



*Global Excellence in Cotton Technology Monthly Bulletin, Volume 12, December 2025*

## **ICAR-CIRCOT 102<sup>nd</sup> Foundation Day celebrated on December 3, 2025.**

ICAR-CIRCOT, Mumbai, celebrated 102<sup>nd</sup> Foundation Day and Agricultural Education Day on December 3, 2025. Ms. Roop Rashi, CEO, KVIC, GoI, graced the occasion as the Special Guest at the ICAR-CIRCOT premises, Mumbai. Dr. S. N. Jha, DDG (Agril. Engg.), as Chief Guest, Dr. C. D. Mayee, Former Chairman, ASRB, as Special Guest, and Dr. K. Narsaiah, ADG (PE), as Guest of Honour participated and addressed the gathering in virtual mode. About 30 retired employees of ICAR-CIRCOT also attended the celebration. During the occasion, a brainstorming session on “Traceability, Transparency and Sustainability in the Cotton Value Chain” was organized in hybrid mode with the participation of about seventy including cotton value chain experts, industry representatives, entrepreneurs, farmers, and other stakeholders.



*Edited by: S.K. Shukla, G.T.V. Prabu, C. Sundaramoorthy, Bindu Venugopal & Anand Jadhav*

# Process Protocol Developed

## Optimized Cottonseed Processing Protocol for Enhanced Oil Recovery and Better Cake Quality

ICAR–CIRCOT has developed an optimized cottonseed processing protocol to enhance oil recovery in industrial expeller units. Trials conducted in commercial oil mills in Maharashtra, Haryana, and Punjab revealed that maintaining cottonseed moisture at 8–10% and operating a 9-bolt screw expeller at lower speeds (15–16 rpm) significantly improves oil yield. These conditions also help maintain low free fatty acid (FFA) levels in crude oil, thereby reducing chemical requirements during refining. In contrast, high seed moisture (>14%) or higher screw speeds (>17 rpm) in both 9-bolt and 12-bolt expellers resulted in reduced oil recovery and increased FFA levels. The protein content of the residual cottonseed cake ranged from 20.6% to 25.1% (dry basis), with the highest values observed under moderate moisture and screw-speed conditions. The study recommends conditioning cottonseed to moderate moisture levels and operating expellers at the lower end of the permissible screw speed range to obtain higher oil recovery and high quality protein in the cake, benefiting both the edible oil and animal feed industries.

## Farmers' Day Celebration



GTC, Nagpur organized a programme to commemorate National Farmers' Day on December 23, 2025, in association with CITI-CDRA, Mumbai and TEXPROCIL, Mumbai. This event was part of the Kisan Samman Diwas organized by ICAR through online mode in which all the staff of ICAR-CIRCOT, Mumbai, GTC, Nagpur and regional stations and other stakeholders attended. About 200 participants attended the programme, including 130 farmers.



## Skill Development Program



ICAR-CIRCOT organized one day awareness-cum-training programme on “Cotton Fibre Quality” for the officials of Better Cotton Initiative on December 9, 2025. Total 22 participants attended the programme.

## Workshop Organized



ICAR-CIRCOT organized Kasturi Cotton Bharat Awareness programme in association with Karnataka Cotton Association, and TEXPROCIL on the theme “Sustainability of Indian Cotton with Special Reference to Kasturi Cotton” at Hubballi on December 20, 2025. Dr. S. K. Shukla, Director, ICAR-CIRCOT, delivered the keynote address on the Kasturi Cotton Bharat Programme, & Dr. A. S. M. Raja, Head, QEID, presented on “Kasturi Cotton Testing, Standards and Compliance.” Sixty three participants attended the programme.

## Awareness Program



An awareness program on “Clean Cotton Picking” under MGMG at Village Vathoda, Kalmeshwar, Nagpur on December 4, 2025. Twenty farmers participated.

## HRD Program



A Vigilance Awareness Training Programme was organized on December 29, 2025, during which Shri Neeraj Tanwar, Under Secretary (Vig-I), ICAR (Hqrs.), New Delhi, delivered lectures on “CCS (Conduct) Rules” and an “Overview of Vigilance, including CCS (CCA) Rules.”



A virtual lecture titled “कार्यालयीन कार्य हिंदी में आर्टिफिशियल इंटेलिजेंस का उपयोग” (Office Work in Hindi Using Artificial Intelligence) was delivered on December 29, 2025, by Shri Deepak Chouhan, Official Language Hindi Officer, Western Coalfields Limited, Nagpur, highlighting the use of Artificial Intelligence in official work in Hindi.

- Dr. Manoj Kumar, completed a one-month research stay (November 7–December 6, 2025) with Prof. Tuba Esatbeyoglu at the Institute of Food and One Health, Gottfried Wilhelm Leibniz University, Hannover, Germany, under the Small Immediate Need Grant (IGSTC-SING) project on the safety of cottonseed protein isolate for human consumption.

## Award and Recognition

- Dr. GTV Prabu received the Best Oral Paper Award for his research paper titled “Sustainable Nutrition through Electrospun Nanofiber Delivery System in Tomato for Improved Nutrient Absorption” and was also conferred the “Excellence in Research Award” in Textile Technology at the International Conference on Sustainable Innovations in Agriculture, Veterinary and Allied Sciences (SIAVAS-2025), jointly organized by the University of Agricultural Sciences (UAS), Raichur and NADCL, Baramulla, Jammu and Kashmir, held during December 29–31, 2025.
- Dr. G. Krishna Prasad chaired the “Technical Textiles” session during the 6<sup>th</sup> International Conference on Industrial Textiles – Products, Applications and Prospects (INDUTECH-2025), held on December 11–12, 2025, at PSG College of Technology, Coimbatore, India.
- Dr. A. S. M. Raja, Head, QEID, served as an expert member of the Research Evaluation Committee (REC) for the evaluation of project proposals received under Phase IV of the BIS R&D Project, pertaining to the Sectional Committee TXD 07 – Textiles, Specialty Chemicals and Dyestuffs, held on December 22, 2025.

## Publications

### RESEARCH PAPER

- Shubham Kalamkar, Arputharaj, A., Bharimalla, A.K., C.D. Souza, Rajesh Kadam, Vigneshwaran, N.\*, “Algal nanocellulose: a potential resource for advanced biomaterials”, Cellulose Chem. Technol., 59 (9-10), 1015-1031(2025). (NAAS rating: 7.30)

### PARTICIPATION AND PRESENTATION IN CONFERENCE

- Dr. K. Pandiyan presented a research paper entitled “Biocontrol potential of *Streptomyces herbinensis* against major phytopathogens in cotton” at the National Conference on “Transforming Plant Health Management: Integrating Traditional Practices with Modern Innovations for Global Food Security”, organized by Indian Phytopathological Society, PAJANCOA & RI, Karaikal, Puducherry, during 18–19 December 2025.
- Dr. GTV Prabu presented a research paper entitled “Sustainable Nutrition through Electrospun Nanofiber Delivery System in Tomato for Improved Nutrient Absorption” at the International Conference on Sustainable Innovations in Agriculture, Veterinary and Allied Sciences (SIAVAS-2025), during December 29–31, 2025.
- At the 6<sup>th</sup> International Conference on Industrial Textiles (INDUTECH 2025) held during December 11-12, 2025 at Coimbatore, the following research papers were presented,
- Dr. P. Jagajanantha, presented research paper entitled "Heat-Generating Conductive Yarns and their Applications in Smart Textiles".
- Dr. T. Senthilkumar, presented research paper entitled “Effect of Cotton Stalk Micro-Particles on the Mechanical Properties of Hybrid Epoxy Composites” -
- Dr. G. Krishna Prasad, presented research paper entitled “Sustainable development of para-aramid and naturally colored cotton blend gloves with enhanced protective performance”.

- Vigneshwaran, N., Arputharaj, A. (2025). Enhancing the Functionality of Natural Fiber Textiles Through In Situ Nanofinishing Techniques: A Sustainable and Cost-Effective Approach. In: Muthu, S.S. (eds) Sustainable Nano Textile Technology. Textile Science and Clothing Technology. Springer, Cham. [https://doi.org/10.1007/978-3-032-05902-4\\_2](https://doi.org/10.1007/978-3-032-05902-4_2).

### MoU / MoA Signed

- An MoU was signed with the Cotton Corporation of India Ltd. on December 10, 2025, for the analysis of fibre quality and trash content in cotton samples from fully pressed (FP) bales.

**During the 102nd Foundation Day of the Institute, held on December 3, 2025, the following MoU/ MoA were signed:**

- Development of Deep-Grooved Roller Forming Machine with M/s Bajaj Steel Industries Limited, Nagpur (Technology Transfer).
- Development of Miniature Ginning Machine with M/s Precision Tooling Engineers, Nagpur (Renewal – Technology Transfer).
- Development of Cotton Ginning Roller with Rubber Discs with M/s Rubber Engineers Enterprises, Kerala (Collaborative Research).
- Behavioural Study of Farmers, including harvesting and cotton disposal patterns across Northern, Central, and Southern Zones, with M/s The Cotton Corporation of India Limited, Mumbai (Consultancy Service).
- Mechanical Cotton Harvesting and Processing with M/s Fast Retailing India Material Corporation Pvt. Ltd., New Delhi (Consultancy Service).
- Eleven MoA were signed with startups under the ICAR-CIRCOT R-ABI Project for incubation and funding support on December 3, 2025.

### Educational Visits

- A group of 10 students from Rachana Sansad's School of Fashion and Textile Design, Prabhadevi, Mumbai visited the institute, on December 04, 2025.
- A group of 111 students from Kerala Agricultural University (KAU), College of Agriculture, Vellanikkara, Thrissur visited the institute, on December 19, 2025.

### Participation in Events

- Dr. N. Shanmugam participated in the 25<sup>th</sup> Meeting of TXD 14 – Textile Machinery and Accessories Sectional Committee, organized by Bureau of Indian Standards (BIS), New Delhi, on December 05, 2025 through virtual mode.
- Dr. T. Senthilkumar, participated in the 13<sup>th</sup> Technical Committee Meeting of the Clothtech Sectional Committee, organized by BIS, New Delhi, on 09 December 2025 through virtual mode.
- Dr. N. Vigneshwaran, attended the 25<sup>th</sup> Meeting of BIS – TXD 35: Technical Textiles for Agrotech Sectional Committee as a committee member on 17 December 2025 through online mode.
- Dr. N. Vigneshwaran, attended the 2nd IBSC Meeting of UPL Limited, Thane, held on 19 December 2025 through online mode, as a DBT nominee.
- Dr. T. Senthilkumar, participated in the 33rd Technical Committee Meeting of Physical Methods of Test Sectional Committee (TXD 01), organized by BIS, New Delhi, on December 22, 2025 through virtual mode.



## Exhibition Participated

ICAR-CIRCOT R-ABI showcased institute technologies at the National Agri Startup Expo 2025, held on December 05–06, 2025, at Dharwad, Karnataka.



The Institute participated in Kisan Agri Expo-2025, held during December 10–11, 2025, at Pune, along with its R-ABI agri-startups.



### Contact us

**Dr. S. K. Shukla**

Director

ICAR-Central Institute for Research on Cotton Technology  
Adenwala Road, Matunga, Mumbai 400019.

URL: <https://circot.icar.org.in/>

Email: [director-circot@icar.org.in](mailto:director-circot@icar.org.in)

Tel: 022-24146002

