MINUTES OF THE 54th MEETING OF RESEARCH COUNCIL HELD ON 20-21, MAY 2013 AT CSR&TI, MYSORE

The 54th meeting of the Research Council of CSR&TI, Mysore was held on 20-21st, May, 2013 to review the progress of on-going and concluded research projects/ programmes. of the Main Institute & its nested RSRSs' 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**.

Shri. H. M. Munikrishnappa, Scientist-C (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 address and giving permission to take up the agenda points.

Dr. B.B. Bindroo, Director & Chairman RC while welcoming all the participants applauded the efforts of the scientific fraternity of the Institute and its nested units for having meaningful work programme, which he had perused and gone through before coming over to Institute from CSRTI, Behrampore. The Chairman further hoped that all the scientists of the CSRTI, Mysore have to work in tandem and feel free to interact with constructive criticisms during the deliberation.

Thereafter, agenda-wise discussions were held as follows:

ITEM NO. 1: CONFIRMATION OF THE MINUTES OF THE 53rd MEETING HELD ON 4th – 5TH DECEMBER, 2012

As no comments were received from any of the members, the minutes of the 53rd RC meeting were taken as confirmed.

ITEM NO. 2: REVIEW OF THE FOLLOW UP ACTION TAKEN ON THE DECISION OF THE 53rd MEETING OF RESEARCH COUNCIL HELD ON 4th – 5TH DECEMBER, 2012

While discussing about the IBSC, It was decided that Dr. S. K. Ashwath, Scientist-D and Member Secretary (IBSC) may fix up the date of the IBSC meeting in the first week of June 2013 at CSRTI, Mysore so that further course of action on the subject could be worked out.

[Action: Dr. S. K. Ashwath, Scientist-D, Mol. Biol. II]

Discussing the roadmap developed for genetic transformation work, Dr. Raghunath Scientist-C to provide a copy of the proposal for perusal of the Director and for further action.

[Action: Dr. Raghunath, Scientist-C, Tissue Culture Lab]

During the discussion of Soil Science and Chemistry, it was suggested to prepare a ready reckoner for fertiliser recommendation for the mulberry soils of southern states and publish the same in the form of pamphlet or brochure as has been done at CSRTI Berhampore for north-eastern states. Further the database on soil test reports may be uploaded on the website of the Institute so that the farmers can access the same and make proper use of the information.

[Action: Head, Soil Science Lab and DD (Computer)]

A write-up on Biofertiliser and VAM based studies carried out by Agronomy Section needs to be prepared if the recommendations whatsoever are truly user friendly and cost effective and efforts for coming out with cost cutting technologies / inputs required to be made at a priority without fail.

[Action: Head, Agronomy Lab]

While discussing on the status of commercialisation of the product Nemahari, it was decided that mandatory tests of the products of the Institute so commercialised are required to be taken periodically for their quality control every three months and it may become mandatory on the part of entrepreneur that quality tests are made on cost basis by the Institute. Further, it was also suggested that other than NRDC, any other agencies could be contacted for getting better and competitive royalty.

[Action: Heads: PMCE and different laboratories of the Institute]

While reviewing the disease forecasting and forewarning and disease calendar, it was felt that the information may be made available online and updated monthly. PML, Soil Science, Pathology and Extension units play a major role in making the information available to the farmers. The forewarning calendars for the diseases and pests to be made available and uploaded within a period of 30 days.

[Action: Head of Mulberry Pathology, PML, SW Pathology and concerned Extension units]

With regard to colour silk, it was observed that the matter being very important and crucial, waiting for its commercialization. Dr. Kanika Trivedy, Sci-D to rethink on what best can be done to commercialise the technology since as per the action plan, large-scale field trials ought to have been conducted for harnessing and augmenting the production of natural colour silk. The project on Cordyceps could be abandoned in the light of the fact that there seems to be little or no impact / benefit / intake from the farmers. However, interim results / information whatsoever could be published.

[Action: Head, Silkworm Physiology Lab]

A reeling package for L14 x CSR2 needs to be developed, prepared and submitted within 10 days for appraising the Member Secretary since it is an important area we are working for development of ICBs.

[Action: Head, Reeling Section]

On the new project already proposed in 53rd RC **"Isolation, purification and characterization of anti-microbial peptides from Indian strains of the silkworm *Bombyx mori* L"**, it was suggested that the facilities available in Molecular Biology Lab of the Institute could be utilised instead of SBRL, Bangalore. Further, a new project already approved in 35th RAC **"Identification and development of user-friendly broad-spectrum disinfectant for Indian sericulture"** may be sent to CO for coding including therein, the comments of the referees also.

[Action: Head, Silkworm Pathology Lab]

Regarding the new programme proposal "**Analysis of inbreeding depression on fitness and quantitative traits in near isogenic lines of silkworm *B. mori*"**, Dr. Sharmila was advised to submit the modified programme and discuss with the Director before sending it to CO for clearance.

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

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

I. MAIN INSTITUTE

1.MORICULTURE DIVISION

MULBERRY BREEDING & GENETICS

Progress of ongoing four projects **PIB 3268 "**Development of Superior Mulberry Varieties Suitable For Moisture Stress Environments (Phase-II)", **PIB 3370 "**Development of superior mulberry varieties by exploitation of hybrid vigour based molecular diversity of promising parental lines"**, PIB 3457 "**Development of diseases resistance and productive mulberry genotypes with special reference to root rot and root knot diseases suitable for seri-zones of South India" & All India Coordinated Experiments for Mulberry (AICEM) and three programmes **MIP 0001 "**Maintenance of mulberry germplasm"**, MIP 0002 "**Maintenance of mother culture plot of improved mulberry varieties" & **MIP 0003** "Maintenance of demonstration plot of mulberry varieties" were reviewed.

Characters other than yield that are considered for assessment for moisture stress conditions which were not presented by the Investigator are required to be included and submitted immediately for last five years for all the genotypes besides to ensure study of all physiological characters without fail.

[Action: Dr. M.K.P. Urs, Sci-C, MBG]

With regard to Development of disease resistant and productive mulberry genotypes, the criteria for short-listing the genotypes were not presented and it was suggested to take a second round of resistance test by including G2, G4 and V1 besides to take a check for resistance to other foliar diseases also.

[Action: Dr. Gandhi Doss, Sci-C, MBG]

With regard to the data generation on photosynthetic transpiration rate, it was decided to use the facilities available at KSSRDI and other Institutes until the photosynthetic meter is repaired. The concerned PI may expedite the same and get the instrument repaired immediately.

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

It was decided that for evaluation study to correlate the growth and the yield potential with different parameters is very much essential, as such the PI may record the physiological characters for all 16 genotypes without any excuse.

[Action: Dr. M.K.P. Urs, Sci-C, MBG]

As per the instructions of CO, the mulberry breeders to come out with a mulberry variety for the rainfed zone as there is constant decline in the water resource. In this direction it was felt that all the mulberry breeders (including the breeders of nested units) to come out with a programme to formulate a project for targeted outcome and submit the same within 30 days.

[Action: Dr.M.K.P.Urs, Sc-C and Dr.Gandhi Doss, Sc-C, MBG, Ms. Sabitha, Sc-C]

The routine programmes viz., MIP0001, MIP0002, MIP0003 and others of maintenance nature to be clubbed together as a routine activity / programme and programme proposal to be submitted immediately for allotment of code afresh.

[Action: Dr. M. K. P. Urs, Sci-C and Dr. Gandhi Doss, Sci-C, MBG]

MOLECULAR BIOLOGY LAB-I

Progress of the project **PIE 3451:** "DNA marker aided analysis of mulberry gene bank towards a core assembly for sustainable conservation and enhanced utilization in crop improvement**"** was reviewed. The actual outcome of the study and that of work carried out at CSGRC, Hosur were sought. It was suggested to come out with markers, which could be easily utilized for mulberry breeding programme for development of a verity with high productivity, instead of documenting only the raveled markers. The utility of the markers in practical way is very much needed instead of making the publications only.

[Action: Dr. Girish Naik, Sc-C, Molecular Biology –I and DC(Mori)]

AGRONOMY

Progress of the project **PRP 3462 "**Biological control of root rot disease of mulberry by endophytic bacteria *Burkholderia cepacia* and *Bacillus subtilis* strains" and the programme **MPR 0047 "**Effect of conjunctive use of nitrification inhibitors for the efficient utilization of nitrogenous fertilizers for the sustainable mulberry production" were reviewed. Chairman enquired the status of root rot and advised to see the impact of the control measures. Simultaneously the study to be been taken in the field areas where already the menace of root rot is there so that the genuineness of the control measures claimed could be verified and further demonstrated.

[Action: Dr. Gunashekar, Sci-C, Agronomy]

It was remarked that the green house is not in good and presentable condition, which needs to be looked into immediately. In spite of repeated instructions, the concerned scientists have not taken any action to this effect, which is not acceptable. The facility needs to be set right forthwith without any lapse.

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

As regard to study on efficient utilization of nitrogenous fertilizers, it was advised to revise the dosage of nitrogen in the experiment based on the recommendation of concluded project of long-term fertilizer application taken up by Soil Science and Chemistry Lab. and also advised to work out the comparative economics.

[Action: Dr. Gunashakar, Sc-C, Mr. V. K. Yadav, Sc-B, Agronomy and DC(Mori)]

SOIL SCIENCE & CHEMISTRY

The progress of two programmes **"**Maintenance of the long term manurial plot" and **MPR 0005 "**Soil fertility management of mulberry gardens and quality control of disinfectants" were reviewed. With regard to Maintenance of the long term manurial plot programme it was felt that the programme need not be continued further as it has already emanated a recommendation for follow up at farmers' field level. It was advised that a collaborative proposal along with nested units and RSRSs under the control of the Institute may be formulated immediately and submitted before 30th May 2013.

[Action: Soil Science and Chemistry and DC(Mori)]

MULBERRY PHYSIOLOGY

The progress of project **PIN 3442: "**Studies on the factors influencing the nutrient uptake and its use efficiency in mulberry under field conditions" was reviewed. While enquiring about the inference of the study, since it is in the concluding stage at present, it was suggested to come out with clear inference as per the objectives and submit the concluding final report along with future course of action besides to come out with a need based programme / project and to submit within 20 days.

[Action: Ms. Sabitha,Sc-C, Mulberry Physiology, and DC(Mori)]

MULBERRY PATHOLOGY

The progress of project **PRE 3486 "**Development of Database for mulberry diseases and one programme", **MPT 0046 "**Long-term effect of mulberry cropping system on soil biology and productivity" were reviewed. With regard to the programme **MPT 0046**, the discussion in detail on sample size, mode of data collection, its periodicity were made and it was suggested that since the programme is very good, it could be extended to other areas.

[Action : Dr. V. Nishita Naik, Sci-C, Mulb. Path]

As regards to the development of data base on mulberry diseases vis-à-vis the data mining and collecting of literature on the aspect, it was felt that the work has not been dealt properly and with due care which needs to be attended with seriousness and dedication. The progress as per set work elements may be reviewed forthwith and steps taken to undertake the assignments seriously and without fail.

[Action: P M Pratheesh Kumar, Sc-C, Mulberry pathology and DC(Mori)]

2. SERICULTURE DIVISION

SILKWORM BREEDING LAB-I

Progress of ongoing two projects **MOE-3463** "Popularization of the productive bivoltine silkworm double hybrid *Krishnaraja* with the farmers of Karnataka" and **AIT-3445** "Development of robust bivoltine hybrids of silkworm *Bombyx mori* L. tolerant to high temperature environment of the tropics through DNA marker assisted selection" were reviewed. Under **MOE 3463** project, it was desired to know the total number of farmers to be adopted, total intake of dfls and the benchmark followed. Care to be taken to keep these parameters recorded and updated.

[Action: Dr. A. Naseema Begum, Sci-D, SWBL-1]

Regarding the project **AIT-3445**, it was advised to provide milestones during the presentation with breeding plan followed.

[Action: S.M. Moorthy, Sci-C, SWBL-1]

As regards to the project **AIB-3498 "**Popularization of authorized silkworm hybrids among the farmers of South India", Chairman desired that he will visit their lab and discuss with the scientists personally.

[Action: Scientists of SWBL-1]

While presenting the progress of two programmes (**SIM 0006** "Maintenance of bivoltine silkworm races" and **SIM 0008** "Evaluation of three way cross hybrids for commercial exploitation") it was suggested that maintenance of unnecessary breeds is not desirable and to restrict to only required breeds. It was further observed that there are certain

cases of duplication of maintenance programmes which needs to be streamlined and clubbed. The document on the pedigree of breeds needs to be updated which could be published.

[Action: SWBL-1 / DC (Seri)]

The silk grading of the breeds / hybrids is a thrust area under 12th plan which cannot be skipped while formulating / evolving the new materials. As a note has been received from CO to develop only those breeds which fit into 2A-3A grade, it is required that the silkworm breeding scientists to discuss with the reeling scientists in this regard and come out with project / programme proposal forthwith conforming to the needs of ICBs. The proposal to be submitted within one month.

[Action: Head S.W.B.L-I and DC(Sri)]

P4, BSF, HASSAN

The progress of the programme **SIM-0015** "Bivoltine silkworm race maintenance and multiplication" was reviewed. Dr. Mal Reddy, Sci-C was advised to shift the breeding maintenance programme (**SIM-0006** "Maintenance of bivoltine silkworm races") to P4, BSF, Hassan after discussing with , Dr. Manthira Moorthy, Sci-C and Dr. S.K. Ashwath, Sci-D on the matter for taking further necessary action.

[Action:Sci-C, BSF, Hassan and Dr. Mal Reddy, Sci-C, SWBL-1]

The supplying of P1 layings to NSSO under post authorization trials could be arranged from BSF, Hassan and action plan could be accordingly entrusted to them.

[Action: Dr.Kalpana,Sc-C, P4, BSF, Hassan, Concerned scientists of S.W.B.L-I, and DC(Sri)]

SSBS, COONOOR

The progress of the three programmes of the station **SIM-0016 "**Maintenance of bivoltine silkworm breeder's stock/ germplasm", **SIM 0017 "**Bivoltine shuttle breeding for development of silkworms with better plasticity" **and SIM 0018 "**Multiplication of productive and new bivoltine races, generation of seed cocoons and preparation of dfls" were reviewed. It was felt that there is a duplication of work as similar works are being taken up at the Institute. Dr. Vindhya, Sci-D was advised to discuss the matter with the scientists of CSGRC, Hosur, P4, BSF, Hassan / SSBS, Coonoor / CSRTI, Mysore and arrive at a policy decision so that the repetitions could be avoided. Availability of SLD4 and SLD8 breeds maintained at Coonoor station needs to be augmented so that smooth supply of P1 DFLs of these breeds could be ensured to NSSO, Bengaluru, which they need for F1 production under post authorization programme of Eastern and North-Eastern states.

[Action: Dr. G. S. Vindhya, Sci-D, SEEM ; SSBS Coonoor; DC(Seri)]

While enquiring whether a male parent is being used under the experiment on "Identification of FCs and new double hybrids" under **SIM 0017**, it was given to understand that there is a scope for work in other regions also, as in adverse conditions, these foundation crosses when used as a male parent are contributing in a big way in making very robust multi x bi hybrids that are already required for harsh climates. It was suggested to a have collaborative programme with Berhampore institute on this aspect where already data is available.

[Action: SSBS Coonoor and DC(Seri)]

Since there is a thrust to develop improved Pure Mysore materials for neatness, cleanliness and cohesion, these silkworm lines could be made suitable to the local conditions.

The breeders of main Institute / Coonoor /Hassan / Kodathi etc. may come out with appropriate programme and projects to address this thrust area and improve the material.

[Action: SSBS, Coonoor, Concerned Breeders of CSRTI, Mysore, Coonoor, P4, Hassan and Kodathi]

SILKWORM BREEDING LAB-II

The progress of the two projects **AIB 3456 "**Development of productive polyvoltine breeds of silkworm *Bombyx mori* L. tolerant to high temperature and BmNPV" **and AIB 3488 "**Pre Authorisation field trials of L14 x CSR2: A new Polyvoltine x Bivoltine hybrid of silkworm *Bombyx mori* L with superior fibre qualities" and one programme **SIM 0009 "**Maintenance of polyvoltine silkworm breeds" were reviewed. It was suggested that breed improvement has to be on priority and group of breeders should come out with a strategy for improvement of L14. It was decided that different groups of breeders at main institute, Coonoor, Hassan and Kodathi would attend the job and come out with a strategy / programme so that it could be discussed forthwith. Dr. S. K. Ashwath, Sci-D may take the lead and present the same.

[Action: Dr. S. K. Ashwath, Sci-D]

It was expressed that for pre-authorisation trials we should have a common RFD with CSTRI where we have to assess the cocoons for reeling parameters and for F1 supply with NSSO. DOS can also be involved in the activity. A draft proposal can be sent to Director NSSO with a copy marked to CSTRI, Bangalore under intimation to Member Secretary for needful. Then the final programme will be submitted to CO for financial approval as soon as possible.

[Action: **Dr. Dayananda,Sc-C, S.W.B.L-II , Concerned Scientists of breeding lab and DC(Seri)]**

SILKWORM GENETICS

The progress of two programmes **SIM 0011 "**Maintenance of breeds developed through amylase marker assisted selection, NPV tolerance and morphological mutant stocks" **& SIM 0012 "**Inheritance analysis of bimodal emergence pattern in Pure Mysore and its introgression into evolved polyvoltine breeds" were reviewed. It was observed that different sections are independently maintaining their own germplasm stocks. Hence, it was suggested to explore the possibility of pooling all the polyvoltine, bivoltine and other genetic stocks and maintain under a common programme.

[Action: DC(Seri)]

MOLECULAR BIOLOGY LAB-II

The progress of the one project **AIB 3476**: "Development of productive NPV tolerant bivoltine breeds/hybrids using BmNOX marker assisted selection" was reviewed. Dr. S. K. Ashwath, Sci-D informed that presently the breeding is at BC6 generation and subsequent to selfing for two generations, homozygous BmNPV tolerant lines will be ready by January 2014. It was suggested to take up the evaluation of the identified breeds/hybrids.

[Action: Dr.S. K. Aswath, Sci-D, Mol.biology – II]

REELING SECTION

The progress of two programmes **SIM 0037: "**Evaluation of post cocoon parameters of cocoons generated from CSRTI, Mysore" **& SIM 0038: "**Studies to determine the process

parameters for the new Multi x Bivoltine hybrids" were reviewed. As the pilot study **SIM 0038** is concluded in December 2012, it was advised to submit the concluded report of the same along with the technology write up for reeling package developed for L14 x CSR2.

[Action: Head, Reeling Section]

SILKWORM PHYSIOLOGY

The progress of the two projects **AIB 3449**: "Developing an indigenous method for culturing Cordyceps and other useful species" and AIP **3478: "**Studies of mulberry leaf nutrition on intermediary metabolism of silkworm *Bombyx mori* L" and one programme **SPR 0013 "**Maintenance of bivoltine and multivoltine semi synthetic diet silkworm strains for original breed characters" were reviewed.

Enquiring about the alternative substrates other than the pupa for culturing Cordyceps and the source of Cordyceps, it was desired that protocol could be spelt clearly and methodologies adopted to be presented. With regard to Maintenance of Multivoltine Semi-Synthetic diet breeds, it was observed that since the technology is said to be cost effective it was suggested that L14 x CSR2 hybrid could be tried in the study. It was suggested to explore the possibility of developing a suitable universal diet acceptable to all the breeds than developing breeds for artificial diet.

[Action: **Dr. Kanika Trivedi, Sc-D, All Concerned Scientists of CSRTI, Mysore and DC(Seri)]**

RTI & TVDC

The progress of four programmes [**SPR 0044 "**Development of silkworm rearing package for newly developed hybrids"**, SPR 0041 "**Large scale multiplication of new multivoltine and bivoltine breeds"**, SPR 0019 "**Large scale inhouse evaluation of new silkworm hybrids" and a pilot study on "Testing of mountages and refinement of the existing mountages for large scale rearing" were reviewed. Mr.Purushotham, Sc-C was advised that in the package of practices developed for L14 pure breed, the bed spacing needs to be reviewed. Plan of action in view of the feed back of the rearers is very much required before publication. Further advised to submit the final report. The technology package write up has to be prepared in the form of a pamphlet.

[Action: Mr. S. Purushotham, Sci-C, RTI]

GRAINAGE SECTION

The progress of two programmes **SPR 0043 "**Studies on reproductive efficiency of newly evolved multivoltine and bivoltine breeds of silkworm *B. mori* and egg production" and "Preauthorization field trials of L14 x CSR2" were reviewed. Dr. Chikkanna, Sc-D was advised to come out with a research project / programme related to grainage aspects and that a concept note on grainage parameters be prepared and submitted for consideration.

[Action: Dr.Chikkanna,Sc-D, Grainage]

PEST MANAGEMENT LAB

Progress of two projects **PPE 3455 "**Habitats studies-Impact of crop diversity on conservation and performance of parasitoids and predators in mulberry crop system" **& PRE 3467 "**Evaluation of available management strategies for Giant African Snail (*Achanta fulica*) in mulberry ecosystem" and three programmes **SPT 0014 "**Maintenance of mother culture for production of recommended bio-control agents and mass release of recommended

bio-control agents of sericultural pests in CSR&TI campus", "Production and distribution of bio control agents, "Forewarning and forecasting" and **CSS 2110 "**Evaluation of thrips management package in mulberry" were reviewed. The consolidated statement of pest incidence and thresh hold limit of pest infestation were observed to be missing and advised to record these parameters scientifically. Regarding works of disease forecasting and forewarning, the data maintained at PML needs to be verified and it could be an extension programme under the care of PML and nested units could be involved in collection of data. The data generated in this aspect during 11th Plan needs to be compiled and a final report in MIS format to be submitted for onward transmission to C.O.

It was advised to submit the 10 years data related to uzifly to the Director within 3 - 4 days. With regard to problem of snail and papaya mealy bug, it was advised to over come the problem and suggested to retrieve the data regularly through out Southern States which is essentially required to see the non-recurrence of the pest incidence. This study needs to be taken seriously and assessed at farmers' field without any lapse.

[Action: Dr. Vinod Kumar,Sc-C, Shri. Narendar Kumar,Sc-C and DC(Seri)]

SILKWORM PATHOLOGY

Progress of one project **ARP 3477: "**Therapeutic control of Microsporidiosis in the silkworm through characterization of Methionine Amino Peptidase enzyme genes (MetAP2) in *Nosema bombycis*" and three programmes **SPT 0039 "**Identification of factors responsible for silkworm crop loss due to diseases at field level and its impact on cocoon productivity"**, SPT 0045A "**Identification of probiotic bacteria and study their antibacterial activity against bacterial pathogens of silkworm *Bombyx mori* L." and **SPT 0024 "**Maintenance of silkworm pathogens and testing their virulence of periodic intervals" were reviewed. Regarding **ARP 3477**, the role of SBRL, Bangalore and CSRTI, Mysore is required to be defined and advised Dr. S.K Ashwath, Sc-D also to associate in this project.

[Action: Dr. M. Balavenkatasubbaiah, Sc-D, Dr. S. K. Ashwath, Sci-D & DC (Seri)]

SEEM DIVISON:

Progress of the project **MOE 3458 "**A Study on Adoption of Pest and Disease Management Strategies in Sericulture" was reviewed and found as per the milestones. Chairman enquired from the PI regarding the technique used for adoption level in the study area and suggested to use technique used by Mr. Eswar, Sc-C, REC, Bidar, for assessing the adoption level of technologies in the same way and assess the data on pest and disease management as well as on adoption of other technologies also.

[Action: Dr. Gangadhar, Sc-C & DC (SEEM)]

3. 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 satisfactory. It was advised to propose the dates of ISDS training programmes to be taken at RSRS and main Institute under intimation to CO and to prepare the course materials.

[Action: Dr. S.D. Sharma, Sc-D, DC (Trg.)]

4. SERICULTURE ENGINEERING DIVISION

The activities of sericulture engineering division in developing various new equipments and machineries for sericulture were reviewed. It was advised to submit the programme proposal for each new item (under development) that can be coded and go accordingly. It was also suggested to workout a proposal on feasibility of rearing houses along with Dr. Geetha, Sci-C, SEEM and submit within a month's time so that proposal could be sent to some funding agency. With regard to the dusting machine, humidifier, cocoon harvesting machine and leaf cutting machines, it was advised to take up the action for their patenting and commercialization there off forthwith.

[Action Dr. Satish Verma, Sc-E (Engg), SED]

II. RSRSs:

A) SALEM:

Progress of 6 programmes [**MPT (S) 8002 "**Studies on Rhizosphere microflora of mulberry varieties as influenced by different cultivation practices under alkaline soil conditions"**, MPR (S) 8003 "**Effect of shoot harvest techniques and biomass yield of mulberry on soil organic carbon depletion in mulberry fields"**, SEM (S) 8001 "**Studies on adoption of silkworm disease control measures and its impact on cocoon production in farmers' field under Tamil Nadu conditions"**, SEM (S) 8004 "**Studies on the adoption and impact of mulberry and silkworm pest management technologies (IPM) by the sericulturists in Tamil Nadu"**, SEM(S) 8006 "**Study on adoption of recommended package of practices followed by different farm sizes in T.N."**] and CSS-2105** and one collaborative programme (In collaboration with CSR&TI, Mysore) **PRE 2107** "Studies on Disease forecasting and forewarning were reviewed.

Based on the out come of INM package it was advised to prepare a technology write up including impact on yield at farmers level and submit to the Institute for publication before his superannuation. The Chairman opined that Soil fertility status programme could be co-ordinated with the main institute and DC (SEEM) may discuss the same with all RSRSs.

[Action: Sc-D, RSRS, Salem and DC(SEEM)]

B) ANANTAPUR

Progress of the programme **MIP(A)5001**: "Evaluation of Elite mulberry varieties under semi- arid agro-climatic conditions" and a collaborative programme (In collaboration with MBG, CSR&TI, Mysore) **PIB-3268**: Development of superior mulberry varieties suitable for soil moisture stress environment were reviewed. The number of varieties involved in the programme were discussed and suggested not to highlight Taiwan variety.

It was advised to raise more of G4 mulberry variety as it is going to be taken for large scale trials. The evaluation reports of RC1/RC2 was required to be submitted. Chairman suggested to formulate a breeding programme for developing rainfed / water stress varieties in Andhra Pradesh as per the thrust area.

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

C) CHAMARAJANAGAR

Progress of one project **PPF 3500 "**Development of Seri-Lac culture model for income augmentation." two collaborative projects (In collaboration with CSR&TI, Mysore)[**PIB-3268** "Development of Superior Mulberry Varieties Suitable For Moisture Stress Environments (Phase-II)".and **PPE 3455 "**Habitats studies-Impact of crop diversity on conservation and performance of parasitoids and predators in mulberry crop system"**]** and one collaborative programme [**MPT 0046 "**Long term effect of mulberry cropping system on soil

biology and productivity"**]** were reviewed. It was observed that progress of the project **PPF 3500** was found to be not as per the milestones. DC (SEEM) was advised to look into the matter related to the progress of the project and ensure its execution and implementation as per time frame.

[Action: In-charge officer, RSRS, Chamarajanagar and DC (SEEM)]

D) **KODATHI:**

The station has one programme [**CSS-2105**: **Monitoring of soil fertility status in Sericultural areas of Karnataka**] and nine collaborative projects/programmes (In collaboration with different labs of CSR&TI, Mysore). The progress were reviewed. It was observed that RSRS Kodathi does not have any specific research project. The scientists of RSRS Kodathi were suggested to come out with project proposals addressing to the needs specific to their region and may submit the same within a month.

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

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

The progress of following three concluded projects, two programmes and two pilot studies were presented and outcome found as per the objectives and milestones.

Sl. No.	Title of the project/prog./pilot study	Duration	Project investigators
Project: 2			
1.	**PPA 3420**: Studies on the comparative yield potentiality and varietal response of promising mulberry varieties under different sources of organic and inorganic nutrients	Jan.2008 to Dec., 2012	K. Srikantaswamy, B.Nagaraj, S. Sen. and M. K. P. Urs
2	**AIB 3437**: Studies on hybrid evaluation and identification of new polyvoltine x bivoltine hybrids of the silkworm *Bombyx mori* L.	January 2010 to December 2012	Dr. P. Rama.Mohana Rao (up to July 2012), Mrs. V. Premalatha, Dr. Dayananda, Mr. Parameswara (From August 2012), Mr. K. P. Shivakumar
3	**MOE 3461**: Assessment of women participation and time spent on different sericulture activities in three southern sericulture states	April 2012 to March 2013	G. S. Geetha, M. Rekha, G. Punithavathy, P. K. Ambika, M. Raghupathi
Programme: 2			
1	**MPT0040**: Development of bio-nematicide for management of mulberry root knot disease	Jan. 2012 – Dec., 2012	Dr. D. D. Sharma (PI); Dr. B. R. Dayakar Yadav; Dr. V. Nishitha Naik and Dr. Pratheesh Kumar, P. M.
2	**CSS-2110**: Field evaluation of colour cocoon production and thin denier silk, conversion to yarn and fabric for commercial use	October 2011 – December 2012	Dr. Kanika Trivedy, Mr. M. Ramesh, Mr. Kariyappa and Dr. S. Nirmal Kumar,

Pilot study: 2			
1.	Development of doubled haploids through *in vitro* technique for mulberry improvement (phase-I)	April., 2011 to March., 2013	S. Ravindran (upto 31.12.2011), M. K. Raghunath and S.Gandhi Doss (from Jan. 2012).
2	Studies on performance of bio-control agent multiplication units and seri-poly clinics established under Catalytic Development Programme in sericulture Clusters in Andhra Pradesh and Tamil Nadu	Nov. 2011 – October 2012	Dr. B. Gangadhar and P. Kumaresan (Upto April, 2012)

ITEM NO. 5: CONSIDERATION OF NEW PROJECT PROPOSALS, IF ANY.

The following seven new concept notes and three projects were presented by the respective scientists in the meeting which were reviewed critically and observations/decisions taken are as follows:

CONCEPT NOTE:

1. Development of disease tolerant bivoltine breeds by Dr.N. Mal Reddy, Sci-C, Silkworm Breeding lab.

Observation/suggestions: It was suggested to keep the title of the proposal as suggested in the Minutes circulated by Member Secretary on 8th May 2013. Already selected parents can be used in the study instead of selecting afresh to save time. Further both bivoltine and multivoltine breeds could be included.

Decision: Approved. Submit the proposal as per the MIS format to be submitted to CO for clearance.

[Action: Dr.N. Mal Reddy, Sci-C, Silkworm Breeding lab]

2. Pre-authorisation field trials of improved cross-breeds and bivoltine hybrids by Dr. K. K. Sharmila, Sci-C, Silkworm Genetics.

Observation/suggestions: The number of farmers, number of breeds and number of crops to be covered needs to be specified. Dr. Dayandand Sci-C to be included in the programme.

Decision: Approved. Submit the full-fledged proposal along with budget requirement for various inputs to be given to the beneficiaries as per the provisions under post authorization trials.

[Action: Dr. K. K. Sharmila, Silkworm Genetics Lab, Dr. Dayanand, Sci-C, SWBL-2]

3. Large scale field trial of G4 mulberry variety in the field by Dr. M. K. P. Urs, Sci-C, MBG & Tissue culture

Observation/suggestions: To identify the farmers who are having half acre of land to be finalized in collaboration with state departments involving DoS. The programme may be planned in a phased manner by giving all inputs. During the I phase, distribute the sapling to 50 farmers @ 2000 saplings per farmer. Similarly II phase will be taken up after a gap of 6 months for more number of farmers. Cost of saplings also to be included in the budget and all the southern states could be included in the programme. By Dec. 2013 approximately one lakh saplings of G4 variety to be kept ready. Varieties viz., Vishala and Anantha could also be taken into the programme.

Decision: Approved. A full fledged proposal be prepared immediately and to submit to CO for financial approval.

[Action: Dr.M.K.P.Urs, Sci-C, MBG, DC(Mori)] and Concerned Heads of RSRSs/ Farm base RECs]

4. Dissemination of rotary mountages to produce quality cocoons by Mr. S. Purushotham, Sci-C, RTI.

Observation/suggestions: Suggested that instead of the term "dissemination", title can be changed into "popularization".

Decision: Approved, Submit the full fledged proposal within 2-3 days for getting the code and financial approval from CO. (JICA fund).

[Action: Mr. S. Purushotham, Sci-C, RTI]

5. Identification of native natural parasitoids for control of uzifly and major pests of mulberry plants by Dr. Vinod Kumar, Sci-C, PML

Observation/suggestions: There is no clear mode of action to mitigate the uzifly menace in the present situation. The scientists of the lab to come out with a clear proposal immediately for identification of native natural parasitoids for control of uzifly as suggested in the minutes the meeting organized by Member Secretary on 8th May 2013. Regarding the strategy for holistic control of uzifly in the field, a dedicated team of entomologists working in RSRSs/RECs and main institute to be identified under the leadership of Mr. Ch. Satyanarayana Raju, Sci-D, RSRS, Ananthapur. The other members of the team comprise Dr. N. Sivarami Reddy, Sci-C, RSRS, Ananthapur, Dr. Noble Morrison, Sci-C, REC, Madivala, Mr. S. Rajakumar, Sci-C, RSRS Salem and Dr. A. V. Mary Josepha (Shery), Sci-C, PML, CSRTI, Mysore.

Decision: Approved. Mr. Ch. Satyanarayana Raju, Sci-D, RSRS, Ananthapur to take a lead and prepare the proposal within 10 days and submit the full pledged proposal.

For identification of other native natural parasitoids to control uzifly, Dr. Vinod Kumar, Sci-C, PML, to submit a proposal immediately, along with last 10 years data on the status of uzifly and discuss with the Director for consideration.

[Action: Mr. Ch. Satyanarayana Raju, Sci-D, RSRS, Ananthapur & Dr. Vinod Kumar, Sci-C, PML]

6. Breeding strategy for improvement of L14 multivoltine breed by Dr.S. K. Aswath, Sci-D, Mol.biology - II

Observation/suggestions: Presently the improvement programme is taken up CSRTI, Mysore and SSBS, Coonoor. The programme to be taken simultaneously at P4 BSF, Hassan and RSRS, Kodathi in order to strengthen the programme. Dr.S.K.Ashwath, Sci-D, Mol.biology – II to lead the programme till the targeted parameters are achieved in the L14 breed as per action plan presented.

Decision: Approved. Submit the programme immediately for allotment of code.

[Action: Dr.S. K. Aswath, Sci-D, Mol.biology - II& DC(Seri)]

7. Identification of single nucleotide polymorphism in mulberry by Reduced-Representation Library method for utilization in genome-wide association mapping by Dr. V. Girish Naik.

Observations/suggestions: Though the pilot study for a duration of 3 months was approved with institute code **MIP–0048** in collaboration with M/S. Genotypic technologies, Bangalore**.** However, the study could not be initiated due to delay in the modalities to be finalized with the collaborator. The Director advised to furnish the details of consumables required for the study so that the programme can be initiated with revised milestones. Further he was asked to discuss with Director and finalise the same.

[Action: Dr. V. Girish Naik, Sci-C, Mol. Biol. –1]

PROJECTS:

1. **Development of Distinctness, Uniformity and Stability (DUS) descriptors for Mulberry (*Morus* spp.) and its Validation** {Externally funded project by PPV & FRA, New Delhi } by Dr.M.K.P.Urs, Sci-C, MBG & Tissue culture

Observation/suggestions: The methodology to meet the proposed objectives to implement the project needs to be elaborated. Mr. K. Rajashakar, Sci-C, PMCE to associate and discuss with the Director.

Decision: Approved. To submit the project for allotment of code.

[Action: Mr.K.Rajashakar, Sci-C, PMCE & DC, Moriculture]

2. **Silkworm disease monitoring of seed commercial crop rearings** by Dr. K. Chandrasekharan, Sci-C, Silkworm pathology

Observation/suggestions: Silkworm diseases that are occurring in the seed stations of state departments as well CSB to be taken care with a holistic approach. This will be a one year programme and each year it will be renewed. Further, details could be obtained from the Berhampore institute. Meeting with CoS, Karnataka and NSSO for nomination of team member to be taken. Areas of Karnataka may include commercial area / seed area / P1 area.

Decision: Approved. Submit the programme for code and implementation fulfilling above suggestions.

[Action: Dr. M. Balavenkatasubbaiah, Sc-D & DC (Seri)]

3. Identification of efficient mulberry for changing climatic regime of increased temperature and CO2 and trait association for sustainable crop improvement by Dr. V. Girish Naik, Sci-C, Mol. Biology-1.

Observation / Suggestions: Since the concept note was not discussed with the Director prior to the meeting, advised to discuss with Director and finalise the same for approval.

Decision: The concept note has been discussed with the Director and suggested to prepare the project and submit for clearance from C.O.

[Action: Dr. V. Girish Naik, Sci-C, Mol. Biol. –1]

MISCELLANEOUS:

Scientists of the institute and nested units of RSRSs / RECs to correspond only through the Director with outside agencies.

[Action: All Concerned]

All scientists to prepare milestones for all the projects / programmes / activities and submit to PMCE.

[Action: All Concerned]

All scientists of the institute and nested units of RSRSs / RECs required to initiate the necessary follow-up as per the suggestions / decisions made during various meetings called by the Director or else and without waiting for the minutes. This is for strict compliance.

[Action: All Concerned]

The project presentations should invariably include a separate slide for total activity table of the project and milestones along with the results.

[Action: All Concerned]

As per RFD target each scientist should have a project/programme. In this regard scientists those who are not having any project/programme, have to propose a concept note immediately on the areas suggested by CO as per 12th plan thrust areas or as per local needs of the region.

[Action: All Concerned]

All the scientists should follow the scheme codes while booking the expenditure, as there is a separate code for each activity like R&D, TOT and Training.

[Action: All Concerned]

All heads of RSRSs to ensure that RRAC meetings of respective regions are taken and completed as per time schedule before holding the RAC meeting.

[Action: All Heads of RSRSs]

Principal Investigators of all CSB coded projects as well as institute coded programmes / pilot studies are required to submit a copy of the project document for reference of the Director.

[Action: All Concerned]

Final Project / Programme report (Part 10) of all the concluded projects / programmes / pilot studies to be submitted within 20 days for perusal and onward transmission to C. O.

[Action: All Concerned]

At the end, the Chairman expressed satisfaction on the R&D progress made and advised all scientists to take up projects as are suggested by CO during action plan and decisions of Member Secretary on 8th May 2013 and also to achieve the RFD targets proposed for 2013-14.

The meeting ended with vote of thanks.

Sd/-

Director and Chairman,
Research Council

05.06.2013

Annexure-I

List of participants attended the Research Council meeting held on 20th & 21st May 2013 at CSRTI, Mysore

Sl. No.	Name	Designation	Section/Unit
1.	Dr. B. B. Bindroo	Director, CSRTI, Mysore	Chairman, Research Council
2.	Dr. Satish Verma	Scientist-E (Engr)	CSRTI, Mysore
3.	Dr. Vindhya,G.S	Scientist-D	CSRTI, Mysore
4.	Dr. Kanika Trivedy	Scientist-D	CSRTI, Mysore
5.	Dr. T. Thippeswamy	Scientist-D	CSRTI, Mysore
6.	Dr. S. D. Sharma	Scientist-D	CSRTI, Mysore
7.	Dr. M. T. Himantaraj	Scientist-D	REC, Chitradurga
8.	Dr. R. Balakrishna	Scientist-D	RSRS, Salem
9.	Dr. Chikkanna	Scientist-D	CSRTI, Mysore
10.	Shri Ch. Satyanarayana Raju	Scientist-D	RSRS, Ananthapur
11.	Dr. S. K. Ashwath	Scientist-D	CSRTI, Mysore
12.	Dr. M. Balavenkatasubbaiah	Scientist-D	CSRTI, Mysore
13.	Dr. A. Naseema Begum	Scientist-D	CSRTI, Mysore
14.	Shri R. Gururaj	Scientist-D	CSRTI, Mysore
15.	Shri H. M. Munikrishnappa	Scientist-C	CSRTI, Mysore
16.	Dr. B. Mallikarjuna	Scientist-C	RSRS, Chamarajanagar
17.	Dr. S. Radhakrishnan	Scientist-C	RSRS, Salem
18.	Shri S. Rajakumar	Scientist-C	RSRS, Salem
19.	Shri N. G. Selvaraj	Scientist-C	REC, Udumalpet
20.	Shri N. Sakthivel	Scientist-C	REC, Srivilliputur
21.	Dr. P. Samuthiravelu	Scientist-C	REC, Hosur
22.	Shri K. C. Mahalingappa	Scientist-C	REC, SU, Kinkanahalli
23.	Dr. Dayananda	Scientist-C	CSRTI, Mysore
24.	Shri O. K. Gopinath	Scientist-C	REC, SU, Vaniyambadi
25.	Dr. Vinod Kumar	Scientist-C	CSRTI, Mysore
26.	Dr. B. Gangadha	Scientist-C	CSRTI, Mysore
27.	Dr. A.V. Mary Josepha	Scientist-C	CSRTI, Mysore
28.	Smt P. V. Soudamini	Scientist-C	REC, SU, Kalpetta
29.	Smt C. A. Mary Flora	Scientist-C	RSRS, Salem
30.	Dr. N. Dahira Beevi	Scientist-C	REC, Gobichettipalayam
31.	Smt K. Sarala	Scientist-C	REC, Palakkad
32.	Dr R. Meenal	Scientist-C	RSRS, Chamarajanagar
33.	Dr. S. Balasaraswathi	Scientist-C	REC, Krishnagiri
34.	Dr. V. Girish Naik	Scientist-C	CSRTI, Mysore
35.	Dr. G. S. Geetha	Scientist-C	CSRTI, Mysore
36.	Dr. M. Noble Morrison	Scientist-C	REC, Madivala
37.	Dr. M. K. P. Urs	Scientist-C	CSRTI, Mysore
38.	Dr. M. K. Raghunath	Scientist-C	CSRTI, Mysore
39.	Dr. H. Jayaram	Scientist-C	REC, SU, Shimoga
40.	Shri J. P. Renukeswarappa	Scientist-C	CSRTI, Mysore
41.	Dr. S. Manthira Moorthy	Scientist-C	CSRTI, Mysore
42.	Shri Gnanakumar Daniel	Scientist-C	REC, Samayanallore
43.	Shri J. B. Narendra Kumar	Scientist-C	CSRTI, Mysore
44.	Smt Rekha, M.	Scientist-C	CSRTI, Mysore
45.	Dr. M. R. Subrahmanyam	Scientist-C	REC, SU, Kanakapura
46.	Dr. S. K. Bhargava	Scientist-C	REC, Bidarguppe
47.	Dr. Nishitha Naik	Scientist-C	CSRTI, Mysore
48.	Shri C. Parameshwara	Scientist-C	CSRTI, Mysore
49.	Smt V. Premalatha	Scientist-C	CSRTI, Mysore
50.	Dr. N. Mal Reddy	Scientist-C	CSRTI, Mysore

Sl. No.	Name	Designation	Section/Unit
51.	Shri Ramprakash	Scientist-C	REC, Baramati
52.	Dr. Dasappa	Scientist-C	CSRTI, Mysore
53.	Dr. K. Srikantaswamy	Scientist-C	RSRS, Chamarajanagar
54.	Dr. D. D. Sharma	Scientist-C	CSRTI, Mysore
55.	Dr. Pratheesh Kumar, P. M.	Scientist-C	CSRTI, Mysore
56.	Shri R. K. Khare	Scientist-C	REC, Hoshangabad
57.	Shri A. J. Karande	Scientist-C	REC, Parbhani
58.	Dr. Vinod B. Mathur	Scientist-C	REC, SU, Maddur
59.	Dr. M. Venkateswara Rao	Scientist-C	REC, Eluru
60.	Shri Ishwar	Scientist-C	REC, SU, Bidar
61.	Dr. A. M. Babu	Scientist-C	CSRTI, Mysore
62.	Dr. S. Gandhi Doss	Scientist-C	CSRTI, Mysore
63.	Dr. A. Venugopal	Scientist-C	REC, Penukonda
64.	Dr. V. Gunasekharan	Scientist-C	CSRTI, Mysore
65.	Smt. M. G. Sabitha	Scientist-C	CSRTI, Mysore
66.	Dr. S. N. Pallavi	Scientist-C	CSRTI, Mysore
67.	Shri K. Vedavyasa	Scientist-C	CSRTI, Mysore
68.	Smt. E. Rajalakshmi	Scientist-C	SSBS, Coonoor
69.	Dr. M. Pitchi Reddy	Scientist-C	CPC, Hindupur
70.	Dr. P. Venkataramana	Scientist-C	REC, Vikarabad
71.	Dr. Virendrakumar	Scientist-C	CSRTI, Mysore
72.	Dr. N. Balaji Chowdary	Scientist-C	CSRTI, Mysore
73.	Shri. S. B. Kulkarni	Scientist-C	CSRTI, Mysore
74.	Dr. P. Sudhakara Rao	Scientist-C	RSRS, Kodathi
75.	Dr. Raveendra Mattigatti	Scientist-C	CSRTI, Mysore
76.	Shri B. T. Srinivas	Scientist-C	CSRTI, Mysore
77.	Dr. P. C. Santha	Scientist-C	CSRTI, Mysore
78.	Shri A. R. Narasimha Nayaka	Scientist-C	CSRTI, Mysore
79.	Shri S. B. Nagaraj	Scientist-C	CSRTI, Mysore
80.	Dr. Vineet Kumar	Scientist-C	CSRTI, Mysore
81.	Dr. B. Kasi Reddy	Scientist-C	REC, Madakasira
82.	Dr. K. Chandrasekharan	Scientist-C	CSRTI, Mysore
83.	Dr. Kariyappa	Scientist-C	CSRTI, Mysore
84.	Shri K. P. Shivakumar	Scientist-C	CSRTI, Mysore
85.	Dr M. Muniratnam Reddy	Scientist-C	CSRTI, Mysore
86.	Dr. D. S. Somaprakash	Scientist-C	CSRTI, Mysore
87.	Shri R. V. Kushwaha	Scientist-C	REC, Amravati
88.	Shri Mukund V Kirsur	Scientist-C	CSRTI, Mysore
89.	Dr. M. Venkatachalapathy	Scientist-C	REC, Raychoti
90.	Dr. V. N. Sudha	Scientist-C	CSRTI, Mysore
91.	Dr. K. K. Sharmila	Scientist-C	CSRTI, Mysore
92.	Shri Mukund V Kirsur	Scientist-C	CSRTI, Mysore
93.	Shri Rajashekhar K	Scientist-C	CSRTI, Mysore
94.	Dr. G. V. Kalpana	Scientist-C	P4 BSF, Hassan
95.	Shri T. Thirunavukkarasu	Scientist-C	REC, Gopichettipalayam
96.	Shri N. Shivashankar	Scientist-C	RSRS Kodathi
97.	Shri S. Purushotham	Scientist-C	CSRTI, Mysore
98.	Shri Vinod Kumar Yadav	Scientist-B	CSRTI, Mysore
99.	Shri Y. N. Sanathkumar	Scientist-B	REC, SU, Koppal
100.	Dr. Sibayan Sen	Scientist-B	CSRTI, Mysore