CIRCOT news

Newsletter of the Central Institute for Research on Cotton Technology, Mumbai

Volume 5 | October 2002 to March 2003 | Number 2

Editorial

In the not too distant future, commercial transactions in cotton would have to be exclusively on the basis of objective estimates of fibre attributes. To achieve this, it is necessary that the fibre quality assessment is made on a scale that is internationally acceptable. Such a system would not only ensure that a trader irrespective of his country of origin speaks the same language as his counterpart in any other place but also would refrain anyone from gaining unfair advantage. In a quality driven market, to sustain and enhance our share in world trade, it is needless to mention that Indian cottons on an international scale should have quality characteristics comparable to those of other cotton producing countries apart from cost competitiveness.

A quick and accurate estimation of fibre quality by sophisticated instrumental techniques forms the backbone in objective grade-based commercial transaction of cotton lint. In this context assessment of fibre parameters like length, length uniformity, micronaire and tenacity by the High Volume Instrument comes very handy. As is well known HVI is capable of operating in two modes viz. ICC mode and HVI mode. Although HVI mode has now become an internationally accepted system of measurement, the domestic industry continues to use the ICC mode. In the immediate future, Indian industry will have to adopt the HVI mode of fibre quality assessment due to its inherent advantages even for domestic transactions. It is high time that the domestic industry understands the implications of HVI mode and adopts this system not only for international transactions but also for internal trade.

While the ICC mode gives parameters such as 2.5% Span length, Uniformity ratio, Micronaire and tenacity (ICC mode), the HVI system of operation yields Upper Half Mean Length (UHML), Uniformity Index, Micronaire and tenacity (HVI mode). While the ICC tenacity is closer to the value measurable using stelometer, the HVI tenacity approximates the pressley value. It is possible to shift from one mode of measurement to the other by suitable operation of the machine after calibrating with respective standards.

Extensive data collected by CIRCOT has clearly revealed that both the measures 2.5% Span length and UHML are closer to each other within tolerable limits. It is important to note that while the micronaire value in both the systems remains the same, the HVI tenacity is higher by 1.1 to 1.4 times the ICC tenacity depending on the fineness of cotton. HVI scale enables cottons to be shown as stronger by 20 to 40% for a given length class. This is a crucial information for the Indian trader.

CIRCOT study clearly brought out the fact that, for a comparable length group in the HVI scale, Indian cottons are as stronger as the corresponding foreign cottons from Australia, USA, China and others. On the other hand, extra long cottons particularly from Egypt were found to have higher tenacity compared to Indian counterparts that were deficient in micronaire too.

It is pertinent to mention here that cottons in the medium and long category from India are in no way inferior to internationally traded ones as far as fibre attributes are concerned. Trading community should realise and appreciate this fact and use it favourably in commercial transactions. Coupled with this, the smoother and softer feel of Indian cottons ginned by rollers should provide adequate comfort level for the Indian traders and spinners in International markets, to derive competitive advantage

S. Sreenivasan
Director

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ICAR

Seminars

AWARENESS PROGRAMME ON GINNING MODERNISATION AND HUMAN RESOURCES DEVELOPMENT

Awareness Programme on Ginning Modernization and Human Resource Development under Technology Mission on Cotton was organised on November 30, 2002 at Adilabad in Andhra Pradesh in Collaboration with M/s. Bajaj Steel Industries Ltd., Nagpur. About 25 ginners attended the meeting while Dr. S. Sreenivasan, Director and Dr. K.M. Paralikar Head, Transfer of Technology Division participated from CIRCOT. Other dignitaries included Mr. Bajranglal Agarwal, President Adilabad Cotton Association, Mr. Kantiprasad Patodia of M/s. Makhanlal Rajkujmar Cotton Ltd., Adilabad and Dr. K.R.Krishna Iyer, former Director of CIRCOT and consultant, TMC, MM. III & IV.

At the awareness programme, the ginners were appraised of the technologies developed by CIRCOT that are useful in increasing the productivity in ginning operation as well as in utilizing the wastes generated during this activity. The need for training to gin operators, fitters and supervisors to improve their efficiency was also highlighted.

Apart from this, ginners were told about the need and relevance of ginnery modernization and salient features of the package offered under the TMC MM.IV. All the participants were exhorted to go in for upgradation of their installations as that alone would help in production of clean contaminant free cotton.

The Second awareness programme on Ginning Modernisation and Human Resource Development was held at CIRCOT Regional Centre, Sirsa on 30.1.03 under the chairmanship of Dr. C.D. Mayee, Director, CICR, Nagpur. About 30 ginners participated in this meeting.

Dr. K.R.K. Iyer Consultant, TMC, reiterated the need for modernisation of ginning factories in order to produce clean cotton. Elaborating on the TMC Package for upgradation of ginneries, Dr. Iyer clarified that composite factories only could qualify for benefit under this scheme.

Shri Ved Parkash Nagpal, Branch Manager, CCI, Sirsa, in his address pointed out that the lack of interest in north zone ginneries to opt for modernization is due to the reduced cotton production over the years from 50 lakhs bales

Dr. K. M. Paralikar, Head, TTD, CIRCOT speaking at the Awareness Meet held at Sirsa

to 18 lakh. At a time when ginning operation is beset with problems of lack of availability of quality cotton; higher investments for modernization will not be possible by ginners.

Dr. S. Sreenivasan drew the attention of the traders, ginners and mill industry in the region to the installation HVI machine at CIRCOT Unit of Sirsa and exhorted them to take full benefit of it. While modernization is one of the key requirements for production of clean cotton, Dr. Sreenivasan stressed the importance of trained man power to run a modern unit and advised the ginners to utilize the training facility offered by CIRCOT at Nagpur.

Elaborating on the difficulties faced by the ginning factories in the north due to lack of availability of cotton in adequate quantities Mr. Sushil Mittal, President of the Ginners Association, sought government help in establishing modern units with adequate financial assistance.

Dr. C.D. Mayee spoke on the importance of modernization of ginning factories and reducing losses during processing. Emphasizing the importance of training for ginners to produce quality bales, Dr. Mayee exhorted the industry to go for modernization before it becomes too late as imported clean cottons have found a firm place in the country.

The third awareness programme on Ginning Modernisation and Human Resource Development under Technology Mission on Cotton was organized at the Chamber of Commerce Hall at Rajapalyam (Tamil Nadu) on March 22, 2003. About 50 participants comprising ginners and traders attended the programme. While welcoming the delegates, Dr. S. Sreenivasan, Director, CIRCOT emphasized on the need for modernization. To make a modernized ginnery economically viable, Dr. Sreenivasan suggested that CIRCOT technology of value adition to ginnery wastes can be adopted by ginners. Dr. K.M.Paralikar, Head, Transfer of Technology Division, CIRCOT brought out the importance of ginning training to efficiently run a modernized ginning factory.

Inaugurating the programmes, Mr. Dhanush Kodi Raja, Managing Director, Rajaram Mills, Rajapalayam, exhorted the ginners to opt for modernization as that would enable the ginnery to produce clean cotton to remain competitive in the open market-economy. Dr. K.R. Krishna Iyer, Consultant, TMC MM III & IV explained in lucid terms the salient features of the modernization project of Govt. of India while Shri P.G. Patil, Scientist, CIRCOT gave a brief account of the activities of the Ginning training center at Nagpur. Lively discussion followed the presentations where all the queries raised by the ginners were suitably answered.

ALIBRATION COTTON USERS' MEET

A Calibration Cotton Users' Meet was organised at Rajapalayam, Tamilnadu on March 22, 2003 for the benefit of southern textile industries utilizing CIRCOT calibration cotton. At this meet, technical presentation on the need to use calibration cottons and also the methodology employed by CIRCOT to assign values for calibration standards were made. All the queries of the users of this reference standard were answered during the interaction.

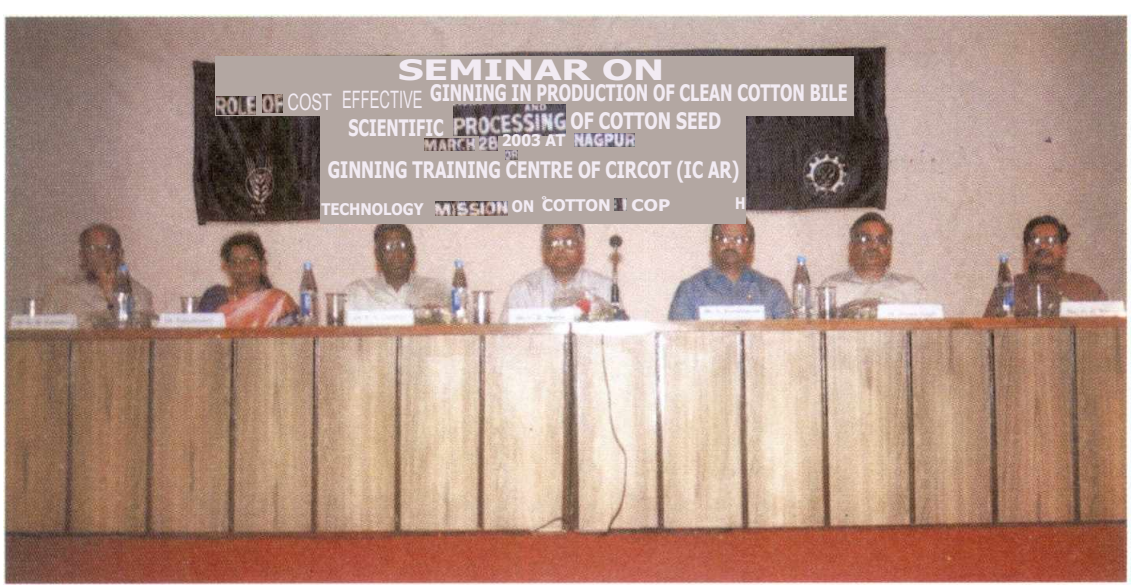
Shri D. Venkat Raj, Managing Director, Saravana Textiles Pvt. Ltd.speaking at the CIRCOT Calibration Cotton Users' Meet at Rajapalayam, Tamilnadu

ROLE OF COST EFFECTIVE GINNING IN PRODUCTION OF CLEAN COTTON BALE AND SCIENTIFIC PROCESSING OF COTTON SEED

This seminar was organised at the NBSS & LUP auditorium on March 28, 2003 by CIRCOT. This activity arranged as part of the ICDP- MM II programme of CIRCOT was intended to showcase the role of cost effective ginning for the production of clean cotton and emphasize the need for scientific processing of cotton seed in order to make 'ginning' an economically viable enterprise. Spread over three sessions, eleven papers were presented at the seminar, the details of which are given below :

- *Research and Development Initiatives for Cost Effective Production of Clean Cotton, S. Sreenivasan, CIRCOT, Mumbai*
- *Modernisation of Ginning Industry through Technology Mission on Cotton, K.R. Krishna Iyer, TMC, (MM III & IV), Mumbai.*
- *Status of Ginning Industry in Maharashtra, K.M. Paralikar and S.B. Jadhav CIRCOT Mumbai and V.G. Arude, T.S. Manojkumar, J. Selvakumar and P.G. Patil, GTC, Nagpur.*
- *An Application Software for Cotton Quality Update-COTSOFT, J. M. Nath, K.M. Paralikarand P.G. Patil, GTC, Nagpur.*
- *Effect of Double Roller, Saw and Rotary Knife Roller Ginning on the Quality of Cotton — A Review, P.G. Patil, GTC, Nagpur.*
- *Energy Requirement for Various Systems in Modern Ginneries and its Conservation, S.K. Shukla, P.G. Petit and K.M. Paralikar, GTC, Nagpur*
- *Value Added Products from Ginnery Waste, R.H. Balasubramanya, A.J. Shaikh, Y Subrahamanyam and S. Sreenivasan, CIRCOT, Mumbai.*
- *Importance of Scientific Processing of Cotton Seed, Sandeep Bajoria, AICOSCA, Mumbai.*
- *Development of Delinting Machinery and Delinting Process, R.D. Bohra, Cottor Plants (India) Pvt. Ltd., Mumbai*
- *Cotton Seed Oil for Human Consumption, Sudha Tiwari, A.J. Shaikh and R.H. Balasubramanya, CIRCOT, Mumbai.*
- *Genesis and Development of Cotton Seed Oil, its Role and Significance as an Important Neutraceutical (s) in the Human Health, J.R. Vakil, Bharati Vidhya Peeth, Pune.*

The Seminar was well attended by participants drawn from ginning industry, cotton associations, machinery manufacturers, government officials connected with cotton promotion, industry personnel and scientists. Judging by the response of the participants it could be said that the seminar realised its objective in good measure.



Dignitaries on dias at the Seminar on "Role of Cost Effective Ginning in Production of Clean Cotton Bale and Scientific Processing of Cotton Seed'

Meetings

AFF RESEARCH COUNCIL

The **Half-yearly SRC Meeting** to discuss the progress made in the research activities during the period April to September 2002 was held during October 18, 19 and 28, 2002, In his opening remarks, the Director touched upon the following points.

- The commitment made by CIRCOT in various areas of research activity in the SFC document for X Plan.
- CIRCOT's emphasis on the availability and transportation of cleaned cotton stalks throughout the year for the ICAC-CFC funded project to the International Experts Groups' that visited the Institute.
- Importance of extension activities *on* parwith that of research work.

The following three new project proposals in Core Area I and one new proposal in Core Area II have been approved after incorporating the suggestions/ recommendations of the SRC.

Core Area I

- Modification of DR Gin with Rotary Knife.
- A Comparative Evaluation of Saw Ginning and Roller Ginning for all Length Classes of Representative Indian Cottons.
- Studies on Wear Characteristics of Leather Rollers and Knifes used in Cotton Ginning Industry.

Core Area II

- Development of a Low Cost Sliver Making Machine for Value Addition to Cotton at Rural Level.

MANAGEMENT COMMITTEE MEETING

The Fifty-fifth and Fifty-sixth Meetings of the Management Committee were held on October 10, 2002 and February 22, 2003 respectively. Regular items such as confirmation of the minutes of the previous meeting, action taken on the recommendations of the committee, progress of works, action taken on the recommendations of the Institute Joint Council and Grievance Committee formed the topics of discussion in both the meetings. Discussions on the on-going research projects and research highlights also figured prominently in the deliberations.

Redeployment of surplus supporting staff attached to Sirsa unit either to CIPHET, Ludhiana or to CIRCOT, Mumbai, Allotment of land by TNAU for Coimbatore Regional Unit of CIRCOT and its application for 50% sharing of HVI paid test fees were discussed. Dr. N.S.L. Srivastava made the following important suggestions at the 55th meeting of IMC:

- Collaborative research activities should be taken up with organised textile mills, industries, etc.
- CIRCOT should come forward with suitable proposals for foreign collaboration to train scientists and other experts in its various areas of activity. Institute should come out with a list of countries / organizations most suitable for undertaking such collaborative work and brief ICAR about the same.

At the 56th meeting, Dr. Pitam Chandra, ADG (PE), ICAR made the following observations at the end.

- Scientists should contribute technical papers on the technologies developed for publication in the Journal of Agricultural Engineering.
- In the context of changing global scenario, it would be worthwhile to study the quality parameters of imported cottons and develop protocols so that it would be possible to check the import of inferior cotton and thereby protect Indian cottons and farmers.
- Scientists should focus attention on bio-composites, which is an emerging area of research.
- Efforts are to be made on testing clothing

fabrics to determine the comfort properties of these fabrics after various treatments.

Dr. Pitam Chandra released a booklet on *High Volume Instrument — Implications of Testing Mode* in the 56th Management Committee meeting.

VIGILANCE AWARENESS WEEK CELEBRATION

As per directives from the Govt. of India, the week beginning from October 31 to November 6, 2002 was celebrated as Vigilance Week. The observance of the week commenced with a pledge administered to all the staff in Hindi on October 31, 2002 and there was an essay competition on the subject **How Vigilant Indians Are ?** on November 1, 2002.Two prizes were awarded to the first two best essays in Hindi, Marathi and English. The winners were awarded prizes. The following were the winners in the essay competition in various languages.

Hindi	Shri R.R. Chhagani
	Smt. V.V. Janaskar
Marathi	Smt. S.D. Dudam
	Shri S.N. Salve

Dr. Pitam Chandra releasing a booklet entitled ***High Volume Instrument - Implications of Testing Mode***

English - Smt. Binu Sunil
Shri A.A. Chaphekar

A talk on **Importance of Vigilance in the Present Era** by Major Vijaya Kumar (Retd.) was organised on November 2, 2002.

NATIONAL INTEGRATION WEEK

This was celebrated during November 19 - 25, 2002. The culmination day was observed as the **Conservation Day.** In this connection a talk on **Environmental Complexities of Agriculture** by Dr. S.R. Maley, Director, Eco Save Systems Pvt. Ltd., Mumbai was arranged at the Institute.

KISAN SANMAN DIWAS

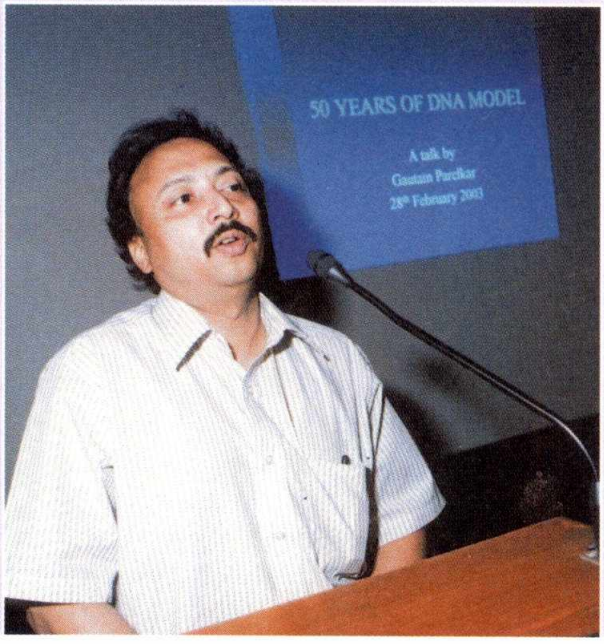
This was organised by CIRCOT at its Ginning Training Centre at Nagpur on December 23, 2002 as part of the birth centenary celebration of Chaudhari Charan Singhji, ex. Prime Minister of India. This function organized at the NBSS & LUP auditorium was well attended with participation from Scientists, farmers, ginners, trading organizations and Government Officials.

On this occasion, seventeen farmers and five ginners were felicitated and certificates of merit were distributed in recognition of their outstanding achievements.

NATIONAL SCIENCE DAY

On the occasion of the National Science Day on February 28, 2002 which marks the discovery of Raman Effect by the Nobel Laureate Prof. C.V. Raman in 1928, Prof. Gautam Parelkar of Mithibai College, Mumbai gave a lecture on **50 Years of DNA Discovery.** This lecture which brought out the history and development of this path breaking discovery in molecular biology dealt with the various facets of application including the genetically modified crop production technology of Bt. cotton. The lecture was well attended by the staff of CIRCOT.

Dr. S.R. Maley, Director, Eco Save Systems Pvt. Ltd., Mumbai, Dr. S. Sreenivasan, Director, CIRCOT and Dr. R.H. Balasubramanya, Head, CBPD, CIRCOT on the dias during National Integration Week Celebration



Prof. Gautam Parelkar speaking on the occasion of National Science Day

INCREASING STRENGTH OF THE ROTOR SPUN YARN BY INCREASING PEELING-OFF TENSION

Open-end rotor spinning is a comparatively new non-conventional method of yarn production that has the advantage of economic production of yarn compared to conventional ring spinning system, particularly in the coarse yarn count range. The uniformity of yarns is also better than conventional ring yarn. Although this technology has wide international acceptance, major short-coming of the rotor spun yarn is its low strength compared to ring yarn. Earlier studies at CIRCOT have shown that the rotor spun cotton yarns are weaker by 16 - 24% compared to similar ring yarns. The lower strength of rotor yarn is attributed to the lower compactness of fibres in the yarn assembly, as the fibres are twisted under relatively low tension in a negative mode.

The peeling-off tension which is the force with which the fibrous assembly is lifted from the rotor groove during twisting has an important role in deciding the yarn strength. Higher peeling-off tension leads to compact and stronger rotor yarns. In the recent investigation, by proper choice of fibre properties and rotor spinning variables CIRCOT has come up with a methodology based on sound theoretical background for producing stronger yarns.

PREDICTION OF YARN COUNT USING NEURAL NETWORK

Highest Standard Count (HSC) is a single integrated index that provides an easy way to express the quality of cotton. This is the count at which the actual Count Strength Product (CSP) coincides with the standard CSP value for that count. This index can be considered as an unique means of expressing the maximum spinning potential of given cotton

CIRCOT has developed an Artificial Neural Network Model (ANN) using fibre properties such as 2.5% span length, uniformity ratio, Micronaire value, bundle strength and percentage mature fibres as inputs to predict the HSC value. This model is able to successfully predict the HSC within an error of ± 4.23 counts. Since the spinning industry is very familiar with the concept of count, understanding and using HSC as an index for characterising spinnability would not pose any problem and would be more favoured than the current Fibre Quality Index, which is used to indirectly assess spinnability of cotton.

PRODUCTION OF XYLANASE FROM *PENICILLIUM FUNICULOSUM*

Xylanase is an enzyme that can bio-degrade lignocellulosic substrates to useful end products. Hence an attempt was made to produce this enzyme using the fungus *Penicillium funiculosum,* which is a known source of cellulase enzyme. Studies revealed that this organism could secrete xylanase simultaneously when cultivated for cellulase production using cellulose as carbon source. The maximum yield of xylanase was found when the substrate on which the organism was cultivated had 1.0% cellulose and 0.25% peptone. The maximum secretion was found at 72 h of incubation. The enzyme thus produced had maximum activity equivalent to 33.3 units ml^{-1} at a pH 6.0 and temperature 50°C which is considered to be optimum for use in textile finishing applications.

FRICTIONAL CHARACTERISTICS OF CHEMICALLY MODIFIED COTTON FABRICS

Studies on frictional characteristics of chemically modified cotton fabrics reveal that metal to fabric frictional behaviour differs from fabric to fabric in many ways. The study indicated that various chemical treatments such as resin finishing with DMDHEU, flame retardant finishing, biopolishing, mercerization both with sodium hydroxide and potassium hydroxide in

slack as well as in stretch condition enhance fabric to fabric frictional force compared to that of raw fabric. While treatments with sodium hydroxide and potassium hydroxide lead to pronounced change, those involving biopolishing treatment showed lower coefficient of friction. The coefficient of friction increases with rise in the fabric thickness. The type of chemical modification had a significant effect. There exists a good relationship between the coefficient of friction (metal to fabric) and Kawabata Primary Handle Values such as Fukurami (for light and medium weight fabrics), which indicates the fullness and softness of the fabrics, and Koshi (for heavy weight fabric), which reflects the stiffness of the fabric.

COIR-COTTON COMPOSITE YARNS

For the first time, coir-cotton composite yarns were developed through friction spinning technology for industrial end-uses. Coir rope was used in the centre of the yarn with fibres like cotton, wool, jute, viscose, polyester, acrylic and polypropylene preferentially laid on the surface for making a composite yarn matrix. This matrix will derive its high strength from the strong coir fibres and good surface adhesion property from the staple fibres randomly disposed as sheath over the centrally placed coir rope. As an application of coir-cotton composite yarns, fabrication of conveyor belting was made. Woven fabrics were used in the preparation of the composite yarn in place of cotton fabric since, the 'carcass' made from coir-composite yarns were found to be quite thicker, particularly when a plied coir yarn was used. There will be no need for using piles like in the case of cotton fabrics. As a cheaper fibre, replacement of cotton fabrics with coir will help in bringing down the cost of the conveyor belting.

AN IMPROVEMENT LATTICE FEEDER FOR DOUBLE ROLLER GIN

At the Ginning Training Centre of CIRCOT at Nagpur in collaboration with M/s. Bajaj Steel Industries, Nagpur a Lattice Feeder was developed for loosening the lumps of raw cotton and evenly distributing the same along the knife-edges of the beater of a double roller gin.

This feeder can reduce the manpower requirement for cotton feeding to the gins and increase the productivity of the machine with reduced power consumption. CIRCOT's study has shown that use of lattice feeder can increase the average ginning output to the extent of about 7% without any deleterious effect on the fibre quality parameters.

The cost of this additional feature has been worked out to be around Rs. 3000 and the same can be recovered within one and half season ginning operations since the net income resulting from the feeder is around Rs. 140/day and the pay back period is approximately 160 working days (2 shifts of 8 hours /day).

TECHNOLOGIES AVAILABLE AT CIRCOT FOR TRANSFER

Products

Kisan Gin, CLOY Gin and Lilliput Gin
Ginning Percentage Balance
Kapas Extractor
Inclined type Pre-Cleaner
Halo Length Disc
Boll Hardness tester
Variable Speed Gin

Processes

Pulp and Paper, Particle Board and Corrugated Boxes from Cotton Plant Stalk
Biogas from Textile Mill Waste
Mushroom Crop on Agro-Wastes
Dyeing of Cotton Fabrics with Natural Dyes
Compost from Ginnery Waste

TRAINING

For meeting the requirements of the textile and ginning industries, the Institute conducts training programmes on appropriate technologies in ginning for the production of clean quality cotton and on the maintenance aspects of ginning and allied machines at the Ginning Training Centre at Nagpur. Tailor made training courses on Cotton Quality Evaluation, and on the operation of HVI and AFIS are conducted at the Headquarters. Both training courses comprise informative lectures and a series of practical demonstrations along with visits to the Textile / Ginning and Pressing industries to get practical knowledge on the respective subject. Course material in the form of a book, which contains details of test methods, statistical interpretations of results, etc. are provided to the trainees.

A number of training programmes were conducted and about 25 participants from trade and industry underwent training in Quality Evaluation, Ginning and also Quality Evaluation by using sophisticated instruments.

A specialized training course was organised for eight sponsored trainees in the use of sophisticated instruments and for certain tests in textiles.

A refresher course was conducted from November 25 to 30, 2002 to nine Technical Officers from various regional stations to acquaint them with the new developments in testing methods. There were eight lectures delivered on various topics related to fibre tests. They were also briefed about the different technologies developed by the Institute and available for commercial exploitation. A visit to the Century Textile and Industries was organised to apprise the participants about the modern high speed processing of cotton.

COMMERCIAL TESTING

During the period under report 5000 samples of fibre, yarn and fabric were tested at the Headquarters, GTC Nagpur and at the regional stations of CIRCOT. About 100 samples have been tested for ginning. Apart from these a large number of samples were tested under the All India Co-ordinated Cotton Improvement Project (AICCIP) as well as those from breeding trials.

CONSULTANCY.

- A MOU was signed between CIRCOT and M/s. Mac-Well Engineering Pvt. Ltd., Mumbai for the manufacture of attachment for fibre cleaner to Raspador machine.
- Scanning Electron Microscopy study on oral drugs received from M/s. Degusa India Pvt. Ltd., Mumbai.
- Thermal characterisation studies on drug encapsulation for M/s. Bharat Serum & Vaccines Ltd., Mumbai.
- Chromatographic characterisation of fungal extract and isolation of active ingredients for M/s. Net Business Solutions, Mumbai.
- Colour gradation studies on raw cotton linters.

TECHNOLOGY TRANSFER

M/s. Bajaj Steel Industries Ltd., Nagpur has been producing and marketing ginning machines, autofeeders, pre and post cleaners and seed cotton conveying systems with the technical supervision and active collaboration of CIRCOT. During the period 514 DR Gins, 10 Precleaners, 417 Autofeeders, 33 raw cotton suction units, 15 lint suction systems, 6 lint cleaners and 2 baling press were sold. This includes export of 102 DR Gins, 102 Autofeeders and 1 lint suction System.

EXTENSION / PUBLICITY

CIRCOT participated in various exhibitions organised by different agencies during the period.

- Krishi 2002, Agricultural Exhibition, at Pune from 10th Oct. to 13th Oct. 02 organised by Global Exhibitors, Pune.
- India International Trade Fair at Pragati Maidan, New Delhi organised by Indian Trade Promotion organization during November 14 to 27, 2002.
- Indian Agriculture Trade Fair – KISAN 2002, At — Pune from 11th Dec. to 15th Dec. 02, organised by Deccan Exhibitors Pvt. Ltd., Pune.
- Krishi-Mela at Rahuri on 21.12.2002 organised by MPKV, Rahuri on the occasion of Late Prime Minister Shri Choudhari Charansinghji Centenary Week Celebration.

APPOINTMENTS

Name	Post	Effective Date of Appointment
Shri P. E. Gurav	Supporting Staff Gr.I	08-05-2002

PROMOTIONS

Name	Post	Effective Date of Promotion
Dr. R.D. Nagarkar	Technical Officer T - 6	01-01-2003
Shri S.N. Hedau	Technical Officer T - 5	23-03-2002
Smt. S.R. Kawlekar	Technical Officer T - 5	07-05-2002
Shri R. G. Dhakate	Technical Officer T - 5	16-10-2002
Smt. K.K. Kale	Technical Officer T - 5	16-12-2002
Shri V.D. Kalsekar	Sr. Technical Assistant T-4	29-04-2002
Shri M. Bhaskar	Sr. Technical Assistant T-4	21-09-2002
Shri C.V. Shivgan	Technician T-1-3	16-01-2003
Shri S.K. Parab	Technician T-2	01-10-2002
Shri C.L. Mundale	Technician T-2	01-10-2002
Shri R.R. Gosai	Technician T-1	22-04-2002
Shri D.M. Raje	Technician T-1	22-04-2002
Shri P.S. Panchbudhe	Technician T-1	01-05-2002

ADVANCE INCREMENTS

Name	Advance Increment	Effective Date of Increment
Shri D.U. Kamble	One increment	10-06-2002
Smt. Bindu Venugopal	One increment	05-11-2002
Shri B.V. Shirsath	One more increment	10-09-2002

RETIREMENT

Name	Post	Effective Date
Shri N. C. Vizia	Principal Scientist	31-10-2002
Shri T. K. M. Das	Technical Officer T (7-8)	31-10-2002
Shri K. V. Ananthakrishnan	Technical Officer T (7-8)	31-03-2003

TRAINING PROGRAMME ATTENDED BY STAFF

Training Programme	*Period and Place*	*Participant(s)*
Integration of Windows & G.N.U./Linux Environment	October 05 to 06, 2002, VJTI, Mumbai	Shri V.B. Suryanarayanan Shri D. Radhakrishnamurthy
7th Management Development Programme in Agricultural Research	November 21 to 27, 2002 NAARM, Hyderabad	Dr. K.M. Paralikar
Information Technology in Agriculture	December 2 to 23, 20002 NAARM, Hyderabad	Shri Y. Subrahmanyam Dr. S.B. Jadhav
Reorientation Programme on the Contract Labour (Regulation & Abolition) Act 1970	December 9, 2002 Bangalore	Shri S.V. Kasabe
Training in Computers - Windows & M.S. Office	January 13 to 15, 2003 CIRCOT, Mumbai	Dr. E.A. Pachpinde Shri R.K. Jadhav Shri G.B. Hadge Smt. K.K. Kale Smt S.D. Dudam Smt. S.M. Desai Smt. V.V. Janaskar Smt. J.R. Chavkute Shri R.D. Shambharkar Shri T.D. Dhamange
International Conference on Non-Wood Agrobased Panel Boards & Allied Industry	January 14 to 15, 2003 New Delhi	Shri R.M. Gurjar
Detection and Estimation of Aflotoxin Contamination in Groundnut and its Management	January 20 to 25, 2003 Andhra Pradesh	Shri N. Vigneshwaran
Training in Computers - Windows & M.S. Office	February 24 to 26, 2003 CIRCOT, Mumbai	Shri D.L. Upadhyay Shri R.R. Chagani Shri S.N. Hedau Smt. P.S. Nirali Shri K.W. Khamkar Smt. S.D. Ambre Smt. T.T. Souz Smt.U.N. Bhandari Smt. S.G. Parab Shri V.M. Sable
Measurement of Uncertainty	February 25 to 26, 2003 Mumbai	Dr.R.P. Nachane Dr. C.D. Ravindran Shri D.V. Mhadgut Shri N. Shanmugam
Professional Educational Course on Artificial Neural Network	March 10 to 13, 2003 Mumbai	Shri N. Shanmugam Shri M.V. Vivekanandan

Publications

ARTICLES PUBLISHED

Author(s)	*Title*	*Journal*
Gangar, H.U. Ahmed, M.	*The Art of Hand Knitting*	Fashion and Beyond, Oct. — Dec., pp. 54-56, 2002.
Ahmed, M. Chatopadhyay, S.K. Chaphekar, A.K. Gaikwad, R.S.	*Processing of Cotton-Ramie Blends on Short Staple Spinning System*	Journal of the Textile Association, Vol. 63, No. 4, Nov. — Dec., pp. 155 —159, 2002.
Hussain, G.F.S. Iyer, J.K. Singavi, B. Iyer, K.R.K.	*Estimation of Fibre Maturity from Micronaire Value*	Indian J. Fibre & Textile Research, Vol. 27, December, pp. 335-341,2002.
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