CIRCOT news

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

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Editorial

Natural, renewable, recyclable and biodegradable raw materials like natural plant fibres are receiving serious attention globally as the buzzword today is sustainable development through ecological and environmental preservation. These fibres often termed as "Green Fibres" have the potential for diversified applications and play a decisive role particularly in those countries where agriculture forms the backbone of development. While some of the natural fibres like Cotton, Jute, Ramie, Sisal etc. form the main product of cultivation, a few of them like flax, banana, pineapple and coir constitute the by-produce capable of providing adequate remuneration to grower if managed well.

Over a considerable period of time, petroleum-dependent man-made fibres with tailorable fibre attributes have been able to challenge the position of eminence once occupied by natural cellulosic fibres. However, a long term dependence on them is an unacceptable proposition as it has far-reaching damaging consequences. Here lies the scope for rejuvenation and promotion of natural fibres by applying modern tools of science and technology and by diversifying their application to newer areas for sustainable growth.

Globally, among natural fibres, the "king" cotton occupies currently the position of eminence contributing to about 37% to the fibre basket. All other natural fibres, excluding cotton hold a share of about 9%. Even after that, more than half the share is held by man-made fibres with a major contribution from polyester. However in India, even today cotton meets the demand of about 54% of the fibres. All other natural fibers contribute about 9% leaving 37% gap to be filled by man-made fibres. The global demand for fibres is forecasted to rise from the current level of 54.2 million tonnes/ annum to 130 million tonnes. To this pool, it is estimated that natural fibres other than cotton would have to contribute about 18-19 million tonnes per year at that point of time. This means that increased availability to the extent of 3 or 4 times the current level will have to be ensured in the next 45 to 50 years. This also calls for sustained and even path-breaking R&D interventions including application of modern biotechnological tools for enhancement of yield, consistency in quality and a clear road map for diversified use. Unless and until newer products are developed, entrepreneurship ensured and enhanced remuneration to grower assured, sustaining interest in production of natural fibres in significant quantities would be a difficult proposition in the current agricultural set up.

On the topic of diversified end-uses, a perusal of global trends indicate that from the status of a packaging material, ligno-cellulosic natural fibres are being upgraded and put to effective use in newer fields. The current world-wide

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IMPLEMENTATION OF ICDP UNDER MM II OF TECHNOLOGY MISSION ON COTTON FOR IMPROVEMENT OF GINNING AND PRESSING AND EXTENSION ACTIVITIES

A review meeting to assess the progress of work in the Project on Implementation of ICDP under MM II of Technology Mission on Cotton for Improvement of Ginning and Pressing and Extension Activities was held on May 8, 2004 CIRCOT, Mumbai under the Chairmanship of Dr. C.D. Mayee, Agriculture Commisioner, Govt. of India. Dr. K.M. Paralikar, Head, TTD, CIRCOT presenting the progress of work under the programme mentioned that the target of conducting 5 batches of training for 100 people drawn from ginning sector has been achieved utilising the resources made available under the Project. Dr. R.H. Balasubramanya Head, CBPD, CIRCOT presented a project on preparing compost from ginning waste. Dr. C.D. Mayee expressed his satisfaction over the progress of work. This proposal was as per the decision taken in a recently conducted review meeting of MM II at Nagpur wherein it was decided that CIRCOT would take steps to popularize technologies developed by the Institute that are beneficial to the growers through MM II of TMC.

Another review meeting of the Progress of MM II of TMC was held at the Directorate of Cotton Development on 11th June, 2004 under the Chairmanship of Mr. J.P.Meena, Joint Secretary,Ministry of Agriculture. Dr. K.M.Paralikar, Head TTD, presented the progress of work about the Project on Implementation of ICDP under MM II of Technology Mission on Cotton for Improvement of Ginning and Pressing and Extension Activities at Ginning Training Centre, Nagpur

Review Meeting of ICDP – MM-II Programme in Progress

Dr. S. Sreenivasan, Director, CIRCOT addressing at the Awareness Programme held at Kadi, Gujarat

MODERNISATION AND HUMAN RESOURCE DEVELOPMENT IN GINNING & PRESSING AND VALUE ADDITION TO PROCESSING WASTE

An awareness programme on Modernisation and Human Resource Development in Ginning & Pressing and Value Addition to processing waste was organized on May12, 2004 at Kadi, Gujarat. Dr. K.M. Paralikar, Head, Technology Transfer Division, CIRCOT, Mumbai presented the welcome address. Mr. Dilipbhai Patel, President, All Gujarat Cotton Ginning Association in his remarks emphasized the need for installing quality ginning and pressing machines in G & P factories to facilitate production of contaminant-free, good quality of cotton to face squarely challenges posed by global market. Mr. M.B. Lal, Former Advisor, Technology Mission on Cotton highlighted the need for modernisaion of ginning & pressing factories and training to the employees of ginning & pressing factories. In his speech, Dr. S. Sreenivasan, Director, CIRCOT brought forth the importance of training for the operatives of ginning & pressing factories to achieve maximum benefits from modernisation. Trained manpower to run a modernised ginnery is highly essential to achieve optimum ginnery output and to preserve the pristine quality of cotton. Dr. R.H. Balasubramanya, Head, CBPD, CIRCOT presented a paper on the processing of ginning waste for compost. The meeting ended with a vote of thanks by Shri P.G. Patil, Scientist In-charge, Ginning Training Centre of CIRCOT, Nagpur.

NATP WORKSHOP ON VALUE ADDITION OF SAFFLOWER PETALS FOR NATURAL DYES AND HERBAL HEALTHCARE PRODUCTS

A workshop on "Value Addition of Safflower Petals for Natural Dyes and Herbal Healthcare Products" a project funded by NATP was held at CIRCOT on 21-9-2004. This meeting was

Dr. S. L. Mehta, National Director, NATP, New Delhi releasing a booklet on "Value Addition of Safflower Petals for Natural Dye & Herbal Healthcare Products"

presided over by Dr. S.L. Mehta, National Director, NATP, New Delhi. Dr. P.V. Varadarajan, Principal Investigator presented a summary of the progress of the research work carried out at CIRCOT.This was followed by a presentation by Prof. P.N. Satwadhar on the research carried out at Marathwada Agricultural University, Parbhani. Prof. K.S. Laddha of University Institute of Chemical Technology, Mumbai gave the details of pharmacological studies carried out at his Institute. A discussion followed and the members present suggested new ideas and other valuable feedback. Dr. S.L. Mehta complimented the PI and Co-PIs for developing the technologies and said that these interactions would provide additional income to the farmer. He said that adding value to a crop is a boon to the farmer. He recommended partnership with institutions other than NARS so that the technology would reach the appropriate user group. Dr. R.H. Balasubramanya, Head, CBPD proposed a vote of thanks

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
Cotton Stalk Compacting Machine

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
Absorbent Cotton from Non-Spinnable Cotton

RESEARCH ADVISORY COMMITTEE

The tenth Research Advisory Committee Meeting was held on April 28-29, 2004. Dr. P.R. Roy, Chairman, RAC and Consultant, Presided over the meeting. The ongoing research and allied activities were presented by the HODs. After this there were discussions on the research projects as well as new research project proposals for 2004-05. The relevance of each project with respect to the mandate of CIRCOT was considered. Members gave their suggestions in improving the research activities. Dr. Roy released a leaflet entitled **Manjit — a Natural Dye for Polyester : Cotton Blended Fabric.** As a part of the RAC Programme, Dr. G. Subramanian delivered a talk on **Cyanobacteria in Bioremediation** on 29-4-2004.

Dr. S. Sreenivasan, Director, CIRCOT giving his Introductory Speech at the Research Advisory Committee Meeting

Research Advisory Committee Meeting in discussion with Dr. A.J. Shaikh Principal Scientist, CIRCOT

STAFF RESEARCH COUNCIL

The One hundred and fourth meeting of the SRC was held on May 17-19, 2004. Dr. S. Sreenivasan, Director was in the chair and all the HODs, Scientists and Technical Officers of the respective Divisions attended all the sessions. Discussion was held on the progress of research work during the period 2003-04 and a programme of work for 2004-05 was finalised. Eleven new project proposals were approved with certain modifications and suggestions.The following new projects were approved :

Core Area I

- Influence of Different Ginning Systems on the Quality and Quantity of Linters from Different Varieties of Cottonseeds
- Optimization of the Frequency of Beater in the Double Roller Gin and its Effect on Fibre Quality and Lint Out Turn and Power Consumption
- Effect of Ginning Performance with Different Types of Seed Cotton Feeding Systems used in Modern Ginneries

Core Area II

- Study of Fibre Development in Bt. and non-Bt. Cottons at Different Growth Stages and Comparison of Fibre Properties with Farmers' Samples at Final Stage
- Relationship between Neps Present in Cotton Lint and that Present in Yarn
- Genetic Improvement in the Quality of G. Cot. 23
- A Micro Controller based System for Measurement of Dynamic Modulus of Elasticity of Textile Fibres & Yarns
- Assessment of Knitting Performance of Trade Varieties and Standard Indian Cottons

Core Area III

- Formaldehyde-free Crosslinking Finishing of Cellulosic Fabrics
- Application of Nanoparticles in Paper Coating

Staff Research Council Meeting in Session

GROUP MEETING ON CREATION OF DATABASE ON PHYSICO-CHEMICAL AND STRUCTURAL CHARACTERISTICS OF COIR FIBRES

A Group Meeting on "Creation of Database on Physico-Chemical and Structural Characteristics of Coir Fibres" was held on August 7, 2004 at CIRCOT. Dr. S. Sreenivasan was in the Chair and the following persons attended the meeting:

1. Mr. A. Subramaniam, Consultant
2. Dr. C.J. Thampi, TMNRDC
3. Dr. H.S. Sen, CRIJAF
4. Shri T. Vidhan Singh, CPCRI
5. Dr. K.M. Paralikar, CIRCOT
6. Dr. R.H. Balasubramanya, CIRCOT
7. Shri M. Ahmed, CIRCOT
8. Dr. A.J. Shaikh, CIRCOT
9. Dr. R.P. Nachane, CIRCOT
10. Shri V.B. Suryanarayanan, CIRCOT

Following suggestions/decisions were made based on discussion:

- A variety not having sufficient tonnage should not be considered in the project.
- As coconut is not cultivated for fibres unlike cotton, collection of a variety of particular fibre may not be feasible as a commercial venture.
- Popular varieties from different states other than Kerala must also be included in the project.
- Productivity or/and resistance to disease could be the criteria for selecting the varieties.
- Coconuts of 11 & 12 months maturity should be collected for the project.
- Physical characteristics like fibre weight, pith size, etc. must be carried out initially.
- The ratio of fibre weight to nut weight to be

Group Meeting on Coir Fibres in Session

taken as one of the potential indices.

- Some microbial culture during soaking could be introduced to study their effect on extraction.
- Brown coir fibres would be more useful in technical textiles.
- Fibres should be separated into three lots of different fineness grades.
- Technical programme must follow a time frame.
- Targets for 3 months must be made available.
- Compressibility of the fibres could be tested if possible.
- A review after six months and a workshop after a year were suggested.
- It was felt that actual users should be involved in the project.

GROUP MEETING ON COLLABORATIVE NETWORKING PROJECT

A Group Meeting on Collaborative Networking Project "Technology Generation for Production of Value Added Blended and Composite Textiles from Natural Fibre Blends and their Commercial Adoption" was held at CIRCOT on August 7, 2004. Dr. S. Sreenivasan, Director was in the Chair. The following persons attended the meeting :

1. Mr. A. Subramaniam, Consultant, Coimbatore
2. Dr. C.J. Thampi, TMNRDC, Trivandrum
3. Dr. H.S. Sen, CRIJAF, Barrackpore
4. Shri T. Vidhan Singh, CPCRI, Kasargod
5. Dr. G.K. Bhattacharjee, NIRJAFT, Kolkata
6. Shri M. Datta, NCJD, Kolkata
7. Dr. M.S. Banerji, IRMRA, Mumbai
8. Dr. S.K. Chakravorty, IRMRA, Mumbai
9. Shri P. Roy Choudhary, IRMRA, Mumbai
10. Shri Yogesh J. Nar, IRMRA, Mumbai
11. Dr. K.M. Paralikar, CIRCOT
12. Dr. R.H. Balasubramanya, CIRCOT
13. Dr. G.F.S. Hussain, CIRCOT
14. Shri M. Ahmed, CIRCOT
15. Dr. A.J. Shaikh, CIRCOT
16. Dr. R.P. Nachane, CIRCOT
17. Shri S.K. Chattopadhyay, CIRCOT
18. Shri R.M. Gurjar, CIRCOT
19. Shri V.B. Suryanarayanan, CIRCOT
20. Shri D.L. Upadhyay, CIRCOT

Dr. Sreenivasan said that CIRCOT is interested in carrying out a networking project in which different Institutes would come together and use their combined expertise in developing value added products. The purpose of this meeting is to discuss about the objectives of the proposed project, value added products to be produced and chalking out a detailed technical programme. The other institutes which would be working with CIRCOT were CRIJAF, NIRJAFT, CPCRI, NCJD, TMNRDC and IRMRA. The representatives from these institutions presented in detail their part in the proposed project. Dr. S. Sreenivasan summed up the entire discussion and requested the participating Institutions to submit their proposal immediately to enable him to submit the combined project to the Council.

Interactive Meet on "Vision-2020 — CIRCOT Perspective Plan" in progress

INTERACTIVE MEET ON VISION 2020 — CIRCOT PERSPECTIVE PLAN

An Interactive Meet on "Vision 2020 — CIRCOT Perspective Plan" was held on 20-9-2004. The main purpose of the meeting was to sharpen the focus of the modified Vision document of CIRCOT that is under preparation. The following experts were present to go through the document and suggest modifications.

- Dr. P.R. Roy, Consultant, Arvind Mills, Ahmedabad
- Dr. R.P. Kachru, Former ADG (PE), ICAR, New Delhi
- Dr. G. Subramanian, Member, RAC
- Dr. A.R. Patel, Chemical Technologist, Arvind Mills, Ahmedabad
- Dr. G.P. Nair, Consultant, Mumbai
- Dr. N.B. Patil, Former Director, CIRCOT
- Shri M.S. Parthasarathy, Retd. Head, MPD, CIRCOT
- Dr. A.V. Ukidve, Retd. Principal Scientist, CIRCOT
- Dr. (Smt.) P. Bhama Iyer, Retd. Principal Scientist, CIRCOT

Apart from the above experts, the all scientists working in CIRCOT also participated in the meet. After introductory remarks by the experts, Dr. S. Sreenivasan presented the draft Vision 2020 to the members. A thorough discussion was held as the presentation proceeded and experts gave their suggestions/recommendations to modify the draft. Dr. Sreenivasan thanked all the experts and informed them that the suggestions received will be suitably incorporated in the document and submitted to the Council. Dr. R.H. Balasubramanya, Head, CBPD proposed a vote of thanks

OBJECTIVE GRADING FOR TRADING OF COTTON

One hundred and forty samples of J. 34 and 109 samples of Shankar 6 (H. 6) cottons were procured from different market yards over the crop season 2003-04 and objectively evaluated for various fibre properties *viz.,* 2.5% Span length, Uniformity ratio, Micronaire value, Tenacity and Trash content. These samples represented a spectrum of values, which agree with the samples traded during the past. Based on the earlier research at the Institute, each of the fibre attributes was assigned weightage in a combined Index representing its overall quality and categorized into three grades *viz.,* Super fine, Fine and Good. Based on the quality index, efforts are on to fix the price of the trade variety under reference and also for fixing premium and discount if any for deviation in quality of the traded sample.

UTILITY AND PERFORMANCE OF ADVANCED FIBRE INFORMATION SYSTEM IN EXPORT ORIENTED UNITS - A SURVEY

Selection of suitable cotton and process control are two vital steps involved in quality control operations in any export-oriented unit in the face of stringent specification for any product. In this context, the High Volume Instrument (HVI) and Advanced Fibre Information System (AFIS) play a major role.

A survey was conducted in and around Kolhapur (Maharashtra) to find out the utility of HVI and AFIS in enabling export-oriented units (EOU) to monitor the quality of raw material and end product. Following pertinent points emerged from the study:

- The yarn realisation achieved by EOUs is around 70%. This low yarn realisation is due to the reason that all the EOUs are producing combed yarns, in which case the comber noil removed is on an average varies from 15 to 20%.
- EOUs in Kolhapur region consume around 2.19 lakhs bales of cotton accounting to for about 1.4% of India's cotton production. Yarn production of these EOUs mainly is by ring spinning. EOUs test 20% of their bales for AFIS fibre parameters.
- Upper Quartile Length, 5.0% Length, Short Fibre Content, mTex, Immature Fibre Content, Maturity ratio, Neps/g and Seed Coat Neps /g are parameters that are put to use daily by EOUs in their routine operations.
- Among these eight parameters, neps/ gram is used by all the EOUs and the least used parameters are the 5.0% length and fibre millitex.
- Neps per gram indicates the number of neps present in one gram of cotton. This is the parameter most extensively used by all the EOUs to study the performance of blow room, card and comber. As per the norms adopted by these mills, for roller ginned cotton, the neps per gram should be less than 180 and for saw ginned cotton it should not be beyond 250. Higher neps are allowed for saw ginned cottons, as the treatment in saw gin is harsh and produces more neps than roller gin.

TRAINING

For meeting the requirements of the textile and ginning industries, CIRCOT conducts tailor made training courses on Cotton Quality Evaluation and on the operation of HVI and AFIS at the Headquarters. Training programmes on appropriate technologies in ginning for the production of clean quality cotton and on the maintenance aspects of ginning and allied machines are conducted at the Ginning Training Centre at Nagpur. All the 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.

During this year 112 trainees in 12 batches have been trained in fibre quality evaluation at the headquarters. One hundred and forty trainees in 11 batches have been trained in Ginning maintenance at GTC Nagpur. Some of these training were conducted onsite at different ginning factories. Staff members other than fitters and workers also took advantage of these onsite trainings.

COMMERCIAL TESTING

CIRCOT provides commercial testing facilities to user groups on various tests. Over four thousand four hundred samples of fibre, yarn and fabric were tested at the Headquarters. Commercial testing is also being done at the Ginning Training Centre at Nagpur and at the Regional Units of CIRCOT. Apart from commercial testing, a large number of samples belonging to various agricultural trials as well as the All India Coordinated Cotton Improvement Programme were also tested.

CONSULTANCY

CIRCOT provides technical consultancy to various clientile industries. The following technical consultancies were provided during the period :

- MOU signed with M/s Precision Tooling Engineering, Nagpur for Hipro Double Roller lab Model Gin
- Analysis of burnt sarees for M/s. Mehta & Co. Mumbai.
- Determination of qualitative loss of cotton due to fire for M/s. New India Assurance Co., Mumbai
- Comparison of performance of AQURA L with Baer sorter for M/s. Premier Polytronics, Coimbatore
- Analysis and estimation of oil in seeds of Bt. cotton for M/s. J.K. Agri Seeds, Hyderabad.
- Impact assessment of modern ginning and pressing factories under TMC.
- Cross sectional and surface morphology of drug pellets for M/s. Degussa India Pvt. Ltd., Mumbai by SEM.
- SEM studies of coated fabric sample for M/s. Intertek Labtest, Mumbai.
- Cross sectional study of polypropylene by SEM for M/s. Reliance Industries Ltd., Mumbai.

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Personnel

PROMOTIONS

Name	*Post*	*Effective Date of Promotion*
Smt. N.M. Ashtaputre	Technical Officer T-6	01-01-2003
Shri Hamid Hassan	Technical Officer T-6	01-07-2003
Shri Matish Chandra	Technical Officer T-6	01-07-2004
Shri M. Mohan	Technical Officer T-6	01-07-2004
Smt. Sheela Raj	Technical Officer T-6	01-07-2004
Shri T. Venugopal	Technical Officer T-6	01-07-2003
Shri M.V. Vivekanandan	Technical Officer T-6	05-11-2003
Smt Bindu Venugopal	Technical Officer T-5	01-07-2004
Smt Binu Sunil	Technical Officer T-5	27-10-2003
Shri B.B. Gaykar	Technical Officer T-5	07-10-2003
Shri D.U. Kamble	Technical Officer T-5	10-06-2003
Shri R.M. Sonke	Technical Officer T-5	07-10-2003
Smt N.A. Sonkusle	Technical Officer T-5	15-06-2003
Shri B.V. Shirsath	Technical - Category T-3	10-09-2001
Shri R.P. Kadam	Technical - Category T-2	29-06-2004
Shri John Robert	Technical - Category T-2	05-11-2003

TRANSFERS

Name	*Post*	*Effective Date*
Smt. Acushla Antony Scientist	CIFA, Bhubaneshwar to CIRCOT, Mumbai	02-06-2004

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10. Study of longitudinal views of viscose rayon fibre by SEM for M/s. Grasim Industries Ltd., Mumbai.
11. Surface morphological study of PVC resin by SEM for M/s. Reliance Industries Ltd. Mumbai.
12. Cross sectional study of moulded Polypropylene compound for M/s. Reliance Industries Ltd., Mumbai.
13. Cross sectional study of Polypropylene by SEM for M/s. Reliance Industries Ltd., Mumbai.
14. SEM studies on liquid drug samples for M/s. Bharat Serum & Vaccines, Ltd., Mumbai.
15. Cross Sectional study on drug pellets to see the multiple layer coating by SEM for M/s. Sandoz, Thane.

TRAINING PROGRAMME ATTENDED BY STAFF

Training Programme	*Period and Place*	*Participant(s)*
Certified Internal Quality Auditor as per ISO-9000-2000	May 26 to 28, 2004, Mumbai	Shri R.R. Chhagani Shri H.S. Koli Shri C.M. More
Windows and MS Office	June 8 to 10, 2004, CIRCOT, Mumbai	Smt. N.M. Ashtaputre Shri R.M. Modi Shri R.S. Prabhudesai Shri A.P. Modak Shri R.R Kadam Smt. T.P. Mokal Shri A.P. Natu Smt. J.J. Karanjavkar Shri J.R. Mangale Smt. B.D. Kherodkar
Instrumentation and Testing of Agricultural Machinery	June 16 to July 6, 2004, Bhopal	Shri Sujeet Kumar Shukla
Certified Course on Effluent Treatment	June 25 — 28, 2004, Hyderabad	Shri N. Vigneshwaran
Recent Trends in Mathematical Modelling and Computer Simulation of Biological Systems	June 28 to July 8, 2004, Coimbatore	Dr. C.D. Ravindran
78 FOCARS Training	August 10, 2004 to December 7, 2004, NAARM, Hyderabad	Shri Lokesh Jain Shri G. Sundaramoorthy
NABL Training	August 16 to 19, 2004, Mumbai	Smt. N.M. Ashtaputre Dr. R.D. Nagarkar
Consumer Satisfaction Measurement	September 15, 2004, Bangalore	Dr. K.M. Paralikar
Appropriate Technologies for Value Addition of Fruit and Vegetable Products from Farm to Consumer Chain	September 20 to October 1, 2004, Mysore	Smt. A.A. Kathe

CIRCOT CALIBRATION COTTON

CIRCOT is offering indigenously prepared Calibration Cotton Standards having quality characteristics similar to those of USDA Calibration Cottons.

Two sets of calibration cotton standards are available:

- One set comprises five samples coded A-1, M-4, D-1, E-4 and E-5 for conventional instruments such as Fibrograph, Micronaire and Stelometer
- The second set consists of five cottons coded as HM-5, HC-2, HD-2, HE-4 and Hlm-1

The net weight of each sample is 200 g and the cost is Rs. 750/-

Publications

PUBLICATIONS

- CIRCOT Annual Report 2002-2003
- CIRCOT leaflet No. 41— Manjit — A Natural Dye for Polyester:Cotton Blended Fabric
- CIRCOT leaflet No. 42 — Production of Compost from Ginnery Waste *(in Gujarati)*
- CIRCOT leaflet No. 43 — Production of Compost from Ginnery Waste (Kannada)
- CIRCOT leaflet No. 44 — Ginning Training Course - A Practical Programme on Ginning Technology for Ginning Personnel *(in Hindi)*
- CIRCOT leaflet No. 45 — Ginning Training Course - A Practical Programme on Ginning Technology for Ginning Personnel *(in Marathi)*
- CIRCOT News, October 2003 to March 2004
- CIRCOT Ginning Bulletin, October 2003 to March 2004
- Booklet — Highlights of CIRCOT's Achievements under TMC — Mini Mission II on HRD in Ginning and Allied Sector
- Booklet — Value Addition of Safflower Petals for Natural Dyes and Herbal Healthcare Products
- Annual Cotton Quality Update 2004

PAPERS PRESENTED AT SEMINAR/CONFERENCES

Title	***Title***	***Seminar/Conference***
Sreenivasan, S.	*On Quality Upgradation of Indian Cottons to Meet User Industry's Demands*	**All India Workshop of AICCIP,** April 5, 2004, MPKV, Rahuri.
Balasubramanya, R.H.	*Value Added products from Ginnery Waste*	Awareness Programme on **Modernisation of Ginning Factory and Need of Training in Ginning,** May 12, 2004, Kadi, Gujarat
Vigneshwaran, N.	*Bacterial Pigments for Eco-friendly Textile Dyeing*	Textile Institutes' **83rd World Conference on Quality Textile for Quality Fibre,** *May* 23-27, 2004,Shanghai, China.
Balasubramanya, R.H.	*Commercial Technology Developed on Cotton Plant Byproduct for Value Addition*	**MMI 4.2 TMC Workshop,** June 25, 2004, Nagpur
Sreenivasan, S.	*Cotton Production in Different States and Quality Scenario*	Meeting on **Production of Cotton as per Demand of the User Agencies under MM II, TMC,** July 3, 2004, Mumbai.
Balasubramanya, R.H.	*Production of Biogas and Compost from Willow-dust*	Awareness Programme on **CIRCOT Technologies, Processes and Products,** July 6, 2004, Salem, Tamilnadu
Chattopadhyay, S.K.	*Feasibility Study on Development of Coir-Cotton Composite Yarn*	International Conference on **High Performance Textiles and Apparels 2004,** July 7-9, 2004, Coimbatore.
Nachane, R.P., Hussain, G.F.S.	*Frictional Characteristics of Chemically Modified Cotton Fabrics*	International Conference on **High Performance Textiles and Apparels 2004,** July 7-9, 2004, Coimbatore.

Title	*Title*	*Seminar/Conference*
Venkatakrishnan, S.	*Quality Attributes of Calotropis floss Fibre and their Utilisation in Blends with Cotton for the Production of Value Added Fabrics*	International Conference on **High PerformanceTextiles and Apparels 2004,** July 7-9, 2004, Coimbatore.
Sreenivasan, S.	*Quality Scenario of India Cottons and Future Requirements*	National Symposium on **Changing World Order—Cotton Research Development and Policy in Context,** August 10-12, 2004, Hyderabad.
Balasubramanya, R.H.	*Cotton Plant Byproducts and Value Addition*	National Symposium on **Changing World Order—Cotton Research Development and Policy in Context,** August 12, 2004, Hyderabad
Makwana, D.N.	*Fibre Quality of Existing Cottons and Fibre Requirements in Textile Industries (Poster Paper)*	National Symposium on **Changing World Order — Cotton Research Development and Policy in Context,** August 10-12, 2004, Hyderabad.
Matish Chandra, Sreenivasan, S.	*Technological Performance of Improved G. arboreum Cottons (Poster Paper)*	National Symposium on **Changing World Order—Cotton Research Development and Policy in Context,** August 10-12, 2004, Hyderabad.
Balasubramanya, R.H.	*Cotton Stalk – an Excellent Lignocellulosic Raw Material for Various End-Uses*	**National Seminar on** Mechanisation of Cotton Production, **August 16, 2004, Nagpur**
Sreenivasan, S.	*Objective Analysis of Fabrics*	Short Course on **Advances in Testing, Processing and By-Products Utilization of Cotton,** August 31 to September 10, 2004, CIRCOT, Mumbai.
Sreenivasan, S.	*Status on Organic and Coloured Cotton*	Short Course on **Advances in Testing, Processing and By-Products Utilization of Cotton,** August 31 to September 10, 2004, CIRCOT, Mumbai.
Balasubramanya, R.H.	*Production of Biogas and Compost from Willow Dust*	Short Course on **Advances in Testing, Processing and Byproducts Utilisation of Cotton,** August 31, 2004 to September 10, 2004, CIRCOT, Mumbai
Balasubramanya, R.H.	*Preparation of Pulp and Paper from Cotton Stalks and Edible Mush-rooms on Cotton Stalks*	Short Course on **Advances in Testing, Processing and Byproducts Utilisation of Cotton,** August 31, 2004 to September 10, 2004, CIRCOT, Mumbai
Balasubramanya, R.H.	*Cottonseed and its Byproducts*	Short Course on **Advances in Testing, Processing and Byproducts Utilisation of Cotton,** August 31, 2004 to September 10, 2004, CIRCOT, Mumbai

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thrust shows that these are increasingly being used as (i) Apparel grade Blended Textiles (ii) Technical and Home Textiles (iii) Industrial Non-wovens (iv) Bio-composites (v) Fine Quality Pulp and Paper (vi) Fine Chemicals (vii) Cosmetics and Healthcare Products and in the manufacture of (viii) Biofuels. Sustained diversification in above mentioned areas would call for R&D interventions in issues like year-round availability of these fibres in a cleaner, ready-to-use form at competitive rates, consistency in quality between lot-to-lot and bale-to-bale and improved extraction, softening and clean-up procedures.

CIRCOT's research efforts in the past to standardise processing technology for the manufacture of apparel/furnishing grade textile items employing cotton spinning machinery for blends of cotton with any of the natural fibres like jute, pineapple, ramie and Angora rabbit hair have born fruit. Good quality handloom furnishing fabrics from Cotton:Jute; denims made of Cotton:Pineapple fibre and knitted and woven fabrics and garments from Cotton:Ramie, and Cotton:Angora Rabbit Hair; Rubberised conveyor belting from Cotton:Coir:Jute/Polypropylene have been produced. The Institute is actively pursuing large scale trials and technology transfer protocols to develop entrepreneurship in these new areas.

Recently, the Govt. of Kerala has sponsored a research project to develop a data base on the physical and chemical attributes of coconut fibres of popular varieties cultivated in the country with a view to identify suitable material for specific end uses. In a network mode, efforts are underway to cultivate Ramie in hitherto non-traditional areas in Central and Southern parts of the country to see that this excellent fibrous resource is made available to the industry for production of value added products. Again R&D interventions on a large scale are planned to take up manufacture of natural fibre composites with active participation of research institutes; developmental organisations and entrepreneurs. The present newsletter gives a glimpse of the recent efforts made by the Institute in these directions.

With greater stress on post harvest processing, value addition, storage, packaging of agricultural, horticultural, fish and animal products, the need and applications for natural fibres are bound to enhance. Green fibres possess the potential to serve admirably this cause and effectively contribute to sustainable agricultural development.

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