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A Monthly Insight into the ICAR-CIRCOT

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Director's Desk...

International cotton prices, which declined for most of January, were rising steadily during February and the Cotlook A Index moved gradually upwards to 71.50 cents per lb. The prices of Cotton in India also rose by around 8 per cent owing to the international price sentiments, lower yield estimates and the procurement of almost 20 % (8 million bales) of the total expected crop during the cotton season 2014-15 by the Cotton Corporation of India. Around 3.2 million bales is estimated to have been exported so far, while it was around 7.7 million bales last year during the same period. Cotton Advisory Board expects cotton exports to stand at 9 million bales.

The cotton outlook estimate indicates a decrease in world production by 7.5 percent attributable to changes in the three major producers, India, China and the United States. Output in India is predicted to fall more modestly than in the other two origins. World consumption is expected to increase by almost 1.4 percent during 2015/16. Growth is restricted to a handful of countries, such as Bangladesh, where export earnings from the garment export sector have continued to increase steadily, and Vietnam, which has been the subject of substantial inward investment in spinning capacity. As a result, world stocks are forecast to decline in 2015/16 for the first time for several seasons, albeit by an insignificant margin.

The ICAR – CIRCOT has been actively carrying out research and development in the field of chemical processing of textile materials. The institute has well equipped chemical testing lab with sophistic equipments and also has ISO 17025: 2005 accreditation from NABL. A comprehension knowledge on the purity, quality and performance of the chemicals and their interaction with the textile fibres is very much essential for the personnel working in the processing industry. In this regard, a training programme on “Chemical Characterization of Textile Materials” was organized during 23-27th February 2015 with the objectives to acquaint the trainees about basic and advance chemical and spectroscopic methods for the characterization of dyed and finished fabrics and auxiliaries and to provide hands on training on various analytical techniques.

Dr. P.G. Patil
Director



ICAR-CIRCOT, MUMBAI



ISO: 9001:2008

Technology Insight

Process Protocol for Ginning of Long Staple Cotton on Rotary Knife Roller Gin

A Study was carried out to optimize rotary knife roller gin for efficient ginning of Indian cotton. Experimental trials were conducted at commercial rotary knife ginning plant at Dharwad. The plant comprises of feeder box, inclined pre-cleaner, stick machine, screw conveyor for seed cotton distribution to 10 rotary gin stands, cylinder and air jet lint cleaners and fully automatic down packing baling press. The pneumatic suction system was used for handling lint and seed cotton. Seeds obtained after ginning were passed through the two re-claimers machine wherein the un-ginned cotton was reclaimed and recirculated for ginning. The salient specifications of the rotary knife gin stand includes, the length and diameter of roller was 1060 mm and 388 mm respectively, rotary knife was fitted with six helical knives and connected power to rotary knife roller gin was 30 HP (25 HP for driving roller and rotary knife and 5 HP for driving cleaner and feeder).

Roller speed, rotary knife speed, and roller to knife pressure and feed rate were the independent variables selected for the study. The dependent variables were ginning capacity, fibre and seed quality. Cotton of Bunny variety was ginned. The roller speeds were kept as 150, 175, 200, 225 and 250 rpm while the rotary knife speeds were kept as 300, 350, 400, 450 and 500 rpm. The feed roller speeds were maintained at 16, 18, 20, 22 and 24 rpm. The pressure on roller to rotary knife was selected as 70 bar and 80 bar. A total of 15 experiments with two replications each were conducted. The lint and seed samples were collected for each experiment before and after ginning for assessing the effect of rotor knife ginning on fibre, seed quality and spinning performance. The same cotton variety was ginned on double roller gin and the

results were compared. The fibre quality was assessed by evaluating the HVI and AFIS parameter and the yarn quality was assessed by spinning the cotton at 50's count. The percentage of cut seeds obtained after each experiment was also evaluated.

The efficient ginning in terms of fibre, yarn and seed quality was found to be better at roller speed in the range of 200-225 rpm, rotary knife speed of 400-450 rpm, feeder roller speed of 18-20 rpm and at a pressure of 80 bar between the roller and the rotary knife. The the capacity of the single stand of rotary knife roller gin when operated at roller speed of 200 rpm, rotary knife speed of 400 rpm, feed roller speed of 18 rpm and with the gin roll and rotary knife pressure at 80 bar, was found to be 425 kg lint/h. The capacity was found to be about six times that of the Jumbo double roller gin.

HVI results indicated marginal increase in 2.5% span length in rotary knife ginning over DR ginning and other fibre properties remain unaffected. AFIS results showed higher fibre neps and seed coat neps in rotary knife gin than DR gin. Fibre neps were found to be 263 cnt/gm and 162 cnt/gm and seed coat neps were found to be 42 cnt/gm and 21 cnt/gm for rotary knife gin and DR gin respectively. Full spinning of rotary knife and double roller ginned cotton was done at 50s counts and the yarn properties were evaluated. The lea strength and CSP values were found to be higher for rotary knife ginning than DR ginning. The cut seed percentage was found to be about 4% and 0.5% for rotary gin and double roller ginned respectively.

Training Programmes

Training on Quality Evaluation of Cotton

A training programme on Quality Evaluation of Cotton was organised from 9-13rd February, 2015 at ICAR-CIRCOT, Mumbai. The training was inaugurated by Dr. K.K. Singh, Director, CIAE, Bhopal. Dr. P. G. Patil, Director was also present on the occasion. There were seven

Trainees in the programme, who are from diverse fields representing from CCI, spinning industry, farming community and also from business.



Dr. K. K. Singh, Director, CIAE, Bhopal, Inaugurated the Quality Evaluation of Cotton Training Programme

During the inaugural speech, Dr. K. K. Singh emphasised the importance of cotton quality and added that CIRCOT is the only institute which can fulfil the needs of the textile industry as well as the farmers. Dr. P.G. Patil, requested the participants to take this training as a good opportunity and give valuable feedback which would help to improve the training course in the future.



Group photo: Training on Quality Evaluation on cotton



Dr. A. K. Basu, Former Director, CICR, Nagpur interacting with trainees (valedictory function)

Dr. A.K. Basu, former Director, CICR, Nagpur was the Chief Guest during the valedictory function, which was held on 13th February

2015. Dr. A. J. Shaikh, former Director, ICAR-CIRCOT also attended this function.

Training on Chemical Characterization of Textile Material & Auxiliaries

A training programme on the Chemical Characterization of Textile Material & Auxiliaries was organised at ICAR-CIRCOT, Mumbai from 23-27th February, 2015. The objective of the programme was to acquaint the trainees about basic and advanced chemical and spectroscopic methods for the characterization of dyed and finished fabrics and auxiliaries and to demonstrate and provide hands on experience on various analytical techniques. The programme was inaugurated by Dr. P.G. Patil, Director. Twelve participants attended the training programme.



Dr. P.G. Patil, Director, CIRCOT Inaugurated the Training on Chemical Characterization of Textile Material & Auxiliaries Group photo: Training on



Chemical Characterization of Textile Material & Auxiliaries

The valedictory function was held on 27th February, 2015 which was attended by HoD's of various Divisions. Dr. A.J. Shaikh, Former Director, CIRCOT, Dr. S. K. Chattopadhyay, Head In-charge, MPD and Dr. R.P. Nachne,

former Head QEID also participated and shared their experience in the field of chemical testing. The feedback from the trainees indicated their overall satisfaction about the course content, lectures and practical demonstrations.



Valedictory function of Training on Chemical Characterization of Textile Material & Auxiliaries

Awareness Programme

Bio-enriched compost Awareness-cum-Demonstration programme

An Awareness-cum-Demonstration for the preparation of bio-enriched compost from cotton plant residues was organised at farmer's field at village Shahpur Begu in Sirsa District of Haryana State on 21st February 2015. In all, 48 invited farmers from nearby districts of Haryana and Rajasthan participated in the programme.



Awareness programme for Bio-enriched compost from cotton plant residues

The methodology of compost preparation, its nutritional and other technical aspects were explained to them by Dr. V. Mageshwaran, Scientist, GTC Nagpur and Dr. Hamid Hasan, Assistant Chief Technical Officer, QEU of

CIRCOT at SIRSA. The application of compost to cotton crop, its beneficial impact on soil health improvement and its utility in containing pests and diseases were explained by Dr. Dilip Monga, Head and Dr. Rishi Kumar, Principal Scientist, CICR Regional Station Sirsa. The farmers were given a hands on practical demonstration of compost preparation at large scale by Dr. Hamid Hasan. Shri Rajaram Kadvasra, a progressive farmer and secretary of Kisan Club, Sirsa who prepared and used this compost last year also shared his experiences with farmers.



Dr. V. Mageshwaran and Dr. Hamid Hasan demonstrating the preparation of Bio-enriched compost from cotton plant residues

Meetings

1) A Meeting of CIRCOT Scientist with Rashtriya Chemicals and Fertilizers Ltd (RCF) Personnel



Deliberation between ICAR-CIRCOT Scientists and RCF Personnel

A meeting with personnel from Rashtriya Chemicals and Fertilizers Ltd (RCF) was arranged on 7th February, 2015 at RCF, Mumbai. RCF, a Govt. of India undertaking, a

major fertilizer company is interested to explore the opportunities to develop new products or perform value addition to existing products through nanotechnology in collaboration with ICAR-CIRCOT. This is second in the series of discussion to finalize the scope of work for ICAR-CIRCOT to act as consultant of RCF officials to develop technology for adoption of nanotechnology to improve the efficacy of fertilizers. During the meeting, Shri Abir Banerjee, Executive Director, Trombay, provided overall outlook of fertilizer industries in India, followed by a presentation by Dr. Archana Kale, Deputy Manager R&D, about the status of fertilizers and their requirement of nano-based material to improve the fertilizer use efficiency.

Dr. P.G. Patil, Director, CIRCOT explained about the mandate of ICAR-CIRCOT and its strength in the field of nanotechnology and their applications. The scope of nanomaterial to be used as fertilizer was explained by Dr. N. Vigneshwaran and Dr. Sujata Saxena, Senior Scientist, CIRCOT while the protocol for consultancy and other business modalities was explained by Er. A.K. Bharimalla, Senior Scientist, CIRCOT. The consultancy project period is decided to be two years, starting 1st April, 2015. Apart from this, other potential application area identified for cooperation are Conversion of low grade rock phosphate to high content P₂O₅ rock phosphate by ball milling processes, and inclusion of nanoparticles to NPK complex fertilizer to enhance their efficacy. Finally, it was decided to sign the MoU on or before March 15, 2015 after completing the required formalities. The meeting concluded with thanks to the entire team involved in this project.

2) Official language implementation committee's quarterly meeting

Official language implementation committee's quarterly meeting of the CIRCOT was held on 7th February, 2015, presided by Dr. P.G. Patil Director, CIRCOT. Discussion was held on various aspects such as quarterly report,

target of letters, Hindi workshop and institute website in Hindi.

3) Meeting Cum Workshop of PME In-Charges of ICAR Institutes at NASE Complex, New Delhi

Dr. Sujata Saxena, Senior Scientist & Head Incharge, CBPD, CIRCOT attended the meeting cum workshop of PME in-charges of ICAR institutes organized by NAARM, IFPRI and NAAS at NASC Complex on 23rd February, 2015 to discuss the PME Indicators and its Implementation Strategy developed by NAARM and IFPRI. The PME manual containing the PME indicators prepared by NAARM and IFPRI was presented by Dr. Mruthyunjaya, IFPRI. It was followed by remarks and suggestions. Then a group discussion on PME indicators and specific requirements of various subject matter divisions in their implementation and suggestions from each Division were noted by the project team. The workshop ended with vote of thanks by Dr. B. S. Yadav, former Director IVRI, Izatnagar.

4) ISO Management Review Meeting

A meeting was held on 27th February, 2015 at Dr. V. Sundaram Committee Room, CIRCOT, Mumbai to look into the observations of the internal audit held on 12 – 13 January, 2015 and also compliance of the audit points by various divisions and sections. The meeting was Chaired by Dr. P.G. Patil, Director and attended by all the ISO Management Committee Members and invitees. Dr. A.S.M. Raja, Sr. Scientist and MR, ISO made a presentation on the various aspects like review of quality policy for sustainability, status of quality objectives, results of internal audit, process performance and service conformity, customer complaint and feed-back, status of corrective, preventive actions, changes that would affect the Quality Management System and sought recommendations from the members for the improvement. The meeting ended with Vote of thanks by Dr. A.S.M. Raja, Senior Scientist, CBPD.

Consultancy

A Non-Disclosure Agreement was signed on 12th February 2015, between the ICAR-CIRCOT & M/s. ITC Limited, Bengaluru for business relationship pertaining to the characterization of Nanocellulose (Nanofibrillated cellulose / Nanocrystalline cellulose) samples that are being produced by the said party from woody biomass. ICAR-CIRCOT, with the available expertise, will characterize the given material for various properties related to nanocellulose and evaluate the overall quality of the material.

Exhibitions

- 1) ICAR-CIRCOT Participated in the 12th Agricultural Science Congress 2015 held at Karnal, Haryana from 2-7 February, 2015.



Mr. Kaptan Singh Solanki (Governor of Haryana) & Dr. S. Ayyappan (DG, ICAR) inaugurating the exhibition



Dr. Hamid Hasan, ACTO, ICAR-CIRCOT interacting with Dr. K Narayana Gowda, Former Vice Chancellor, University of Agricultural Sciences, Bangalore, Karnataka at the ICAR-CIRCOT Stall.

- 2) Participated in the Science Expo 2015 at Nehru Science Centre, Worli, Mumbai from 4-7 February, 2015.



Er. G. Krishna Prasad, Scientist and Dr. R.D. Nagarkar, Assistant Chief Technical Officer interacting with Dr. Ratan Kumar Sinha, Chairman, Atomic Energy Commission and Leader, India Delegation; Dr. S.M. Khened, Director, Nehru Science Centre at ICAR-CIRCOT Stall.

Swachh Bharat Mission



Cleaning Work by CIRCOT Staff Members

During this month, cleaning of Room No. 207 in the second floor was carried out on 24th February, 2015 from 2.00 to 5.00 p.m. by forming a human chain. Old furniture, computer monitors, files, wooden partitions, etc. were removed to the ground floor for subsequent removal from the office premises.

Hindi Work Shop

Quarterly workshop in Hindi, held on 28th February, 2015 on राजभाषा कार्यान्वयन को कैसे बढ़ाये? Dr. Anant Shrimali, Assistant Director, Hindi Shikshan Yojana Guided and

Dr. Vibhavari Gore, Senior Rajbhasha Adhikaari, Central Railway delivered the lectures. This workshop was organized for Technical Officers and 15 officer attended the workshop.



Dr. P. G. Patil, Director, CIRCOT, welcoming Dr. Anant Shrimali, Assistant Director, Hindi Shikshan Yojana, Mumbai



Shri. Sunil Kumar, Administrative Officer, CIRCOT Welcoming Dr. Vibhavari Gore, Senior Rajbhasha Adhikaari, Central Railway, Mumbai

National Science Day Celebration

The 25th National Science Day was celebrated by ICAR-CIRCOT with great enthusiasm on 28th February, 2015. This day was celebrated every year to commemorate the invention of the Raman Effect in India by the Indian physicist, Sir Chandrasekhara Venkata Raman on the same day in the year 1928. For his great success in the field of science in India, Chandrasekhara Venkata Raman was awarded and honored with the Nobel Prize in Physics in 1930. As a part of the science day celebration ICAR-CIRCOT organized a lecture on Food and Health by Dr. N.J. Thakor, Dean, Faculty of Agricultural Engineering, Dr. B.S.K.K.V, Dapoli on 19th February, 2015.

In his lecturer Dr.N.J. Thakor, discussed about the different kinds of food, nature of food items and stressed on the importance of food habits of people to lead a healthy life.



Dr. N.J. Thakor delivering the lecture on Food and Health

An Open Day was organized on 28th February, 2015 during which around 75 students from the nearby schools visited the institute and explored various research facilities in the Institute like fibre and yarn testing, Mechanical Processing Division apart from Visitor's & Exhibition Room where the technologies and process developed by the institute are displayed.



Dr.P.G. Patil, Director CIRCOT delivered the Inaugural speech on National Science Day celebration



Participation of school students on the Open Day



Dr. Sanjeev Shevade, Orthodontist and Nature Enthusiast delivered the lecturer on Images from the Wild

In the afternoon, Dr. Ujwala and Sanjeev Shevade, Orthodontist delivered a popular lecture on “Images from the Wild” on the occasion of celebration of National Science Day at CIRCOT Mumbai on 28th February, 2015. The lecture provided an insight about the biodiversity surrounding us. The lecture sensitized the impact of waste disposal especially plastics, resulting in the death of birds. Dr. Shevade conveyed the message about conservation of environment and the concept of three R’s “Reduce-Recycle-Reuse” approach to save the planet.



Shri S.K. Parab, Technical Assistant, MPD, explaining students on the role of Blowroom in Cotton Processing

Director Visit

1) Director’s visit to Quality Evaluation Unit of ICAR-CIRCOT, Dharwad, Karnataka

Dr. P. G. Patil, Director, CIRCOT visited Quality Evaluation Unit of ICAR-CIRCOT located in the premises of Cotton Research Station of University of Agricultural Sciences,

Dharwad (Karnataka) during 1-4 February, 2015. He monitored the working of unit and guided the staff members to play active role in the quality improvement of cotton.

Dr. P.G. Patil, Director CIRCOT visited M/s. Classic Knits India Pvt. Ltd., in which Rotobar gins are installed. He also monitored the research trials on cotton ginning being conducted at this factory and also visited M/s. L. N. Oils in which cottonseed is processed scientifically and besides oil by-products like linters, hulls & deoiled cake (DOC) are recovered.



Dr. P.G. Patil, Director CIRCOT, visited to Quality Evaluation Unit of ICAR-CIRCOT, Dharwad, Karnataka.

He also had meeting with Dr. D.P. Biradar, Vice-chancellor and Dr. B.M. Khadi, Director of Research, UAS, Dharwad and discussed the issues related to ICAR-CIRCOT Quality Evaluation Unit.



Dr. P.G. Patil, Director, CIRCOT visited M/s. Classic Knits India Pvt. Ltd., Dharwad, Karnataka

2) Director’s Visits to M/s. Rajaram Solvex Solvent Extraction Factory, Islampur, Dist. Sangli, Maharashtra

Dr. P.G. Patil, Director, CIRCOT visited M/s. Rajaram Solvex Solvent Extraction Factory, Islampur, Dist. Sangli, Maharashtra on

17th February, 2015 to assess the possibility of undertaking the research trials on cottonseed cake to recover the residual oil. He also visited raw material storage section, solvent extraction unit, oil section and deoiled cake packing section, oil and protein testing laboratory situated in the same premises.

Seminar/Conference/Workshop

Dr. P. G. Patil, Director, CIRCOT attended conference on “Innovations for Sustainable Textile Production...Connecting the Dots” organized by Society of Dyers & Colourists (India) Education Charity held on 20th February, 2015 at Mumbai.

HRD Activity

1) NABL Training on Laboratory Quality Management Systems and Internal Audit as per IS/ISO/IEC 17025 at BIS, Mumbai

Dr.P.K Mandhyan, Senior Scientist and Er. G Krishna Prasad, Scientist had undergone a training programme on “Laboratory Quality Management Systems and Internal Audit as per IS/ISO/IEC 17025” during 18-21 February, 2015 at Bureau of Indian Standards, Andheri, Mumbai.

2) Workshop on Training Needs Assessment for HRD nodal Officers of ICAR at ICAR-NAARM, Hyderabad

The workshop on “Training Needs Assessment for HRD nodal Officers of ICAR” was organized by ICAR-NAARM, Hyderabad on 26th February, 2015. This was chaired by Dr. D. Rama Rao, Director ICAR-NAARM and Dr. N. Vigneshwaran, HRD nodal officer of ICAR-CIRCOT participated in this workshop. This workshop was held to sensitize the HRD nodal officers about the proposed ICAR-Training policy 2014 that is based on Govt of India’s National Training policy 2012. This policy is

based on “Competency-based training for all employees of ICAR”. Dr. R. Kalpana Sastry, Joint Director, ICAR-NAARM delivered the welcome address. The training needs assessment (TNA) was discussed in detail by Dr. Rama Rao and the role of HR cell was elaborated by Dr. P. Manikandan, Head HRM division of ICAR-NAARM. Guidelines and suggestions were provided by Shri. N.P. Rajasekharan from M/s. Guru Management Consultants, Bengaluru. The important action point includes the preparation of Training Needs Assessment (TNA) of Scientists, Technical Staff, Admin / Finance and SSS for the next two years (Apr 2015 to Mar 2017) that should be submitted by HRD nodal officer to ADG (HRM), ICAR before 31st March 2015.



intercation of HRD Nodal officer at ICAR-NAARM, Hyderabad

Visit of Dignitaries



Dr. K. Alagusundaram, Deputy Director General (Engineering) visited ICAR-CIRCOT Quality Evaluation Unit, Coimbatore

Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi, visited CIRCOT Regional Quality Evaluation Unit, Coimbatore on 13th February 2015.

Dr. S. Venkatakrishnan, Officer-in-charge, explained the activities of the Unit in the promotion of CIRCOT Technologies to the end user, the assistance provided to cotton Breeders for evaluating cotton quality parameters using advanced instruments and demonstrated the testing facilities available at this Unit.

Upcoming Event

Training Programme on “Advances in Textile Characterisation” during 16th to 20th March, 2015.



ADDRESS FOR CORRESPONDANCE

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