

CENTRAL SILK BOARD, BENGALURU

MINUTES OF THE 4TH MEETING ON SERI-BY PRODUCT UTILISATION HELD THROUGH WEBEX PLATFORM ON 22.09.2020

The Fourth (4th) meeting of the Working Group on the utilization of seri by-products was held through webex /VC platform on 22.09.2020 and the list of participants is appended. At the outset, Dr.R.K.Mishra, Director [Tech], CSB, Bengaluru welcomed all the participants and initiated the discussions as per the agenda.

ITEM NO. 1: REVIEW OF CONCLUDED PROJECTS AND UTILIZATION OF OUTCOME UNDER THE BY-PRODUCT UTILIZATION

- 1. AIB-3449: Studies on the development of indigenous method of culturing *Cordyceps* and other useful species:** In view of the patent granted for the process on 11.09.2020, the Working Group advised CSR&TI Mysore to expedite the commercialization of the technology, within December, 2020.
(Action: CSR&TI, Mysuru)
- 2. AIP-3568: Development of Value added product from spent pupae of mulberry silkworm *Bombyx mori* L:** It was informed that the application was filed for grant of patent and also its commercialization through NRDC. In view of the technology of pupae separation from pelade layer and its drying being part of Silk Samagra, the Working Group decided that CSTRI, Bengaluru and CSR&TI Mysore to work together to integrate the technology of pupal separation and drying. Commercialization of use of Dried Silkworm Powder (DSWP) for poultry other ruminant feed may be expedited.
(Action: CSR&TI, Mysuru and CSTRI Bengaluru)
- 3. AIT-4724: Isolation and characterization of sericin from tasar silk waste for commercial utilization (Funded by DBT, New Delhi):** The Working Group advised to furnish the present status of utilization of project outcome and also the status of follow-up project, latest by 30th Nov., 2020.
(Action: CTR&TI, Ranchi)
- 4. CYR-7053: Development of technology package for proper handling and processing pupae by product for effective utilization:** It was suggested to furnish the detailed information on the process and the economics of the demonstration unit, month-wise production data of the demonstration unit and its disposal, plan for further popularization of the technology etc., to CO, CSB and CSR&TI, Mysuru.
- 5. Projects CYF-5060, CFC-7064, CFC-7065, CYF-7067, CFC-7072, CYF-7074, CFW-7085&CFC-7087:** The Working Group took note of the outcome of the said concluded projects, which were also evaluated by the Technical Audit Team and noted slow progress on the status of their commercialization. In view of the claims in the final reports and the scope for revenue generation in this area, it was decided that CSTRI will furnish detailed project-wise note on the present status to CO latest by 30th Nov., 2020 and take action on commercialization of the developed technologies latest by December, 2020.
(Action: CSTRI, Bengaluru)
- 6. AIT-3538: Development of fibroin fusion silk with antioxidant and antimicrobial properties:** Commercialization of the technology within 31.12.2020 was suggested.
(Action: SBRL, Kodathi)

**ITEM NO.2: REVIEW OF THE ONGOING PROJECTS UNDER BY-PRODUCT UTILIZATION
AT CSB INSTITUTES**

- 1. PIC 01007 SI: Development of protocol for production of medically fit silk (cocoon, sericin, fibroin) for clinical purposes:** It was advised to maintain the plot for production of organic cocoon free from entry of any material from outside viz., runoff water due to rain, fertilizer, besides using only pure organic FYM, organic green manure seeds for green manuring, organic bio-pesticide beside organic plot to be fenced across all border to avoid entry of any animals. This need to be ensured as the outcome of this project is the raw material for many other collaborative projects on by-product utilization and hence PIs concerned may be advised to take proper care on the matter.
- 2. PIC 01008 SI: Isolation, characterization of chitin/chitosan from silkworm pupal exuviae/spent pupae and its commercial exploitation:** It was suggested to plan for simultaneous commercialization involving suitable industrial partner with clear terms of benefit sharing. Inclusion of a component on the utilization of the scales/ moth dust generated during grainage operations for extraction of Chitin was also suggested.
- 3. BPS 01013CN: Utilization and diversification of silkworm pupae products for human & animal consumption and compositing:** CSR&TI Mysore was requested to expedite signing of MoU with collaborating institutes without any further delay and submit the copies of MoUs to CO, CSB for record purpose.
(Action: CSR&TI, Mysuru)
- 4. BPC 04005 SI: Tasar Waste to wealth by Cordyceps:** It was advised to speed up the work as per the approved Work Plan, as the progress under the project was delayed by over 6 months.
(Action: CTR&TI, Ranchi)
- 5. BPP 05014CN: Standardization of processing and production of a consumable beverage from mulberry leaves and blending with green tea:** The Working Group observed that the progress under the project is satisfactory and going as per the set milestones. CMER&TI was advised to coordinate for timely supply of required quantity of mulberry leaf from BC259 & C2038 by RSRS Jorhat as per indents from TTRI Jorhat and AAU Jorhat.
(Action: CMER&TI, Lahdoigarh and RSRS Jorhat)
- 6. CED 07013MI: Development of Sericin/ Polysachharide encapsulated fertilizer for crop management and growth:** The Working Group suggested to expedite work elements as per approved project work plan as the progress made is lagging behind slightly.
- 7. Projects CYF 07001SI, CYF 07011SI, BPC 07015CN & BPC 07017 EF:** As these projects are initiated recently, institute was requested to carry out the research work as per milestones.
(Action: CSTRI, Bengaluru)

ITEM NO.3: REVIEW OF NEW CONCEPT NOTES ON SERI-BY PRODUCT UTILISATION

- 1. CSB/MYS/RCN 057: Development of a suitable technology for removing the rearing bed residue and utilizing it for making value added products:** The proposed study was decided to be taken up as a pilot study at institute level.

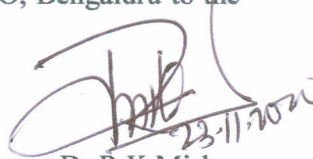
2. **CSB/MYS/RCN 058: Collection of scales/moth dust generated during the silkworm grainage operation to address the health issues of the workers and also utilizing the dust for extraction of Chitin:** Inclusion of this aspect as an additional component in the ongoing project PIC 01008 SI was decided instead of taking up the same as a separate project.
3. **CSB/MYS/RCN 059: Development of fibroin based biomaterials from silk industry waste for wound healing:** In view of earlier works in this regard by CSTRI, Bengaluru, SBRL Kodathi, IIT, Kharagpur & IIT, Guwahati on similar lines, the Working Group decided that the PI concerned to visit CSTRI and discuss the proposal in detail for making it more effective and industry oriented. After the consultations as suggested, revised concept may be submitted for re-consideration by the Working Group.

(Action: CSR&TI, Mysuru)
4. **By-product utilization and waste management in sericulture** (received on 18.12.2019): After detailed deliberations, the Working Group did not consider the concept note.
5. **Development and characterization of sericin hydrogels from cocoons of *Bombyx mori* for biological application through *in vitro* studies** (received on 18.12.2019): Since, CSTRI Bengaluru has already taken up work in this area, the Working Group did not consider the said concept note.

(Action: CSR&TI, Pampore)
6. **Development of silk fibroin powder for nutraceutical applications (CSB/CST/RCN 037) and Development of silk fibroin powder for non-textile applications (CSB/CST/RCN 038):** In view of the earlier discussions by the institute with CFTRI, the Working Group suggested to finalize the proposal for Development of silk fibroin powder for non-textile application including nutraceutical applications in collaboration with CSIR-CFTRI, Mysuru.

(Action: CSTRI, Bengaluru)

The meeting ended with vote of thanks offered by Dr. K. Vijayan, Scientist-D, RCS, CO, Bengaluru to the Chair and other participants.


23.11.2020
Dr.R.K.Mishra
Director [Tech]

Date: 23.11.2020
Place: Bengaluru

List of participants in the 4th meeting of the Working Group on the utilization of seri by-products held through webex platform on 22.09.2020

- 1) Dr. R. K. Mishra, Director [Tech.], CSB, Bengaluru
- 2) Dr. Pankaj Tewary, Director, CSR&TI, CSB, Mysuru
- 3) Dr. Subash V Naik, Director, CSTRI, CSB, Bengaluru
- 4) Dr. Jalaja S Kumar, Director (i/c), CMER&TI, Lahdoigarh
- 5) Dr. K. Sathyanarayana, Scientist-D, RCS, CSB, Bengaluru
- 6) Dr. K. Vijayan, Scientist-D, RCS, CSB, Bengaluru
- 7) Dr. K. Ponnuruvelu, Scientist-D, SBRL, Kodathi
- 8) Dr. Jagannathan, Scientist-D, CSTRI, CSB, Bengaluru
- 9) Dr. Manthira Murthy, Scientist-D, CSR&TI, CSB, Mysuru
- 10) Sh. Nazeer Ahmed Saheb, Scientist-D, RCS, CSB, Bengaluru
- 11) Dr. Mahananda Chutia, Scientist-D, CMER&TI, Lahdoigarh
- 12) Dr. Karambeer Jena, Scientist-D, CTR&TI, CSB, Ranchi
- 13) Dr. Prashanth Sangannavar, Scientist-C, RCS, CSB, Bengaluru
- 14) Dr. Tulsi Naik, Scientist-C, SBRL, Kodathi