



ICAR-CIRCOT

e-News



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Technology of the Month

Cotton-Based Protection Gloves for Rose Cultivation Farmers

Farmers involved in Rose cultivation sustain injuries to their hands, fingers, and forearms during pruning, flower plucking, cutting, or budding of briar root stocks. In an endeavor to address this issue, ICAR-CIRCOT has developed Cotton-Based Protection Gloves for Rose Cultivation Farmers. These protective gloves were fabricated from cotton knitted single jersey coated with nitrile rubber and were designed to provide complete coverage of fingers and extend to the elbow. The performance of the gloves among the Rose cultivation farmers has been initiated, in collaboration with ICAR-DFR Pune, where 212 different rose varieties are cultivated.

The gloves were provided to workers who regularly perform activities in rose cultivation, and they were instructed to carry out their regular activities using the protective gloves. The workers reported that the wear comfort of the glove was good and provided excellent protection against small and medium thorns, while offering average to good protection against heavy thorns. Also, no odour was detected from the gloves. Workers also reported that the gloves exhibited good flexibility without impeding the movement of fingers or hands during rose farming activities. Through the field trial, it was ascertained that the gloves effectively addressed the issues faced by rose cultivation farmers.

The request to develop such product was received from farmer stakeholders in response to the Institute technology posted in Twitter under the 'One Day, One Technology' initiative.

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Visit of Dr. Himanshu Pathak, Secretary (DARE) & Director General (ICAR) at GTC, ICAR-CIRCOT, Nagpur

Hon'ble Secretary (DARE) & Director General (ICAR), New Delhi, Dr. Himanshu Pathak along with Dr. Y.G. Prasad, Director, ICAR-Central Institute for Cotton Research (CICR), Nagpur and Dr. C. D. Mayee, Former Chairman, ASRB, New Delhi visited the Ginning Training Centre (GTC), Nagpur on January 20, 2025. Dr. K. Pandiyan, Sr. Scientist & Officer In-charge, GTC, warmly welcomed the Hon'ble Secretary, DARE and DG, ICAR, New Delhi and other dignitaries. Dr. S.K. Shukla, Director, ICAR-CIRCOT along with Dr. K. Pandiyan, Sr. Scientist & Officer In-charge, GTC briefed the institute's activities to the guests and demonstrated various technologies including Double Roller Gin, Rotary Knife Gin, Saw Gin, Particle board plant, biomass processing plant and facilities such as Fibre testing laboratory which are pertinent to cotton processing and value addition to its by-produce.

After the visit, an industry interface meeting was held wherein stakeholders from different industries of cotton value chain have participated in the meeting. Shri Lav Bajaj, Director, Bajaj Steel Industries Ltd., Nagpur; Shri Bhavesh Shah, President, Vidarbha Cotton Association (VCA), Sh. Anil Chouk, M/s. Vidarbha Sales, Sh. Rahul Bharatwal, Cotton trader and other stakeholders were present.

During the visit, the Office Main Gate & Security Room of Ginning Training Centre (GTC), Nagpur and Biomass Torrefaction Pilot Plant, funded by Central Power Research Institute (CPRI), Bengaluru under Ministry of Power to process the agro-residues for production of torrefied pellet for co-firing with coal in Thermal Power Plants (TPP), were inaugurated at the hands of Dr. Himanshu Pathak, Secretary, DARE and DG, ICAR, New Delhi.

On January 19, 2025, Dr. Pathak visited M/s. Shreekrishna Cotton Company, Saoner and witnessed the technologies developed by ICAR-CIRCOT, Mumbai such as Deep grooved roller and cotton seed dryer in collaboration with M/s. Bajaj Steel Industries Ltd., Nagpur.

Licensing of Technologies / MoUs signed

(i) MoU with Forech Mining and Construction International LLP, New Delhi was signed for 'Technical Textile Reinforced Rubber Composite Sheet for making ICAR Flexi Check Dam' on January 06, 2025.

(ii) Four MoUs signed with leading industry partners to address challenges in cotton seed collection and storage, viz: M/s. Farmtek Solutions, Nashik, M/s. Micro Sales India, Nashik, M/s. United Cotton Extract Pvt. Ltd., Malegaon, and M/s. Prakash Agro Plast, Nashik, on January 07, 2025.

(iii) MoU with M/s. Relegare Agro Life Bio Science Pvt. Ltd., Ahmednagar, for the licensing of 'Nano-Zinc Suspension Production Technology', on January 07, 2025.

(iv) MoU with M/s Zzwick Hygiene, New Delhi was signed for 'High Absorbency and Biodegradable non-woven based pad' on January 16, 2025

(v) MoU with M/s Vidarbha Sales, Nagpur was renewed on January 16, 2025 for commercialization of 'ICAR-CIRCOT Green Crematorium'.



Training on 'Smart Textiles and 3D Printing'

A 3-day training on 'Smart Textiles and 3D Printing' was organized during January 6-9, 2025 under the SCSP scheme of ICAR. This was aimed at upgrading the skills and expertise of the scheduled caste community in the field of smart textiles. The training programme covered a wide range of topics, including smart textiles, basic electronic components, high-performance fibers, core spinning, DREF spinning, cone winding, and composite development using conductive materials. It also included hands-on training in Arduino sensors, phase change materials, smart textile product development, 3D printing for prototype modeling, use of smart textiles in agriculture, and entrepreneurship development. A total of 16 participants, including 7 male and 9 female candidates from DKTE Society's Textile and Engineering Institute, Kolhapur (MH), India, attended the training programme.

Publications

1. R. Pandiselvam, M. Mahamutha Thazneem, M. R. Manikantan, Anjitha Jacob, S. V. Ramesh, Shameena Beegum. Transformative effects of infrared-assisted hot air drying on neera syrup concentrated coconut flakes: a comprehensive evaluation of physical properties, composition analysis and antioxidant profiles. *Journal of Food Measurement and Characterization* (2025) 19:199–209
2. Vigneshwaran, N. and Anagha Pawar, 2025 'Microbial electrolysis cells: a promising avenue for hydrogen production in India' *Current Science*, Vol. 128, No. 2, 25 Jan 2025, pg. 1-2.
3. Sharma, K., Choudhary, P., Majeed, A., Guleria, S., Kumar, M., Rana, A. K., & Rajauria, G. (2025). Cellulose based membranes, hydrogels and aerogels for water treatment application. *Industrial Crops and Products*, 225, 120474.
4. R. Pandiselvam, Rupa Krishnan, M. R. Manikantan, Anjitha Jacob, S. V. Ramesh, Shameena Beegum. 2024. Comparative analysis of biochemical composition of fried coconut chips: influence of thickness and oil type on nutritional attributes. *Journal of Food Measurement and Characterization* (2024) 18:10102–10108.
5. Pandiselvam, Sudharshana Sathyanath, M. R. Manikantan, S. V. Ramesh, P. P. Shameena Beegum, K. B. Hebbar. Physicochemical properties of coconut inflorescence sap (neera) under double wall open heating system. *Journal of Food Measurement and Characterization* (2024) 18:8555–8563.



Demonstration / Awareness Programmes

(1) An awareness programme was organized on January 08, 2025 on *Production of Quality Bales* under SCSP scheme at M/s Mahalaxmi Industries, Dhapewada, Nagpur. Total 25 people including farmers and workers of Ginning Industry were present in the programme.

(2) An awareness programme was organized on January 10, 2025 on *Production of Quality Bales* under SCSP scheme at Village Borgaon, Taluka Kalmeshwar, Nagpur. About 15 farmers (including eight women) participated in this programme.

New Projects Initiated

1. BIS Project No. TXD 0272 titled, 'Study to develop a standard test method for determination of lint and trash content of cotton', with a budget of Rs. 9.00 Lakhs is sanctioned for a period of six months.
2. DBT Project, 'Nutraceutical Profiling and Optimization of Rice-Based Low-Alcoholic Beverages from North East Regions of India: Health Implications and Commercial Potential', No. BT/PR51907/NER /95/2127/2024 with a budget of Rs. 21.5 lakhs is approved.

Books & Popular Articles Published

1. Sharma, K., Kumar, M., Dukare, A., Vigneshwaran, N., & Saxena, S. (2024). The Role of Defoliants in Modern Cotton Farming: Facilitating Easy Mechanical Harvesting and Enhancing Cotton Quality. Agri Articles, ISSN: 2582-9882. Volume: 04, Issue: 06 (NOV-DEC, 2024)
2. Chaurasia, H., Shanmugam, N., Sharma, K., Arora, A., & Murmu, S. (2025). AI revolution in cotton processing. Krishi Science, ISSN: 2583-4150. <https://krishiscience.co.in>. [E-publication]
3. Achievements & Progress of Projects under Consortium Research Platform on Natural fibres (CRP- NF) during the period from 2015-2025, 2025. Eds. Shakyawar D B, Shukla S K, Raja, A S M, Debnath S, Ammayappan L, Basak S, Samanta K K, published by ICAR-NINFET, Kolkata, 70p.

Patent Granted

An Indian patent titled "Biodegradable Polymeric Nanofibre Nutrient Matrix for Plants and Method to Prepare the Same" has been granted to the inventor Dr. G. T. V. Prabu, Scientist. Patent No.: 553793.



Mid Term IRC

The Midterm IRC meeting of the Institute held during January 21-23, 2025 in a hybrid mode under the chairmanship of Dr. S. K. Shukla, Director, ICAR-CIRCOT, Mumbai. All scientists, CTO, ACTO (at Mumbai and at outstation units) and In-charge of regional units attended the meeting. All the research programmes and relevant activities were discussed in detail.



Exhibition at ICAR-NINFET, Kolkata (January 3, 2025)



Republic Day Celebration (January 26, 2025)



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