



CALIBRATION COTTON

DIFFERENTIAL SCANNING CALORIMETRY

INSTRON

COMPACT SPINNING

## A Monthly Insight into the ICAR-CIRCOT

### e - News Letter

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#### Director's Desk...

Fermentation Technology has been widely used in the present scenario especially in the agro-residues management for its conversion into food, fertilizer and fuel. Getting the desired product involves the manipulation of microorganisms and its enzymes. The products such as bioethanol, enzymes, organic acids, antibiotics, animal feed, mushroom, organic manure etc. have been successfully obtained from agrosidues such as rice and wheat straw, corn wastes, baggase, cotton stalk etc. The two major by-products of cotton are its stalks and seed. CIRCOT's strength lies in biomass utilization and value-addition for not only cotton, but, also of other natural fibres.

ICAR-Central Institute for Research on Cotton Technology (ICAR-CIRCOT) is actively carrying out research on fermentation technology over the last three decades for value-addition to cotton by-products and biomass. Microbiological Research Group, of the Institute was the first to transfer the biogas technology to textile sector on a commercial scale in 1980s to private industries.

The latest among these developments is the degossypolization of cottonseed meal/cake by solid state fermentation process, which enable the cottonseed meal as source of protein in non-ruminant feed. The Institute has organized ICAR short course on "Fermentation technology for value-addition to cotton by-products and biomass" with the objectives to acquaint the participants with basics of fermentation technology and to demonstrate its application in cotton by-products and biomass utilization

P.G. Patil  
Director



# ICAR-CIRCOT, Mumbai



## Technology Insight

### Colorimetric Sensor to Monitor Ripening of Mangos

A chemical based colorimetric sensor has been developed under the NFBSFARA project "Biodegradable electro spun fibre mat for use in packaging of fresh perishable agricultural material" using the combination of ammonium molybdate and palladium sulphate in optimized proportion to monitor the ripening of the mango fruits. This sensing chemical embedded matrix targets the alkene based volatile organic compounds released from mango during ripening to change its colour from off white to blue when mango is fully ripped. The colour strength of sensor changes with the concentration of ethylene gas. The change in colour occurs due to structural change in sensing chemical after reaction with ethylene.



**Electro spun fibre mat as sensor to monitor ripening of mango**

## Training

### Training on 'Quality Evaluation of Cotton'

Fifth batch of the training course on "Quality Evaluation of Cotton" was conducted during 31<sup>st</sup> August - 4<sup>th</sup> September, 2015. There were 19 participants, junior cotton purchasers from regional stations of CCI such as Ahmedabad, Bathinda, Bhilwara, Rajkot, Sirsa and Srigananagar. Dr. P. G. Patil, Director, ICAR-CIRCOT inaugurated the training course and interacted with participants. During the training period participants were acquainted with every aspect of cotton quality assessment and shown facilities such as Kawabata, SEM and Nanotechnology Lab. Participants also visited Cotton Association of India, Cotton Green, Mumbai for some hands on experience in cotton grading. A special guest lecture on Indian Cotton was delivered by Mr. Pankaj Mevani, CEO, ABC Cotspin. During valedictory function, CCI officials Mr. R. K. Gupta and Mr. N. Kutty appreciated CIRCOT efforts in the field of training on Cotton Technology.



Dr. P. G. Patil, Director, CIRCOT; Mr. R. K. Gupta, CCI and Mr. N. Kutty, CCI distributing certificates during the valedictory function



Group Photo: Training on Quality Evaluation of Cotton

## Training on 'Absorbent Cotton Technology'

A two-day self-financed training programme on "Absorbent Cotton Technology" was organized during September 2 - 3, 2015, to create awareness among entrepreneurs and students about the potential of absorbent cotton. The course was inaugurated by Dr. P.G. Patil, Director, ICAR-CIRCOT who briefed about the importance of absorbent cotton and relevance of the training in the current scenario. Ten participants of the training programme included persons from industry, budding entrepreneurs from Maharashtra and Andhra Pradesh, besides students of Pharmacy and Textile Technology. The course consisted of lectures and practical demonstrations. A guest lecture on "Licensing of absorbent cotton industry" by Shri.G.D.Hukare Asst.

Commissioner, FDA, Maharashtra was also arranged where participants could gain knowledge about various FDA regulations and the process of obtaining FDA clearance for setting up of absorbent cotton manufacturing unit. Dr. S.K. Chattopadhyay, I/C Head, Mechanical Processing Division, distributed the certificates in the valedictory function and delivered valedictory speech highlighting various issues, especially environment related issues in the establishment of absorbent cotton industry. Dr. Sujata Saxena, Principal Scientist & Head I/C, CBPD acted as the Course Director of this training programme. Dr. ASM Raja, Er. AK Bharimalla, Dr. Virendra Prasad, Mr. A. Arputharaj and Dr. R. D. Nagarkar coordinated the training programme.



Dr. P. G. Patil, Director, releasing the Training CD during Inaugural Function



Dr. P. G. Patil, Director presenting CIRCOT publications to Sh. G. D. Hukare, Assistant Commissioner, FDA, Maharashtra



Group photo: Training on "Absorbent Cotton Technology"

## Training Programme on “Recent Advances in Quality Evaluation of Cotton”

The Ginning Training Center (GTC), Nagpur organized customized training programme on recent advances in quality evaluation of cotton for the Junior Cotton Purchasers of The Cotton Corporation of India (CCI) during September 7-11, 2015. There were fourteen participants from different regions viz., Akola and Aurangabad (MS), Indore (MP), Rayagada (Odisha) and Warangal (AP). The programme modules dealt with cotton scenario in India, fibre fineness and maturity, cotton grading, processing, trading and

marketing. The practical sessions covered aspects like stapling of cotton, visual grading, moisture and ginning percentage measurements and gin settings. In addition, different subject matter specialists from industry and govt. organisations delivered a series of guest lectures on specialized topics. The trainees were also taken to industrial visits to M/s Bajaj steel Industries Ltd. & M/s Sri Bhagirath Textiles Pvt. Ltd. Dr. M.S. Kairon, former Director, ICAR-CICR presided over the valedictory function and distributed certificates to the trainees upon successful completion of the programme.



Group Photo: Training Programme on “Recent Advances in Quality Evaluation of Cotton”

## ICAR short course on “Fermentation Technology for value-addition to cotton by-products and biomass”

Dr. V. Mageshwaran, Scientist, ICAR-CIRCOT director the ICAR short course on “Fermentation Technology for value-addition to cotton by-products and biomass” during Sep. 7-16, 2015 which was attended by eleven participants from SAU and ICAR institutes representing the states such as Gujarat (1), Maharashtra (6), Tamil Nadu (1) and Uttar Pradesh (3). Dr. S. Sreenivasan, former Director, CIRCOT was the chief guest for the inaugural function, who lauded the efforts taken to host this unique programme on the co-incidence of golden jubilee celebrations of Microbiological research that started during 1965. Dr. R. H. Balasubramanya, former Head, CBPD presided over the function as a

guest of honour. Dr. A.J. Shaikh, former Director, CIRCOT graced the function as special invitee. The short course consisted of 15 lectures out of which five were guest lectures, two demonstrations, nine practicals and one industrial visit. The topics covered fermenters, growth kinetics of microorganisms, lignocellulosic substrates, pretreatments of lignocellulosic substrates, value addition to cottonseed and to cotton stalks. The online feedback system generated by CBP-IASRI portal showed the seven participants ranked the training program in excellent and four participants ranked the training program in very good categories. Dr. N.J. Thakor, Dean, BSKKV, Dapoli presided over the valedictory function as chief guest and blessed the participants for their bright endeavors.



Inaugural function of ICAR short course on “Fermentation Technology for value-addition to cotton by-products and biomass”



Group Photo: of ICAR short course on “Fermentation Technology for value-addition to cotton by-products and biomass”

## Meeting

- 1) A meeting to discuss extra mural research project proposals was held on September 5, 2015 under the chairmanship of Dr. Dr. S. Sreenivasan and A. J. Shaikh former Directors, CIRCOT.
- 2) A Meeting of all scientists was called on September 19, 2015 to revise the Institute Mandate. Dr. S. Sreenivasan and Dr. A. J. Shaikh, former Directors, CIRCOT were also invited for the meeting which was chaired by Dr. P. G. Patil, Director (Acting).
- 3) **Mera Gaon Mera Gaurav**  
A meeting to discuss the action to be initiated in the Mera Gaon Mera Gaurav programme was held on September 23, 2015 with Dr. P.G. Patil, Director, in the Chair.

After deliberations, six teams consisting of four scientists each were formed and five villages were allotted to each team. Thus, a total of 30 villages were identified in the vicinity of GTC, Nagpur for undertaking the activities as per the ICAR guidelines.

## Event

### Brainstorming session on “Make in India/Made in India” in Textiles

Textile sector is one among the 25 selected sectors under the “Make in India” program launched by our Prime Minister with the aim of transforming India into a global manufacturing giant. With good availability of raw materials such as cotton, jute, silk etc. and skilled manpower, this sector has



better edge over other sectors. However, it is very important to review the pros and cons in the implementation of make in India concept in textile industry for which a brainstorming session was organized on 11<sup>th</sup> September, 2015 at the Institute. The discussion was jointly organized by ICAR-CIRCOT and Indian Fibre Society (IFS).

Participants included Dr. S.N. Pandey, President, IFS; Dr. S. Sreenivasan, former Director, ICAR-CIRCOT; Dr. R.P. Nachane, Chairman, IFS; Shri R.M. Gurjar, Secretary, IFS, Dr. P.G. Patil, Director, ICAR-CIRCOT and the scientists. Shri Suresh Vaidya, Textile Consultant; Shri Ulhas Nimkar, Textile Consultant; Dr. G.S. Nadiger, former Director, Textiles Committee, and Textile Consultant; Dr. P. Varadharajan, Assessor, NABL; Dr. Anap, International ginning consultant; Shri Arun Roongta, Textile Consultant cum journalist; Shri Vidhur, Industrialist; Mr. Mepani, Industrialist was attended the session.

Dr. P.G. Patil delivered welcome address giving brief insight into "Make in India/Made in India" initiative of the government. He pointed out that better infrastructure facilities and skill development are the core issues to be targeted for the success of this initiative. He insisted for better utilization of cotton materials and

training of manpower to improve productivity.

Dr. S.N. Pandey, President, IFS, in his presidential address, highlighted the need for producing quality products at competitive prices. He said that lot of textile materials are getting imported from other countries and it is not a good sign for Indian textile industry. He informed that industrial managers have to play a major role in nation building activity and expressed hope of India becoming a global leader in Textiles.



### Brainstorming Session on Make in India / Made in India in Textiles

Dr. R.P. Nachane, Chairman, IFS, in his address highlighted the positives of Indian textile industry such as high spindleage, rotor capacity, loom capacity, manpower availability etc. He mentioned about increase in domestic demand for quality products touching upon the need to develop indigenous machinery. He pointed out that the Indian companies are performing poorly in chemical finishing and garment finishing sectors. He advocated measures from central and

state governments to ease policies for licensing of industries. However, he mentioned that the outcomes of initiatives like single window clearance for industrial licensing are yet to be seen. Dr. S. Sreenivasan, former Director, ICAR-CIRCOT moderated the session. The prominent speakers included Shri Ulhas Nimkar, Textile Consultant, Dr. G. S. Nadiger, former Director, Textiles Committee, and Textile Consultant, Dr. P. Varadharajan, Assessor, NABL, Shri Mepani, Industrialist.

Dr. S. Sreenivasan concluded the session applauding the active participation of all members in the brainstorming session.

The recommendations from the brainstorming session are-

- ✓ Home textile industry in India is flourishing and India can become dominant supplier of home textile products in future
- ✓ Immediate action is necessary for long staple cotton to maintain our status as a prominent cotton producer and manufacturer
- ✓ Fundamental research in waste management is very essential and the need for skill development of manpower
- ✓ Uniqueness of Indian products should be projected in a bigger scale
- ✓ Need to revive the Indian eco label and for formulation of Indian organic standard.



Felicitation of Dr. S.N. Pandey, former Director ICAR-CIRCOT and Chairmen IFS cotton by-products and biomass"

## Hindi Week Celebration at ICAR-CIRCOT, Mumbai

Hindi Week was celebrated in the institute during September 7 -14, 2015. A variety of interesting competitions were organized for the staff members viz. (1) Poetry Recitation (2) Essay (3) Drafting / Noting (4) Crosswords (5) Technical Translation (6) General Knowledge and (7) Antakshari. The celebration was inaugurated by Dr. Anant Shrimali, Assistant Director, Hindi Shikshan Yojana and well-known Humor Poet & Manch Sanchalak on September 7, 2015. He applauded consistent progress of official language implementation at this Institute.

Kavi sammelan was organized on September 14, 2015 on the concluding

day where eminent poets Shri. Suresh Mishra, Dr. Vanamaalee Chaturvedi, Shri. Sagar Tripathy, Shri. Ras Bihari Pandey, Smt. Pramila Sharma and Shri Vidyabhooshan Tiwari participated and recited some of their beautiful original compositions. The poets also graced the occasion as Chief Guests and distributed the certificates and awards to the winners of competitions held during the Hindi week. The annual awards for rendering official works originally in Hindi went to clerical employees Mrs. S.P. Payala and Mrs. S. R. Shirsat. The recipient of annual Chal Vaijayanti shield for maximum official work in rajbhasha were Technology Transfer Division and Personnel Administrative section. The employees who passed Hindi Prabodh-Pravin were also honored on this occasion.



Dr. P. G. Patil, Director Lighting the lamp during inaugural function of Hindi week Celebration



Valedictory Function of Kavi Sammelaan

### Hindi Week Celebration at GTC, Nagpur

Ginning Training Centre, Nagpur observed Hindi Week celebration during September 14-19, 2015. Different competitions were held to promote awareness for official language viz. 1) poetry recitation 2) story writing using idiom 3) drafting / noting 4) essay 5) word puzzle 6) elocution.

The Chief Guest, Mrs. Madhuri Raulkar, eminent gazal singer opined in her inaugural speech that amongst all the languages being a simplest language of all, hindi is unanimously spoken in the country. Dr. Manoj Pandey, Professor, R.S.T.M. University, Nagpur graced the closing ceremony as the chief guest on September 19, 2015 and insisted to promote hindi nationwide to strengthen federal governance of our country. He distributed cash prizes and certificates to winner employees of the hindi week competitions.

### Swatchha Bharat



ICAR-CIRCOT Staffs at cleaning activity

The staff of the Institute formed a human chain and removed old scrap, unserviceable items, damaged papers from basement of Dr. V. Sundaram Building on September 28, 2015.



ICAR-CIRCOT Staffs at cleaning activity

### Director's Visits

- 1) On 1<sup>st</sup> Sept., 2015, Dr. P.G. Patil, Director visited villages Amondi & Kanse, Dist. Pune, M.S. for selection of villages under 'Mera Gaon Mera Gaurav' Scheme and to inspect the rubber dams constructed by ICAR-CIRCOT. He was accompanied by Dr. S.V. Ghadge, Er. A.K. Bharimalla, Shri S.V. Kokane and two technical experts from M/s. Zenith Industrial Rubber Products Pvt. Ltd., Mumbai. The installation works of rubber dams in these sites were accomplished as per specifications.
- 2) Dr. P. G. Patil, Director, ICAR-CIRCOT along with Dr. Debasis Nag, Director, NIRJAFT, Kolkata and Dr. S.M.K. Naqvi, Director, CSWRI, Avikanagar attended the

High Power ICAR Committee meeting under the chairmanship of DDG (Engg.), ICAR, for evaluating Wool Processing Plant at ICAR-CSWRI, Avikanagar during 15-16<sup>th</sup> Sept., 2015. The committee visited the Wool Processing Plant of Division of Textile Manufacturing & Textile Chemistry and interacted with the scientists and staff. Issues such as manpower, machinery, building and operation of the plant under PPP were discussed and recommendations were made. He also visited various divisions and laboratories such as Animal Genetics Breeding, Animal Nutrition, Animal Physiology and Bio-chemistry, Animal Health, etc. and also Sheep & Goat Farms.

- 3) Dr. P. G. Patil, Director, ICAR-CIRCOT attended the meeting for revision of the guidelines for evaluation and testing / products at ICAR Institutes held at SMD (Agricultural Engineering Division), KAB-II, Pusa, New Delhi on 8<sup>th</sup> Sept., 2015. The meeting was chaired by Dr. K. Alagusundaram, DDG (Engg.) and attended by Dr. K.K. Singh, ADG (Engg.), Dr. D. P. Yadav, Director, IIMR, New Delhi and representatives from CIPHET & IARI. He also took part in deliberations and presented the methodology adopted by ICAR-CIRCOT for testing of materials and

products along with fee structure. Further it was decided in the meeting to form the sub-committees subject wise. For fibre products, it was decided to form the sub-committee under the chairmanship of Director, ICAR-CIRCOT & members from NIRJAFT and CSWRI, Avikanagar to prepare the report.

### Seminars/ Conferences/ Workshops

- 1) Dr. T. Senthilkumar, Scientist, Mechanical Processing Division attended two day National workshop on 'Advanced Nano Composite Materials: Characterization and Application' Organized by Department of Mechanical Engineering, Anna University Regional Centre, Coimbatore, Tamil Nadu during September 22-23, 2015.
- 2) Dr. P. K. Mandhyan, Senior Scientist, Quality Evaluation and Improvement Division attended meeting on "Indo-German table in Trade Potential in Technical Textiles" organised by Bureau of Indian Standards on September 30<sup>th</sup>, 2015 at Hotel Lalit, Mumbai.

## Awards and Recognitions

Mrs. K. R. Joshi, Senior Technical Officer of Official Language Cell was awarded by Ashirwaad, a literary-social-cultural organization in Mumbai in their 24th Ashirwaad Rajbhasha Award Function on 23rd September 2015, in recognition of her valuable contribution towards implementation of official language in this institute.

## Visits of Dignitaries

Shri Mahesh Sharda, President, Indian Cotton Association Limited, Bathinda visited CIRCOT Regional Unit Sirsa on 17.09.2015. The activities of the Regional Unit was explained by Dr.Hamid Hassan, Officer In-Charge, and the visitor expressed his concerns about excessive level of trash and contamination in cotton in north India and enquired about various possibilities for their reduction.



Shri Mahesh Sharda, visited CIRCOT Regional Unit Sirsa

## Visits of Students

As part of the course curriculum or Educational tour students from various textile institutes, SAU visit ICAR-CIRCOT round the year.

Name of the Organization	No. of Students & Date of Visit
Vidyalankar Polytechnic, Wadala, Mumbai	60 Sept. 21 <sup>st</sup> , 2015
Vidyalankar Polytechnic, Wadala, Mumbai	60 Sept. 22 <sup>nd</sup> , 2015
Vidyalankar Polytechnic, Wadala, Mumbai	60 Sept. 23 <sup>rd</sup> , 2015
Vidyalankar Polytechnic, Wadala, Mumbai	60 Sept. 24 <sup>th</sup> , 2015
University of Agricultural Sciences, Raichur	116 Sept. 28 <sup>th</sup> , 2015
National Institute of Fashion Technology (NIFT), Kharghar, Mumbai	20 Sept. 30 <sup>th</sup> , 2015



Mr. C. M. More, QEID elucidating yarn testing facilities to Vidyalankar Polytechnic students



**Sh D. N. Moon, QEID** elucidating fibre testing facilities to students from Vidyalankar Polytechnic



Group photo: Women farmers of Sabarkantha and Aravali district of Gujarat



**Sh R K Jadhav, MPD** elucidating about compact spinning machine to students from NIFT, Mumbai

## Upcoming Events

- (1) Training Course on “Quality Evaluation of Cotton” at ICAR-CIRCOT, Mumbai

### Training Calendar for 2015 -16

No.	From	To
1.	14-12-2015	18-12-2015
2.	11-01-2016	15-01-2016
3.	08-02-2016	12-02-2016

## Visits of Farmers

Under Agriculture Technology Management Agency (ATMA) project, women farmers from Sabarkantha (50 farmers) and Aravali (45 farmers) districts of Gujarat visited ICAR-CIRCOT on September 14, 2015. They visited Fibre Testing and Yarn Testing sections of QEID as well as Mechanical Processing Division.

## COURSE CONTENTS

- Advances in Ginning Technologies
- Introduction and Practical in Cotton Grading
- Cotton Crop By-products
- Fiber Length Measurement using Conventional Instruments
- Demonstration in Fibre Fineness and Maturity
- Cotton fibre Testing using High Volume Instrument (HVI) and Advanced Fibre Information System (AFIS)



## Up Coming Event



ISO: 9001:2008

- Mechanical Processing of Cotton
- Contamination in Cotton and Marketing & Commercial aspect of Cotton
- Techno Entrepreneurial Activities and Business Planning Development
- Visit to Cotton Association of India, Cotton Green

**Course Fee:** Rs. 5700/- (Inclusive of taxes)

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Nobel Laureate Dr. C. V. Raman visited the Institute in 1950. The ICAR-CIRCOT, Director and Scientists of Mechanical Processing Division explaining the spinning technology.



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