



## A Monthly Insight into the ICAR-CIRCOT

### E - NEWS LETTER

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#### Director's Desk...

ICAR-CIRCOT is actively carrying out research in the field of nanotechnology since 2004, with emphasis on nanofinishing on cotton textiles, nanocellulose from cotton linters for bio-composite application.

With the expertise gained in the field ICAR-CIRCOT has organized nine training programmes in this area for varied stakeholders. Tenth in the series is the ICAR-Short course on "Synthesis and Characterization of Nanomaterial for Agricultural Applications" held during September 19-28, 2016 for the faculties from agriculture and allied sector.

Besides, ICAR-CIRCOT is also organizing the skill development programmes in the field of Cotton quality assessment, pre-ginning and ginning technology, Value addition to Cotton by-produce for capacity development in the cotton processing sector. Institute has organised training programme especially for women in three districts of Maharashtra on value addition to cotton biomass. The institute under the umbrella of the Mera Gaon Mera Gaurav (MGMG) programme is establishing linkage with the farmers and is organizing training, technology Demonstration cum awareness programmes for the benefit of the farmers in the targeted villages.

On the other hand the Agri-business Incubation Centre of the Institute is incubating the ideas of the young entrepreneurs to establish start-up by nurturing their business ideas in the area of post-harvest processing of cotton. At present five entrepreneurs are being nurtured in the ABI centre of the Institute are M/s. Sana Agro Industries, Raichur, Karnataka, M/s. Green Globe Mumbai, M/s. The Kadri Mills Ltd., Coimbatore, Tamil Nadu, M/s. Life Long Combines, Kerala and M/s. Greyy, Navi Mumbai.

*P. G. Patil*

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## Technology Insight

### Cotton Lint Opener for Fibre Testing

Cotton lint samples from densely packed bales should be properly opened and cleaned for accurately measuring the fibre quality parameters using High Volume Instruments. Presently, testing laboratories either employ human labour or use trash analyzer for the purpose of opening cotton lint samples for testing. In both these methods, the extent of lint opening is not uniform or optimum and the speed is also very slow. Therefore, a new device has been designed to give uniform and desired lint opening at faster rate without any damage to the cotton fibres. The research prototype of the lint opener has been fabricated and tested for performance evaluation.



Cotton lint opener

## Training

### Synthesis and Characterization of Nano Materials

ICAR sponsored short course on “*Synthesis and Characterization of Nano Materials for Agricultural Applications*” was organized at the Institute during September 19-28, 2016. A total of 20 participants representing agricultural universities and ICAR institutes located in Andhra Pradesh, Haryana, Karnataka, Kerala, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal, Jharkhand and Tripura took part in the training programme. Dr. P.G. Patil, Director inaugurated the programme, Dr N. Vigneshwaran was the course director and Er AK Bharimalla was the course coordinator. During the course, 21 different lectures were delivered that covered basics of nanotechnology, characterization techniques, applications in integrated pest management, fertilizers, filtration, sensors, textiles and composites in addition to safety, toxicology & standards relevant to nanotechnology. Hands-on experience for synthesis and characterization of nanomaterials were arranged for the participants. The trainees having diversified fields of expertise ranging from microbiology, entomology, horticulture, nanotechnology, aquaculture, animal nutrition, biotechnology, fish processing technology, physics, chemistry and engineering rated the short course as 'Excellent'. During the valedictory function, Dr. P.G. Patil, Director insisted that participants should go beyond the boundaries of research for transfer of technology to benefit farmers and other stakeholders and also encouraged to work in a collaborative mode for better sharing of resources and expertise.



Release of the training manual:  
ICAR short course on synthesis and characterization  
of nano materials for agricultural applications



Group photo of trainees of the ICAR short course held  
during September 19-28, 2016



Hands-on practical training on preparation of nano composites

## Quality Evaluation of Cotton

In line with the skill development initiative of the Govt of India, a five day training programme on “Quality Evaluation of Cotton” was organized during Sept. 26-30, 2016 at Mumbai for participants from the Cotton Trade and Industry. This programme focussed on basics of cotton grading, quality evaluation & its importance in trade. Practical classes and demonstrations on cotton quality assessment, cotton grades, spinning and yarn testing were also conducted. In addition, a visit to Cotton Association of India was arranged to expose the participants to commercial grading of cotton.



Group photo of a training programme on *Quality Evaluation of Cotton* organized during September 26-30, 2016

## Utilization of cotton and its byproducts

A one day training program on Cotton and its By-products utilization was organized in three districts of Wardha, Amravati and Nagpur during September 27-29, 2016, which was attended by about 200 women farmers from each districts. The training program was aimed at providing new opportunities in the area of cotton by-products utilization to enhance the livelihood

of women farmers. The programme covered topics like cultivation of oyster mushroom using cotton stalks, surgical cotton preparation, poultry feed from cotton seed meal and preparation of briquettes and pellets from cotton and other agro residues. Dr S.K. Shukla, In-charge, GTC, Nagpur briefed about the institute research activities and utilization of cotton stalks and other agro residues to increase farm income. Demonstrations on preparation of value added products from cotton stalks were also conducted.



Training program for women organized at Wardha on September 27, 2016



Training program for women organized at Amravati on September 28, 2016



Training program for women organized at Nagpur on September 29, 2016

## Oyster Mushroom Production and Preparation of Pellets from Cotton Stalks

A demonstration cum training programme on oyster mushroom production and preparation of pellets from cotton stalks was organized at GTC, Nagpur on September 17, 2016. The programme started with the interaction of farmers with team of experts from GTC of ICAR-CIRCOT. The production of oyster mushroom using cotton stalks and other agro-wastes was illustrated to the farmers. Demonstration was conducted with respect to spawn production and cultivation of mushroom using cotton stalks. Farmers were also demonstrated about preparation of pellets from cotton stalks.



Participants during hands-on-training on oyster mushroom seed bed preparation at GTC, Nagpur



Director Dr. P.G. Patil distributing certificate during Hindi celebration ceremony



Hindi magazine AMBER being released on September 14, 2016

## Events

### Hindi Week

Hindi Week was celebrated in the Institute during September 8-14, 2016. A series of events and competitions like hand writing, unicode typing, technical vocabulary and note drafting were organized for the staff members. Dr. P. G. Patil, Director distributed the certificates and awards to the winners of competitions and honored employees who passed Hindi Prabodh & Pravin exams during concluding ceremony held on 14<sup>th</sup> September 2016. On this occasion Magazine AMBER, issue-2 was released by Director.

### ICAR West Zone Sports Tournament

A team of 44 staff members of the Institute participated in the ICAR West Zone Sports Tournament 2016 held at ICAR - National Research Centre on Camel, Bikaner during 24-27 September, 2016. Dr. T. Senthilkumar, Scientist, was the Chef de Mission (CDM) and Shri Manoj Ambare, Senior Technical Assistant and Shri R. K. Palleward, Assistant Administrative Officer were the managers. The list of medals won by CIRCOT contingent in various events is given below:

Events		Gold Medal	Silver Medal	Participant
Men	Carrrom	★		Shri. S. K. Parab
	Table Tennis		★	Dr. R. S. Nagarkar Shri. P. V. Jadhav Shri. Manoj Ambare Shri. H. S. Koli Shri. M. M. Kadam
	100 x 4 meters Relay		★	Shri. N. V. Kambli Shri. Manoj Ambare Shri. Dhawal Dhodia Shri. S. P. Naik
Women	Chess	★		Ms. Varsha Satankar
			★	Smt. Hemangi Pednekar
	Carrrom	★		Smt. Smita Paiyala
	Table Tennis (single)	★		Smt. Smita Paiyala
	Table Tennis (Doubles)	★		Smt. Smita Paiyala Smt. Vijaya Walzade
	Badminton (Single)		★	Smt. Smita Paiyala
	Javeline Through		★	Smt. Smita Paiyala
<b>Total Medals (10)</b>		<b>5 (Gold)</b>	<b>5 (Silver)</b>	



Director Dr. P.G. Patil with sports winning team of ICAR-CIRCOT

## Mera Gaon Mera Gaurav

Mera Gaon Mera Gaurav programmes were conducted in Wardha district in Deoli, Muraigaon and Sonegaon villages on September 26, 2016. Dr. P. K. Mandhyan, senior scientist along with former CICR director Dr. M. S. Kairon and Shri G. H. Wairale, agro-plus foundation organized a programmes to create awareness related to crop production & pest management, clean cotton harvesting practices & marketing of produce, utilization of cotton stalks and preparation of pellets and briquettes to the farmers. CIRCOT technology pamphlets were also distributed to the farmers during the programmes.



Experts during interaction with farmers in farmers field at Murajgaon village on September 26, 2016

On 30<sup>th</sup> September, 2016 Dr S.V. Ghadge, Senior Scientist and Mr Rangari, Technical Officer visited Bhugaon and Selukate village and explained about cotton biomass utilization by way of pelleting and briquetting, mushroom cultivation and degossipolised poultry feed.



Mera Gaon Mera Gaurav programme at Selukate, Wardha on September 30, 2016



Mera Gaon Mera Gaurav programme at Sonegaon, Wardha on September 26, 2016

## Human Resource Development

- Dr. P. G. Patil, Director CIRCOT attended an Executive Development Programme on Leadership Development at NAARM, Hyderabad from 26.08.2016 to 01.09.2016. This programme was conducted to improve work efficiency and overall effectiveness in functioning of the Institution to achieve desired organizational goal. Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR), was the Chief Guest of the Valedictory Function.
- Shri G. Krishna Prasad and Dr. P. Jagajanantha attended five days training programme on “Developing Winning Research Proposals in Agricultural Research” at NAARM, Hyderabad during Sept 20-24, 2016.
- Dr. C. Sundaramoorthy, Senior Scientist and Shri A. Arputharaj, Scientist attended two day training programme on “Technology Valuation” organized by CSIR-NCL, Pune at Venture Centre from Sept 23-24, 2016.

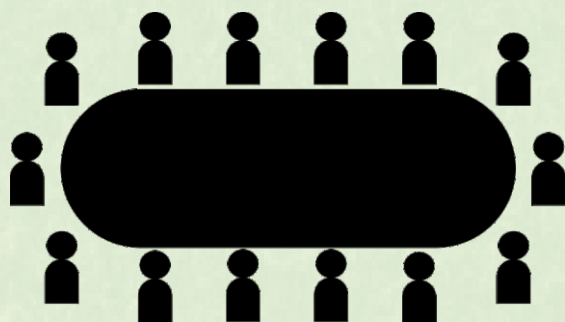


## Director's Visits

- Dr. P. G. Patil, Director CIRCOT attended 24<sup>th</sup> meeting of ICAR Regional Committee No. VII held during September 8-9, 2016 at The International Centre Goa, Goa chaired by Dr. Trilochan Mohapatra, Secretary, DARE & Director General, ICAR, New Delhi. All Deputy Director Generals and senior officials of ICAR, Vice Chancellors of Agricultural Universities and officials of State Governments (Maharashtra, Madhya Pradesh, Chhattisgarh, Goa) were present in the meeting. During the meeting issues related to agriculture, fisheries, animal sciences in the states of Chhattisgarh, Maharashtra, Madhya Pradesh and Goa were discussed. Shri Pandurang Pundalik Fundkar, Hon'ble Minister for Agriculture and Horticulture, Govt. of Maharashtra, Shri Mahadev Jankar, Hon'ble Minister for Animal Husbandry & Dairy Development and Fisheries Development, Govt. of Maharashtra and Shri Ramesh Tawadkar, Hon'ble Minister for Agriculture, Sports & Youth Affairs, Tribal Welfare and Animal Husbandry & Veterinary Services Govt. of Goa participated during deliberation.
- Dr. P. G. Patil, Director CIRCOT attended the Review Meeting of Directors and Project Coordinators of Engineering Division on September 22, 2016 at ICAR, New Delhi chaired by Deputy Director General (Engg.), ICAR, New Delhi.

## Student visits

As part of the course curriculum and educational tour about students from various textile institutes, SAUs visited the ICAR-CIRCOT during the month of September 2016.



S. No.	Name of the organization	No. of students
1	SASMIRA, Mumbai	30
2	College of Agri, Kalaburagi	55
3	Imayam Inst. of Agri. & Tech, Coimbatore	45
4	Sir V. T. College of Home science, Mumbai	40
5	Rai Technology University, Bengaluru	45
6	NIFT, Kharghar	30
7	College of Agri, Mandya, Karnataka	40
8	Agri. College, UAS, Bengaluru	44
9	Veer mata Jijabai Technological Institute, Mumbai	50
10	Veer mata Jijabai Technological Institute, Mumbai	76
<b>Total</b>		<b>455</b>



Mr. C.M. More, QEID explaining about yarn testing equipment to SASMIRA students



Shri Krishna Bara, Technical Assistant, MPD elucidating about blow room process to UAS, Raichur students.



Students from School of Agricultural Sciences and Forestry, Rai Technology University, Bengaluru.

## Conference

Dr. C. Sundaramoorthy, Senior Scientist, attended the World Textile Conference-2 organized by The Textile Association (India) at Mumbai during September 16-17, 2016 and presenting a paper on the topic "Improving Acceptance and Utilization of Indian Cotton" under the Theme area: Future of Indian Cotton & Global Scenario.

## Publications

Bharimalla A.K., Deshmukh S.P., Vigneshwaran, N., Patil P.G., Prasad V. (2016) "Nanocellulose based polymer composites for applications in food packaging: Future prospects and challenges" **Polymer-Plastics Technology and Engineering journal**. (Accepted for publication' NAAS rating 5.0 and Thomson Reuters impact factor 1.5).

## Agri-Business Incubation (ABI) Centre

### Technologies Available for Incubation at the ABI Centre of ICAR-CIRCOT

- Synthesis of Nano-Zinc Oxide Particle by Novel Chemical route
- Energy Efficient Nanocellulose Production Technology
- CIRCOT's Accelerated Processing of Cotton Stalk for manufacture of Compost
- Gossypol reduction and nutritive quality improvement in cottonseed cake for its use in non-ruminants feed
- Design and development of Textile through Computerized Sampling Facility with CAD
- Process for preparation of Absorbent Cotton
- Briquetting and Pelleting of Cotton Stalk
- Quality Tagging of Farmers' Seed Cotton sample for better price realization



## Technologies for Incubation



## Proposed activities for the year 2016-2017

Seminar/Conference/Industry Academia meet etc.

Sl. No.	Name of the programme	Date
1	One day seminar on Textile finishing	December 17, 2016
2	Technology Mela	February 10, 2017

## Upcoming Events

Calendar of training cum-skill development programmes for the year 2016-17

S.No.	Title of Training	Period	Fees (Rs) (excluding Service tax)
1	Fibre and Yarn Quality Management in Spinning	Oct 5-7, 2016	10,000
2	Basic Statistical Techniques for Textile Research	Nov 15-17, 2016	6,000
3	Training on Absorbent Cotton Technology	Nov 21-23, 2016	10,000
4	Characterization of Materials Using X-Ray Diffractometer (XRD)	Dec 19-21, 2016	30,000
5	Advances in Microscopy	Jan 16-18, 2017	15,000
6	Advances in Applications of Nanotechnology	Feb 6-10, 2017	25,000
7	Spectroscopic and Chromatographic Techniques for Material Characterization	Feb 21-24, 2017	15,000
8	Instrumental Evaluation of Clothing Comfort	Mar 6-10, 2017	50,000
9	Quality Evaluation of Cotton	Nov 7-11, 2016 Jan 9-13, 2017 Feb 20-24, 2017	10,000
10	Double Roller Ginning Technology & Basics of Cotton Grading, GTC, Nagpur	Oct 17-22, 2016 Nov 21-26, 2016 Dec 19-24, 2016 Jan 16-21, 2017 Feb 20-25, 2017	10,000

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