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EDUCATIONAL QUALIFICATION

Ph.D. in Sericulture entitled “*Techno-economic analysis of commercial chawki rearing and its impact on silkworm cocoon productivity and quality*” awarded by University of Mysore, 2008.

EXPERTISE:

- ❖ Experience: >34 years experience in Bivoltine Sericulture, Seed Research, Seed Technology and Extension Research.
- ❖ Remained associated in 14 projects of CSB, DST, JICA and DBT.
- ❖ Silkworm rearing technologies developed for new CSR hybrids and innovation of rearing equipments and mountages.
- ❖ Expertise in Rearing Technology and Innovation,
- ❖ Counterpart in PEBS Project of Japanese International Cooperation Agency
- ❖ Excellency in the implementation of the Institute Village Linkage Programme
- ❖ Appreciation received for popularizing Bivoltine Sericulture Technology in the South India.
- ❖ Established commercial Chawki Rearing Centres (CRC) in Arkalgud, Karnataka under JICA project.

Technologies, Varieties, products, concepts, methodologies developed and disseminated:

- ❖ Developed Technology To Enhance The Egg Laying For Bivoltine Hybrids: Improved production through enhancement 10.6 g of extra eggs by weight per kg of Bivoltine cocoons through host plant volatile application. Highly beneficial for Silkworm seed production centers through improvement in egg yield (***Patent application under process***).
- ❖ Commercial Chawki Rearing Technology: A model chawki rearing technology of brushing 1,60,000 dfls in 32 crops/year/2 acreage of mulberry garden was developed. Supplied chawki to farmers & got 65 kg cocoon yield per dfl. Contributed towards development of 25 CRCs.
- ❖ Commercial Chawki technology developed for leaf & shootlet feeding exclusively for Chawki garden of S36 & V1 varieties.

- ❖ Mountages and Mounting Technology: Shoot rearing rack mountages and Vertical fixed mountages for self mounting brought reduced defective cocoon from 13% to 5%. Successful adaptation into CDP programme.
- ❖ Development of New Plastic Rotary Mountages: Durable and repeatable usability, easy handling for cleaning, smooth and equally distributed complete disinfection equipped moutage was developed towards improving cocoon quality.
- ❖ Pedal Operated Cocoon Harvester: Environment friendly, reduced time (about 70%), pedal operated cocoon harvester adopted by the JICA farmers and popularized in the field.
- ❖ Manual Mature Worm Separator: have quick and high adaptation at farmer's level; low expenditures in electricity, labour and time, environment friendly.
- ❖ New Loose Egg Brushing Net: Minimizes the larval loss during the loose egg brushing from the loose egg frames. Use of 35% HDPE monofilament shade net saves 50% time, cost on net and labour during brushing.
- ❖ Loose Egg Incubation Cum Transportation Bag: Easy and cheapest technology adopted for transportation of loose eggs under black boxing condition without effecting the environmental conditions.
- ❖ Long-term Preservation Of Multivoltine Eggs: Preservation of 9 multivoltine breeds for 35-40 days under double step method for long-term preservation. Technology recommended to Basic seed farms and Germplasm to get improved productivity; to reduce the number of cycles & quality eggs.

Recognized ideas/concepts/outputs/presentations at national and International level:

- ❖ Achievements and impact of the project for Strengthening Extension System for Bivoltine Sericulture in India (PEBS)
- ❖ Mountages and mounting technology for Bivoltine sericulture
- ❖ Identification of mulberry host plant volatiles to stimulate egg laying in bivoltine hybrid of *Bombyx mori* L.: Development of a synthetic blend.
- ❖ Identification of potential host plant volatile blends and their influence on egg laying in Vanya (Muga & Eri) silk moth.
- ❖ Studies on emergence pattern and seed preservation techniques in Tasar silkworm (*Antheaea mylitta* D.).
- ❖ Recent trends for Sustainable Sericulture
- ❖ Sericulture Innovations - Before and Beyond

Capacity Building/Administration/Financial/In-charge/Responsibilities so far in Brief

- ❖ Faculty Member for Post-graduation courses in University of Mysore.
- ❖ Faculty member for many training programmes for DSTM, capsule trainings, ISDS,
- ❖ Development & popularization of women friendly technology for avoiding drudgery in DST funded 600 women farmers trained.
- ❖ Engagement in enlightenment and group discussions of Karnataka, A.P and Tamil Nadu & CSB programmes.
- ❖ Delivered many Technology talks in training schools i.e. Seed Technology Laboratory for DOS officials, farmers, Registered Seed Producers on Seed crop rearing, Seed production techniques
- ❖ Invited Expert by the Department of Sericulture, Sericultural Training Institutes and ATMA programme.
- ❖ Remained actively engaged in TOT programmes conducted by the Institute with the operation of DOS Karnataka DOS officials and farmers.
- ❖ Forecasting & Forewarning through SMS for Silkworm Disease Management in silkworm seed technology.

Publication: Published more than 100 Research/ Review Articles, Book Chapters, Books, Popular Articles, Success stores. Some of the selected publication are:

Research

- ❖ Vijaya Kumari K.M., Kumar A., Shabnam, A.A., Sangannavar, P., Gogoi D.K., Jigyasu, D. K. 2021. A ready reckoner for nutrient management in Som (*Persea bombycina*). CMER&TI, Bulletin 01.
- ❖ Vijaya Kumari, K.M.; Sarava Kumar R.; Sudhakara Rao, P.; Sailaja, B.; Vidynmala, S.; Mishra, R.K. 2019. Multiplication of popular multivoltine races of eastern zone and their performance under south Indian conditions. J. Int. Acad. Res. 7, (5):31-37.
- ❖ Vijaya Kumari K.M., Sudhakara Rao P.; Sarava kumar R., Vidynmala S., Mishra, R.K. 2019. Maintenance of popular multivoltine races for seed cocoon generation and their performance at basic seed farms, Int. J. Curr. Microbiol. App. Sci 8(4):2031-2037
- ❖ Sudhakara Rao P.; Vijaya Kumari K.M.; Sailaja, B., Vishaka G.V., Vidynmala S., R.K.Mishra, 2019, Studies on egg laying behaviour and fecundity under different stress conditions in tropical Tasar silk moth. Int. J. Curr. Microbiol. App. Sci 8(9): 1182-1187
- ❖ Vijaya Kumari K.M., JayaPrakash P., Vemananda Reddy G. Jayappa T. 2016. Studies on double refrigeration of polyvoltine eggs for long term preservation in silkworm, *Bombyx mori*, L., for tropics. Ind. J. Seric., 55(1-2), 38-42.

- ❖ Vijaya Kumari K.M., Rajan R.K.2005. An Economic analysis of factors influencing income from commercial chawki rearing centres in Karnataka. Ind. J. Seric., 44(2), 208-211
- ❖ Singh G.B., Vijaya Kumari K.M., Srinivasa Babu G.K. Dandin S.B. 2006. Development of Commercial Chawki rearing model and its success and economics. J. Rural Tech. 2(5).

Books

- ❖ Vijaya Kumari K.M., Sudhakara Rao P. 2003. Bivoltine Pattu Parisrama Sankethika Parignanam Pi Rythulu Tarachuga Adigae Prasnalu. JICA (PEBS), 1-60 (Telgu).
- ❖ Vijaya Kumari K.M., Sudhakara Rao P. 2003. Pattu Gulla Pariseelana Yeratam Mariyu Gulla Nanyathanu Vrudhi Cheyutaku Anusarinchavalasina Padhathulu. JICA(PEBS), 1-60 (Telgu).
- ❖ Balavenkata subbaih M., Vijaya Kumari K.M. 2003. Pattupurugula Rogala Nivarana Pi Visadeekarinchabadina Schitra Pusthakam. JICA(PEBS), 1-107 (Telgu).
- ❖ Viajaya Kumari K.M.Nanyamayina 2006. Bivoltine Pattu Gulla Koraku Chandrikalu. JICA(PEBS). 1-14 (Telgu).

ICT work:

1. Central Silk Board, Bangalore (CSB) 2006. Hygiene and New Chawki Rearing (English)
2. Japanese International Cooperation Agency (JICA) 2006. Usage of Rotary Mountages (English)

(Dr. K. M. Vijaya Kumari)