



A Monthly Insight into the ICAR-CIRCOT E - News Letter



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From Director's Desk...



The world cotton production has been projected to grow by 8 per cent to 24.9 million tonnes with global area of around 31.7 million hectares under cotton cultivation. The acreage under cotton cultivation in India has increased by around 20 per cent to 121 lakh hectares with an estimated output of about 6 million tonnes. Bumper crop is expected to put downward pressure on the cotton prices in the beginning of the season.

The international prices represented by the Cotlook A index is likely to hover around 69 cents per pound during the year. In

India the price of the Fair and Average Quality cotton is ruling above the minimum support price at present. It is expected that the domestic prices will experience a depressing trend with the increase in the arrivals. The role of Cotton Corporation of India would be crucial to maintain the stable price for cotton through its domestic procurement. The Minimum support price for cotton has been fixed at Rs.4020 per quintal for medium staple and Rs.4320 per quintal for long staple cotton.

The production of Cottonseed, two-third of cotton by weight, is estimated to be around 12 million tonnes. The cottonseed processing industry has assumed significance as the production of cotton has attained a substantial growth in the recent past. Presently only around 5 per cent of the cottonseed is scientifically processed for extraction of oil and other value added products viz., linters, hulls and cake, while the remaining seed is processed either through conventional expellers for oil extraction with lesser recovery. Besides cotton stalks to the tune of around 30 million tonnes are being produced in the country annually and there is a need to commercially exploit the biomass to convert waste into wealth on one hand and enable farmers to get additional remuneration for the cotton stalks.

ICAR-CIRCOT is a premier institute under the ICAR carrying out basic and strategic research in processing cotton and its agro residues, development of value added products and quality assessment. The institute is also providing skill development programme and the Agri-Business incubation services to the stakeholders. CIRCOT is also an NABL accredited laboratory and is a referral laboratory for cotton testing.

P. G. Patil
Director

ICAR-CIRCOT, Mumbai

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Published by:

Dr. P. G. Patil
Director,
ICAR-CIRCOT

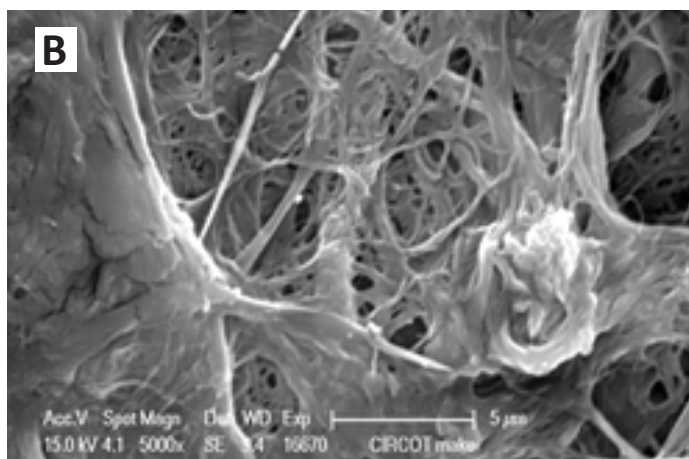
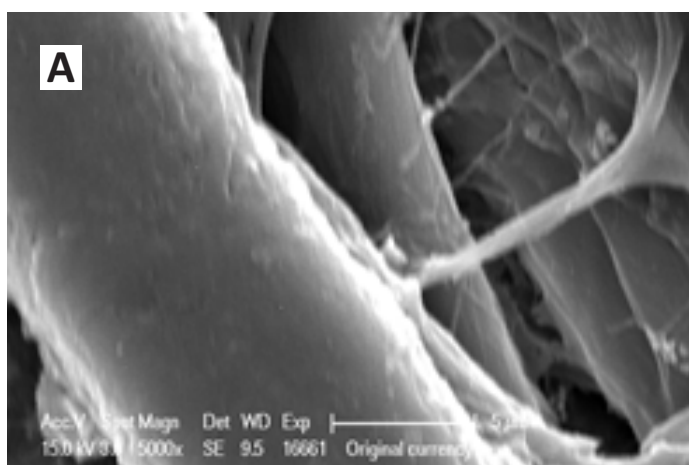
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Technology Insight

High quality speciality grade paper pulp from cotton

The ICAR-CIRCOT has developed a technology to make high quality speciality grade pulp using cotton rags and comber noil as raw materials. The paper developed from such pulp exhibited very high double fold property which was about three to four times when compared with that of the presently used speciality paper. Other properties like brightness, bursting strength and tensile strength were well within the requirement. The fine mesh structure of the paper developed by CIRCOT technology as can be seen in the SEM image imparts such high quality to the paper.



SEM micrograph of nanocellulose produced by friction grinding

Trainings

Cotton Production and Post-Harvest Processing

ATMA sponsored farmers training on “Cotton Production and Post-Harvest Processing” was conducted on October 3–6 and October 9–12, 2017 at GTC, Nagpur. In the first batch, twenty two progressive farmers from Jalna district of Maharashtra and in the second batch, twenty six farmers from Jalgaon district of Maharashtra attended the training. The four day training program covered series of lectures and practical demonstrations. The lecture topics such as best management practices in cultivation of cotton, precision farming, integrated nutrient and pest management, biological inputs and preparation of briquettes & pellets from cotton stalks were covered during the training. The training program also covered practical demonstration on preparation of compost and cultivation of oyster mushroom using cotton stalks and encouraged the farmers for these additional farm activity to get additional remuneration. The pilot plant facilities available at GTC were also shown to the farmers. The farmers were taken to field visit at M/s Ankur Seeds and ICAR-CCRI, Nagpur. During the training program, farmers were distributed with CIRCOT compost culture to promote preparation of compost from cotton stalks.



Group photo of ATMA farmers (GTC, Nagpur)

Cotton Quality Testing

GTC, Nagpur conducted two days training program on “Cotton Quality Testing” for officials of various regional marketing committees (RMC) of Odisha State Agricultural Marketing Board (OSAMB) during October 13–14, 2017. Twenty four participants representing various RMC's viz., Parlakhemundi, Rayagada, Kantabanji, Koraput, Gunupur, Kesinga, Bhavanipatna, Bolangir, Patnagarh, Padampur and Biramaharajpur attended the program. The two-day training consisted of lectures and practical training on cotton quality parameters, cotton grading (both manual and instrumental), cotton processing and cotton marketing. The emphasis was given on the hands-on-training on manual assessment of cotton quality parameters for quick and reliable grading of cotton at procurement site. The Indian and global scenario of cotton and role of cotton quality in determination of its pricing were covered in the training. The cotton quality parameters viz., staple length, fibre bundle strength, fibre fineness, fibre maturity, trash content, ginning percentage and moisture content were described. The preparation of test reports based on HVI results obtained was demonstrated to the trainees.



Group photo of trainees from OSAMB
(GTC, Nagpur)

Double Roller Ginning Technology & Basics of Cotton Grading

In the series of training programs, GTC Nagpur also organized a six days training program on “Double Roller Ginning Technology and Basics of Cotton Grading” during October 25–30, 2017. Nine participants representing ginning industries attended the training program. The program covered various aspects such as fibre quality assessment like fibre length, strength, fineness and maturity, cotton trading and marketing, DR ginning technology, automation & ginning settings such as beater and fixed knife settings, repairs and maintenance of ginning and pressing machinery, humidification in ginning system, scientific processing of cottonseed, cotton by-product utilization etc. Guest lectures by outside experts on cotton trading, cotton marketing, pre-engineered building structures for cotton and bale storage etc. were also arranged. The trainees were taken for industrial visits to M/S Bajaj steel Industry & M/S Sri Bhagirath Textiles Ltd.

Events

Swachha Bharat Abhiyan

As a part of the implementation of the Swachh Bharat Mission, a major cleanliness drive was arranged on October 1, 2017 at Five Gardens, Matunga – a tourist spot in Mumbai with the special emphasis to remove the non-biodegradable materials. The Institute staff participated in the cleaning program enthusiastically.



Cleanliness drive by CIRCOT staff at Five Gardens,
Matunga, Mumbai

Mahila Kisan Divas

Mahila Kisan Divas was celebrated on Oct 16, 2017 as per the directives of ICAR, New Delhi. Lauding the contribution of women on and off the agricultural field since the pre-vedic era, the Director of the Institute Dr. P. G. Patil, in his address, emphasized the role played by women in enhancing agriculture sector in our country. He pointed out that women actively participate in home-grown agri-businesses. The Government of India has decided to celebrate October 15 every year as an awareness campaign across the nation to sensitize women agriculturists about their health, education, equality rights and adoption of modern farming to empower them in the mainstream agriculture. Appreciating this as a great initiative, he hoped the campaign would bring about fulfillment of the government's goal of doubling the farmer's income by 2022 with the help of competent women farmers which would lead the country towards the second Green Revolution. The senior administrative officer, scientists and other staff members also expressed their views towards the upliftment of women farmers through innovative ways.



Cleanliness drive by CIRCOT staff at Five Gardens, Matunga, Mumbai

Inauguration of Facility for Administrative, Finance Staff and Record Room

The renovated rooms of Admin-I, Finance & Accounts section and the Record room were inaugurated by Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) on Oct 12, 2017.



Inauguration of Admin-I section by Dr. Trilochan Mohapatra, Secretary (DARE) & DG (ICAR)



Inauguration of Finance section by Mr. Sudhir Bhargava, member of Governing Body, ICAR



Inauguration of Record room by Dr. Trilochan Mohapatra, Secretary (DARE) & DG (ICAR)

Vigilance Awareness Week

As per the directives of Central Vigilance Commission, ICAR-CIRCOT is observing Vigilance Awareness Week 2017 on the theme "My Vision - Corruption Free India" from October 30 – November 04, 2017. It began with an "Integrity Pledge" administered to all the employees by the Director Dr. P.G. Patil. All the employees also undertook an e-integrity pledge through CVC website.

Visits

Director's visits

- Dr. P. G. Patil, Director, visited the ASRB, New Delhi on October 11, 2017 as a committee member for promotion of Senior Scientist to Principal Scientist.
- Dr. P. G. Patil, Director, visited ICAR- National Research Centre for Grapes, Pune on October 17-18, 2017 to discuss with the institute's Director regarding smart packaging of grapes by using nano-sensor technology.

Awareness Programs

Awareness Programs for Farmers of Haryana

An Awareness Program on "Preparation of bio enriched compost from cotton plant residue" and "Clean cotton picking" was organized in association with CICR Regional Station, Sirsa on October 17, 2017. A select group of 35 progressive farmers and 25 scouts mentored by Bharat Cotton Factory, Giddarbaha (Pb) under the aegis of Better Cotton Dr. D. Monga, Head,

CICR Regional Station, Sirsa and Dr. Rishi Kumar, Principal Scientist participated in the program. Initiative (BCI). Dr. Hamid Hasan, Officer In-charge, delivered a lecture on "Preparation of bio enriched compost from cotton plant residues" and deliberated detailed methodology of preparation of compost and its application to field. He explained that the compost thus prepared would not only supplement the scarcity of farm yard manure which is increasingly becoming unavailable day by day but also result in increased crop production and improvement in soil health. They were also made aware of menace of trash and contamination in cotton and its impact on the quality of yarn and fabric. They were elaborated upon clean cotton picking practices, storage and transportation and how to minimize contamination in cotton during harvest and post-harvest operations. They were also demonstrated of functioning of HVI and Trash Analyser. Printed materials on compost preparation and clean cotton picking were also distributed.



Awareness program on "Preparation of bioenriched compost from cotton plant residue" at ICAR-CIRCOT Quality Evaluation Unit, Sirsa

Mera Gaon Mera Gaurav

Under Mera Gaon Mera Gaurav (MGMG) program, a team of experts consisting of Er. V. G. Arude, Mr. S. L. Bhanuse and Mr. R. G. Dhakate visited Parada Village, Hinganghat Taluk, Wardha Dist., Maharashtra on October 27, 2017. About thirty seven farmers attended the meeting held at panchayat office. The expert team interacted with farmers on issues related to cotton production such as best management practices of cotton, integrated pest management, biological inputs and soil fertility management while issues like clean cotton picking, cotton quality and moisture management were discussed on processing aspects. The farmers overwhelmingly showed interest on various aspects of cotton production and processing in order to have better productivity and marketable quality of cotton. Since, the crop is in harvest stage, the farmers were guided on clean cotton picking to have good quality cotton for better marketability. The farmers were also given information on preparation of bio-enriched compost, oyster mushroom cultivation, preparation of briquettes and pellets etc., so as to have value-addition to cotton stalks and other agro-residues for better remuneration and sustainable livelihood. The expert team also visited nearby farm and made observation on cotton crop health and cotton fibre quality.



Visit of expert team to a cotton farm at Parada Village, Hinganghat Taluk, Wardha (Maharashtra)

Meetings

QRT Meeting at Sirsa, Harayana

Quinquennial Review Team (2012-17) of CIRCOT held its meeting at Sirsa Regional Unit on October 7, 2017 under the chairmanship of Dr. N. C. Patel, Vice Chancellor, AAU, Anand along with other members Dr. N. J. Thakor, DBSKKV, Dapoli; Dr. G. R. Anap, World Bank Ginning Expert; Dr. V. D. Gotmare, VJTI, Mumbai and Dr. Sujata Saxena, Pr. Scientist & Member Secretary. QRT members visited and inspected the facilities available and activities being performed at the unit. On this occasion, a stakeholders meeting was also organized for interaction with entrepreneurs, ginners, progressive farmers, seed producers and cotton scientists. The stakeholders raised various issues being faced by them and requested the chairman to provide need based solutions to problems faced by them. Officer In-charge of the regional unit presented a report of the work done during 2012-17 and apprised the QRT about problems, prospects and scope for further expansion of unit. The QRT visited M/s Sharda Cotton Factory, a TMC modernized ginning unit, and interacted with its Director and technical staff while keenly observing the functioning of various units of the factory especially pre-cleaning, roller ginning, saw ginning, pressing, seed crushing and oil extraction.



QRT meeting various stakeholders at Regional Unit, Sirsa, Harayana

IRC Half Yearly Meeting

The Half Yearly Meeting of the Institute Research Council (IRC) was held on October 30-31, 2017. The progress of 16 Institute funded research projects, 2 externally funded projects and 4 Consortia Research Project (CRP) on Natural Fibers, was presented and discussed. The ATR on the proceedings of the 23rd Research Advisory Committee (RAC) was also presented and discussed for immediate action on the part of the concerned scientists. Director Dr. P. G. Patil, in his remarks emphasized on the need for development of technologies to meet the stakeholders requirement and the ways and means to increase the linkage with the stakeholders. He also stressed that scientists should put more effort to get industry sponsored projects and urged them to focus on projects of national importance in cotton processing sector. All scientists and technical officers participated in the meeting.



IRC half yearly meeting at CIRCOT, Mumbai

Meeting of Women Complaint Committee

The second tri-monthly meeting of Women complaint cell for year 2017-18 was held on October 13, 2017. The meeting was attended by all committee members. Discussions on awareness about workplace sexual harassment and women safety among employees took place.

Human Resource Development

Er. Jyoti Dhakane, Scientist (APE) completed her three month Professional Attachment Training at the Centre for Rural Development and Technology, Indian Institute of Technology, Delhi.

Publication

Nishant D. Kambli, Vellaichamy Mageshwaran, P. G. Patil, Sujata Saxena, and R. R. Deshmukh (2017). Synthesis and characterization of microcrystalline cellulose powder from corn husk fibres using bio-chemical route, Cellulose, DOI: 10.1007/s10570-017-1522-4.

Participation in Seminar

Mr. A. Arputharaj (Scientist, QEID) and Dr. Sharmila Patil (Scientist, TTD) attended the national seminar on “Nanotechnology for Evergreen Revolution” organized by Department of Nano Science & Technology, Tamil Nadu Agricultural University, Coimbatore from October 5-6, 2017.

Personnel

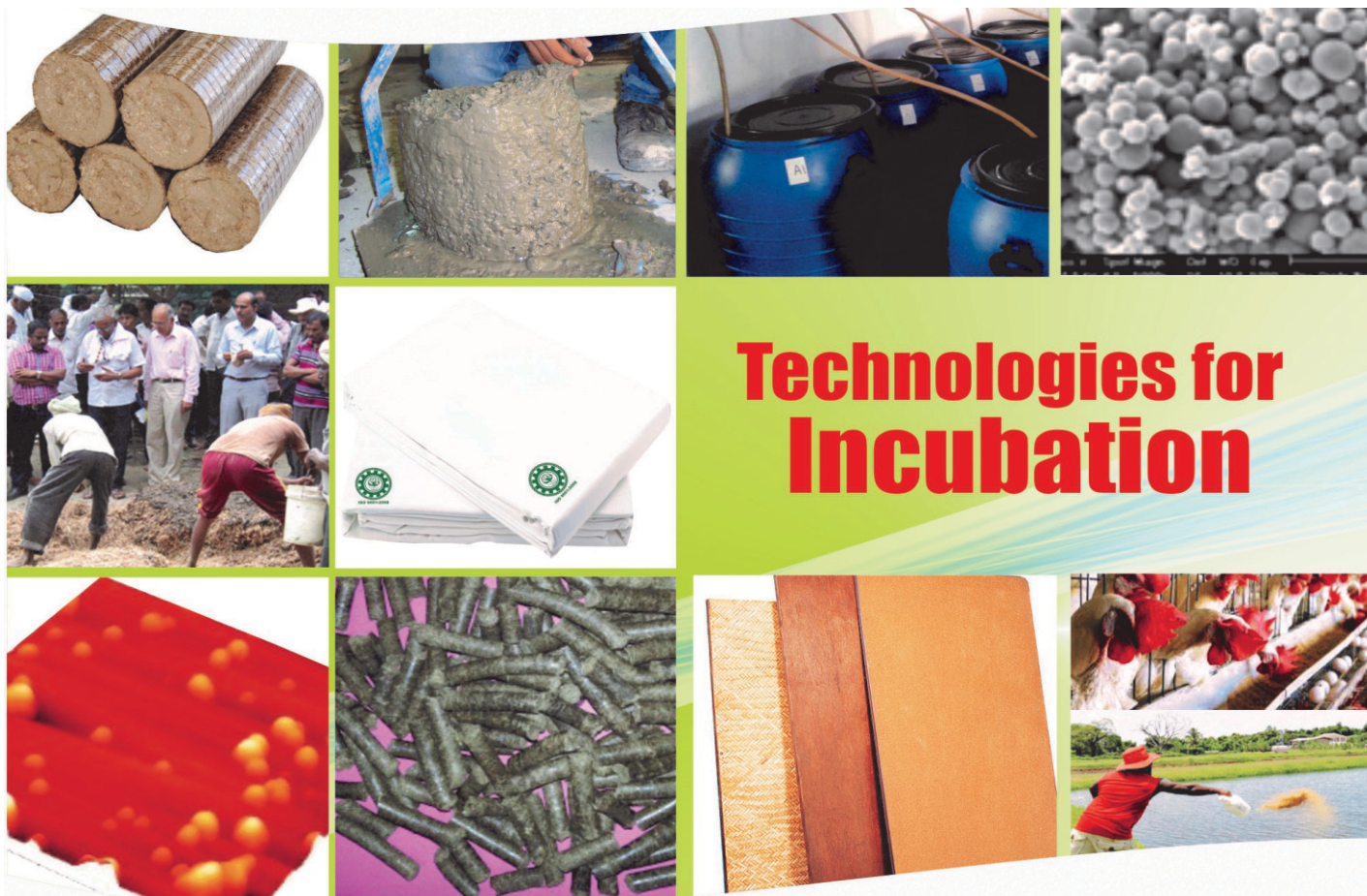
Superannuation

Mr. Satish Madhav Gogate, Senior Technical Officer, Quality Evaluation & Improvement Division, superannuated on October 31, 2017.

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



Technologies for Incubation

Upcoming Events

Calendar of training cum-skill development programmes for the year 2017-18

S.No.	Title of Training	Period	Fees (Rs) (excluding Service tax)
1	Basic & advanced Statistical Techniques for Research	15-17 Nov., 2017	8,000
2	Characterization of Materials Using X-Ray Diffractometer (XRD)	19-21 Dec., 2017	30,000
3	Basic and Advanced Techniques for Evaluation of Textile Materials	04-06 Jan., 2018	10,000
4	Advances in Microscopy	16-18 Jan., 2018	15,000
5	Electrospinning Technologies & their Applications	23-25 Jan., 2018	10,000
6	Fibre Reinforced Composite	07-09 Feb., 2018	10,000
7	Quality Evaluation of Cotton	20-24 Nov., 2017 29 Jan.-. 2 Feb, 2018 19-23 Feb., 2018	10,000
8	Double Roller Ginning Technology & Basics of Cotton Grading, GTC, Nagpur	13-18 Nov., 2017 18-23 Dec., 2017 15-20 Jan., 2018 12-17 Feb.,2018	10,000
9	Customized training programme for students & academia*	Two days (Dates can be finalized as per the requirement)	2,000
10	Customized training programme for students & academia*	One day (Dates can be finalized as per the requirement)	1,000

For more information please contact:

Er. 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
www.circot.res.in



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