CIRCOT news

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

Volume 6 | April 2003 to September 2003 | Number 1

Editorial

The cultivation of cotton, of late, is besieged with several problems in a predominantly rain-fed situation like in India. The rising costs of inputs like seeds, fertilizers and pest management chemicals coupled with multiplicity of low yielding varieties, excessive use/ misuse of pesticides have all contributed in good measure to this state of affairs. Although efforts to off-set the rising cost of cultivation in terms of promoting biofertilizers and biopesticides, organic cotton cultivation, transgenic Bt cotton, promotion and popularisation of IPM, IRM, Integrated nutrient management and such other technologies are in place, new innovative/ path-breaking initiatives are needed to improve the cost-benefit ratio of cultivation and to bring back those farmers to cotton who have veered away to other promising crops.

A judicious approach to promote commercial use for by-products of cotton cultivation after optimum value addition would pave way for the grower to realise additional income through the otherwise wasted farm by-produce. Cotton stalk is a voluminous biomass available in the field after harvest of seed cotton which if ploughed back into the field acts as carrier of pest for the subsequent crop. As a naturally available, renewable ligno-cellulosic material, on the other hand, cotton stalks used as substitute for wood/forest timber can have a significant impact in arresting the environmental degradation caused by the fast depletion of forest resources.

CIRCOT has developed a technology for the manufacture of particle boards from cotton stalks that meet all the requirements as per BIS specifications. Based on laboratory trials and limited large scale factory observations, the cost of particle boards made from cotton stalks has been shown to be much lower than that from wood. The Institute has also standardised a process to prepare hard boards from cotton stalks using the lignin present in the material itself as a binder. This eco-friendly process has also been seen to be techno economically viable although this observation needs confirmation on large scale trials for commercial exploitation.

CIRCOT has submitted a project on efficient utilisation of cotton stalks for manufacture of particle boards for funding by the Common Fund for Commodities (CFC), Netherlands. This proposed programme intended to be executed with active collaboration of particle board manufacturers, seeks to set up a demonstration plant for board preparation. This pilot plant is envisaged to serve the twin purpose of evaluating the techno-economic viability of the process as well as to convince prospective entrepreneurs to set up new plants based on cotton stalks.

The CFC while accepting the technical-worthiness of the proposal had raised a few pertinent issues pertaining to marketing potential of cotton stalk particle boards and also the availability of stalks for this industrial use. A CFC-sponsored marketability survey was carried out by M/s. Feed back Marketing Services Pvt. Ltd. , Mumbai. The survey has clearly brought out a prospective market penetration of 5 to 10% in the immediate future by cotton stalk boards provided sustainable supply of cotton stalks to manufacturer, brand building exercise and awareness creation programmes are put in place. Another survey carried out by an international consultant by personal visits to select centres at North, Central and Southern India also indicated the availability of adequate amounts of cotton stalks for board preparation after duly accounting for the stalks used by growers for their own use.

An international workshop was organised by CIRCOT on behalf of CFC at Mumbai wherein apart from researchers, Govt. officials both from India and abroad, particle board manufacturers and entrepreneurs actively participated. I have great pleasure in presenting a brief report on the Workshop to you through this newsletter. Participants at the Workshop unanimously endorsed CIRCOT's technical proposal and reiterated the need to quickly set up pilot plant facility to promote awareness and entrepreneurship.

It is felt that commercial exploitation of cotton stalks for particle board manufacture would bring in the much needed impetus to rural employment, enhancement in growers' income by fetching revenue for byproduce, apart from arresting the depletion of forest resources and preservation of environment.

S. Sreenivasan
Director

Seminars

INTERNATIONAL WORKSHOP ON UTILISATION OF COTTON PLANT BY-PRODUCE FOR VALUE ADDED PRODUCTS

The International Workshop on Utilisation of Cotton Plant By-Produce for Value Added Products was held on May 26-27, 2003 at CIRCOT.

The inaugural session on the forenoon of May 26 was chaired by Dr. N.S.L. Srivastava, DDG (Engg.), Indian Council of Agricultural Research, New Delhi. Dr. S. Sreenivasan, Director, CIRCOT welcomed the delegates and gave details about the proposal submitted to Common Fund for Commodities (CFC), Netherlands. He brought out the possibility of utilising the available cotton stalk beneficially. He mentioned that the idea of the workshop was to get information from all user groups and modify the proposal so that the project would be beneficial to all concerned.

Mr. Sietse van der Werff, First Project Manager, CFC, in his opening remarks explained about the mandate of CFC. He observed that the project proposal having a sound design was found feasible. He wanted to ascertain that adequate supply of stalks was available for large scale trials. He also wanted the scientists to ascertain the quality of cotton stalk boards with boards made from other raw materials on a comparative scale. He also mentioned that a discussion with industry will be helpful in modifying the project.

Dr. C.D. Mayee, Director, CICR, Nagpur chaired the session in the noon of 26 and this session was devoted to presentations by Dr. R.H. Balasubramanya, Principal Scientist & Head, CBPD, CIRCOT, Dr. Jan E.G. van Dam, Senior Scientist & Consultant, Fibres & Cellulose, ATO B.V., Netherlands and Mr. S.P. Anup Kumar, Senior Manager, M/s Feedback Marketing Services Pvt. ltd., Mumbai.

The forenoon session on May 27 was chaired by Dr. M.S. Kairon, Former Director, CICR, Nagpur, while the plenary session on May 27 noon was chaired by Dr. R.P. Kachru,

International Workshop on Utilisation of Cotton Plant By-Produce for Value Added Products in Progress

A view of the participants at the International Workshop

Former ADG (PE), ICAR, New Delhi. Mr. V.S. Raju, Dr. M.S. Kairon, Dr. van Dam, Mr. Sietse van der Werff and and Dr. R.H. Balasubramanya participated as panelists. The objective of the session was to discuss and refine the project.

The observations during the two days workshop are as follows :

- The capacity of a particle board factory based on cotton stalks could be about 30 tonnes per day.
- The project should have private participation to look after the commercialisation of the product.
- As the availability of cotton stalks will increase with increase in productivity, the matrix of extra income to the farmers will be viable.
- On the socio-economic impact of the project, it was felt that the farmer would be happy if he gets a good remuneration and this will make the product commercially viable.
- A right private sector partner is needed to successfully implement the project.
- The rate of Rs. 7-8 as suggested by M/s Feedback seemed to be low as against the approximate production cost of Rs.11/- per board of 8' x 4' size
- A standby processing method with alternate raw materials must be kept ready, as it is not possible to process with cotton stalk throughout the year.
- As cotton stalk is distributed over larger area in a scattered way it is necessary to assess the ways and means of transporting.
- Cotton stalk delivered in chipped form would be ideal for particle board manufacturers.
- It is necessary to locate the ideal place for chipper to enable farmers to deliver stalks.
- Transportation cost would be reduced if stalks are transported in the form of chips.
- Storage is better in chipped form and a chip size of 15-20 mm is most suitable.
- Bales made of chips would not be stable while transporting.
- Pilot plant must contain all machineries

required for a commercial plant.

- The pilot plant must enable a commercial entrepreneur to extrapolate the cost of production.
- The output of a pilot plant should be scalable to commercial level and must work like a frontline demonstration plant.
- The board prepared should be acceptable to the commercial entrepreneur.
- Different sizes of boards were suggested i.e. (4' x 8', 4' x 4', 4' x 2').
- CIRCOT's proposal for setting up a pilot demonstration plant was unanimously endorsed by all the particle board manufacturers present at the workshop.

CIRCOT – INDUSTRY INTERFACE MEET

An Industry Interface Meet was held on August 11, 2003 at CIRCOT to get feedback from the industry regarding the facilities that are to be augmented at the Institute in order to support the industry to enhance its textile export.

Dr. S. Sreenivasan, Director, CIRCOT welcomed the participants. Dr. J.P. Mittal, National Co-ordinator, NATP, New Delhi, Dr. P.R. Roy, Consultant, Arvind Mills, Ahmedabad and Dr. S.K. Tandon, Principal Scientist (Agril. Engg.), ICAR, New Delhi presented their thematic remarks.

In his Welcome address Dr S. Sreenivasan stressed the need to look into the quality aspects from yarn to finished garment and lamented that the unorganized powerloom industry is not giving importance to quality aspects which is one of the reasons for low unit value realisation of our garment exports from this sector. He said that CIRCOT could help the industry in satisfying the stringent quality norms required for export.

Talking about the interface meet Dr. Sreenivasan said that CIRCOT has approached NATP with an objective of promoting the Institute as a referral laboratory. The purpose of the Meet is to assess the areas

Dr. S. Sreenivasan, Director, CIRCOT welcoming the delegates at the CIRCOT-Industry Interface Meet

in which CIRCOT should focus its efforts and also enhance the capabilities so as to gain the status of a referral laboratory.

Dr. J.P. Mittal, who chaired the meet, informed that NATP is looking at CIRCOT's proposal for recognition as a referral lab for cotton. He informed that this meet is being organised to gather the views of the industry, on the need for a referral lab on cotton and also on the kind of facilities that are needed to be created.

Dr. P.R. Roy opined that If CIRCOT is delegated the status of a referral laboratory then the tests done at CIRCOT would be recognised all over the world. He was of the opinion that CIRCOT is better equipped in terms of human resource and facilities to compete with many international laboratories although there is need to augment facilities in selected areas. Dr. Roy stressed the importance of a platform to discuss and promote quality aspects in cotton. He added that CIRCOT is in a position to explain to the new entrants in garment exports the quality requirements in the international markets. He stressed that there is a strong case to create a base in India at CIRCOT for all products related to cotton from fibre to the finished end product.

Dr. S.K.Tandon informed that government was looking forward to the industry to tell what it needs. He said that a task force has been established at ICAR to develop the industry interface for mutual benefit. Dr Tandon was of the opinion that to meet the international quality standards it is necessary to establish referral labs and requested the industry for their inputs. He informed the members that efforts are on to develop even maturity cottons which would solve the problem of uneven dyeing.

Shri Suresh Kotak, Chairman, COTAAP Research Foundation and Immediate Past President of IMC, Mumbai, said that "referral status" to CIRCOT would go a long way in promoting cotton.

After the thematic remarks Dr. Mittal requested the various dignitaries to present their comments/suggestions to enable CIRCOT to submit a proper proposal for setting up the referral lab. The following suggestions were received:

- Need for establishing flame retardant test facilities at CIRCOT as these are needed by garment manufacturers supplying not only to internal organisations like Railways, Navy, etc. but also for export.
- Strengthening eco-laboratory at CIRCOT, establishing chlorine-fastness test and instruments to test coated fabrics to help export.
- A miniature spinning plant with high-speed machinery to evaluate the quality of new varieties being released and modernising the equipment facilities at CIRCOT to remain in tune with international demands.

  Equipment for characterising quality of dyed fabrics.

  Developing colour grade and trash grades for Indian cottons on the lines of American cottons.

  Testing synthetic fibres apart from cotton.

- Publishing the work done at CIRCOT through press and the training courses conducted by CIRCOT.

  Need for CIRCOT to become member of bodies of international standards like American Association of Textile Chemists and Colourists (AATCC) in order to effectively discharge the duties as a standard organisation.

Dr. G.F.S. Hussain, Principal Scientist and Head, Quality Evaluation and Improvement Division, CIRCOT proposed the Vote of Thanks.

STAFF RESEARCH COUNCIL

The **One hundred and Third Meeting** of the SRC was held during April 28, 29 & 30, 2003 in which discussion was held on the progress of research work during the period 2002-2003 and a Programme of Work for 2003-2004 was finalised. Dr. S Sreenivasan, Director was in the Chair and all HODs, Scientists and Technical Officers of the respective Divisions attended all the sessions. Eight new proposals were approved with certain modifications or suggestions.

A talk on **An Introduction to Intellectual Property Rights** by Dr. R.P. Nachane, Principal Scientist was arranged. This was followed by felicitation by Director to Dr. (Smt.) S.P. Bhatawadekar, Principal Scientist, Chemical & Biochemical Processing Division who was to retire in July 2003.

The following new project proposals have been approved after incorporating the suggestions/ recommendations of the SRC.

Core Area I

- An Assessment of Processing Cost in a Modern Ginning Factory
- Evaluation of Processing Loss and Effects of Diffferent Automation Systems in Cotton Ginneries on Fibre Quality Parameter
- Development and Performance Evaluation of Modified Double Roller Gin

Core Area II

- Time Series Performance Analysis of Standard and Trade Varieties of Indian Cottons

Core Area III

- Microbial Pigments for Eco-friendly Textile Dyeing
- Scale-up Trials on Dyeing of Cotton with Marigold and Chrysanthemum Flowers

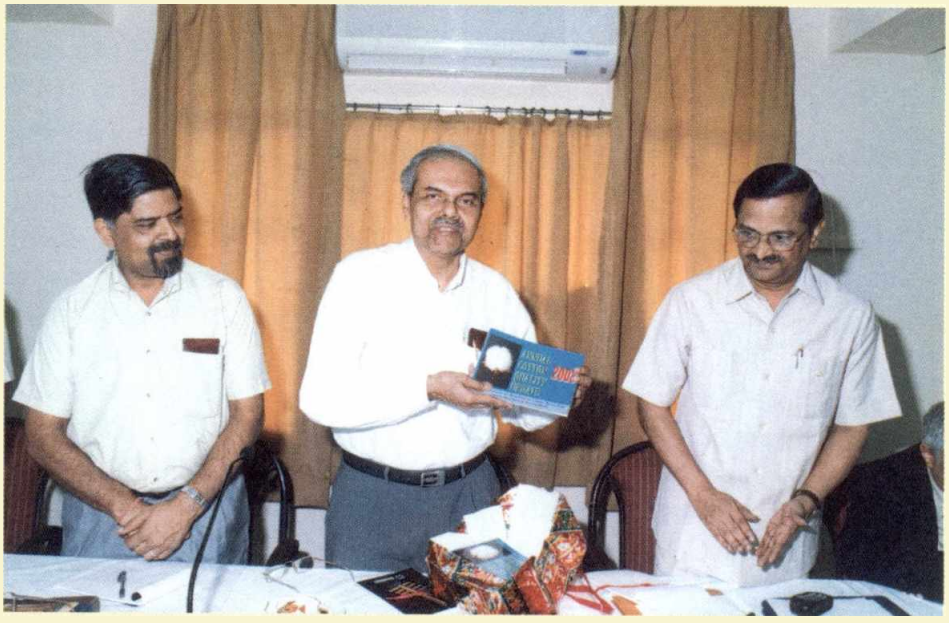
Core Area IV

- Design and Development of a Machine for Compaction of Cotton Stalk.

RESEARCH ADVISORY COMMITTEE

The Ninth meeting of the Research Advisory Committee (RAC) was held during July 10 and 11, 2003. Dr. P.R. Roy, Chairman, RAC and Group Advisor, Aravind Mills, Ahmedabad

Research Advisory Committee in Session



Dr. P.R. Roy releasing the Annual Cotton Quality Update 2003

presided over the meeting. There were discussions on the on-going research projects, as well as new research project proposals for 2003- 2004 keeping the recommendations/ suggestions of the SRC in view. The relevance of each of the project with respect to the mandate of the Institute and QRT's observation was considered. One CIRCOT leaflet entitled **Ginning Training Course : A Practical Training Programme on Ginning Technology for Ginning Personnel** was released by Dr. Pitam Chandra, ADG (P.E.), ICAR and Dr. P.R. Roy, Chairman released the **Annual Cotton Quality Update 2003.** The on-going research and allied activities were then presented by HODs. On the second day a talk on **Indian Yarn in World Market** by Prof. C.D. Kane was organised. All the RAC members, scientists and Technical Personnel attended the lecture.

GROUP MEETING FOR PROMOTION OF RAMIE CULTIVATION

A Group Meeting for Promotion of Ramie Cultivation was held at CIRCOT, Mumbai on 12-9-2003. Dr. S. Sreenivasan, Director, CIRCOT coordinated the meeting and the following persons participated in the deliberations.

- Dr. H.S. Sen, Director, CRIJAF, Barrackpore
- Dr. S. Ramanathan, Director of Research, TNAU, Coimbatore
- Dr. V.S. Korikanthimath, Director, ICAR Research Complex, Goa
- Dr. J.R. Ramteke, Prof. & Head, Dept. of Agronomy, BSKKV, Dapoli
- Dr. S. Manjunath, Sr. Scientist, ICAR Research Complex, Goa
- Sr. Scientist, BSKKV, Dapoli
- Mr. K.C. Gangar, N.K. Filters, Mumbai
- Mr. K.K. Gangar, N.K. Filters, Mumbai
- Dr. R.H. Balasubramanya, Principal Scientist & Head, CBPD, CIRCOT
- Dr. K.M. Paralikar, Principal Scientist & Head, TTD, CIRCOT
- Dr. G.F.S. Hussain, Principal Scientist & Head, QEID, CIRCOT
- Shri M. Ahmed, Principal Scientist & Head,

MPD, CIRCOT

- Shri. R.M. Gurjar, Principal Scientist, CIRCOT
- Dr. S.K. Chattopadhyay, Sr. Scientist, CIRCOT, Mumbai
- Shri V.B. Suryanarayanan, Technical Officer, CIRCOT
- Shri. D.R. Murthy, Technical Officer, CIRCOT

Giving details about the good qualities of ramie fibre, Dr. Sreenivasan said that no serious work has been done in India for promoting cultivation of the crop. He mentioned about the research work done at CIRCOT in producing apparel fabrics from blended yarns of ramie and cotton. In order to utilise the good qualities of ramie it is necessary to promote cultivation of ramie in other parts of the country. He said that ICAR has constituted a committee to look into this matter with an objective of preparing a detailed project proposal for promotion of ramie cultivation. Dr. Sreenivasan stressed that the purpose of this meeting was to achieve this objective.

Dr. H.S. Sen, Co-ordinator and Director, CRIJAF, Dr. S. Ramanathan, Director of Research, TNAU, Coimbatore, Dr. V.S. Korikanthimath, Director, ICAR Research Complex, Goa and Dr. J.R. Ramteke, professor and Head, Department of Agronomy, BSKKV, Dapoli presented their views on promoting ramie. After the initial remarks by the participants Dr. Sen in his presentation gave details about the ramie crop and put forward a draft project proposal to be submitted for funding under AP Cess Fund. He said that CRIJAF will be the lead centre and CIRCOT, Mumbai, ICAR Research Complex, Goa, BSKKV, Dapoli, TNAU, Coimbatore and Department of Agriculture, Meghalay will be the co-ordinating centres. He requested that the participants should go through the proposal thoroughly and suggest modifications, if any to refine the programme.

Dr. R.H. Balasubramanya, Principal Scientist and Head, CBPD, CIRCOT then made a presentation on the research work done at CIRCOT on Biological Degumming of

Group Meeting for Promotion of Ramie Cultivation in progress

Decorticated Ramie Fibres. This was followed by a presentation giving details on work done at CIRCOT on Ramie—Cotton Blends by Shri M. Ahmed, Principal Scientist and Head, MPD, CIRCOT.

During the discussions that followed the some of the points made were as follows

- Ramie could be used in the preparation of various types of filter fabrics.
- Ramie can replace polyester, polypropylene, etc. as functional/industrial fabrics for defined end uses.
- It would be beneficial to market degummed ramie fibres.
- It would be ideal to extract fibres from freshly harvested and decorticated ramie.
- Delay in decortication would result in loss in quality and quantity of fibres
- Ramie fibres from China & Philippines are to be compared with fibres of Indian origin.
- Available germplasm material should be evaluated for quality.
- Gum content needs to be brought down to an acceptable level for textile purposes.

ASRB MEETING WITH WEST ZONE DIRECTORS

A Meeting of the Directors of ICAR Institutes located at Nagpur, Junagadh, Pune, Goa and Mumbai was organised by ASRB at CIRCOT on July 14, 2004 to discuss and work out the modalities for holding the recruitment/ examinations for filling up the posts of administrative category.

A committee consisting of Dr. K.M. Paralikar, Head, Transfer of Technology Division, CIRCOT Shri U.C. Prasad, Administrative Officer, CIRCOT and Smt. M.V. Kamerkar, Asstt. Administrative Officer, CIRCOT made the necessary arrangements for conducting the meeting.

Dr. M.S. Basu, Director, National Research Centre for Groundnut, Junagadh, Dr. P.G. Adsule, Director (Acting), National Research Centre for Grapes, Pune, Dr. S.A.M.H. Naqvi, Sr. Scientist, National Research Centre for Citrus, Nagpur, Dr. V.S. Korikanthimath, Director, ICAR Research Complex for Goa, ELA, Old Goa, Dr. K.E. Lawande, Director, National Research Centre for Onion and Garlic, Rajgurunagar, Pune, Dr. S.C. Mukherjee, Director, Central Institute of Fisheries Education, Mumbai and Dr. S. Sreenivasan, Director, CIRCOT, Mumbai attended the meeting. Dr. A.G. Sawant, Member, ASRB presided over the meeting. The following points were discussed :

- Merits and demerits of the new system of conducting examination by ASRB for direct/ limited departmental examinations for administrative posts of ICAR Institutes vis-a-vis existing system.
- Infrastructure facilities (space & staff) available at the Institute for conducting the examination. If such facilities are not available in the Institute, what alternative options are available ?
- Number of examination centres (institute wise/group of institutes/ state wise/ group of states, etc.).
- Merit list of selected candidates (Institute wise /Region wise/ National Level).
- Suggestions/proposals on the subject made available by the Directors of ICAR Institutes present at the meeting.

The deliberations pointed out the difficulties in conducting a centralised examination by ASRB and urged for continuation of the existing system followed at the institutes.

STUDIES ON WEAR CHARACTERISTICS OF LEATHER ROLLERS AND KNIVES USED IN COTTON GINNING INDUSTRY

The leather material used for covering the rollers in a double roller gin is an important ingredient in determining the productivity of the machine and quality of ginned lint. The leather or the covering material wears out due to continued friction between the roller and fixed knife in a DR gin. Periodic changing of the roller covering material is important to sustain the productivity of the DR gin.

A project was undertaken at CIRCOT with the objective of :

- determining the rate of wear of leather rollers and knives used in cotton gins,
- to find out the effect of wear of both roller and knife on the ginning output and fibre properties and
- to determine the break-even point of working life of roller vis-a-vis ginning output in order to make ginning more profitable.

Both laboratory as well as field trials were conducted and the salient observations are as follows :

1. The abrasive wear action between the roller and fixed knife leads to reduction in roller weight and diameter thereby resulting in diminished output
2. If the same roller material is continued for a whole ginning season the income loss due to reduced output could vary from anywhere between Rs. 35,000/- to Rs. 50,000/-.
3. An income saving of about Rs. 68,000/- could be achieved if the roller cover is replaced at a material cost of Rs. 2000 after about 1000 hours of working.

The results obtained in this study could be a good guideline for the ginners to increase their profit and for cost-effective ginning.

Similarly knives are also very vital parts of the double roller gins that are subjected to wear and tear during the ginning operation.This has an adverse impact on fibre properties and it also causes damage to seed. A thoroughly trained staff can look after the maintenance aspect of the rollers, knives and other moving parts in a DR gin and help in realizing sustained higher productivity during the entire season.

SOFT BOARDS FROM COTTON PLANT STALK PULP

Laboratory trials to prepare softboards from cotton stalk pulp by blending with bagassee in 50:50 ratio revealed that boards prepared were of acceptable quality having thickness of not less than 9 mm, density about 400 kg/m^3 and with a thermal conductivity upto 5.6 cal. Cm/m^2 h° C. These boards could be used for insulation purposes, or as joint filler in construction, etc.

CELLULOSE POWDER FROM COCONUT HUSK

Small-scale laboratory trials were carried out to prepare cellulose powder from tender coconut outer cover and carpet coir waste by subjecting them to an anaerobic treatment for one week under batch digestion. The anaerobically treated fibres were then steam cooked in alkali for 30 min followed by bleaching with hypochlorite for 30 min. The bleached material was hydrolysed with 2.5N HCL for 20 min to obtain cellulose powder. Results indicated that the cellulose prepared was of superior quality and that the recovery was more from tender coconut than from carpet coir waste.

STUDIES ON BANANA PSEUDOSTEM FIBRES

Studies on the fibre properties of fifty-five varieties of banana pseudostem revealed that the tenacity values show a high of 60.8 g/tex and a low of 32 g/tex. Other important observations were as follows

- The breaking strain values range from 1.7% to 3.7%.
- The tex of the thick fibres is seen to be almost double than that of the thin fibres within a variety, the highest being 10 tex and the lowest 2.6 tex.
- The modulus values range from 7829 Mpa to 20083 Mpa.
- The tenacity and modulus are not affected by the thickness of the fibres.
- Within a particular variety, the variation is found to be very less.

A small modification has been made in Raspador fibre extractor to suit the extraction of fibers from banana pseudostem. Also, a fibre cleaner has been developed to remove non-fibrous material from the fibres extracted by Raspador. These two in combination gave fibres, which are as good as hand-extracted material based on mechanical properties. They have better whiteness index, soft silky feel with silvery appearance. The amount of fibres extracted per machine in a day can be more than 5 Kg. If a number of machines are used in banana plantations, large quantity of good quality banana fibres can be made available at cheaper rate for preparation of fancy articles as well as textiles.

Banana fibres being extracted from the modified Raspador Fibre Extractor

Extension Activities

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.

Visitors at CIRCOT Stall at the AGRI INTEX 2003 Exhibition organised by CODISSA at Coimbatore

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

COMMERCIAL TESTING

During the period under report, 1633 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

Scientific consultancies in raw material characterisation, design and development of machine, etc. were extended to the following industries and entrepreuners :

- M/s. Degussa India Pvt. Ltd for SEM studies on drug samples
- M/s. Novartis Enterprises Pvt. Ltd., Thane for cross sectional and surface morphology of tablets by SEM
- M/s. Bharat Serums and Vaccines Ltd. Thane for investigation on Amphotericin B formulations by SEM
- M/s. Bajaj Steel Industries Ltd., Nagpur for ginning and pressing equipment

EXTENSION / PUBLICITY

CIRCOT participated in the AGRI INTEX 2003 organised by CODISSIA from September 9-14, 2003 at Coimbatore.

APPOINTMENTS

Name	Post	Effective Date of Appointment
Scientific Personnel		
Shri Achchhelal Yadhav	Scientist	25-08-2003
Shri Virendra Prasad	Scientist	25-08-2003
Shri C. Sundarmoorthy	Scientist	11-08-2003
Technical Personnel		
Shri N.K. Shaikh	Technician T-1	17-04-2003
Kum. V.G. Udikeri	Technician T-3	04-08-2003

PROMOTIONS

Name	Post	Effective Date of Promotion
Technical Personnel		
Shri H.S. Bhabar	Technician T-1	26-09-2003
Administrative Personnel		
Shri K.W. Khamkar	Assistant Administrative Officer	21-04-2003
Supporting Personnel		
Shri N.J. Kharat	Supporting Staff Gr. IV	01-08-2003
Shri S. N. Gope	Supporting Staff Gr. III	01-08-2003
Shri T.B. Khan	Supporting Staff Gr. III	01-08-2003
Shri J.D. Sakpal	Supporting Staff Gr. II	01-08-2003
Shri V. Murugan	Supporting Staff Gr. II	01-08-2003

TRANSFER

Name	Post	Effective Date
Shri P.D. Sonawane, Assistant Administrative Officer	CIRCOT HQ to CIFE, Mumbai	07-04-2003

RETIREMENT

Name	Post	Effective Date
Shri V.V. Kshirsagar	Technical Officer T-5	30-04-2003
Shri S.G. Shinde	Sr. Technical Assistant T-4	30-04-2003
Dr. (Smt.) S.P. Bhatawadekar	Principal Scientist	31-07-2003
Shri Chi. Thimmanna	Supporting Staff Gr. IV	31-07-2003
Shri V.Y.M. Suvarchala Rao	Supporting Staff Gr. III	31-07-2003
Dr. (Smt.) S.D. Pai	Technical Officer T- (7-8)	31-08-2003

TRAINING PROGRAMME ATTENDED BY STAFF

Training Programme	*Period and Place*	*Participant(s)*
76th Foundation Training Course for ARS	April 16, 2003 — August 14, 2003, NAARM, Hyderabad	Shri Achchhelal Yadhav Shri Virendra Prasad
Hindi Gahan Training & Workshop	July 1 — 5, 2003	Shri R.K. Jadhav
Brainstorming Workshop on Training Needs of technical Employees of ICAR	CIFE, Mumbai July 9, 2003	Dr. H.U. Gangar Shri S. Chandrasekhar Shri B.S. Ganvir Shri H.R. Laxmivenkatesh Smt. A.A. Kathe Dr. E.A. Pachpinde Dr. (Smt.) Sudha Tiwari Shri S.G. Dalvi Shri R.M. Modi Shri D.L. Upadhye Shri T. Venugopal Smt. Bindu Venugopal Shri D.U. Kamble Smt. C.D. Prabha Shri A.A. Chaphekar Kum. C.D. D' Souza Shri A.P. Modak Shri C.V. Shivgan Shri M.B. Chandanshive Shri D.M. Correia
Improving Administrative Efficiency & Financial Management	June 7 — 24, 2003 NAARM, Hyderabad	Shri S.V. Kasabe Shri K.W. Khamkar
IT@ AGRILIBNET-2003 – ICAR-INFLIBNET Training Programme for Agriculture Librarians on Networking and E-Resources Management	August 19-30, 2003, INFLIBNET, Ahmedabad	Shri V.B. Suryanarayanan Smt. Prachi R. Mhatre

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 HIm-1

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

Publications

ARTICLES PUBLISHED

Author(s)	*Title*	*Journal*
Nachane, R.P. Hussain, G.F.S.	*Inverse Relaxation in Fabrics*	Indian Journal of Fibre & Textile Research, Vol. 28 (1), p.50, 2003.
Sreenivasan, S.	*Research and Development Activities as Engines for Cotton Promotion and Utilisation*	Cotton Outlook, p.32, May 2003
Sreenivasan, S.	*Technology Interventions for Cost Effective Production of Clean Contaminant-free Cotton*	Express Textiles, Volume 8, No. 1, P. 6, April 17, 2003
Patil, P.G. Anap, G.R.	*Engineering Properties of Cottonseed*	Journal of the Indian Society for Cotton Improvement, Vol.28 (1), p. 8, 2003.
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CIRCOT leaflet No. 35— CIRCOT Eco-testing Facilities for Textile Materials

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Variable Speed Gin

Processes

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Biogas from Textile Mill Waste
Mushroom Crop on Agro-Wastes
Dyeing of Cotton Fabrics with Natural Dyes
Compost from Ginnery Waste

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