



SERI NEWS

Quarterly Newsletter of
CSRTI-Mysuru

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From the Director's Desk

Platinum Jubilee of Central Silk Board

The Central Silk Board (CSB) has made great contributions to the silk industry in India ever since it was established by an Act of Parliament on September 20, 1948. The organisation has been striving forward with a clear vision to make our country *numero uno* in silk production. Sericulture has come a long way from a low-productive cottage enterprise to a highly remunerative and productive enterprise, driving millions of small and medium sericulture farmers to a higher economic pedestal. CSB has envisaged varied flagship programmes across the country not only in the mulberry sericulture but also in the *Vanya* silk sector.

As a Premier research institute engrossed in tropical sericulture, CSRTI-Mysuru has been at the forefront of implementing highly ambitious and crucial programmes of the CSB. The Institute has developed many mulberry varieties and multivoltine and bivoltine silkworm hybrids with specific as well as productive traits. The Institute also made its mark in developing highly acclaimed technologies for crop improvement and crop protection, which really has given a fillip to the productivity of mulberry silk production. The equipment, machinery, tools, *etc.*, developed by the Institute have helped the industry in reducing the cost of production, achieving higher production & productivity, and even addressing the manpower shortage in different aspects of sericulture.

The role of the Institute in the transfer of technology through various ECPs and HRD through capacity building programmes has been well acclaimed. This has given a great impulse to the sericulture industry in augmenting the income of farmers. Though silk production and productivity have shown tremendous improvement over a period of time, there remains a great scope for further improvement on this front. There is a need to develop game-changing technologies that could revolutionise the sericulture industry and, in the process, place India on top of the world in silk production and export. By taking advantage of highly developed information technology, more efficient, field compatible technologies should be produced and propagated at field level with highest priority towards achieving the focused target.

The 75 years of CSB and the Platinum Jubilee celebrations are an opportunity to develop many more effective sustainable technologies and consolidate the achievements made by CSRTI-Mysuru. The Platinum Jubilee reminds us of the responsibilities of achieving higher goals, just as the great poet Robert Frost says:

***The woods are lovely, dark and deep,
But I have promises to keep,
And miles to go before I sleep,
And miles to go before I sleep.***

Silk Day

On 20.09.2023, CSRTI-Mysuru celebrated Silk Day to commemorate the establishment of the Central Silk Board and the inauguration of the Platinum Jubilee. The silk pledge was administered by the Director to the participants. Dr. R.G. Geetha Devi, retired joint director from CSRTI-Mysuru, was the chief guest and delivered a special address on the enhancement of silk production with the latest improved technologies. Director, CSRTI-Mysuru Dr. S. Gandhi Doss, delivered the presidential speech. Staff and children performed cultural programs. ITEC trainees, farmers, reelers, scientists, staff, research fellows, project assistants, and workers have participated.



Reshme Krishmimela at Koppal



CSRTI-Mysuru in association with Dept. of Sericulture, Karnataka, organized a *Reshme Krishimela* at Koppal on 27th July 2023. It was organized with the theme, **Sericulture - way to prosperity**, to enlighten the farmers of its potential to increase farmers' income. A Sericulture exhibition was also organized on the occasion. Various technologies *viz.*, soil testing, compost preparation, mulberry varieties, silkworm hybrids, pest and disease management for mulberry and silkworm were exhibited. Further, by-products such as paper, cellulose, chitosan, *etc.*, were also exhibited. Silk sarees, garments, handicrafts made of cocoons and silk have attracted the visitors. Silk mark, Biosin, Sericare Maruti Traders, Helpline Modicare, AJ Organic, Chetana Kaimagga and Vasudha Enterprises participated in the exhibition. More than 1000 farmers from different northern districts of Karnataka participated.

The *Krishimela* was inaugurated by Smt. Shivaganga S Bhumakkanavara, the Chairperson of Koppal Municipal Council. She expressed that Koppal district have favourable conditions to increase the bivoltine cocoon production. The Exhibition was inaugurated by Smt. Hemalatha Nayaka, Hon'ble MLC, Koppal, who hoped that the programme will motivate the farmers in this area to take up sericulture at larger scale, which helps to increase productivity. Dr. S. Gandhi Doss, Director, CSRTI-Mysuru in his welcome address pointed out that, India has a promising potential to become number one silk producing country in the world.

On the occasion, six technology bulletins, one booklet entitled, **Principles and Practices for tree mulberry cultivation** and the first issue of the Quarterly Newsletter **Seri-News** was also released. Smt. Sandhya and Smt. Vijaya Kumari, Joint Directors, DoS, Bengaluru informed about the schemes and subsidies available for the sericulture farmers. Sri Nagappa Biradar, Joint Director, Kalaburgi requested to the scientists of CSRTI-Mysuru to find out solutions to the problem of non-spinning syndrome of silkworms. He also stressed the need for region specific mulberry varieties and silkworm races.

Sri Anjanappa, Deputy Director, Koppal has told that the cocoon reared in the Koppal are fetching high price and farmers are getting more profit. Sri Channabasaiah Vastrada, President of Koppal Farmers Association expressed his happiness for organizing the Reshme Krishimela at Koppal.

During the technical session, the queries raised by the farmers on various aspects were addressed by Dr. K. B. Chandrasekhar, Dr. M. K. Raghunadh and Dr. G. S. Arunkumar. The program concluded with the vote of thanks by Dr. R. Bhagya, Scientist-D & Head SEEM (Div.), CSRTI Mysuru.



Technology for Detection of Pesticides in Mulberry Garden

L. Satish, S. Mahiba Helen, L. Kusuma, K. Varshini, H.R. Raveendranath, S. Gandhi Doss

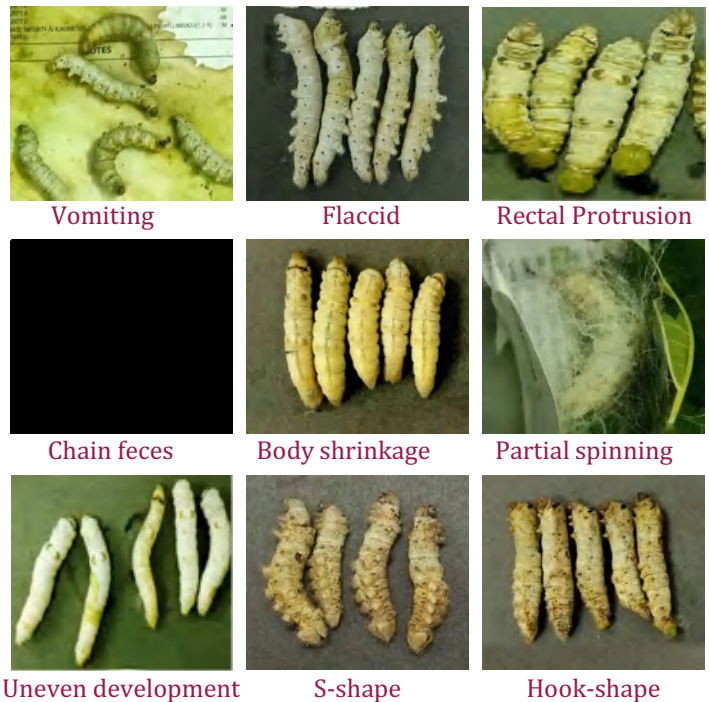
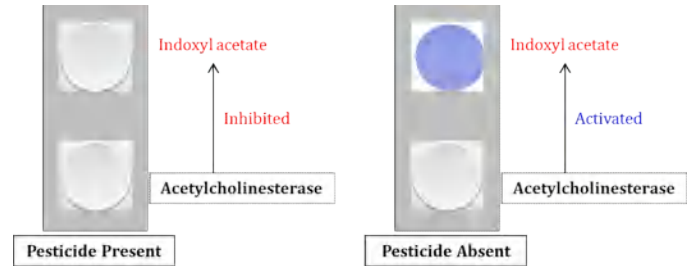
Silkworm crop loss due to pesticide toxicity is rising at an alarming rate. The pesticide toxicity to silkworms can happen by two means:

- Many new entrepreneurs and farmers are shifting to mulberry sericulture from other agricultural crops. However, previous overuse of pesticides would have led to the accumulation of the same in the soil of mulberry gardens, thereby affecting silkworm rearing.
- Insecticides are used to protect standing crops from lepidopteran pests. When mulberry gardens are in the vicinity of these crops, these pesticides are drifted by air to the mulberry garden and thus accumulate in the mulberry leaves and soil, affecting the silkworm crop, which may result in total or partial loss and, in some cases, lead to non-spinning.

Farmers who shifted from other agricultural crops to mulberry cultivation are facing silkworm crop loss, and in some cases, it may also be attributed to the usage of restricted pesticides. In this regard, CSRTI-Mysuru conducted silkworm rearing bioassays with a few commercially available pesticides (Bifenthrin 10% EC, Flubendiamide 39.35% SC, Buprofenzin 23.1% + Fipronil 3.85% SC, Emamectin Benzoate 5% SG, Chlorantr-aniliprole 18.5% SC, Imida-clopid 17.8% EC, and Fenpropathrin 30% EC). The pesticide concentrations in the study ranged from recommended field doses to 25-fold reduced concentrations.

The pesticide effect was observed, evident with the larval symptoms like vomiting, flaccid body, rectal protrusion, chain faeces, body shrinkage, partially and non-spinning, and also mortality (S-shape and hook shape). Non-spinning was observed in some of the specific concentrations of all the pesticides tested.

In view of this, CSRTI-Mysuru, developed a new technology in the form of a paper strip method for semi-qualitative detection of pesticides in mulberry leaves and soil. This paper strip method is a cost-effective and user-friendly technology that could help farmers in the early detection of pesticides in soil and mulberry leaves, thereby preventing silkworm crop loss due to pesticides before taking up the rearing.



Spotted



Tasar cocoons were spotted on the *Tamarindus indica* (tamarind) tree in Hagaribomannahalli village of Vijayanagara district, on 04.07.2023 and BG Kere village of Chitradurga district on 02.09.2023. This indicates the possibility of tasar silk production in the region towards increasing the livelihood option in rural economy. Additionally, *Tamarindus indica* (tamarind) is also reported as a new host plant for tasar in India.

Report: Y. Srinivasulu & Mallikarjuna G.

Drive against Mites and Thrips

#	Date	Venue	Cluster	District	Participants
RSRS-Kodathi					
1	18.07.23	Dharmapura	Bengaluru Rural	Bangalore Rural	52
2	18.07.23	Bommanahalli	Bengaluru Rural	Bangalore Rural	19
3	19.07.23	Attibele	Bengaluru Rural	Bangalore Urban	40
4	20.07.23	Hosahudya	Bengaluru Rural	Bangalore Rural	75
5	21.07.23	Gundrahalli	Bengaluru Rural	Bangalore Rural	17
6	21.07.23	Karahalli	Bengaluru Rural	Bangalore Rural	23
7	24.07.23	Vyskurahalli	Bengaluru Rural	Bangalore Rural	56
8	17.07.23	Alagadakalu	Ramanagaram	Ramanagaram	30
9	17.07.23	Aralagadakalu	Ramanagaram	Ramanagaram	25
10	21.07.23	Kaggalahalli	Ramanagaram	Ramanagaram	30
Sub-total					367
REC-Madvivala					
11	15.06.23	KVK, Kolar	Shapur	Kolar	75
12	21.06.23	Ittasandra	Hoskote	Bangalore Rural	56
13	28.06.23	KVK Kolar	Shapur	Kolar	75
14	12.07.23	Nelavagilu	Hoskote	Bangalore Rural	50
15	12.07.23	Dhalasagere	Hoskote	Bangalore Rural	20
16	13.07.23	KaamanaAgrahara	Doddaballapur	Bangalore Rural	60
17	13.07.23	Talagavaara	Doddaballapur	Bangalore Rural	55
18	14.07.23	KVK Kolar	Kurudumalai	Kolar Dist	50
19	14.07.23	Gaddekannur	Shapur	Kolar Dist	25
20	17.07.23	Hegdehalli	Doddaballapur	Bangalore Rural	44
11	17.07.23	Gangasandra	Doddaballapur	Bangalore Rural	25
22	18.07.23	Dharmapura	Devanahalli	Bangalore Rural	52
23	18.07.23	Bommanahalli	Devanahalli	Bangalore Rural	19
24	19.07.23	Thorehalli	Tekal	Kolar	62
25	20.07.23	Gorinabele	Nelamangala	Bangalore Rural	41
26	24.07.23	Dhalasanur	Yeldur	Kolar	32
27	25.07.23	Bettakote	Devanahalli	Bangalore Rural	45
28	25.07.23	Channahalli	Devanahalli	Bangalore Rural	22
29	27.07.23	Thimmanahalli	Devanahalli	Bangalore Rural	26
30	27.07.23	Koyira	Devanahalli	Bangalore Rural	25
31	28.07.23	KVK Kolar	Shapur	Kolar	71
32	08.09.23	Kuppahalli	Ithandahalli	Kolar	132
33	12.09.23	KVK Kolar	Shapur	Kolar	78
Sub-total					1,140
REC Su-Maddur					
34	11.07.23	K,ghatta & C.doddi	Bidarkote	Malavalli	30
35	12.07.23	A.doddi & M.linga	Bidarkote	Malavalli	24
36	14.07.23	Dundanhalli	Thoresettahalli	Malavalli	26
37	18.07.23	Dhabballi	D.Halasaahalli	Malavalli	30
38	18.07.23	Konnapura	Halaguru	Malavalli	33
39	19.07.23	Gajanuru	Gajanuru	Malavalli	30
40	19.07.23	Kundur	Purigala	Malavalli	31
Sub-total					204
REC-Chitradurga					
41	03.07.23	R. sasagara, Segadi	Kudligi	Vijayanagara	55
42	04.07.23	HB Hally, G. halli	KB Halli	Bellari	50
43	05.07.23	Bryapura, K'hvara	Haveri	Haveri	65
44	17.07.23	Anabur, Hosakere	Davanagere	Davanagere	80
45	19.07.23	Denehalli, H. Hally	Davanagere	Davanagere	70
46	20.07.23	Mallahally	Hiriyur	Chitradurga	25
Sub-total					345
G. Total					2056

Thrips (Class: insecta) and mites (Class: Arachnida) have attained the status of major mulberry pests in recent years in all the mulberry cultivating areas of south India. They are very minute in size, and both suck the sap from the leaves, leading to deterioration of the quality of the leaf. Mites are usually confined to the topmost leaves, whereas thrips occupy the next subsequent leaves. Moreover, mite infestation leads to the curling of apical leaves and the subsequent drying of the apical stem portion. The entire apical stem portion, including leaves, gets dried without any moisture or nutrients. The infestation further creates physiological stress, leading to the bearing of fresh and tender side branches, which cause grasserie disease in silkworms.

Since the agricultural and horticultural crops adjacent to mulberry are being sprayed with various pesticides with high concentrations, these sucking pests have found mulberry to be the safest place, as very few chemicals are being used in the latter. Hence, the situation became alarming, and some urgent measures had to be taken in order to save the crop from these deadly pests. Compared to thrips, the damage and further consequences were really alarming in the case of mites, and hence a special drive was started by CSRTI, CSB, Mysore in coordination with the respective state department of sericulture (DoS) to combat the same by conducting a series of awareness programmes in the entire south India.

Package followed

- 10-12 days after pruning (DAP), spray water with force so as to dislodge the pest stages of adults & nymphs.
- 15 DAP spray Intrepid @1.5 ml/lit (20 days safety period).
- 22 DAP, spray wettable sulphur @3 to 5g/lit, to fall on back side of leaves.

Repeat the spray with sulphur at every 8-10 days. Sulphur can be sprayed even 4 to 5 days before the receipt of chawki worms.

Note:

- If both mites and leaf roller observed, use Intrepid @1.5 ml/lit (20 days safety period)
- If only mites, use kunoichi @1.5 ml/lit (20 days safety period)
- If both mites & thrips observed, mix and spray Rogor (2 ml/lit; safety period 20 days) and Sulphur (3g/lit) and use as narrated above.

Drive against Mites and Thrips



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ಬೈವೋಲಿನ್ ಗೂಡು ಬೆಳೆಯುವ ಕಡೆ ಗಮನಹರಿಸಿ

ವಿಜಯಪುರ, ಜೂ.18: ರೈತರು ಬೈವೋಲಿನ್ ಗೂಡು ಬೆಳೆಯುವ ಕಡೆಗೆ ಹೆಚ್ಚು ಗಮನಹರಿಸಬೇಕು. ಮಿಶ್ರ ತಳ ಗೂಡಿಗೆ ಸಮೃದ್ಧ ಬೆಳೆದಲ್ಲಿ ಮೂತ್ರ, ಮೂರುಕುಟ್ಟಿಯಿಂದ ಎಂದು ರೋಗಕ್ಕೆ ಪ್ರತಿ ಉಪಯೋಗ ತಜ್ಞರಾದ ಹೇಳಿದರು.

ಹೋಲುವುದು ಧರ್ಮಪುರ ಗ್ರಾಮದಲ್ಲಿ ರಜನ್ ಇಲಾಖೆಯ ಹೊಯಿಂದ ಪಿಪ್ಪಳೇರಿ ತೋಟಗಾರಿಕೆ ಇಲಾಖೆಯ ಪ್ರೊ.ಮತ್ತು ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಕುಂಬು, ಉಪನ್ಯಾಸಕರಾದ ಪ್ರಾಂಶುಪಾಲಕರಾದ ಹಾಗೂ ತಾಂತ್ರಿಕ ಸೇವಾ ಕೇಂದ್ರದಿಂದ ರೋಗ ಕ್ರಮ ಕೈಗೊಳ್ಳಬೇಕೆಂದು ಆಹಾರ ಮಾಡುವುದು.

ರೈತರ ಆಧಾರವನ್ನು ದ್ವಿಗುಣ ಗೊಳಿಸಬೇಕೆಂದು ಪ್ರಧಾನಿ ಮೊದಲಾದವರಾಗಿದೆ. ಆದರೆ, ಭೂಮಿಯನ್ನು ಹಿಡಿಯುವುದು ಇದುವರೆಗೆ ಕಡಿಮೆಯಾಗಿದೆ.

ಭೂಮಿಯಲ್ಲಿ ಕಡಿಮೆ ಬಂಡವಾಳದಲ್ಲಿ ಹೆಚ್ಚು ಉಳುವು ಬಡೆಯುವಂತಹ ತಂತ್ರಜ್ಞಾನವನ್ನು ಬಳಸಿ ಮಾಡಿಕೊಂಡು, ಹೆಚ್ಚು ಉತ್ಪಾದನೆಯನ್ನು ಗಳಿಸಬೇಕೆಂದು ರೈತರ ಅಭಿಪ್ರಾಯವಾಗಿದೆ. ಇದಕ್ಕೆ ಅಂತರಾಷ್ಟ್ರೀಯ ಮೂರುಕುಟ್ಟಿಯಲ್ಲಿಯೂ ಹೆಚ್ಚು ಬೇಡಿಕೆಯನ್ನು ರೈತರು ಅಭ್ಯಾಸಿಸಲು ನಡವಳಿಯಾಗಿದೆ.

ವಿಜಯಪುರ ರೈತರನ್ನು ಉದ್ದೇಶಿಸಿ ಮಾತನಾಡಿ, ಫಿಲ್ಮ್ ರೋಗ ಕಡಿಮೆಯಾದ ಬರುವ ದಿನಗಳಾಗಿದೆ. ಇತ್ತೀಚೆಗೆ ಒಮ್ಮಾನೇಲೆ ತೋಟಗಾರಿಕೆ ಕಾಲೇಜಿನಿಂದ ರೈತರಿಗೆ ಆಹಾರ ಪ್ರಮಾಣದಲ್ಲಿ ಸಾಕ್ಷಿಯಾಗುತ್ತಿದೆ. ಈ ರೀತಿಯಲ್ಲಿ ತಜ್ಞರನ್ನು ನೋಡುವುದು ಮತ್ತು ಗುಣಮಟ್ಟ 40-50 ರಷ್ಟು ಕಡಿಮೆಯಾಗುತ್ತದೆ. ರೈತರು, ಹಿಮ್ಮೆಟ್ಟಲೇ ಕಡಿಮೆಯಾಗಿದೆ 14-16



The drive was highly successful, as the thrips and mites incidence has reduced drastically. The farmers were sensitized in such a way that the message has spread far and wide, and the technological intervention by the CSRTI-Mysuru is yet another milestone towards contributing to the sericulture industry by the Institute.

Silkworm Pupae as Poultry Feed

Poultry feed is a highly important input for a profitable poultry business. Silkworm pupae are a by-product of the sericulture industry and can cause eutrophication after being drained into the freshwater body. The foul smell of the degrading pupae is also another issue. However, it can be used as feed in the poultry industry as silkworm pupae meal (SWPM). It is protein-rich, and its crude protein content ranges from 50% to 80% (defatted meal). The lysine (6-7% of the protein) and methionine (2-3% of the protein) contents are particularly high, which are essential for poultry growth. Therefore, SWPM can be used in poultry, which is a better way to reduce the environmental impact of the silk industry.



Report: Azad Gull

Director Visits RECs



28.07.23 - Koppal



10.08.23 - Gobichettipalayam



10.08.23 - Samayanallur

Events



04.07.2023: Guest lecture on **Formulation of research projects for funding from external agencies of GOI and new innovations for improvement of mulberry sericulture** by Dr. K Satyanarayana, Director (Rtd.), Central Silk Board.



10.07.2023: Dr. N. Mal Reddy, Sci. Rtd., presented a talk on **Technical aspects of cocoon selection & maintenance of breeds**. He also conducted a practical session on selection of cocoons in the breeding laboratory.



15.07.2023: Dr. Y. Thirupathaiiah, Scientist-C from CSRTI, Mysuru was guest of honour for International symposium on **Emerging materials for sustainable energy and environment-2023 (EMSEE-2023)** at JSS Science and Technology University, Mysuru and talked *Sericulture rearing waste as an emerging material for biorefineries*.

National Handlooms Day

Dr. S. Gandhi Doss, Director, CSRTI-Mysuru attended the National Handlooms Day celebrations at New Delhi on 7th August 2023. CSRTI-Mysuru celebrated the day by inviting Sri T.V. Dileep Babu, Consultant, Chamundi Silk, Mysuru; Sri V. Rajanna, Former President, Handloom Weavers Association, Kollegal and Smt. Ratnamma, President of Grama Panchayat, Saraguru taluk.



Pattubadi Programmes

The *Pattubadi* programmes were organized for sericulture farmers in different villages of Andhra Pradesh by DoS, AP, under *Rashtriya Krishi Vikas Yojana* (RKVY) scheme for sericulture growth. Dr. M. Venkatachalapathi sensitized farmers on different sericulture technologies on 14.07.23, 19.07.23, 22.07.23, 24.07.23, 25.07.23, 02.08.23, 05.08.23 and 09.08.23. Similarly, Dr. K. P. Kiran Kumar also participated and took classes on 02.08.23 at Garmaykalapalli village.



Innovations/Findings



Dusting equipment for chawki and late age worms



Manual cum motor operated table mounted deflossing machine and humidifier

REC Samayanallur organised **AGRI INNOVA 2023** - International Conference on Recent Innovations and Technological Advancements in Agriculture, Horticulture, Agricultural Engineering, Sericulture, Food Science, Biotechnology and Rural Entrepreneurship-2023, on August 11-12, 2023 in association with the Indian Agriculture College (Affiliated to TNAU, Coimbatore) Near Kanyakumari, Rathapuram, Tirunelveli Dt., Tamil Nadu and Joy University, Vadakkangulam, Tirunelveli Dt., TN; METVSO Research Foundation, Madurai, TN; Periyakulam Horti Business Incubation Forum (EDII-PHBIF), HC&RI, TNAU, Periyakulam, Theni Dt., TN; Killikulam Agri Business Incubation Forum (EDII-KABIF), AC&RI, TNAU, Killikulam, Thoothukudi Dt., TN; Agri Amigos Private Limited, Theni, TN and VAPS Nodal Training Institute, AC & ABC Training Centre, Madurai, TN.



The Director and Scientists of CSRTI-Mysuru participated and Director delivered Key note address during the inaugural ceremony and Scientists made oral presentations during Sericulture session chaired by Dr. S. Gandhi Doss, Director CSRTI-Mysuru.



Phone-in Programmes

Dr. J. B. Narendra Kumar, Sc-D, REC-Madivala, Kolar participated in live Phone-in Programme on Doordarshan (Chandana), Bengaluru on 20.07.2023 on **Management of Mites and Thrips in Mulberry**. He interacted with sericulturists of Karnataka state and answered their queries on the subject. The programme was well received by the sericulture farmers and has helped them to resolve the problems faced by them in managing the menace.



Phone-in programme, *Krishiranga* organized by Akashavani, Mysuru. Dr. S. Gandhi Doss, Director and Dr. K. B. Chandrasekhar, Sci-D participated and answered the questions raised by sericulture farmers on 03.08.2023.



“Hello *Ananta Raitanna*” Phone-in live programme was broadcasted by AIR Ananthapur on 17.08.2023. Dr. K. P. Kirankumar, Sci-D, RSRs-Anantapur has answered the questions raised by sericulture farmers of Andhra Pradesh on mulberry cultivation practices and silkworm rearing.





Colours of Independence



Executive Editor
Dr. S. Gandhi Doss

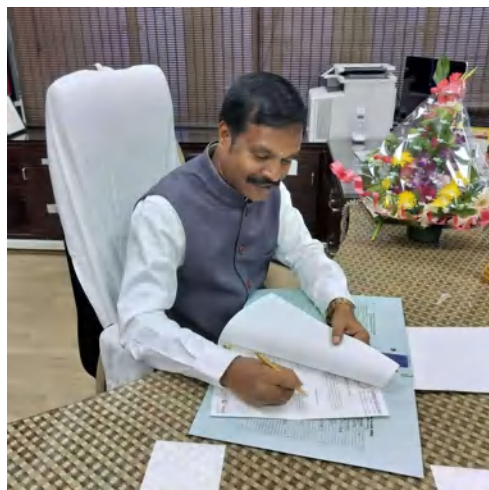
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Member Secretary Assumes Office



Sri P. Sivakumar, IFS assumed office as the 21st Member Secretary of Central Silk Board, on the 16th October 2023. CSRTI-Mysuru welcomes the new Member Secretary to lead the great organization to new heights.