



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



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

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Director's Desk



The area under cotton cultivation in India during the current season was estimated to decline by 8 per cent, however sowing has picked up due to the recent hike in the minimum support price of the crop. The minimum support price (MSP) of cotton was increased by 28 per cent for the medium staple cotton and 26 per cent for the long staple cotton. India being the global leader in cotton production, a steep rise in the MSP may set a higher price floor for cotton in both domestic and international market. The

higher prices may impact the competitive advantage of the Indian cotton in the global market. But due to the changing international trade scenario, the Chinese buyers are looking forward for the Indian market to source its cotton requirements.

With the emergence of India as a global leader in cotton production, there is an imminent need for creating more skilled human resource and potential entrepreneurs in cotton value chain to establish and sustain a brand value for the Indian cotton in the global market. Skill India initiative, to empower the individuals with skill sets to make them more employable and more productive in their work environment and Start-up India programme, to build a strong eco-system for nurturing innovation and start-ups are the two flagship programmes of the Government of India in this line.

ICAR-CIRCOT is actively involved in both these initiatives, the institute provides skill development programme and Agri-business incubation services for the farmers and other stakeholders in the area of post-harvest processing of cotton, value addition to its agro-residues and development of value added products. During this month three skill development programmes for the farmers in the area of Processing of cotton at village level was organized, besides a programme on quality evaluation of cotton and specialized training on value addition to Cottonseed were organized for the Industrial stakeholders. The agri-business incubation centre has admitted one new incubatee for development of value added products from the banana fibres.

ICAR-CIRCOT is committed to serve the stakeholders through development of the technologies for processing cotton and its agro-residues, skill development, incubation services, research consultancy and commercial testing services.

(P. G. Patil)
Director

Dignitaries' Visit

Shri Chhabilendra Roul (IAS), Special Secretary DARE & Secretary ICAR, visited the Institute on 21st July, 2018 and interacted with scientific and administrative staff of the Institute. He visited the Nanocellulose Pilot Plant and other research facilities like X-Ray lab as well as newly created workplaces and the gymnasium facility. During the meeting, he elucidated on the various policy

initiatives of the Council to bring in more transparency and efficiency in the system. As the Institute is nearing its centenary year, thematic celebration should be planned for which brainstorming may be carried out within the Institute with relevant stakeholders, he suggested.



Shri Chhabilendra Roul in the Nanocellulose Pilot Plant



Shri Chhabilendra Roul being briefed about various activities and achievements of the Institute by Dr PG Patil, Director, CIRCOT



Shri Chhabilendra Roul at the newly created gymnasium facility

Workshop

Workshop on “Finalization of Indian Standards for Cotton Classing”

India is the largest cotton producer and exporter of cotton in the world. Hand-picked roller ginned Indian cotton has inherent remarkable properties such as low trash content and few nep count with excellent fibre and colour grades etc. Despite that, Indian cotton is priced lower than prevailing rates in the international market. One of the major reasons is a lacking of Indian quality standard for cotton grading whereas the other major cotton producing countries viz. USA, Australia and Egypt etc. have established quality standards of their cotton long ago. Hence, there is an urgent need to think of establishing Quality standard of Indian cotton to fetch better price in the international market. Through its years of testing services, ICAR-CIRCOT has acquired a better understanding of quality parameters prerequisite of stakeholders and has come out with a quality standard for grading of Indian cotton for its better marketing and trading.

Ginning Training Center of ICAR-Central Institute for Research on Cotton Technology (CIRCOT), Nagpur recently conducted a workshop on August 1, 2018 on “Finalization/ Confirmation of Indian Cotton Grading Standards” to set the guidelines for quality based cotton trading for betterment of all stakeholders including farmers, ginners, traders and spinners. This workshop was organized to finalize the draft based on the opinion of shareholders from cotton business. Dr. S. K. Shukla, Principal Scientist and Officer In-charge, GTC made presentation on proposed Indian cotton classification.

In this workshop, Dr. P. G. Patil, Director, ICAR-CIRCOT, Dr. V. N. Waghmare, Director, ICAR-CICR along with the representatives from trade and industry viz. Dr. M. K. Sharma, M/S Bajaj Steel Industries Ltd., Nagpur, Shri. J. P. Mahajan and Shri. G. H. Vairale, Maharashtra Cotton

Federation, Shri Vineet Mohota, M/s. JimTex Industries Pvt. Ltd., Hinganghat, Sri. Rajiv Dubey, Textile Association (India) - Vidarbha, M/s. Vardhman Textiles Ltd., Ludhiana, M/s. Sultania

Oil Industries, Kalmeshwar, M/s. Deveshkumar Brajeshkumar, Nagpur etc. were present to grace this occasion.



Workshop on 'Finalization of Indian Standards for Cotton Classing'



Discussion during workshop on 'Finalization of Indian Standards for Cotton Classing'

MoU signed

Memorandum of Understanding (MoU) for "Preparation of banana fibre based value added products" was signed between ICAR-CIRCOT,

Mumbai and Incubatee M/s Paras Gold Industries Limited, Chota Udepur, Gujarat on July 11, 2018.



Meeting with Incubatee M/s Paras Gold Industries Limited, Chota Udepur, Gujarat at ICAR-CIRCOT ABI Centre on July 17, 2018



MoU signing with M/s Paras Gold Industries Limited, Chota Udepur, Gujarat

Award

Dr. Prashant Sampatrao Deshmukh, Senior Scientist received prestigious Jawaharlal Nehru Award for P.G. Outstanding Doctoral Thesis Research in Agricultural and Allied Sciences

(Agricultural Engineering), 2017 on the 90th ICAR Foundation Day and Award Ceremony held at NASC Complex, Pusa, New Delhi on 16th July, 2018.



Dr. P.S. Deshmukh receiving Jawaharlal Nehru
P.G. Outstanding Doctoral Thesis Award

Technology Insight

Dishware as banana fibre based value added product

A technology has been developed to make eco-friendly & biodegradable dishware from the fibres extracted from banana pseudostem. Banana fibres are cleaned and beaten to obtain pulp, which is then compressed in molds under high temperature and pressure to give desired shape like bowl shown below. No binders or additives are used in this process. Lignin present in the

fibres acts as the binder during high temperature compression molding. The dishware that is produced has acceptable aesthetic finish and sufficient strength for holding various food items. The technology has been transferred to Mr. Sandip Nikam, an incubatee for establishment of a green-field factory for production of eco-friendly dishware.



Plates made of banana fibres

Trainings

Increasing farm income through increase in production and processing of cotton at village level

Three training programs of four days duration each were conducted at GTC Nagpur for 51 farmers representing Jalgaon district of Maharashtra during the month of July, 2018 on "Increasing farm income through increase in production and processing of cotton at village level". The training was sponsored by Agricultural Technology Management Agency (ATMA), Jalgaon, Maharashtra. The current topics on pink boll worm management, organic cotton farming, biological inputs in cotton

farming, best management practices and value-addition to cotton biomass were covered in the training programs. The training programs also conducted practical demonstrations on preparation of compost and cultivation of oyster mushroom using cotton stalk as an additional farm activity for better remuneration. The farmers were taken to nearby research organizations including M/s Ankur Seeds, Nagpur for an exposure visit.



Group photo: Training programme on 'Increasing farm income through increase in production and processing of cotton at village level' from July 9-12, 2018

Quality Evaluation of Cotton

A self-financed five-days training programme on "Quality Evaluation of Cotton" was conducted at Mumbai during July 23-27, 2018. Eight participants from different industries spread over Maharashtra, Gujarat and Karnataka attended the training programme, which covered various aspects of fibre and yarn quality evaluation, ginning and mechanical processing of cotton,

cotton contamination, grading as well as its commercial aspects. Hands-on training was imparted for fibre testing using the High Volume Instrument (HVI) and the Advanced Fibre Information System (AFIS) as well as yarn testing. Visit to Cotton Association of India (CAI), Mumbai was arranged to give knowhow into commercial grading of cotton.



Practical Session during the Training on 'Quality Evaluation of Cotton'



Group photo: Training programme on 'Quality Evaluation of Cotton'

Value Addition to Cottonseed

A self-financed three day training programme on “Value Addition to Cottonseed” was organized at ICAR-Central Institute for Research on Cotton Technology, Mumbai, during July 26-28, 2018. Nine participants from industry, budding entrepreneurs, academia and researchers participated in this programme. The training consisted of lectures, practicals and

demonstrations on processing of cottonseed, various products obtained from cottonseed by scientific processing viz. linters, cottonseed hull, meal and oil, potential for further value addition to these products and research carried out by CIRCOT in this direction. Dr. Parimal Sardar (Principal Scientist, ICAR-CIFE, Mumbai) was invited to deliver guest lecture during the training

programme. The participants found the training very useful, relevant to their needs and they were interested in utilizing the CIRCOT expertise in

preparation of value added products from cottonseed.



Training Programme on 'Value addition to cottonseed'

Swachch Bharat Abhiyaan

- Cleanliness drive was conducted at GTC, Nagpur on July 19, 2018 in and around the garden in centre's premises. All the staff of the GTC participated enthusiastically in the cleaning activities.
- A cleanliness programme was organized by

Quality Evaluation and Improvement Division on July 23, 2018. Rooms on the ground floor opposite to SEM lab were cleaned. Waste cotton, fabric and yarn samples left out after testing and kept in the room were discarded properly.



QEID staff during the cleaning programme

MSP of Cotton at a glance

The Government of India in Ministry of Agriculture and Farmers Welfare has fixed the Support price of Medium Staple and Long Staple

Seedcotton (Kapas) for Cotton Season 2017-18 (October-September).

Support price of Medium and Long Staple Seedcotton for Season 2017-18 (Oct-Sep)

SR. NO.	CLASSES OF COTTON	FIBRE QUALITY PARAMETERS		MINIMUM SUPPORT PRICE (MSP) FOR 2017-18 (Rs.)	NAME OF THE INDICATIVE VARIETIES USED BY THE TRADE
		BASIC STAPLE LENGTH (2.5% SPAN LENGTH) IN MM	MICRONAIRE VALUE		
(I)	(II)	(III)	(IV)	(V)	(VI)
Short Staple (20 mm & below)					
1		-	7.0-8.0	3520	Assam Comilla
2		-	6.8-7.2	3520	Bengal Deshi
Medium Staple (20.5mm-24.5 mm)					
3		21.5-22.5	4.8-5.8	3770	Jayadhar
4		21.5-23.5	4.2-6.0	3820	V-797/G.Cot. 13/G. Cot, 21
5		23.5-24.5	3.4-5.5	3870	Ak/Y-(Mah & M.P.)/ MCU-7(TN)/ SVPR-2 (TN)/PCO-2 (AP & Kar)/ K-11(TN)
Medium Long Staple (25.0 mm- 27.0 mm)					
6		24.5-25.5	4.3-5.1	4020	J-35 (Raj)
7		26.0-26.5		4120	LRA-5166/KC-2(TN)
8		26.5-27.0		4170	F-414/H-777/J-34 Hybrid
Long Staple (27.5 mm-32.0 mm)					
9		27.5-28.5	4.0-4.8	4220	F-414/H-777/J-34 Hybrid
10		27.5-28.5	3.5-4.7	4220	H-4/H-6/MECH/RCH-2
11		27.5-29.0	3.6-4.8	4270	Shankar-6/10
12		29.5-30.5	3.5-4.3	4320	Bunny/Brahma
Extra Long Staple (32.5 mm & above)					
13		32.5-33.5	3.2-4.3	4520	MCU-5/Surabhi
14		34.0-36.0	3.0-3.5	4720	DCH-32
15		37.0-39.0	3.2-3.6	5520	Survin

* The Cabinet Committee on Economic Affairs (CCEA) at its meeting approved the increase in MSP of cotton (medium staple) from Rs 4,020 to Rs 5,150 and that of cotton (long staple) from 4,320 to Rs 5,450 per quintal (Ref: <http://pib.nic.in/newsite/pmreleases.aspx?mincode=63>)

Visit

Director's Visits

- The 90th ICAR Foundation Day and Award Ceremony at NASC Complex, Pusa, New Delhi on 16th July, 2018.
- A meeting of the Directors of ICAR Institutes on 18th July, 2018 to decide the cadre strength of the Institute.
- Banana fibre pulp manufacturing unit at Muzaffarnagar, UP during July 26-28, 2018 in connection with specialty grade paper pulp preparation.

Dignitaries' Visit

Shri Rakesh Rathi, President, Indian Cotton Association, Bhatinda visited Sirsa unit of the Institute in Haryana on 10th July, 2018. Various issues regarding production of clean cotton were discussed. Need was felt to rope in farmers,

ginners and DCM Textiles, Hisar for clean cotton production under the technical guidance of ICAR-CIRCOT and ICAL, Bathinda, which will help farmers get remunerative price on one hand and neat and clean cotton to spinner on the other.



Shri Rakesh Rathi, President, Indian Cotton Association, Bathinda during visit to ICAR-CIRCOT Unit, Sirsa on 10th July, 2018

Students Visits

- A batch of 32 students of BSc (Microbiology) from Mithibai College, Vile Parle, Mumbai visited the Institute on 19th July 2018. They were taken to Quality Evaluation and Improvement Division (QEID), Mechanical Processing Division (MPD), Chemical and Biochemical Division (CBPD) and Nano Technology lab of the Institute.
- A batch of 60 students from The Synthetic & Art Silk Mills' Research Association (SASMIRA), Worli visited the Institute on 27th July, 2018 as a part of their educational visit. Comprised of

students from Man-made Textile Technology and Knitting Technology Division of SASMIRA, the batch visited MPD and Fibre and Yarn Testing sections of QEID. Students

were also briefed about national and international cotton scenario, history, vision, mission and mandate of the Institute.



Students of Mithibai College learning about mechanical processing of cotton



Students of SASMIRA during visit to QEID

Meeting

Institute Research Council (IRC) Meeting

Institute Research Council (IRC) interim meeting was held on July 03-04, 2018 to review the progress of research during the period April to June, 2018.

Dr. G. S. Nadiger, Research Advisor at SASMIRA, Mumbai was available as External Expert during the meeting.



IRC interim meeting on July 3, 2018

Participation

BIS Sectional Committee Meeting

Dr. Sujata Saxena, Principal Scientist and Head I/C, Chemical and Biochemical Processing Division attended the meeting of the BIS sectional committee TXD 07 held at Manak Bhawan, New Delhi on 30th July, 2018. During the meeting, BIS standards of natural indigo and madder dyes prepared by the committee were examined and

modified according to suggestions from the members. Also the status of ISO standards for natural dyes proposed by the committee after the ISO meeting held at New Orleans, USA during October 9-13, 2017 and further action to be taken in the matter was discussed.

Industrial visits

- Dr. Dattatreya M. Kadam, Principal Scientist visited M/s Jain Farm Fresh Foods, Vadodara, Gujarat as Technical Assessment Panel Member of the Export Inspection Agency, Mumbai on July 6, 2018 to certify its food products for export worthiness under Voluntary Certification Scheme.
- A team of scientists including Dr. Sujata Saxena, Dr. ASM Raja, Er. A. Arputharaj and Dr.

Sharmila Patil and ACTO Shri. R.R. Chhaggani visited Gini Silk Mills, Boisar on July 24, 2018 in connection with wet processing trials and organization of awareness workshop on salt free dyeing technology. The team also visited M/s Guru Bhakti Polymers, Umbergaon, Gujarat in connection with development of eco-friendly packaging film.



CIRCOT Team Visit to Gini Silk Mills, Boisar on July 24, 2018



CIRCOT Team at Guru Bhakti Polymer Industry, Umbergaon

Presentation

Dr. Manoj Kumar, Scientist, Chemical and Biochemical Processing Division, presented research proposal entitled "Valorization of cottonseed meal extraction of quality protein for improving livelihood of cotton farmers" at JSS Pharmacy College, Rocklands, Ooty on July 13-14,

2018. The research proposal was submitted under the Scheme for Young Scientist and Technologist (SYST) to SEED Division, DST and shortlisted for presentation. There were total 43 presentations under this scheme in Ooty and it was evaluated by the expert committee members from different institutes.

Recruitment / Transfer

- Mr. Paresh P. Thakur and Mr. Prashant G. Gavhale joined the Institute as Technical Assistants during the month of July, 2018.
- Dr. Jyoti M. Nath, Scientist was transferred from GTC, Nagpur to Mumbai HQs on 21st July, 2018.
- Mr. S. A. Telpande, AAO was transferred from the HQs to GTC, Nagpur on 21st July, 2018.
- Mr. K. Parleshwar, AAO was transferred from GTC, Nagpur to Mumbai HQs on 21st July, 2018.

Publications

Research / Review papers

- Arude, V. G., Deshmukh, S. P., Shukla S. K. and Patil, P. G. (2018). Development of saw band cylinder-type single locking cotton feeder for double roller gin. *Journal of Agricultural Engineering*, 55(2): 21-32.
- Arputharaj A., Vigneshwaran N. and Shukla, S. R. (2018). Development of multi-functional cotton surface for sportswear using nano zinc oxide. *Journal of Natural Fibers*, DOI: 10.1080 / 15440478. 2018. 1492490
- Kambli, N. D., Samanta, K. K., Basak, S. et al. (2018). Characterization of the corn husk fibre and improvement in its thermal stability by banana pseudostem sap. *Cellulose*, Available online at <https://doi.org/10.1007/s10570-018-1931-z>
- Vigneshwaran, N., Bharimalla, A. K. and Arputharaj, A. (2018). Application of functional nanoparticle finishes on cotton textiles. *Trends in Textile & Engineering & Fashion Technology*, 3(4):1-5.

Book Chapter

- Kadam, D. M. and Kaur, A. (2018). Novel approaches of nanotechnology in agro and food processing *In Handbook of Nanomaterials for Industrial Applications*. Hussain, C. M. (Ed.) Elsevier Publication USA, pp. 271-291.

Popular Article

- Patil, P. G., Sundaramoorthy, C., Mandhyan, P. K. and Kranthi, K. R. (2018). Sustainable practices in small-scale cotton production, hand-picking, fibre processing, and by-product utilisation: Case studies from India. *The ICAC Recorder*, 36(2).

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) Innovative 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

Specialized training programmes for the year 2018-19

S.No.	Title of Training	Period	Fees (Rs) (excluding GST)
1	Quality Evaluation & Spinning performance of Indian Cottons using Advanced Techniques	04-07 Sept., 2018	10,000
2	Advances in Applications of Nanotechnology	24-28 Sept., 2018	25,000
3	Electrospinning for Nanofibre Production & its Applications	03-05 Oct., 2018	10,000
4	Basic & Advanced Statistical Techniques for Research	12-15 Nov., 2018	6,000
5	Spectroscopic & Chromatographic Techniques for Material Characterization	27-29 Nov., 2018	10,000
6	Instrumental Evaluation of Clothing Comfort	10-15 Dec., 2018	50,000
7	Characterization of Materials Using X-Ray Diffractometer (XRD)	27-29 Dec., 2018	30,000
8	Advances in Microscopy	17-19 Jan., 2019	15,000
9	Basic and Advanced Techniques for Evaluation of Textile Materials	17-19 Jan., 2019	10,000
10	Fibre Reinforced Composite	04-06 Feb., 2019	10,000
11	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

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