3486 "**Development of Database for mulberry diseases and one programmeò, **MPT 0046 "**Long-term effect of mulberry cropping system on soil biology and productivityò were reviewed.

Regarding the project **PRE 3486**, it was suggested that already the information on mulberry diseases is available in different websites and the database should have new information with updated recommendations on control measures.

[Action: P M Pratheesh Kumar, Sc-C, Mulberry pathology]

With regard to the programme **MPT 0046**, Chairman observed that as per the objective, data should be collected on threshold limits of microorganisms which are likely to become epidemic. The beneficial and antagonistic microbes should be identified.

[Action : Dr. V. Nishita Naik, Sci-C, Mulberry Pathology]

SILKWORM DIVISION

SILKWORM CROP IMPROVEMENT

SILKWORM BREEDING LAB-I

Progress of ongoing two projects **AIT-3445** ñDevelopment of robust bivoltine hybrids of silkworm *Bombyx mori* L. tolerant to high temperature environment of the tropics through DNA marker assisted selectionò **AIB 3498** ñPopularization of authorized silkworm hybrids among the farmers of South Indiaò and one programme **SIM 0008** ñEvaluation of three - way cross hybrids for commercial exploitationò were reviewed. It was noted that the progress was as per the milestone.

[Action: DC (Silkworm)]

P4, BSF, HASSAN

The progress of the programme **SIM 0015 "**Bivoltine silkworm race maintenance and multiplicationò and **SIM 0051 "**Improvement of breed characteristics of L14 through multi-locational breeding approachò were reviewed and noted the progress.

SSBS, COONOOR

The progress of the three programmes of the station **SIM 0016** ñMaintenance of bivoltine silkworm breeders stock/germplasmò , **SIM 0017** ñExpt. i: Evolution of bivoltines for higher productivity under semi temperate conditions of Nilgiris and shuttle breeding to have genetic variations and plasticityò and **SIM 0017** ñExpt. ii: Breeding for improvement of robustness in bivoltine silkworm under semi-temperate conditions of Nilgiris and shuttle breeding to have genetic variations and plasticityò and **SIM 0051** ñImprovement of breed characteristics of L14 through multi-locational breeding approachò were reviewed and noted the progress.

SILKWORM BREEDING LAB-II

The progress of the projects **AIB 3456**: ñDevelopment of productive polyvoltine breeds of the silkworm *Bombyx mori* L. tolerant to high temperature and BmNPVò, **SIM 0051** ñImprovement of breed characteristics of L14 through multi-locational breeding approachò, **SIM 0009** ñMaintenance of polyvoltine silkworm *Bombyx mori* Lò., **AIB 3488** ñPre-authorization field trials of L14 x CSR2 ï a new polyvoltine x bivoltine hybrid with superior fiber qualitiesôô were reviewed and the progress found as per the milestone.

With regard to programme No. SIM 0051, it was suggested that the consolidated data on the breeding cycles carried out on the improvement of L14 at CSRTI, Mysore, P4, BSF, Hassan, SSBS, Coonoor and RSRS, Kodathi should be presented in the next meeting.

[Action: **Dr. S.K. Ashwath and concerned Scientists of breeding groups]**

SILKWORM GENETICS

The progress of two programmes **SIM 0011**: Maintenance of breeds developed through amylase marker assisted selection, NPV tolerance and morphological mutant stocks., was reviewed and the progress was found be satisfactory.

MOLECULAR BIOLOGY LAB-II

The progress of the one project **AIB 3476**: ñDevelopment of productive NPV tolerant bivoltine breeds/hybrids using BmNOX marker assisted selectionò was reviewed and the progress found as per the milestone.

POST-COCOON EVALUATION UNIT

The progress of one programme **SIM 0037: "**Evaluation of post cocoon parameters of cocoons generated from CSRTI, Mysoreò was reviewed and RC noted the progress.

SILKWORM PHYSIOLOGY

The progress of the project **AIP 3478** ñStudies of mulberry leaf nutrition on intermediary metabolism of silkworm *Bombyx mori* Lò and two programmes **SPR 0013** ñMaintenance of bivoltine and multivoltine semi-synthetic diet silkworm strains for original breed charactersò and **SPT 0045B** ñApplication of Probiotics for improving economic characters of silkworm *Bombyx mori* Lò were reviewed and the progress found satisfactory.

With regard to the project **AIP 3478,** it was suggested that the relationship among the differential nutritional levels of S36 and V1 has to be clearly established with the intermediary metabolism and economic traits of silkworm.

[Action: **Dr. Muniratham Reddy, Sc-C, Silkworm Physiology]**

SILKWORM CROP PRODUCTION

RTI & TVDC

The progress of two programmes [**SPR 0044 "**Development of silkworm rearing package for newly developed hybridsò and **SPR 0041 "**Large scale multiplication of new multivoltine and bivoltine breedsò were reviewed and RC noted the progress.

GRAINAGE SECTION

The progress of one programmes **SPR 0043 "**Studies on reproductive efficiency of newly evolved multivoltine and bivoltine breeds of silkworm *B. mori* and egg productionò was reviewed and the progress found satisfactory.

SILKWORM CROP PROTECTION

PEST MANAGEMENT LAB

The progress of two projects **PPE 3455** ñHabitat Studies- Impact of crop diversity on conservation and performance of natural enemies in mulberry eco-systemò, **PRE 3467** ñEvaluation of available management strategies of giant African snail, *Achatina fulica* Bowdich in mulberry eco-systemò and three programmes **SPT 0014** ñMaintenance of mother culture for production of recommended bio-control agents and mass release of recommended bio-control agents of sericultural pests in CSRTI campusò, **SEM 0050** ñDemonstration of uzi fly management strategies in an adopted village of Srirangapatna talukò and **SEM 0049** ñDetection of virus in mulberry in hot spot area of Karnataka- A pilot study, Forewarning and forecasting were reviewed and RC noted the progress as per the milestone.

SILKWORM PATHOLOGY

Progress of one project **ARP 3477** ñTherapeutic control of microsporidiosis in the silkworm through characterization of Methionine Amino Peptidase enzyme genes (MetAP2) in *Nosema bombycis*ò, **SPT 0039** ñIdentification of factors responsible for silkworm crop loss due to diseases at field level and its impact on cocoon productivityò, **SPT 0045A** ñIdentification of probiotic bacteria from the mulberry silkworm and study their antibacterial activity against the bacterial pathogens of silkworm, *Bombyx mori* Lò., were reviewed.

EXTENSION DIVISION

Progress of the project **MOE 3458 "**A Study on adoption of pest and disease management strategies in sericultureò and one programme **SEM 0042 "**Sericulture woman and Technology transfer- A group approachò were reviewed and RC noted the progress which was as per the milestone.

TRAINING DIVISION

The activities of training division in organizing various training programmes under Skill development and other non-structured courses and need based training programmes were reviewed and the progress was found to be satisfactory.

SERICULTURE ENGINEERING DIVISION

The activities of sericulture engineering division in developing various new equipments and machineries for sericulture were reviewed and the progress was noted.

II. RSRSs:

A) SALEM:

Progress of four collaborative projects/programme with different labs of main institute, namely, All India Co-ordinated Experimental Trial for Mulberry Varieties (**AICEM**), **MPT 0046** ñLong Term Ecological Research in different cropping system

on soil biology and productivityò, **MPR 005** ñMonitoring of soil fertility status of mulberry gardens in Karnataka, Andhra Pradesh and Tamil Nadu and creation of data baseò, **AIB 3498** ñPopularization of Authorized silkworm hybrids in South Indiaò and Studies on Disease forecasting and fore warning model (Mulberry pests and Silkworm pests) in Dindugul area of Tamil Nadu were reviewed and RC noted the progress which was as per the milestone.

B) ANANTAPUR

Progress of the programme **MIP(A)5001**: ñEvaluation of Elite mulberry varieties under semi- arid agro-climatic conditionsò and All India coordinated experimental trial for mulberry varieties (**AICEM**) ï Phase III (2011-2015) were reviewed. Regarding **MIP(A)5001** RC observed that the programme ends in March 2014 but the progress is much behind schedule. It was suggested to send a request for extension with proper justification.

[Action: Sri. Sathyanarayana Raju, Sci-D, RSRS, Anathapur]

C) CHAMARAJANAGAR

Progress of the project **PPF 3500 "**Development of Seri-Lac culture model for income augmentation.ò Five collaborative projects/programmes with different labs of CSR&TI, Mysore, viz., **PIB 3228**: ñEvaluation of superior mulberry varieties suitable for moisture stress and non stress condition (FYE)ò, **MPT 0046** ñLong term effect of mulberry cropping system on soil biology and productivityò, **MPT 0053** ñForecasting and forewarning of mulberry pestsò, **AIB 3498** ñPopularization of authorized silkworm hybrids among the farmers of South Indiaò and **PPE 3455** ñHabitat studies ï Impact of crop diversity on conservation and performance of parasitoids and predators in mulberry crop systemò were reviewed. With regard to the Project **PPF 3500**, the Chairman advised the PI to fill the gaps in Lac plantation being established.

[Action: In-charge officer, RSRS, Chamarajanagar]

D) KODATHI

The progress of seven collaborative projects/programmes with different labs of CSR&TI, Mysore, namely, **SEM 0042** ñSericulture woman and Technology transfer- A group approachò, **SIM 0051** ñImprovement of breed character sticks of L14 through multilocational breeding approachò, **AIB 3498** ñPopularization of Authorized silkworm breeds among the farmers of South Indiaò, **SPT 0039** ñIdentification of factors responsible for crop loss due to silkworm diseases at field level and its impact on cocoon productivityò, **PPE 3455** ñHabitat studies - Impact of crop diversity on conservation and performance of natural enemies in mulberry ecosystemò, **MPT 0053** ñForecasting and forewarning of mulberry pests, Demonstration of management practices for collection and destruction of Giant African snails infesting mulberry in hot spot areas of Ramanagaram distò., **MOE 3458** ñA study on adoption of pests and disease management strategies in sericultureò were reviewed. RC reviewed progress which was as per the milestone.

[Action: Sci-D and Scientists: RSRS, Kodathi]

ITEM NO. 4: ***REVIEW OF THE CONCLUDED RESEARCH PROJECTS/ PROGRAMMES***

The progress of following three concluded projects and five programmes were presented and outcome found as per the objectives and milestones.

Sl. No.	Title of the project/prog./pilot study	Duration	Project investigators
Project: 3			
1.	**PIN 3442:** Studies on the factors influencing the nutrient uptake and its use efficiency in mulberry under field conditions	July 2010 to June 2013	M. G. Sabitha**,** N. B. Chowdary, K. Vedavyasa
2	**MOE 3463:** Popularization of productive bivoltine double hybrid (CSR6 x CSR26) x (CSR2 X CSR27) *Krishnaraja* with the farmers of Karnataka (DST funded)	Oct. 2011 to Sept. 2013	A. Naseema Begum and Mrs. Sowmyashree
3	**AIB 3449:** Studies on the development of indigenous method for culturing *Cordyceps* and other useful species	October 2010 to September 2013	Kanika Trivedy and M.Munirathnam Reddy
Programme: 5			
1	**SPT 0024:** Maintenance of silkworm pathogens and testing their virulence at periodical intervals	July, 2010 to June, 2013	M. Balavenkatasubbaiah, K. Chandrasekharan and A. R. Narasimha Nayaka
2	**SEM(S)-8001:** Studies on adoption of Silkworm disease control measures and its impact on cocoon production in farmersô field under Tamil Nadu conditions.	July 2010 to June 2013	C.A. Mary Flora and R.Balakrishna
3	**MPT (S) 8002:** Studies on rhizosphere microflora of mulberry varieties as influenced by different cultivation practices under alkaline condition	July 2010 to June 2013	N. Dhahira Beevi, S. Masilamani and R.Balakrishna
4	**SEM(S) 8004:** Studies on the adoption of mulberry and silkworm pest management technologies (IPM) by the sericulturists in Tamil Nadu	April 2011 to March 2013	S.Balasaraswathi and R.Balakrishna
5	**SEM(S) 8006:** A study on the adoption of recommended package of practices followed by sericulturists of different farm size in Tamil Nadu	Jul. 2010 to Jun. 2013	S.Rajakuamr, S.Balasaraswathi and S.Lakshmanan

ITEM NO. 5: CONSIDERATION OF NEW PROJECT PROPOSALS

The following 15 new concept notes were presented by the respective scientists in the meeting to take up as a project/programme/pilot study which were reviewed critically and observations/decisions taken are as follows:

Concept notes:

1. Study on new recommendation of fertilizers and manures for mulberry (V1) under irrigated conditions (Programme) by Mr. S. Sen, Sci-B, Soil Science lab.

Observation/suggestions: It was suggested to take it up as OFT study. Chairman also advised to change the title of the programme. Further in addition to three RSRSs proposed, other land based RECs (wherever irrigation facilities available) could be included in consultation with the heads of RSRSs. It is also advised to see that the mulberry gardens for the treatment should be of the same age and uniform spacing, to enable effective comparison.

Decision: Approved as a OFT programme**.** Submit the programme for code and implementation fulfilling the above suggestions.

[**Action**: Mr. S. Sen, Sci-B, Soil Science lab]

2. Development of doubled haploids through *in vitro* technique for mulberry improvement (phase-II) (Programme) by Mr. S. Gandhi Doss, Sci-C MBG & Tissue culture.

Observation/suggestions:. The study on double haploids was not encouraged by RCC members as it lacks field application. Thus this may be taken as a pilot study to fulfill academic interest. The decision may be taken by Dr. T. Tippeswamy (DC Host Plant) after discussion with Dr. Girish Naik and Dr. Gandhi Doss.

Decision: Decision Pending**.**

[Action: Dr. T. Tippeswamy (DC Host Plant), Dr. Girish Naik Dr. S. Gandhi Doss, Sci-C MBG & Tissue culture]

3. Development of drought tolerant high yielding genotypes through introgression of HVA1 gene from transgenic lines of K2 (OP) to the high yielding genotypes through conventional breeding (Project) by Mr. S. Gandhi Doss, Sci-C MBG & Tissue culture

Observation/suggestions: Chairman informed that as per the advise of C.O, supply the materials to UAS, Bangalore under intimation to Member secretary with due acknowledgement and also to keep the back up materials at CSRTI, Mysore. Further suggested to include V1 variety for introgression of the transgene and submit to PMCE for seeking clearance from C.O.

Decision:. Approved. To submit the project immediately.

[**Action:** Mr. S. Gandhi Doss, Sci-C MBG & Tissue culture]

4. **Identification of mulberry genotypes for deficit irrigation practices through physiological and biochemical approaches (Project) by M. G. Sabitha, Sci-C, Mul. Physiology.**

Observation/suggestions: Chairman advised to study the status of already developed drought resistant varieties with their drought resistant characters after thorough review of literature.

Decision:. To resubmit the project with the suggested modifications for consideration

[**Action**: M. G. Sabitha, Sci-C, Mul. Physiology]

5. Development of alternate techniques in loose egg preparation for improvement of grainage operations (Programme) by Mr. S.B. Kulkarni, Sci-C, Grainage

Observation/suggestions: Suggested to submit a write up on the preliminary study taken up already on this aspect. To incorporate the suggestions given by other Scientists and come up with modified proposal.

Decision: Submit the modified proposal as a pilot study within two weeks**.**

[Action: Mr. S.B. Kulkarni, Sci-C, Grainage]

6. **Intrinsically colored *"green"* silk: Novel dyes and their binding (Project) (For Submission to DST for funding by NCL, Pune) by Dr. Kanika Trivedy, Sci-D, Extension division**

Observation/suggestions: To ensure that NCL will be carry out all biochemical analysis and supply the dye material and the Institute will be involved only in analysis of rearing and post-cocoon parameters within the proposed budget of Rs.4.74 lakhs. Suggested to send the endorsement and signed certificate of the Investigators to NCL Pune so that they can submit the proposal to DST for funding.

Decision:**. Approved.**

[**Action**: Dr. Kanika Trivedy, Sci-D, Extension division]

7. **Molecular genetic diversity evaluation among authorized silkworm breeds to develop robust silkworm breeds and hybrids for higher productivity with quality silk through molecular breeding approach (Pilot study) by Dr. Virendra Kumar, Sci-C, Mol. Biol.- II**

Observations/suggestions: As the pilot study will not be able to meet the proposed objectives, a full fledged project may be prepared and submitted to C.O. Bengalore for clearance.

Decision: **Approved as a full-fledged project to be sent to CO.**

[**Action**: Dr. Virendra Kumar, Sci-C, Mol. Biol. ï II]

8. Enhancement of soil organic matter (SOM) in mulberry gardens through intensive manuring technologies for enhanced quality mulberry leaf and cocoon production (Project) by Dr. P. Sudhakar, Sci-C, RSRS, Kodathi

Observations/suggestions: The treatments details presented by the PI was not matching with the proposal and there was no clarity in the methodology. To resubmit the proposal after thorough revision.

Decision: **Not Approved.**

[**Action**: Dr. P. Sudhakar, Sci-C, RSRS, Kodathi]

9. Breeding of season and region specific hybrids of silkworm *Bombyx mori* L. to Karnataka climate (Project) by Dr. P. Sudhakara Rao, Sci-C, RSRS, Kodathi

Observations/suggestions: It was observed that number of parental breeds proposed in the study for short-listing through statistical methods are too low. The project needs to be revised and resubmitted for consideration.

Decision: **Not approved.**

[**Action**: Dr. P. Sudhakara Rao, Sci-C, RSRS, Kodathi]

10. Development of an user friendly technique for transplantation of mulberry saplings using auger and studies on its impact on labour economy, growth and yield parameters of the plants (Pilot study) by Mr. N. Sakthivel, Sci-C, RSRS, Salem

Observations/suggestions: The technology cannot be an alternative but only substitutive as the usage is not continuous. Advised to procure a driller for the use at RSRS farm and work out the comparative economics through a pilot study.

Decision: **Approved as pilot study.**

[**Action**: Mr. N. Sakthivel, Sci-C, RSRS, Salem]

11. Monitoring the spread of papaya mealybug in Tamil nadu and mass production of its parasitoid (Project) by Dr. S. Mahiba Helen, Sci-B, RSRS, Salem

Observations/suggestions: The chairman appreciated the idea and said it is a much needed work and full-fledged project to be submitted for seeking clearance from C.O.

Decision: **Approved**.

[**Action**: Dr. S. Mahiba Helen, Sci-B, RSRS, Salem]

12. Identification the pest status and eco-friendly management of mulberry thrips (Project) by Dr. S. Mahiba Helen, Sci-B, RSRS, Salem

Observations/suggestions: The identification part is not required and advised to work on the management aspects of biological control in collaboration with NBI Bengaluru. It was also advised to modify the title and submit the full fledged project.

Decision: **Approved.** Suggested to submit the revised proposal.

[**Action:** Dr. S. Mahiba Helen, Sci-B, RSRS, Salem]

13. Impact of plant protection strategies on mulberry ecosystem in important sericultural areas of Tamil Nadu (Project) by Mr. J. Ravikumar, Sci-C, RSRS, Salem

Observations/suggestions: Chairman opined that these types of studies have not been undertaken in sericulture. Suggested to take up as a pilot study involving RECs with due credit.

Decision:. Approved as a pilot study.

[**Action**: Mr. J. Ravikumar, Sci-C, RSRS, Salem]

14. Studies on thermo tolerance heat shock protein synthesis during thermal shock and inbreeding in silkworm *Bombyx mori* L (Project) by Dr. S. Manthira Moorthy, Sci-C, S.W. Breeding Lab-I [Project funded by SERB, DST, New Delhi]

Observations/suggestions: The project has already been approved by SERB, DST, New Delhi with a budgetary sanction of Rs.12 lakhs. The PI was advised to start the work as proposed and accordingly the milestone to be revised from the date of sanction..

Decision: **Approved.** Project proposal along with revised milestones may be sent to C.O. for coding.

[**Action**: Dr. S. Manthira moorthy, Sci-C, S.W. Breeding Lab-I]

15. Indo-Bulgarian Collaborative Research Project for Improvement of Silkworm breeding in India and Bulgaria by Dr. S. Manthira moorthy, Sci-C, S.W. Brreding Lab-I .

Observations/suggestions: During July 2013, C.O. has conveyed approval with an estimated budget of Rs.12.25 lakhs with the suggestion to initiate actions as a prelude to take up the collaborative project with Bulgaria, like Material transfer agreement (MTA) and MOU for sharing genetic materials.

Decision: **Approved** and advised to follow up and pursue the matter with the collaborators.

[**Action**: Dr. S. Manthira moorthy, Sci-C, S.W. Breeding Lab-I]

MISCELLANEOUS:

Scientists of the institute and nested units of RSRSs / RECs should refer the Instituteøs website where all the minuets of the meetings of RC/RAC, RFD reports and important circulars are uploaded

[Action: All Concerned]

Scientists of the institute and nested units of RSRSs / RECs should submit all the mandatory reports to PMCE in time in order to forward the same to C.O.

[Action: All Concerned]

Final report of all the concluded projects / programmes / pilot studies to be submitted within three weeks for onward transmission to C. O. Further, as a part of future course of action (FCA), all the PIs should prepare a technical write up on the technologies/products developed under the concluded project/programme, for communicating the same to the DOS.

[Action: All Concerned]

At the end, the Chairman expressed satisfaction on the R&D progress made by the main institute as well as nested units and informed that all concerned should immediately initiate the process for preparation of action plan for the year 2014-15.

The meeting ended with vote of thanks.

Sd/-
Director and Chairman,
Research Council

Annexure-I

List of participants attended the Research Council meeting held on 25th & 26th November 2013 at CSRTI, Mysore

Sl. No.	Name	Designation	Section/Unit
1.	Bindroo, B. B. (Dr.)	Director, CSRTI, Mysore	Chairman, Research Council
2.	Satish Verma (Dr.)	Scientist-E (Engr)	CSRTI, Mysore
3.	Ashwath, S. K. (Dr.)	Scientist-D	CSRTI, Mysore
4.	Balavenkatasubbaiah, M (Dr.)	Scientist-D	CSRTI, Mysore
5.	Chikkanna (Dr.)	Scientist-D	CSRTI, Mysore
6.	Gururaj, R.	Scientist-D	CSRTI, Mysore
7.	Himantharaj, M. T. (Dr.)	Scientist-D	REC, Chitradurga
8.	Kanika Trivedy (Dr.)	Scientist-D	CSRTI, Mysore
9.	Naseema Begum, A. (Dr.)	Scientist-D	CSRTI, Mysore
10.	Satyanarayana Raju Ch.	Scientist-D	RSRS, Ananthapur
11.	Sharma, S. D. (Dr.)	Scientist-D	CSRTI, Mysore
12.	Thippeswamy, T. (Dr.)	Scientist-D	CSRTI, Mysore
13.	Vindhya, G. S (Dr.)	Scientist-D	CSRTI, Mysore
14.	Balasaraswathi, S. (Dr.)	Scientist-C	REC, Krishnagiri
15.	Bhagya, R. (Dr.)	Scientist-C	CSRTI, Mysore
16.	Chandrasekhar, K. B.	Scientist-C	P4 BSF, Hassan
17.	Choudary, N. B. (Dr.)	Scientist-C	REC, SU, Giddalur
18.	Dahira Beevi, N.	Scientist-C	REC, Gobichettipalayam
19.	Dasappa (Dr.)	Scientist-C	CSRTI, Mysore
20.	Dayananda (Dr.)	Scientist-C	CSRTI, Mysore
21.	Gandhi Doss, S. (Dr.)	Scientist-C	CSRTI, Mysore
22.	Gangadhar, B. (Dr.)	Scientist-C	CSRTI, Mysore
23.	Geetha, G. S.	Scientist-C	CSRTI, Mysore
24.	Girish Naik, V. (Dr.)	Scientist-C	CSRTI, Mysore
25.	Gnanakumar Daniel, A.	Scientist-C	REC, Samayanallore
26.	Gopinath, O. K.	Scientist-C	REC, SU, Vaniyambadi
27.	Gunasekhar,V. (Dr.)	Scientist-C	CSRTI, Mysore
28.	Ishwar	Scientist-C	REC, SU, Bidar
29.	Jayaram, H. (Dr.)	Scientist-C	REC, SU, Shimoga
30.	Kalpana, G. V. (Dr.)	Scientist-C	P4 BSF, Hassan
31.	Karande, A. J.	Scientist-C	REC, Parbhani
32.	Kariyappa (Dr.)	Scientist-C	CSRTI, Mysore
33.	Kasi Reddy, B. (Dr.)	Scientist-C	REC, Madakasira
34.	Katiyar, R. S.	Scientist-C	CSRTI, Mysore
35.	Kesavacharyulu, K. (Dr.)	Scientist-C	RSRS, Chamarajanagar
36.	Khare, R. K.	Scientist-C	REC, Hoshangabad
37.	Kulkarni, S. B.	Scientist-C	CSRTI, Mysore
38.	Lakshmanan, V.	Scientist-C	REC, SU, Bidarguppe
39.	Mahalingappa, K. C.	Scientist-C	REC, SU, Kinkanahalli
40.	Mahiba Helen, S. (Dr.)	Scientist-B	RSRS, Salem
41.	Mahima Santhi, A. (Dr.)	Scientist-C	CSRTI, Mysore
42.	Mal Reddy, N. (Dr.)	Scientist-C	CSRTI, Mysore
43.	Mallikarjuna, B.	Scientist-C	RSRS, Chamarajanagar
44.	Manthira Moorthy, S. (Dr.)	Scientist-C	CSRTI, Mysore
45.	Mary Flora, C. A.	Scientist-C	RSRS, Salem
46.	Mary Josepha, A.V. (Dr.)	Scientist-C	CSRTI, Mysore
47.	Masilamani, S. (Dr)	Scientist-C	REC, Krishnagiri
48.	Meenal, R. (Dr.)	Scientist-C	RSRS, Chamarajanagar
49.	Mogili, T. (Dr.)	Scientist-C	REC, V. Kota
50.	Mukund V. Kirsur	Scientist-C	CSRTI, Mysore
51.	Munikrishnappa, H. M.	Scientist-C	CSRTI, Mysore

Sl. No.	Name	Designation	Section/Unit
52.	Muniratnam Reddy, M. (Dr.)	Scientist-C	CSRTI, Mysore
53.	Murthy, B. N. (Dr.)	Scientist-C	REC, Vikarabad
54.	Nagaraj, S. B.	Scientist-C	CSRTI, Mysore
55.	Narasimha Nayaka, A. R.	Scientist-C	CSRTI, Mysore
56.	Narendra Kumar, J. B.	Scientist-C	CSRTI, Mysore
57.	Nishitha Naik, V. (Dr.)	Scientist-C	CSRTI, Mysore
58.	Noble Morrison, M. (Dr.)	Scientist-C	REC, Madivala
59.	Pallavi, S. N.	Scientist-C	CSRTI, Mysore
60.	Pratheesh Kumar, P. M. (Dr.)	Scientist-C	CSRTI, Mysore
61.	Premalatha, V.	Scientist-C	CSRTI, Mysore
62.	Purushotham, S.	Scientist-C	CSRTI, Mysore
63.	Radhalakshmi, Y. C. (Dr.)	Scientist-C	CSRTI, Mysore
64.	Radhakrishnan, S.	Scientist-C	RSRS, Salem
65.	Rahul Singh	Scientist-C	REC, Aurangabad
66.	Rajakumar, S.	Scientist-C	RSRS, Salem
67.	Rajalakshmi, E.	Scientist-C	SSBS, Coonoor
68.	Ramprakash	Scientist-C	REC, Baramati
69.	Ravikumar, J. (Dr.)	Scientist-C	RSRS, Salem
70.	Rekha, M.	Scientist-C	CSRTI, Mysore
71.	Sabitha, M. G.	Scientist-C	CSRTI, Mysore
72.	Sakthivel, N.	Scientist-C	REC, Srivilliputur
73.	Samuthiravelu, P. (Dr.)	Scientist-C	REC, Hosur
74.	Santha, P. C. (Dr.)	Scientist-C	CSRTI, Mysore
75.	Sarala, K.	Scientist-C	REC, Palakkad
76.	Shanthan Babu, M. A.	Scientist-C	RSRS, Salem
77.	Sharmila, K. K. (Dr.)	Scientist-C	CSRTI, Mysore
78.	Shivakumar, K. P.	Scientist-C	CSRTI, Mysore
79.	Shivarami Reddy, N. (Dr.)	Scientist-C	RSRS, Ananthapur
80.	Shivashankar, N.	Scientist-C	RSRS Kodathi
81.	Sibayan Sen	Scientist-B	CSRTI, Mysore
82.	Somaprakash, D. S. (Dr.)	Scientist-C	CSRTI, Mysore
83.	Soudamini, P. V.	Scientist-C	REC, SU, Kalpetta
84.	Srinivas, B. T.	Scientist-C	CSRTI, Mysore
85.	Subrahmanyam, M. R. (Dr.)	Scientist-C	REC, SU, Kanakapura
86.	Sudha, V. N. (Dr.)	Scientist-C	CSRTI, Mysore
87.	Sudhakar, P. (Dr.)	Scientist-C	RSRS, Kodathi
88.	Sudhakara Rao, P. (Dr.)	Scientist-C	RSRS, Kodathi
89.	Suma, A. S.	Scientist-C	CSRTI, Mysore
90.	Thirunavukkarasu, T.	Scientist-C	REC, Gopichettipalayam
91.	Urs, M. K. P. (Dr.)	Scientist-C	CSRTI, Mysore
92.	Venkatachalapathy, M. (Dr.)	Scientist-C	REC, Raychoti
93.	Venkateswara Rao, M. (Dr.)	Scientist-C	REC, Eluru
94.	Venkobachar	Tech. Asst.	REC, SU, Koppal
95.	Vineet Kumar (Dr.)	Scientist-C	CSRTI, Mysore
96.	Vinod B. Mathur (Dr.)	Scientist-C	REC, SU, Maddur
97.	Vinod Kumar (Dr.)	Scientist-C	CSRTI, Mysore
98.	Vinod Kumar Yadav	Scientist-B	CSRTI, Mysore
99.	Virendrakumar (Dr.)	Scientist-C	CSRTI, Mysore