



CIRCOT news

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Cotton enjoys an unique position in India occupying the largest acreage in the world and producing *fibres* encompassing all quality ranges. Cotton also continues to remain as the principal raw material for the Indian textile industry. However, a

closer look at the textile production in the world over indicates a clear shift towards man-made fibres during the past two decades. The share of cotton in textile production has shown a down slide from 50% in 1984-85 to 40% by 1999-2000. However, in India during the same period cotton has declined from 81% to 59%. The gradually increasing production capacity for synthetic fibres and the comparatively low material cost have contributed in good measure to the drop in the share of cotton in fibre production and utilisation in the country.

Besides cotton, the other fibres used by the industry consist of rayon, polyester, wool, silk and to a minimal extent nylon and acrylic. Although cotton fabrics are the most comfortable, synthetic fabrics are preferred for their durability, easy-care properties and affordability. Blending is a viable process that combines the desirable traits of component fibres to enhance the wear life and aesthetics of fabrics.

Over the years, blended textiles have received increasing commercial acceptance. A quick look at the trends in fabric production during the last decade clearly points towards a shifting consumer preference towards blends. The total

fabric production has gone up from 21,000 million square metres in 1989-90 to 44,000 million square metres in 2000-01. During the eleven year period, 100% cotton fabrics have grown only by 46% as against the phenomenal growth of 225% in blended fabrics. Out of the total fabric production in 2000-01, cotton contributed about 46% and as a component fibre in the blended fabrics to about 16%. Among the cotton blended fabrics, cotton-polyester is the most popular combination having tremendous consumer appeal.

Blending of cotton with other natural and man-made fibres calls for identification of cottons compatible with each class of natural and synthetic fibres. It is equally important to formulate appropriate mechanical processing, fabric manufacture and chemical processing and finishing sequences to produce finished fabrics suitable for different end uses.

The National seminar on **Cotton and Blended Textiles** organised by CIRCOT in association with the Indian Fibre Society (IFS) at Mumbai provided a platform for a threadbare discussion on the crucial issues confronting blended textiles. The Seminar brought to fore the possibility of manufacture of newer types of blends of cotton with other natural and man-made fibres that could be put to diverse applications. A brief write up about the seminar is included in this issue of CIRCOT Newsletter. In order to improve the quality and functionality of cotton blended textiles, it is necessary that cotton used for blending is devoid of contaminants and trash and that lot to lot variability in fibre quality is kept minimum. Efforts in this direction need to be taken urgently.

Dr. S. Sreenivasan
Editor

Editorial Committee : Dr. S. Sreenivasan, Dr. R.H. Balasubramanya,
Shri T.K.M Das, Shri **V.B.** Suryanarayanan



COTTON AND BLENDED TEXTILES

A National seminar on Cotton and Blended Textiles was conducted at the Jubilee Hall of CIRCOT in collaboration with the Indian Fibre Society on December 23, 2000. The Seminar was inaugurated by Shri B.C.Khatua, Textile Commissioner, Government of India. The inaugural Session chaired by Dr.S.A.Patil, Vice Chancellor, University of Agricultural Sciences, Dharwad had thematic address by Shri Viswa Nath, CMD, Cotton Corporation of India Ltd., Mumbai. More than 150 delegates and invitees attended the Seminar. There were four Technical

Sessions apart from the valedictory Session, the details of which are as follows :

TECHNICAL SESSION I FIBRE QUALITY FOR BLENDING

Chairman :

Dr. C.D.Mayee, Director, CICC, Nagpur

Genetic Improvement of Cotton Quality for Blending Compatibility in Textiles :
S.S. Narayanan, Former Director, CICC, Nagpur and V. Sundaram, Former Director, CIRCOT, Mumbai.

POST-HARVEST MANAGEMENT : KEY TO FARM GROWTH

- DR. R.P. KACHRU, ADG(PE), ICAR

A lecture by Dr. R.P. Kachru, Assistant Director General (Process Engineering), ICAR was arranged at the Jubilee Hall, CIRCOT, Mumbai on 3-2-2001. The topic of the talk was **Paradigm Shift in Planning : Post Harvest Technology and Value Addition Intervention in Management of Bountiful Agricultural Production.** In his presentation Dr. Kachru enumerated the changes in the country's production status over the last 50 years and pointed out that the post-harvest losses in foodgrains were about 10-15 per cent and as high as 20-30 per cent in horticultural crops. While contrasting the impressive strides made in agricultural production with the spectre of a large segment of the population living below the poverty-line and pervasive malnutrition, Dr. Kachru said intervention in post-harvest technology and value-addition alone can lead to a host of benefits including higher farm incomes, employment generation, product diversification and improved agri-business efficiency.

Suggesting a reform agenda, Dr. Kachru indicated that removal of inter-state restrictions,

integration of national markets, entry of private sector in foodgrains management and fillip to food processing activities would improve the



economic status of farmer. A mission-mode approach to post-harvest technology and value addition was necessary to strengthen farm production. Agro-processing activities (at least primary processing) in production catchment areas would in turn generate employment and increase farmer's income, apart from reducing avoidable losses.

- *Qualitative and Quantitative Requirement of Cotton in 2004-2005* : Indra Doraiswamy, T.V. Ratnam and K.P.Chellamani, SITRA, Coimbatore.

Quality Cotton for Blends at Reduced Cost through Increased Productivity: Viswa Nath and A.K. Basu, CCI, Mumbai.

TECHNICAL SESSION II QUALITY OF BLENDED YARNS

Chairman :

Dr. V. Subramaniam, Senior Professor,
A.C. College of Technology, Chennai.

- *An Investigation on Doubling of Cotton and Polyester Sliver at Open-end Rotor Spinning Machine* : Deepa V.Raisinghani and H.V.S.Murthy, VJTI Mumbai.
- *Future Machinery Options Available for Processing Blended Yarns* : C.D.Kane, S.D.Mahajan and P.V.Kadole, DKTE, Ichalkaranji.

- *Effect of Preparatory Processes on Blend Uniformity and Mechanical Properties of Blended Yarns*: P.Bhama Iyer, B.Srinathan, Sheela Raj, M.V.Vivekanandan and G.B. Hadge, CIRCOT Mumbai

- *Cotton/Sunnhemp Blended Yarns with Eco-friendly Softening of Sunnhemp Fibres*: S.S.Doke and Vinod Mandhaniya, VJTI, Mumbai and R.H.Balasubramanya, CIRCOT, Mumbai.

TECHNICAL SESSION III BLENDED FABRICS AND THEIR PROPERTIES

Chairman :

Shri S.N.Kuchhal, Works Director,
Raymonds Ltd., Mumbai

- *Utilisation of Indigenously Developed Short Wool and Angora Rabbit Hair Fibres in Blends with Cotton for Production of Value Added Textiles*: S.K.Chattopadhyay, M. Ahmed and P.Bhaskar, CIRCOT, Mumbai, N.P.Gupta and A.K.Pokharna, CSWRI, Avikanagar.
- *Development of Polyester Cotton Blended Fabrics from Rotor Spun Yarns*: K.Navaraj, Jaya Engg. College, Thiruninravur, Chennai and V.Subramaniam, Alagappa College of Technology, Chennai.
- *Blending of Cotton with Wool and Speciality Fibres* : N.P. Gupta, D.B.Shakyawar, P.C.Patni, R.K.Arora, A.K.Pokharna, and Chetan Kumar Jain, CSWRI, Avikanagar.
- *Combination Yarns and Fabrics* : A.N. Bhorkar and D.S.Kulkarni, Govt. Polytechnic, Nagpur.



Release of the Book of Papers by Mr. B.C. KHATUSA, Textile Commissioner.
Others in the picture are (From L to R) Dr. S. SREENIVASAN, Director, CIRCOT
and Mr. VISWA NATH. CMD, CCI.

**TECHNICAL SESSION IV
CHEMICAL PROCESSING
AND FINISHING**

Chairman :

Dr. G.P.Nair, Consultant, Mumbai

- *Influence of Yarn Structure on Dyeing and Fastness Characteristics of P/C Blended Knitted Fabric:* V. Iyer, P.V.Varadarajan, S.K. Chattopadhyay and R.R.Chhagani, CIRCOT, Mumbai.
- *Studies on Union Dyeing of Wool-Cotton Blended Yarns with Natural Dyes :* D.B. Shakyawar, N.P.Gupta, R.S.Dagur and Chetan Jain, CSWRI, Avikanagar and S.K.Chattopadhyay, CIRCOT, Mumbai.
- *Dyeing of Rabbit Hair and Cotton Blended fabric with Vegetable Colourant :* J.P.Mathur and N.P.Gupta, CSWRI, Avikanagar and S.K.Chattopadhyay, CIRCOT, Mumbai.
- *Swelling of Cotton as a Tool to Enhance the Enzymatic Activity :* M.D.Teli and Roshan Paul, UDCT, Mumbai.
- *Wrinkle-free Cotton with Formaldehyde Free Crosslinks:* Niyati Bhattacharyya and Harsha Jain, SNDT, Mumbai and S.Subramanian and G.Yagnik, Kemicolour, Mumbai.



A section of the Illustrious Audience at the Inaugural Session of the National Seminar on Cotton and Blended Textiles.

VALEDICTORY SESSION

Chairman :

Prof. E.H.Daruwalla, Research Advisor,
BTRA, Mumbai.

- *Summary of the Proceedings of the Technical Sessions :* M.Ahmed and P.V.Varadarajan, CIRCOT Mumbai.

**RELEVANCE OF GINNING IN THE
PRODUCTION OF TRASH-FREE
COTTON**

A National Seminar on the Relevance of Ginning in the Production of Trash-free cotton was organised by the Ginning Training Centre of CIRCOT at the NBSS & LUP Auditorium at Nagpur on February 17, 2001. The focus of this seminar was mainly on the latest innovations in ginning and allied fields for the benefit of those industries who wish to modernise their factory with assistance from the Technology Mission on Cotton. The seminar was inaugurated by Shri B.C. Khatua, Textile Commissioner, Govt. of India. The thematic addresses were given by Shri Sunilbabu Kedar, Former Minister of State for Energy and Transportation, Govt. of Maharashtra and President, Maharashtra State Cooperative Ginning and Pressing Association, Nagpur, Shri Suresh Kotak, President, EICA, Mumbai and Dr. C.D.Mayee, Director, CICR, Nagpur. There were three technical sessions as given below :

- Ginning Scenario
- Research and Development in Ginning
- Innovations in G & P and Allied Machinery

MANAGEMENT COMMITTEE MEETING

The fifty second meeting of the Management committee was held at 10.30 a.m. on 02.02.2001 in the Committee Room of CIRCOT. The following Members and Invitees were present.

1.	Dr.S.Sreenivasan	Chairman
2.	Dr. R.P.Kachru	Member
3.	Prof. K.N.Sharma	Member
4.	Prof. S.C. Jha	Member
5.	Shri S.K.Phatak	Member
6.	Dr. (Mrs) Vatsala Iyer	Member
7.	Dr. G.F.S.Hussain	Member
8.	Dr. A.J.Shaikh	Member
9.	Dr. K.R.Krishna Iyer	Invitee
10.	Dr. R.H.Balasubramanya	Invitee
11.	Dr. K.M.Paralikar	Invitee
12.	Dr. (Mrs) P.Bhama Iyer	Invitee
13.	Dr. S.K.Chattopadhyay	Invitee
14.	Shri S.B.Jadhav	Invitee
15.	Shri H.U.Gangar	Invitee
16.	Shri T.K.M.Das	Invitee
17.	Shri Devesh Nigam	Invitee
18.	Shri N.N.Lotha	Member-Secretary



Management Committee in Session



Shri K. Ramachandran, former Director, Directorate of Cotton Development, is being greeted by Dr. S. Sreenivasan, Director, CIRCOT before his lecture in connection with the celebration of the National Productivity Week.

Apart from regular items like Confirmation of the Minutes of the previous meeting, Action taken Report, Statement of Expenditure under Plan and Non Plan, Progress of Works, Institute Joint Council and Grievance Cell Representations, Research Highlights, Video Preparation of CIRCOT activities, Technology Transfer and related activities, Progress of work under Mini Mission I & II and Reorganisation of Scientific Strength of different disciplines were the matters taken up for serious discussion.

A proposal for a collaborative project on biopulping technology with M/s Vamshadhara Paper Mills Ltd., was also discussed in the meeting.

NATIONAL PRODUCTIVITY WEEK

In connection with the National Productivity Week that commenced from February 12,2001, two lectures were arranged on Feb.19, 2001 at 2.00 p.m. and 3 p.m. respectively, as follows :

1. *Productivity — the Prime Mover* — by K.Ramachandran, Former Director, Directorate of Cotton Development, Mumbai.

2. *Energy and Its Management* — by Dr. R.P.Nachane, Pr. Scientist, CIRCOT, Mumbai

All the staff members of CIRCOT attended the function.



Dr. R.P. Nachane, Pr. Scientist, CIRCOT speaking during the Celebration of National Productivity Week.

The National Science Day was celebrated at CIRCOT on February 28, 2001 to mark the discovery of Raman Effect by Prof. C.V. Raman in 1928. Two lectures were arranged as follows at the Jubilee Hall of the Institute :

1. *Irradiation of Food Grains* — by Dr. Padwal Desai, Former head, Food Mycology Group, BARC, Mumbai on 28.02.2001.
2. *Role of Information and Info-Tech for Agriculture* — G. Chandrashekhar, Hindu Business Line, Mumbai on 02.03.2001.

All the Scientific and Technical staff attended the lectures.

QUINQUENNIAL REVIEW OF CIRCOT

A new Quinquennial Review Team (QRT) was constituted for CIRCOT by ICAR with the following members :

1. Shri A.R. Garde (Chairman),
2. Shri Y.G. Deshpande,
3. Dr. P.R. Roy,
4. Dr. S.R. Maley,
5. Dr. V.A. Shenoy, and
6. Dr. P.V. Varadarajan (Member-Secretary)



Inaugural Session of the QRT at CIRCOT

The first meeting of this team was held CIRCOT mainly to finalise the methodology of on 24-3-2001 at the Conference Room of Review Work.

CIRCOT CALIBRATION COTTON

CIRCOT is offering indigenously prepared calibration cotton standards having quality characteristic similar to those of USDA calibration cottons.

Two sets of calibration cotton standards are available :

- ♦ One set comprises three samples coded **M, E** and **E-2** for Conventional Instruments such as Fibrograph, Micronaire and Stelometer.
- ♦ The other set consists of three samples coded **HM, HE** and **HE-2** for HVI System.

The net weight of each sample is **200 g** and the cost **Rs. 600/-**

FORCE REQUIREMENT FOR COTTON PICKING, STALK UPROOTING AND STALK CUTTING

Cotton picking, Stalk uprooting and stalk cutting forces were measured at the GTC of CIRCOT at Nagpur with the help of a recently developed test rig. Among the five varieties of cotton, viz. CNH.36, Anjali, LRA.5166, AKA.8401 and AKH.4 tested, Anjali variety was found to require a maximum picking force of 0.598 N/gm of *kapas* followed by AKH.4, LRA.5166, AKA.8401 and CNH.36 in that order. The maximum uprooting force of 930 N was measured for the variety AKA.8401 and the minimum of 430 N was noted for CNH.36. The maximum cutting force required was measured as 1500 N for cotton stalk of diameter 14 mm with a moisture content of 64.7 % (d.b.). These findings will be useful during designing mechanical cotton picker, cotton stalk puller and cotton stalk chipper.

HIGH STRENGTH COTTON CULTIVARS

A recent study which focussed on various structural and morphological factors that may be responsible for the relatively high strength noticed in certain cotton varieties, revealed that :

Though crystallinity as measured by X-ray technique remained nearly the same among varieties, crystallite size was significantly higher in high strength cottons.

For cottons of tetraploid species, strength decreased with increase in the number of convolutions/cm.

INVERSE RELAXATION IN COMPRESSION

If an extended viscoelastic specimen is allowed to recover, a part of the deformation given to it such that tension in it has not become zero, then the stress in it tends to increase. This phenomena, termed as Inverse Relaxation (IR), is found to occur in textile fibres, spun yarns and fabrics which were strained axially. However, there is no information available to indicate whether viscoelastic materials exhibit IR under the influence of compressive forces.

CIRCOT study on the influence of compressive force on polyurethane foam indicates clearly that polymer specimen exhibits inverse relaxation during a specified level of decompression. The behaviour under the influence of compressive forces is some what similar to the one exhibited by textile fibres, yarns

MEETINGS (contd.)



◀ Dr. S. R. Padwal Desai, who gave a lecture in connection with the National Science Day Celebrations, is being introduced by Dr. S. Sreenivasan, Director, CIRCOT.

and fabrics loaded axially. This clearly establishes the occurrence of IR phenomenon in visco-elastic materials under the influence of compressive forces.

SHORT FIBRE CONTENT AND YARN IMPERFECTIONS

Spinning trials at CIRCOT on cottons having the same fibre quality as indicated by 2.5% span length, Micronaire and fibre strength showed that yarns spun to the same count from the above cottons although had the same strength but differed considerably in imperfections. The results brought out the influence of short fibre content and presence of fine foreign matter consisting of micro dust and trash in lint on yarn uniformity.

The current study, thus, highlighted the need: (i) to estimate/measure additional fibre qualities in order to ensure more uniform yarn production at spinning stage and, (ii) to minimise such factors as generation of short fibres and foreign matter during ginning and handling.

NEW ECO-FRIENDLY SCOURING TECHNIQUE FOR COTTON

CIRCOT has developed a novel eco-friendly scouring technique for cotton and cotton blended materials. In this method the cotton fabric is subjected to a 10 hr anaerobic treatment

employing a mixed flora developed and maintained at CIRCOT followed by a mild alkali treatment. The bleaching and dyeing properties of the fabric scoured by the new technique compare very well with those of the conventionally scoured one. The above method is not only eco-friendly but also a low energy process as compared to the conventional scouring technique. The fabric subjected to the new treatment showed an overall improvement in colour strength, colour uniformity and breaking elongation with negligible loss in tensile strength as compared to that obtained in the conventional treatment.

SPINNING OF INDIGENOUSLY DEVELOPED SHORT WOOL IN BLENDS WITH COTTON ON SHORT STAPLE SPINNING SYSTEMS

Indigenously developed *Avivastra wool* is fine but shorter in length compared to standard wools and hence it cannot be effectively processed through long staple woolen and worsted spinning systems for manufacture of consumer acceptable textiles. Therefore, an attempt was made at CIRCOT to explore the possibility of producing *Avivastra wool-cotton* blended good quality yarns by adopting short staple commercial spinning systems. It was

MEETINGS (contd.)



◀ A Lecture by Shri G. Chandrashekar of Hindu Business Line, Mumbai on "Role of Information and Info-Tech for Agriculture" during the National Science Day Celebrations.

TRAINING

CIRCOT conducts tailor-made training courses to meet the requirements of both textile trade and industry. The training comprises informative lectures and a series of practicals and demonstrations on conventional and modern equipments. The Course Material is provided in the form of a book which contains details on test methods, statistical interpretation of results, etc.

During the period, one week training programmes in two batches were organised exclusively for eighteen officers sponsored by The Cotton Corporation of India. A special short term course of one week duration was arranged for thirty two trainees from Madhya Pradesh Agricultural Marketing Board, Bhopal in three batches.

CIRCOT receives trainees from private business houses too. The one week training package is very popular amongst the private cotton traders and merchants. CIRCOT's special training course on the use of Uster HVI and AFIS had Two trainees, One from South Africa and the other sponsored by EICA during the period.

A Poster from CIRCOT was adjudged as 3rd Best Poster Presentation under the Category "Food Science and Technology-2000, held at

CFTRI, Mysore on 22-24 Nov., 2000. The award-winning Poster was entitled "Eco-friendly Packaging Material from Cotton Stalks For Fruits", by A.J.Shaikh, P.V.Varadarajan and R.H.Balasubramanya

CIRCOT bagged the ISCA Best Poster Presentation Award in the 88th Indian Science Congress held at New Delhi during January 3-7, 2001. The award- winning poster displayed in the Section of Engineering Sciences was "A New Eco-friendly Bio-Chemical Scouring Method for Cotton Textiles" by P.V.Varadarajan, R.H.Balasubramanya, N.D.Nachane, and R.R.Mahangade.

ECO TESTING LABORATORY

CIRCOT has set up an Eco-Testing Laboratory for issuing certificate of compliance to textile exporters. Established with partial financial assistance from the Ministry of Textiles, Government of India, this laboratory is fully equipped with sophisticated instruments like High Performance Liquid Chromatograph, High Performance Thin Layer Chromatograph with Electron Capture, Flame Ionisation, NPD and Mass Detector System, UV-VIS Recording Spectrometer and Total Organic Carbon Analyser, besides a well furnished laboratory for carrying out wet chemical analysis.

The Eco-testing laboratory at CIRCOT is equipped to carry out testing on textile materials for all the prescribed eco-parameters such as the detection and estimation of the banned aromatic amines, pentachlorophenol (PCP), banned pesticides, toxic metals, free formaldehyde and halogenic carriers.

R 8 D ACTIVITIES (contd.)

found that *Avivastra* wool can be blended to the extent of 40% for production of 16s and 20s Ne yarns on ring spinning system and upto 30% for production of 16s Ne yarns on rotor spinning system. Ring yarns had relatively better lea CSP and single thread tenacity, higher unevenness (U%), imperfections and hairiness as compared to rotor yarns. Improved beaters at the

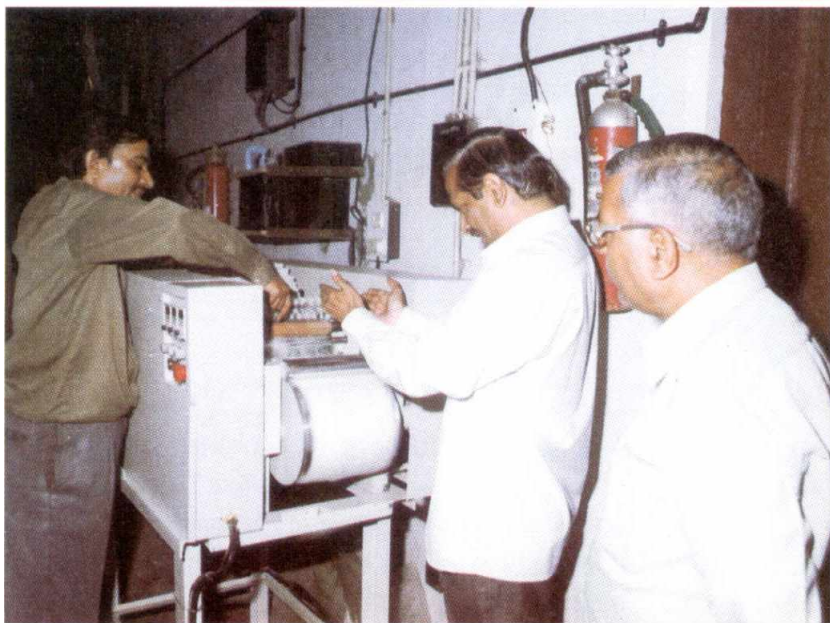
blowroom, carding with India roll apron doffing mechanism, drafting with higher top roller pressure at draw frame and ring frame, use of smaller ratchet wheel on roving frame and rotor spinning with a smooth doffing tube are some of the criteria identified for successful processing and production of *Avivastra* wool-cotton blended yarns.

COMPOST FROM WILLOW-DUST

M/s Hanjer Fibres, Surat approached CIRCOT to suggest methods of disposing willow-dust generated in their mill premises. The firm generates about 2.5 — 3.0 tonnes of willow-dust everyday. CIRCOT with its knowhow in generating biogas and biomanure from willow-dust suggested aerobic composting and prepared a feasibility report for the party. The mill authorities have already started making compost every day under the supervision of CIRCOT Scientists. The compost will be evaluated on cotton crop at Surat in the ensuing *kharif* season.

CIRCOT-TRYTEX MINIATURE SPINNING MACHINE

CIRCOT has recently signed an MOU with M/s. Trytex Machine Company, Coimbatore for fabrication and marketing of a miniature spinning assembly. CIRCOT in collaboration with Trytex Machine Company has developed



Dr. S. Sreenivasan, Director, CIRCOT and Mr. R.M. Subramanian, Proprietor, Trytex Machine Company after signing the MOU.

a set of miniature spinning machines consisting of carding, drawframe, sliver to yarn ring frame and roving to yarn computerised ring frame. These machines which are gearless have been designed incorporating the most modern technology including electronic drive system. The main machine parameters like draft, speed, twist, etc. can be set easily from the machine panel box. These miniature spinning machines are highly suitable for conducting quick trials for reliable assessment of spinning qualities of cotton and staple fibre, either alone or in blends. These machines have better design features and are available approximately at one-fourth the cost of the imported ones.

Dr. S. Sreenivasan, Director, CIRCOT inspecting the working of the Miniature Carding Machine. Others in the picture are Dr. S.K. Chattopadhyay, Sr. Scientist and Incharge Spinning and Mr. M. Ahmed, Head, Mechanical Processing Division.

TRANSFER		
<i>Name</i>	<i>Post</i>	<i>Effective Date</i>
Kum. Jyoti Sharma, Scientist	CIRCOT HQ to GTC, Nagpur	06-10-2000
Shri S.K. Shukla, Scientist	CIRCOT HQ to GTC, Nagpur	28-10-2000
RETIREMENT		
<i>Name</i>	<i>Post</i>	<i>Effective Date</i>
Shri P.B. Gurjar	Sr. Technical Assistant T-4	30-11-2000
Shri K.D. Mohite	Technical assistant T-2	30-11-2000
Dr. (Smt.) Vatsala Iyer	Pr. Scientist	31-03-2001
TRAINING PROGRAMMES ATTENDED BY STAFF		
<i>Training Programme</i>	<i>Period and Place</i>	<i>Participant(s)</i>
Programme on Cash and Accounts Management	October 19-21, 2000, ISERA, 'New Delhi	Shri S.V. Kasabe Shri N.V. Kambli
Internal Audit for Laboratories	November 1-3, 2000, IDEMI, Mumbai	Shri K.V. Ananthakrishnan
72nd FOCARS	1-12-2000 to 31-3-2001, NAARM, Hyderabad	Smt. F. Magdalena Eljiva
Computer Training under Revolving Fund Scheme	December 4-12, 2000, IASRI, New Delhi	Shri D.Radhakrishnamurthy
8th All India Conference on Implementation of the Guidelines and Norms laid down by the Hon'ble Supreme Court of India regarding Sexual Harassment and Gender Injustice	December 8-7, 2000, National Institute of Public Administration, Bangalore	Smt. M.V. Kamerkar
Library Automation and Resource Sharing	December 11-15, 2000, INSDOC, New Delhi.	Smt. Prachi Mhatre

Training Programme	Period and Place	Participant(s)
Gahan Hindi Prasikshan evam Karyashala	January 22-27,2001, NAARM, Hyderabad	Shri V.B. Suryanarayanan Shri B.R. Pawar
Management Programme for Women Scientists	'March 19-24, 2001, NAARM, Hyderabad	Dr. (Kum.) C.R. Raje, Dr. (Smt.) S. Saxena

CIRCOT TEST HOUSE

CIRCOT Test House was established in 1937. The main objective of the Test House is to carry out tests on samples of textile materials by standard methods / specifications prescribed by the party and to issue authoritative reports. The facility of **CIRCOT** Test House is at present widely utilised by both Government and private organisations. Efforts are made from time to time to keep the Institute equipped with modern instruments. The **CIRCOT** Test House which accepts cotton samples for tests on payment of scheduled test fees has the following distinctions :

- The Institute has over 75 years' experience in Textile testing.
- Testing machines kept in top condition.
- Fibre tests carried out by well qualified Scientists and Technical Officers.
- Quick Testing service - **HVI** and **AFIS** test results are available in one or two days.
- Test reports sent by Fax or E-mail
- Accuracy of test results guaranteed for arbitration purposes.
- **CIRCOT**'s quality system - accreditation by **NABL**.

Any organisation is welcome to refer cotton to **CIRCOT** for tests. The samples may be delivered at the Institute through courier or by post from anywhere in the country or abroad. Special concessional test fee package will be offered to mills intending to practice bale management.

Schedule of Fees for Tests can be sent on request.

For further information contact :

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ARTICLES PUBLISHED		
Authors	Title	Journal
Chattopadhyay, S.K. Shanmugam, N. Upadhye, D.L. Chaphekar, A.K. Iyer, K.R.K.	<i>Spinning and Fabric Forming Trials on Naturally Coloured Cottons — Some Observations</i>	ASIAN TEXTILE JOURNAL, Vol.10 No.(1) Jan, 2001, p. 50-56
Chattopadhyay, S.K. Iyer, K.R.K.	<i>Angora Wool — A Profitable Fibre</i>	INDIAN TEXTILE PROCESSING MAGAZINE 1 (1), 2001, p.34-37.
Chattopadhyay, S.K. Upadhye, D.L. Chaphekar, A.K.	<i>INDIA-ITME 2000: Developments in Short Staple Spinning Technology with Relevance to Indian Mills</i>	THE TEXTILE INDUSTRY AND TRADE JOURNAL 39 (1-2), 2001. P.17-30
Chattopadhyay, S.K. Bhaskar, P. Chaphekar, A.K. Muntazir Ahmed, Gupta, N.P. Pokharana, A.K.	<i>Spinning of Cotton/Wool Blends on Short Staple Spinning Systems</i>	JOURNAL OF TEXTILE ASSOCIATION 61(5), 2001, p.183-188.
Chattopadhyay, S.K., Chaphekar, A.K. Muntazir Ahmed, Gupta, N.P. Pokharana, A.K.	<i>Utilisation of Angora Rabbit Hair in Blends with Cotton for Value Added Fabrics</i>	ASIAN TEXTILE JOURNAL, 10(3), 2001, p.86-91.
Bhama Iyer, P., Sreenivasan, S.	<i>High Speed Testing of Textiles: Recent Advances</i>	EXPRESS TEXTILES, Special Supplement for India ITME, November 2000, P. 50
Singh, A.P., Singh, V.P., Singh, M. Lal, C.B., Makwana, D. N.	<i>Improvement of Fibre Strength (Bundle Tenacity) and Other Fibre Quality Traits in Punjab American Cotton (G. Hirsutum)</i>	J. INDIAN SOC. COTTON IMP. 25, December 2000
Balasubramanya, R.H. Bhatawdekar, S.P. Kathe, A. A. Shaikh, A.J.	<i>Utilisation of Cotton Seed By-products</i>	AICOSCA NEWS LETTER, 18-21, March 2001.
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