



A Monthly Insight into the ICAR-CIRCOT e-NEWS letter



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Published by:

Dr. P. G. Patil

Director, ICAR-CIRCOT

Editorial Board:

Dr. P. G. Patil

Dr. A. K. Bharimalla

Dr. C. Sundaramoorthy

Dr. S. V. Ghadge

Dr. Sharmila Patil

Er. Archana Mahapatra

"I see God in every thread that I draw on the spinning wheel." - Mahatma Gandhi

Director's Desk



India has sustained the position of the leading cotton producer in the world. During the 2017-18 season, the area under cotton cultivation was about 12.3 million hectares with an output to the tune of 6.2 million tonnes. The cotton scenario is expected to undergo a sea-change in the national as well as the international level in 2018-19. The global consumption of the cotton is projected to surpass the production. India, the leading global producer of cotton, is expected to have a reduction in the area under cotton cultivation during 2018-19, as a result of the

pink boll worm infestation that had resulted in crop loss in Central and South Indian states. The USA, the leading global exporter of cotton, is having a major concern about the prevalence of drought condition in the major cotton growing areas. This is expected to result in lower output, leading to an upward pressure on the prices due to stronger demand projection from mills.

The consumption of cotton has steadily grown in the last year and increased mill demand is expected to sustain the growth of the cotton consumption during 2018-19. The increasing concern about the environmental cost associated with the production of synthetics, rising crude oil prices is expected to narrow down the price margin and boost the cotton use in textiles. The innovations in the cotton based textiles will promote the growth of cotton textiles in long run.

ICAR-CIRCOT is focusing its research activities towards development of novel cotton rich blends; cotton based home furnishings, smart textiles & medical textiles; nano based multifunctional finishing technologies for cotton textiles; to promote diversified utilization of cotton. The institute is also working towards development of value added products from cotton by-produce and its commercial exploitation to augment the farmers' income and also to harness the renewable energy from the cotton stalks.

The institute has signed the MoU for undertaking collaborative research programme with industrial stakeholders and has also admitted an incubatee for entrepreneurship development in banana fibre based value chain. The skill development initiatives for the current year started with a farmers training programme.

(P. G. Patil)
Director

Technology Insight

Process of colour removal from reactive dye bath effluent using adsorption technique

The effluent generated after dyeing of textile materials contains more than 20 ppm of residual dye. In order to remove the dye, an activated carbon based process has been developed. Under this process, the effluent containing 20 ppm residual dye was passed through the activated carbon column. The iodine value of activated carbon used for this process was 404. By this process, the residual colour of the reactive dye effluent was completely removed. The treated water was then reused for dyeing of cotton fabric

along with a control dyeing using fresh water. The k/s value of the dyed fabric using treated water was 16.2 whereas that of fresh water dyed fabric was 18. There is no significant difference between the treated water and fresh water in terms of colour coordinates. The activated carbon based process can be used for removing the residual colour of the reactive dye effluent and the treated water can be reused for dyeing leading to water saving in textile dyeing process.



Fabrics dyed with treated and fresh water

Eco-friendly Cotton Carry Bags

Presently, eco-friendly products are getting momentum to save our earth and to make it greener. The use of petroleum based products or plastics are creating a serious problem of environmental pollution contributing to ecological imbalance. To tackle with the problem of plastic waste, central and state government has brought in laws to ban the plastics products; especially plastic carry bags. In this context, ICAR-CIRCOT has taken up an initiative and prepared eco-friendly carry bags made up of 100 % cotton. These bags are available for sale at the institute.





Trainings

Increasing Farm Income through Increase in Production and Processing of Cotton at Village Level

The training programme on “Increasing Farm Income through Increase in Production and Processing of Cotton at Village Level” was organized at GTC, Nagpur during April 23-26, 2018. About 19 farmers from Jalgaon district of Maharashtra attended this programme. The programme was coordinated through ATMA, Jalgaon. The training programme was designed to provide first-hand information on recent techniques to enhance cotton productivity and ways to augment additional income in cotton cultivation. The training module dealt with best cotton production management practices,

strategy for control of pink boll worm, biological inputs in cotton farming, pest and disease management techniques, cotton marketing, fibre quality parameters and by-products utilization. The training also covered practical sessions on pellets, compost and oyster mushroom production using cotton stalks and demonstration of Ginning, oil extraction and particle board preparation. Trainees were also taken for visits to ICAR-CCRI, Nagpur, M/s Neem Foundation, Gondkhairy, Tehsil- Kalmeshwar, Nagpur and M/s Ankur seeds Pvt. Ltd., NERI farms.



Training programme on “Increasing Farm Income through Increase in Production and Processing of Cotton at Village Level”

Principles of Physics in Textile Testing

Three days training programme for Academicians of Khalsa College, Mumbai on “Principles of Physics in Textile Testing” was organized at ICAR-CIRCOT, Mumbai from April 25-27, 2018. During the training programme, various

instruments in the QEID were demonstrated working principles were explained to them. This training was useful to the participants to understand the application of physics in textile testing.



Trainees being demonstrated textile testing instruments

Events

Dr. B. R. Ambedkar Jayanti Celebration

Bharat Ratna Dr. B. R. Ambedkar's 127th birth anniversary was celebrated on April 16, 2018 in Jubilee Hall of ICAR-CIROT, Mumbai by initiative of Institute Joint Staff Committee. On the occasion the staff members expressed their views

on the contribution of Dr. B. R. Ambedkar and Dr. P. G. Patil, Director in his speech elucidated on accomplishments of Dr. Ambedkar in various fields and his achievements for the society in general.



Dr. B. R. Ambedkar Jayanti Celebration at ICAR-CIRCOT



Swachh Bharat Abhiyan

- A cleanliness programme was organized on April 21, 2018 at Ginning Training Centre (GTC) of ICAR-CIRCOT in which all GTC staff participated and cleaned the office premises.
- A cleanliness programme was organized in the Mechanical Processing Division at ICAR-CIRCOT, Mumbai on April 26, 2018.



Cleanliness programme at GTC, Nagpur & MPD, ICAR-CIRCOT, Mumbai

Visit

Director's Visits

- Dr. P. G. Patil attended a meeting on “Developmental issues in the Konkan Region of Maharashtra” under the Chairmanship of Shri. Suresh Prabhu, Hon'ble Union Minister of Commerce & Industry and Civil Aviation held on April 1, 2018 at Ratnagiri Collectorate, Ratnagiri, Maharashtra. The Directors of ICAR Institutes in Maharashtra were present in the meeting.
- Dr. P. G. Patil attended an “Annual group meeting of All India Coordinated Research Project (AICRP) on Cotton” at Chaudhary Charan Singh Haryana Agricultural University (CCSHAU), Hisar on April 9-10, 2018.
- Dr. P. G. Patil attended a meeting convened by DDG (Engg.), ICAR with officials of Central Silk Board (CSB) and ICAR on April 19, 2018 at Regional Office, Central Silk Board, August Kranthi Bhavan, New Delhi, to discuss on taking over of CSB Institutes by ICAR.

Dignitaries visit

- Dr. Trilochan Mohapatra, Director General, ICAR, visited ICAR-CIRCOT on April 21, 2018. He interacted with all scientists and took a brief review on commercialized technologies of ICAR-CIRCOT.



Dr. Trilochan Mohapatra, DG, ICAR, interacting with CIRCOT's scientists

Students' Visits

- Dr. A. Saradadevi, ICAR emeritus professor and retired Dean of Home Science College, ANGRAU visited Quality Evaluation Unit of ICAR-CIRCOT at Guntur along with the first year M. Sc. Students of Apparel and Textiles Department, ANGRAU on April 6, 2018. They were briefed about the principles of fibre testing with High Volume Instrument.
- Forty students of final year B. Tech (Mechanical Engineering) from S. B. Jain Institute of Technology, Management and Research visited Ginning Training Centre of ICAR-CIRCOT on April 7, 2018. Dr. S. K. Shukla briefed to the students about the activities undertaken at GTC, Nagpur.



Students of Home Science College, ANGRAU visited CIRCOT's QE unit at Guntur



Students of S. B. Jain Institute of Technology, Management and Research visited GTC, Nagpur



Meetings

QRT meeting

Ninth meeting of the Quinquennial Review Team (QRT) of ICAR-CIRCOT for finalization of report was held during April 11-13, 2018 at V. Sundaram Committee room of ICAR- CIRCOT, Mumbai. Chairman Dr. N. C. Patel, Vice chancellor, Anand Agricultural University and members Dr. G. R. Anap, Dr. N. J. Thakor, Dr. V. D. Gotmare, Dr. M. K. Sharma and Dr. Sujata Saxena, Member

Secretary were present in the meeting.

The team interacted with Dr. P. G. Patil, Director, ICAR-CIRCOT and finalized its draft recommendations. Chairman and members of QRT also interacted with Institute Management Committee (IMC) on April 12, 2018 wherein IMC was apprised with the salient recommendations and observations of QRT team.



9th QRT meeting being held at ICAR-CIRCOT



Joint meeting of QRT and IMC members at ICAR-CIRCOT



IMC meeting

The Seventy Seventh meeting of the Institute Management Committee (IMC) was held on April 12, 2018 under the chairmanship of Dr. P. G. Patil at ICAR-CIRCOT, Mumbai. During the meeting, confirmation of the minutes of the previous meeting and action taken on the recommendation of the previous meeting were discussed. The

demand for additional fund for the year 2018-19, condemnation of old vehicles, approval of IMC for nomination of the Grievance Committee, approval of the IMC for Hospitals and report on the official implementation were discussed in the meeting.



77th IMC meeting being held at ICAR-CIRCOT

ABI meeting

The second advisory meeting of Agri-Business Incubation Centre of ICAR-CIRCOT was held on April 12, 2018 at Conference Hall of ICAR-CIRCOT, Mumbai. The meeting was chaired by Dr. P. G. Patil, Director, ICAR-CIRCOT, Mumbai. The members of the advisory committee Dr. S. N. Jha, ADG (PE), ICAR, New Delhi; Dr. R. P. Kachru, Former ADG (PE), ICAR, New Delhi; Prof. Narendra Shah, CTARA, Mumbai; Dr. M. K. Sharma, Whole time Director & CEO, M/s. Bajaj Steel Industries Limited, Nagpur; ABI Co-PIs, scientists and incubatees Mrs. Yashni Agrawal &

Mr. Anant Mundra (M/s. Greyy, Navi Mumbai); Mr. M. Sankararaj (Technical Head, M/s. TKML, Coimbatore); Mr. Irfan Ali (M/s. Sana Agro Industries Ltd., Raichur) and Mr. Sandeep Nikam, Pune were present during the meeting.

Dr. P. G. Patil, Director, ICAR-CIRCOT & Chairman, Advisory Committee welcomed the gathering and conducted the proceedings of the meeting. Dr. A. K. Bharimalla, Senior Scientist & Head I/c, TTD & PI, ICAR-CIRCOT-ABI Centre presented achievements of ABI centre for 2017-18 and future activities for 2018-2019. The

incubatees shared their experience about their startups, product development, product canvassing, USP of their products, mentoring

support received from the institute and their future plans.



Second advisory meeting of ABI Centre at ICAR-CIRCOT

Awareness Programmes

Kisan Gosthi

A day long Kisan Gosthi was organized by Ginning Training Centre (GTC), ICAR-CIRCOT, Nagpur in association with Confederation of Indian Textile Industry -Cotton Development & Research Association (CITI-CDRA), Mumbai at Village Rehaki, Tah.-Seloo, District-Wardha on April 28, 2018 to sensitize the farmers about cotton biomass management and field preparations for next cotton crop. At the outset, Dr. S. K. Shukla, Principal Scientist & Officer In-charge, GTC welcomed the participants and elucidated the appropriate method for harvesting, collection, chipping and supply of cotton stalks to nearby briquetting plant being operational in the village

Rehaki. In addition, he also discussed about impact of different quality parameters on cotton pricing and urged the farmers to avoid using white polypropylene for bagging of cotton.

Dr. M. S. Kairon, former director, ICAR-CICR, Nagpur explained the strategies like crop rotation, destruction of crop residues and trash in the fields, grazing of fields by animals, deep ploughing of fields, etc. that minimizes the chances of emergence of pink bollworm in next cotton crop. Shri G. H. Wairale, former GM, Maharashtra Cotton Federation, Nagpur urged to farmers to avoid use of uncertified cottonseeds and gave useful tips for selection of early maturing, high

yielding hybrids to increase farm income and reduce expenditure. The farmers were also briefed about the Swaccha Bharat Abhyan, Kisan Bima

Yojana, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Pradhan Mantri Ujjwala Yojana, etc.



Kisan Gosthi organized at village Rehaki, of Wardha district

Human Resource Development

- Shri. S.V. Kokane, Assistant Chief Technical Officer, attended a training programme on Hospitality Management (in collaboration with Institute of Hotel Management & Catering Technology) at ICAR-NAARM, Hyderabad from April 20-25, 2018.
- Smt. Trupti Mokal, Assistant Administrative

Officer, attended the two days National workshop cum training programme on “Official Language Management in ICAR and New Directions (भा.कृ.अ.नु.प. में राजभाषा प्रबंधन एवं नई दिशाएं)” organized by ICAR at ICAR-CRIDA, Hyderabad during April 24-25, 2018.

Publications

Research Articles

- P. K. Mandhyan, R. P. Nachane, P. G. Patil, B. R. Pawar, H. Hasan and S. S. Venkatakrishnan (2018). Influence of segregation of cotton bales based on its fiber attributes in yarn properties. *Journal of Natural Fibers*, DOI: 10.1080/15440478.2018.1453429.
- V. G. Arude, S. P. Deshmukh, P. G. Patil and S. K. Shukla. (2018). Development of spike cylinder type single locking cotton feeder cum cleaner for double roller gin. *Agricultural Engineering Today*, 42(1): 15-19.

Technical/Popular Article

- Yamini Tak & Manoj Kumar (2018) Proline: Biosynthesis and functions. Biomolecule Reports (ISSN: 2450-8759)
- Yamini Tak & Manoj Kumar (2018) Antinutritional Factors in Foods. Biomolecule Reports (ISSN: 2450-8759)
- Hindi article on "Effect of moisture, particle size and lignin content on quality of pellets

prepared from cotton stalks" in "*Rasthriya Krishi*".

Other publications

- Technological Report for the season 2017-18 of AICRP on cotton released during the Annual Group Meeting held at CCS HAU Hisar on April 9-10, 2018
- Fifteen leaflets on Training Programmes of ICAR-CIRCOT (2018-19)

Participation

Meeting

Dr. P. K. Mandhyan, Senior Scientist & Head I/C. QEID, Shri. A. Arputhraj, Scientist, Shri B. R. Pawar, A.C.T.O & Dr. Hamid Hasan, A.C.T.O attended Annual Group Meeting of AICRP on Cotton for 2017-18 and "Central Cotton Variety

Identification Committee" meeting held at Chaudhary Charan Singh Haryana Agricultural University (CCSHAU), Hisar during April 09-10, 2018.



Annual Group Meeting of AICRP on Cotton at CCSHAU, Hisar



MoU signed

Memorandum of Understanding (MoU) was signed with Dr. M. K. Sharma, Whole Time Director & CEO, M/s Bajaj Steel Industries Limited, Nagpur for taking up collaborative

research on “Development of trash handling system for control of pink bollworm in cotton ginneries” on April 12, 2018.



MoU signing with M/s Bajaj Steel Industries Limited, Nagpur

Personnel

Resignation

Dr. R. Guruprasad, Scientist, Mechanical Processing Division, ICAR-CIRCOT resigned from Agricultural Research Service with the effect from April 28, 2018.

Superannuation

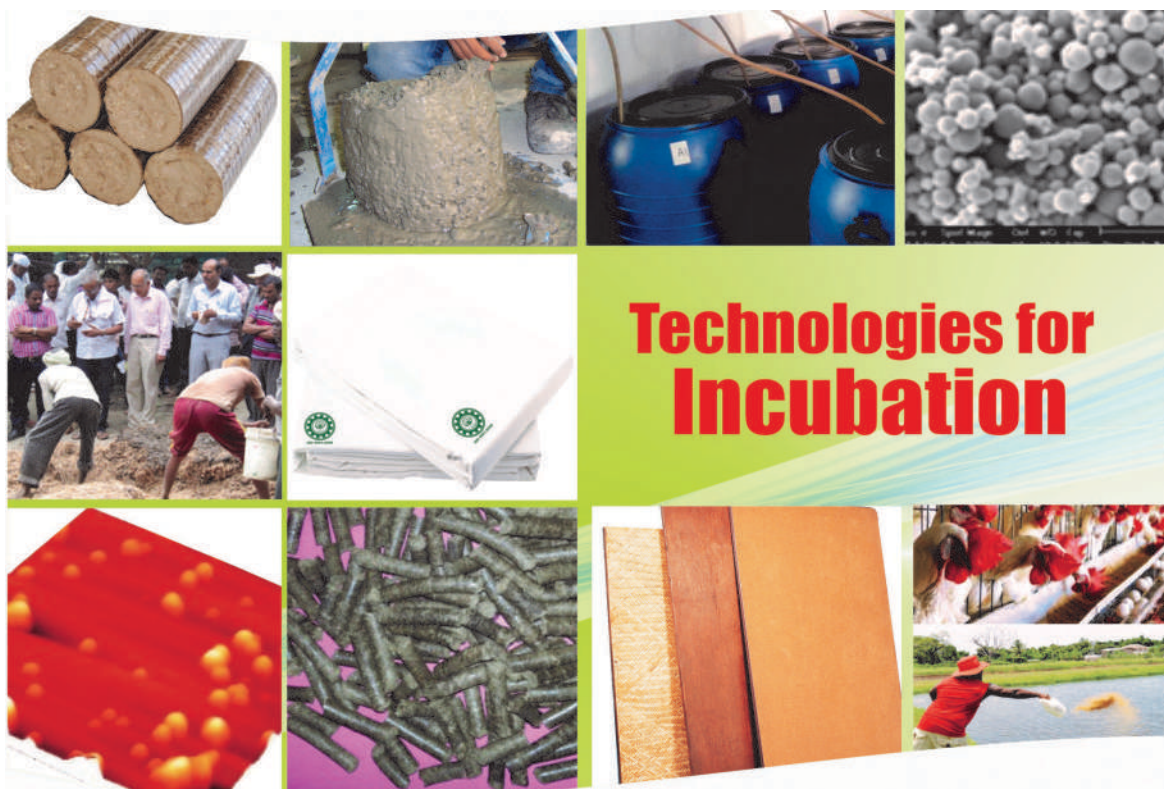
Shri G. N. Mayawanshi, Skilled Supporting Staff, ICAR-CIRCOT superannuated on April 30, 2018.



Agri-Business Incubation

Technologies Available for Incubation at the ICAR-CIRCOT ABI Centre

- 1) Ecofriendly preparation of absorbent cotton for medical & hygiene products.
- 2) Nanofinishing Technologies for Cotton Textiles
 - a) Antimicrobial
 - b) UV protection
 - c) Water repellency
- 3) Cotton rich blends for functional textile applications
- 4) Innovation Finishing processes for garments & home textiles: Mosquito repellent, pesticide protection cloths & denim fading
- 5) Software module for non-metameric color matching in textiles
- 6) CIRCOT Calibration Cotton for global outreach
- 7) Sustainable business model for cotton at village level:
 - a) Quality based trading
 - b) Supply chain logistics for cotton stalk (custom hiring)
 - c) Value addition to cotton biomass
 - d) CIRCOT mini card for sliver preparation
- 8) Microbial Degossypolisation cottonseed meal for use as feed in poultry, fish & piggery sectors
- 9) Enhancing farmers and other stakeholders income by Cotton value chain: via startup & entrepreneurship development
- 10) Cotton Trading based on Quality Parameters for better price remuneration by Farmers





Upcoming Events

Calendar of Regular cum Specialized training programmes for the year 2018-19

| S.No. | Title of Training | Period | Fees (Rs) (excluding GST) |
|-------|---------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------|
| 1 | Value addition to Cottonseed | 05-07 June, 2018 | 12, 000 |
| 2 | Knitting & knit Garments | 11-13 June, 2018 | 10, 000 |
| 3 | Absorbent Cotton Technology | 02-04 Aug., 2018 | 15, 000 |
| 4 | Quality Evaluation & Spinning performance of Indian Cottons using Advanced Techniques | 04-07 Sept., 2018 | 10,000 |
| 5 | Advances in Applications of Nanotechnology | 24-28 Sept., 2018 | 25,000 |
| 6 | Electrospinning for Nanofibre Production & its Applications | 03-05 Oct., 2018 | 10,000 |
| 7 | Basic & Advanced Statistical Techniques for Research | 12-15 Nov., 2018 | 6,000 |
| 8 | Spectroscopic & Chromatographic Techniques for Material Characterization | 27-29 Nov., 2018 | 10, 000 |
| 9 | Instrumental Evaluation of Clothing Comfort | 10-15 Dec., 2018 | 50,000 |
| 10 | Characterization of Materials Using X-Ray Diffractometer (XRD) | 27-29 Dec., 2018 | 30,000 |
| 11 | Advances in Microscopy | 17-19 Jan., 2019 | 15, 000 |
| 12 | Basic and Adnaved Technques for Evaluation of Textile Materials | 17-19 Jan., 2019 | 10,000 |
| 13 | Fibre Reinforced Composite | 04-06 Feb., 2019 | 10,000 |
| 14 | Customized training programme for students & academia* | Two days (Dates can be finalized as per the requirement) | 3,000 |
| | Customized training programme for students & academia* | One day (Dates can be finalized as per the requirement) | 1,500 |

For more information please contact:

Dr. A. K. Bharimalla,

Senior Scientist & Head In- charge, TTD

ICAR-Central Institute for Research on Cotton Technology, Adenwala Road,

Matunga (E)

Mumbai-400019.

Email:bpd.circot@gmail.com;

Ph: 022-24127273, Fax: 02224130835, Mob: 9702878249

Details are available at our Website: www.circot.res.in



ADDRESS FOR CORRESPONDENCE

The Director

ICAR-Central Institute for Research on Cotton Technology

DARE, Ministry of Agriculture, Govt. of India

Adenwala Road, Matunga (E), Mumbai - 400 019

Ph: 022 - 24127273/76; Fax: 022 - 24157239

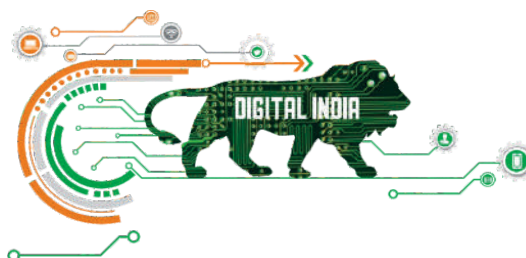
e-mail: icarcircot.news@gmail.com

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