Volume 2 April 2001 to September 2001 Issue 1 mom

EDITORIAL

It is my proud previlege to present the third issue of CIRCOT Ginning Bulletin or more precisely the 1st half yearly issue of the second volume. An year has passed since we launched the inaugural issue. It is heartening to note that this bulletin has been received by the ginning industry with great warmth. CIRCOT would strive with greater determination to serve the industry well through this newsletter.

Technology Mission on Cotton (TMC), a Govt. of India programme with its four Mini-missions is progressing well since its launch in February 2000. The Mini-mission IV, exclusively devoted to the modernisation of ginning and pressing industry in the country has started showing some promising results. TMC-modemised ginning factories are producing cotton bales with trash content much below the prescribed BIS norms. Many more factories are slated for completion in the near future and the scenario in India is bound to change for the better.

At this crucial juncture, it is interesting to consider two important issues that are often raised in the industry circles. First is about the number of G P units that should be taken up for upgradation/ modernisation keeping in view the cotton production scenario in coming years. Second is whether the Industry should continue to process cottons in DR gins or should it change over to Saw Ginning as is being practiced in many other cotton growing countries? Both these questions are pertinent and need considerable debate before arriving at a decision.

The cotton requirement at the end of the Xth Plan, viz. 2006-2007 is estimated to be about 220 lakh bales of 170 kg. A normal DR. with best settings and maintained under excellent working condition will produce about 50 kg lint per hour. In other words, a unit with 24 DR Gins working 16 hours a day in two shifts will produce about 112 bales. The number of units required on this basis works out to about 1200, assuming that ginning activity would go on for about 165 days in a year, being a seasonal work. Taking this projection into consideration, TMC has proposed to modernise by the end of Xth Plan about 600 G & P units in the country each having 24 DR Gins so that at least half of the total cotton produced then would have been processed using modern composite units capable of providing contaminent- free least trashy bales.

Coming to the question of the type of ginning system most suitable for India, it is well known that saw ginning produces clean lint with minimal trash as it has an in-built cleaning system. Also the productivity is much higher as compared to the Roller Gin. At the same time, earlier studies at CIRCOT have shown that at least for cottons possessing 2.5% span length higher than 27 mm, saw ginning results in reduction in length of about 0.5 mm and for extra-long cottons the diminution in length could be as high as 2 mm. Roller ginning considered as " gentle ginning" produces cottons preserving its full length and also the fibre neps created are less although the productivity is much lower. Some experts are of the view that as saw gins produce clean cottons, small loss in fibre properties gets far more compensated by the improved productivity. An argument made in favour of roller ginning particularly for Indian conditions is the small land holdings by frmers unlike in other countries where holdings are huge that help in commercially viable operation of saw ginning. More often than not, the Roller-ginned cottons are trashy due to lack of pre and post-cleaning and not due to inherent problem in the mechanism of lint separation. Considering the economics of scale, user-industry personnel advocate saw ginning as all the foreign cottons imported into India are saw-ginned irrespective of the quality level.

Before drawing any conclusion, it is worthwhile to look once again into the comparative performance of both the ginning systems for cottons of different staple groups in terms of quality as well as economics of operation. CIRCOT intends to carry out such a study in close collaboration with ATIRA. It is hoped that the results of this investigation would enable the industry to take a rational decision as to the direction in which ginning industry in India should move in the years to come.

S. Sreenivasan
Editor

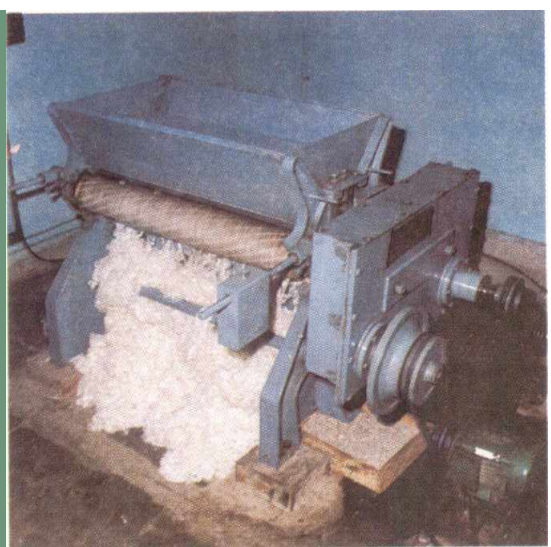
R & D GLEANINGS

CIRCOT scientists have developed a `Tractor Drawn Cotton Stalk Pulling and Chipping Machine'. This trolley shaped machine is provided on either side with two spiked rollers and two guards mounted concentric above each of them. The height of the rollers from the ground and the spacing of the guards are so designed that when the trolley moves, the spikes pick the plant tops and pull them into the gap between the rollers and the guards and effect the uprooting. The uprooted plants are deposited on a running belt towards a rapidly rotating cutter wheel. The speed of the wheel is set to cut the plant into chips of desired length. The chipped pieces fall into a box and are collected later. Dr. Anwar Alam, Deputy Director General (Engg.), ICAR formally launched this machine, on July 11, 2001 at the Ginning Training Centre of CIRCOT at Nagpur.

The 'Variable Speed Gin' (VS Gin) developed by CIRCOT scientists has already been commercialised. About 50 old machines were already converted into VS Gins incorporating in them the variable speed mechanism and another 100 machines are being upgraded. Quite a few new machines of extra long type having the VS system were manufactured and supplied. Based on the information received from the manufacturing party with whom CIRCOT is collaborating, it is learnt that more than 15 factories have so far shown interest in this new technology are upgrading their machinery. More are in the pipeline.

The ginners, in general, opined that the gin output increased dramatically wherever they employed the variable speed gin in preference to the conventional gin. CIRCOT scientists caution the ginners not to increase the beater frequency if their machines are old and if the foundations are not strong. However they can benefit by increasing the roller speeds alone in all the cases without exception.

In the case of extra long gins, the ginners say that there is considerable improvement in ginning output some times by more than 60%, if the beater frequency is moderately increased in addition to employing higher roller speeds.



Variable Speed Gin

Ongoing Projects at CIRCOT

1. Optimum roller and beater speeds for higher out-turn and best quality lint in DR gins
2. Development and testing of tractor operated cotton stalk puller and chipper
3. Development and field evaluation of shoulder mounted power driven cotton picker
4. Effect of pre-cleaning, ginning and post-cleaning on lint and yarn quality of different varieties of cotton.
5. Ginning out-turn of roller gins in relation to different ratios for cotton feeding time to ginning time (ICAR funded Ad-hoc project)
6. Adoption and refinement of cotton picker and cleaning system (World Bank funded NATP project)

New Projects at CIRCOT

1. Power consumption pattern in double Roller Gin
2. Design and development of light weight gin
3. Development of a package for effective management of modern ginning Factories
4. Implementation of ICDP under MM-II of TMC for improvement of Ginning & Pressing and Extension activities

RESEARCH ABSTRACTS

1. Hot shelf tower dryer for a cotton gin using heating elements

A hot shelf tower dryer includes a casing having substantially parallel shelves which alternately extend from opposite ends of the tower structure. As configured, the dryer includes a repetitively convoluted passage. At least one of the shelves has a hollow interior or chamber. Disposed in the chamber is at least one electrical heating element, where the power supplied to the heating element is regulated by a control system. As controlled, the electrical heating elements provide sufficient output to the tower casing which result in a substantially constant temperature throughout the passage. With the heating elements, the hot shelf tower dryer does not require the burning of natural gas or some other fossil fuel to heat the tower dryer unless such heating is desired to increase the temperature of the forced air that conveys the cotton through dryer. As a result, in comparison with hot shelf tower dryers that use fossil fuels as a heating source, pollutant emissions, such as nitrous oxide (NO (x)) emissions, are eliminated or at least significantly reduced.

Winn W.E. U.S. Patent and Trademark Office 2000-/ WEEK 46 - USP6147327-99432, 18 Jun 1998

World Textile Abstracts, Vol33, Issue 2, February 2001: (Fibres: Patents)

2. Apparatus and related method for applying moisture to cotton during a ginning operation

An apparatus and the related method for adding moisture to cotton using humid air are described. The apparatus consists of: a tower-casing defining a chamber having top and bottom portions, a first inlet on the top portion of the tower casing for receiving the cotton, an outlet near the bottom, a cotton conveying passage connecting the first inlet to the outlet, and a second inlet to the top portion for receiving the humid air. The related method involves the following steps: Feeding cotton lint into the chamber, introducing humid air at an elevated temperature into the chamber, and exposing the cotton lint to the humid air while gradually reducing the temperature.

Winn W.E. U.S. Patent and Trademark Office 2001 -/ WEEK 12-USP 6202258 - 389016, 02 Sep 1999

World Textile Abstracts, Vol.33,

Issue 5, May 2001: (Fibres: Patents)

3. Cotton moisture content sensing for gins using resistance

Sensors were installed in a gin to measure the moisture content of cotton on the bottom of the module and of samples from the interior of the module while ginning. The module bottom sensor was designed to detect conditions when cotton on the module bottom was much better than the

cotton in the interior. Good harvesting conditions precluded any modules with naturally wet bottoms. The bottoms of two modules containing cotton were artificially wetted and the ginning operation performed. The resulting data verified the basic operation of the sensors as the wet bottom was detected while the lower moisture content of the module interior was also measured.

Byler R.K. and *Anthony W.S. 2000. Proceedings of Beltwide Cotton Conferences, Volume 2, edited by Dugger* P and *Richter D. 2000 (1561-1563)*

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4. Predicting foreign matter in cotton at the gin

Improved processing of cotton requires measurement of the trash in cotton before and after cleaning at the gin. Cameras are currently used in some gins to measure trash levels. This study ascertained the relationships between standard laboratory tests (Shirley Analyser for lint and Fractionation for seed cotton) and marketing and the relationship between the soft trash content determined by High Volume Instrument and the measurements by a new strobe type camera. About 1000 samples each of seed cotton and lint representing the full range of trash levels expected in both spindle harvested and stripper harvested cottons were evaluated. Laboratory trash levels ranged from 2 to 36 % for seed cotton and from 1 to 14% for lint. Significant regression equations accounted for 76% of the variations in the Shirley Analyser data for lint and 92% for seed cotton fractionation. Similar correlations were found for HVI trash and manual leaf grade.

Anthony W S., 2000 Proceedings of Beltwide Cotton Conferences Volume 2, edited by Dugger P and *Richter D. 2000 (1577-1579).*

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5. Engineering of PM10 and PM2.5. samplers

Agricultural Operations including cotton ginning are encountering difficulties while complying with pollution regulations across the cotton belt. It is likely that these problems will continue and get more severe. EPA has interpreted that the concentration limit on the property line must be less than the National Ambient Air Quality Standard (NAAQS). For PM10 and PM2.5, the 24-hr. NAAQS are 150$\mu g/m^3$ and 65$\mu g/m$, respectively. The logical question by those, who are to comply with the regulations, is how accurate are the concentration measurements of PM10 and PM2.5. Both PM10 and PM 2.5 samplers have pre-separators that remove the dust particles larger than the size to be sampled allowing the smaller particle to pass on to the filter. These pre-separators are not 100% efficient. In other words dust particles larger than 2.5 and 10 microns penetrate the pre-separator and pass through the filter. Dust particles with sizes less than 2.5 to 10 microns are captured by the pre-separator. Hence, there is some error in the measurement of PM10 and PM 2.5 concentrations when sampling with EPA approved samplers. The purpose of this paper is to quantify this potential measurement error with the goal of impacting the regulatory process. For example, if the measurements of 151$\mu g/m^3$ were made at the property line of a cotton gin and the potential error for a PM10 sampler was 10%, it can be argued that this measurement should not be considered as a violation of the property line concentration limit. This is because a 150 $\mu g/m$ concentration measured with an EPA approved sampler could be as high as 165 $\mu g/m$ and that 151$\mu g/m$ could be as low as 136 $\mu g/m$.

Parnell C.B.Jr., Shaw B.W. Auvermann B. And Mc Clure *J.2000 Proceedings of Beltwide Cotton Conferences ed. Dugger* P and *Richter D.2000 (207-21212)*

6. Experience with Intelligin on Stripper Harvested Cotton

A process control for the gin has been installed in 1998 commercially. Over the past 2 years, 17 gins have been using the Intelli Gin System to control the processing of seed cotton. Upto this point all the applications have been on the processing of spindle-harvested cottons in Mid-South, Southeast and South Texas regions. Results from these installations have been reported on successful processing and controlling the drying and cleaning of spindle-harvested cotton. During the past two seasons the Intelli Gin System has also been exposed to processing some of the UNR cottons grown in mid south and southeast region. The initial results from processing these cottons gave us valuable information and confidence that the system has very good potential for applications for stripper-harvested cottons.

Yankey J.M. Sr and Mag field. W. 2000 Proceedings of Beltwide Cotton conferences, Volume 2, edited by Dugger P and Richler D 2000 (1560-1561).

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7. 1D 2D, 1D 3 D, 2 D 2D Cyclone fractional efficiency curves for fine dust

The prediction of emission concentrations from cyclone collectors is integral to the permitting of agricultural facilities including cotton gins. One method for predicting emission concentrations utilizes fractional efficiency curves. Fractional efficiency curves (FEC's) were developed for ID2D, 1D3D and 2D2D cyclone designs. The procedure used to develop these new FEC's incorporated log-normalized distributions and results of particle sizing using the counter. Another method that has been used by many air pollution regulators is the Classical Cyclone Design process (CCD). These new FEC's were used to compare performances of three cyclone designs currently being used by cotton gins to abate PM10. The two methods were compared and the use of the FEC method was found to be far superior to the CCD process. The results indicate that properly designed and operated cyclones are high efficiency collectors and can be used as a final abatement device for agricultural processing facilities.

Wang L., Parnell C.B. Jr. and Shaw B.W. 2000 Proceedings of Cotton Conferences, Volume 2, edited by Dugger P and Richter D. 2000 (1641 - 1647).

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8. Saw gin modifications to reduce seed coat fragments.

Seed loss and Seed-coat fragment generation and contamination of ginned lint during the ginning process can be potential problems with newer, small seeded cotton varieties. Excessive seed loss means loss of a valuable gin product. Also, seedcoats in ginned fibre cause textile quality problems during the spinning and weaving process. Tests were conducted on a method of holding the gin saws in the middle of the gap between the ginning ribs and its effect on seed damage and seed coat fragment generation. Results indicated that the experimental saw guides significantly reduced seed damage. The guides also decreased the level of seed coats in the ginned fibre, as indicated by significantly higher quality yarn for the experimental method. Other benefits of the guides included a higher gin turnout and longer fiber. Additional tests will be done to further improve and understand the somewhat complex interaction of gin saws, guides, and cottonseed at the ginning point.

Hughs S.E .2000 Proceedings of Beltwide Cotton Conferences, Volume 2, edited by DuggerP and Richter D. 2000 (1609-1612)

TECHNOLOGY MISSION ON COTTON

MINI MISSION IV

High levels of trash and contamination have earned notoriety for Indian cottons which find it hard to compete with foreign cotton even in the domestic market. Improper handling of cotton right from the farm till it is baled in ginning factory results in contaminants finding their way into the bulk of cotton. Absence of proper mechanical cleaning before the cotton is ginned is cited as the primary reason for highly trashy lint.

The Mini Mission IV of Technology Mission on Cotton (TMC) seeks to remedy the situation by improving the infrastructure and machinery in G&P units for cleaner quality lint. A capital subsidy up to Rs.20 lakhs will be offered by TMC to set up a new ginning factory and for modernization of an existing one. TMC is an opportunity for units intending to upgrade their set up with a view to produce better quality cotton which caters to the needs of what could be called as buyers' market.

TMC supports approved projects only for total modernization. An existing factory after it is modernized should have all the facilities expected of in what can be defined as an ideal ginning factory. These include paved roads, cemented platforms, sheds, pre cleaner, 24 DR gins equipped with auto feeders, automatic conveyors, both belt driven as well as pneumatic, post cleaner, and automatic bale press. In addition, employing trained staff, maintenance of cleanliness standards, supply of uniforms to the staff, production of bales conforming to BIS specifications, variety-wise and grade- wise heaping and processing of cotton etc. are also insisted on.

This is the third year of TMC. The target for MM IV for the first three years is modernization/setting up of 150 factories. As on today, 136 factories have been identified/listed for the purpose and another 14 slots are still available. Maharashtra tops the list with 67 factories under this program while Gujarat has a share of 39, followed by Madhya Pradesh with 24, Karnataka and Orissa sharing 4 and 1 projects respectively.

As on date about 30 factories have been modernized while reports coming from the remaining in the list indicate that work is going on in full swing. It is expected that by August 2002 the target to modernize 150 factories will be achieved barring unforeseen circumstances. This will be in accordance with the projections made for the period in IX Five Year Plan.

The trash level in cotton processed in the modernized factories is expected to be acceptably low. The factories already benefited by the TMC program have reported very low trash levels well within the limits set by TMC. The norms set by TMC are stricter than BIS specifications.

The TMC scheme is to continue beyond August 2002 for another five years and about 450 more factories may fall under the modernization program. Thus by the end of 2006-2007 viz. the end of X plan, 50% of the total cotton processed in the country would be of assured quality meeting the international specifications.

• Courtesy : Dr. K. R. Krishna Iyer, consultant, TMC (MM III & IV).

MEETINGS AND SEMINARS

1. Interactive Meet on Influence of Boll Characteristics on Ginning Out-turn

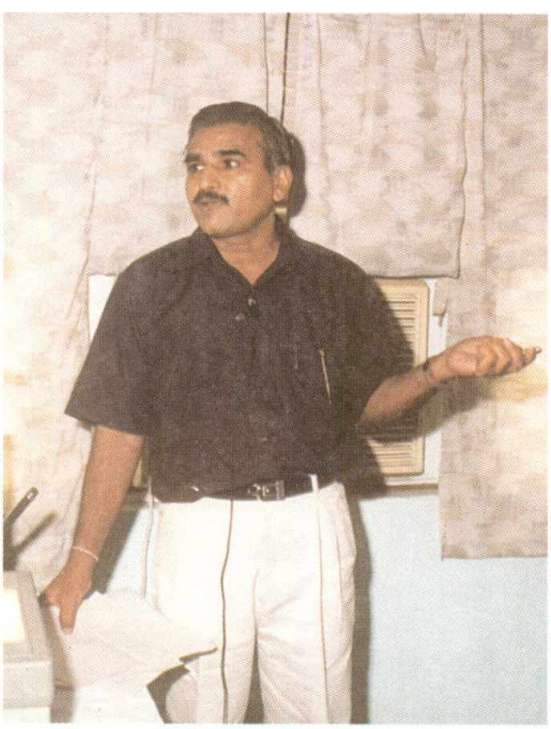
A meeting was organized by CIRCOT and ISCI on June 2, 2001 to discuss the influence of Boll characteristics on the ginning out- turn. Dr. V. Sundaram, former Director of CIRCOT and Dr. A.K. Basu, former Director, CICR, Nagpur were in the chair. Dr. S. Sreenivasan, Director, CIRCOT, Mumbai welcomed the delegates. Dr. V.R. Gadwal, chairman of ISCI, introduced the topic of the meet. The meeting was well attended and several cotton traders actively participated, notable among them being Shri A.Suresh Kotak, President, EICA, Mumbai. There were four presentations in all.

Dr. G.R. Anap, International Ginning Consultant, presented the first paper `Cotton Boll And Cotton Seed Characteristics of Some Cottons in Relation to Ginning Out turn' in which he

Shri Shirish Shah presenting his paper *"Influence of Boll Characteristics on Ginning Out-turn" at the Interactive Meet on 20-6-2001*

dealt in detail various aspects affecting the ginning outturn. Boll size, seed index, lint index etc. and their relationship with ginning percentage are the highlights of the paper. He also brought to the notice of the delegates the inverse relationship between ginning percentage and ginning out -turn as understood by trade. He opined that there exists no clear-cut relationship between the seed parameters and ginning percentage and hence it is not possible to predict GP before hand from them.

Shri Shirish Shah, a cotton trader of Mumbai, presented the second paper Influence of Boll Characteristics on Ginning Outturn'. He placed his observations on various aspects of cotton boll-especially its size, number of locules, the number of seeds inside the boll, seed size with the help of several illustrative tables and figures. The author gave several important suggestions such as the need to give greater emphasis to yield of lint/ha



Dr. G.R. Anap *presenting his* paper *"Cotton Boll and Characteristics of Some Cottons in Relation to Ginning Out-turn" at the Interactive Meet on 20-6-2001*

rather than yield of cotton/ha, breeding varieties with less seeds per boll, increasing the number of fibres per unit area on a seed and breeding for bigger boll size etc.

Dr. V.V. Singh, Principal scientist, CICR, Nagpur read the next paper 'Genetic Characteristics of Cotton Boll and Cotton Seed'. He brought to the notice of the delegates the existence of some exotic varieties of cotton yielding ginning percentage exceeding 55%. He told that these varieties exhibit traits like very few bolls per plant and hence not accepted by farmers. He also mentioned about the positive correlation between ginning percentage and characteristics of seed, lint and boll.

The fourth and final presentation 'Factors Governing Ginning Out-turn' was by Dr. N.C. Vizia, Principal Scientist, CIRCOT. In this paper he detailed the findings of CIRCOT scientists regarding the ways to improve the productivity of the ginning machines. In this connection special mention has been made on the innovations effected by CIRCOT scientists in respect of DR gins resulting in 'Variable Speed Gin' and 'Improved DR Gin with increased feeding time' that showed

Dr. V.V. *Singh presenting his paper "Genetic Characteristics of Cotton Boll and Cotton Seed" at the Interactive Meet on 20-6-2001*

Dr. N.C. Vizia's presentation of paper *"Factors Governing Ginning Out-turn" at the Interactive Meet on 20-6-2001*

promise for the purpose of very high productivity. He dwelt at length on factors influencing gin output such as the genetic characteristics of cotton like size of seed, staple length, fuzziness, strength of attachment of the fibre to the seed, trash content in seed cotton, gin preparation and machine settings and the productivity of the gin machine. He advocated cottons having smaller seeds, less amount of fuzz on the surface of the seed among others for improved production of the gin machines.

Dr. V. Sundaram summed up the proceedings of the meeting. Dr. RH Balasubramanya, Principal Scientist and Head, CBPD, CIRCOT thanked the participants.

2. First Meeting of the Review Committee on the Progress of the Project "Implementation of ICDP under MM-II of Technology Mission on Cotton for improvement of Ginning & Pressing and Extension activities"

The first meeting of the periodic review committee was held at Ginning Training Centre, Nagpur on July1 1, 2001. Dr. Anwar Alam, DDG (Engg.) was in the chair.

Dr. S.Sreenivasan, Director, CIRCOT, Mumbai welcomed all the members and

Captive Audience at *the Interactive Meet on 2-6-2001*

briefly touched upon the activities and achievements of GTC since its inception, and need for installation of modern ginning machinery looking at technological developments taking place in Indian Ginning Industry.

Dr. A.Alam, in his opening remarks said that the Council is very serious about the implementation of MM-II programme pertaining to improvement of Ginning, Pressing and Extension activities of CIRCOT. Dr.Alam directed that infrastructure to be developed should be completed before the start of the next cotton season. He also mentioned that cotton is a good foreign exchange earner and one cannot remain careless and neglect it. Dr. Alam stressed the need for technology development and adoption. Issues such as cotton pre-cleaning, cotton handling and conveying need to be addressed to reduce the trash and contamination. In particular he cited the example of Australia and wondered that if Australians could bring down the trash content to the level of 3% with machine picked cottons, then why not in India where the cotton is entirely hand picked. Dr. Alam also cited the example of Egyptian cotton that contains no more than 3 to 4% of trash, the reason being that cotton is never kept on ground in Egypt.Implementation of the modernisation project with a complete set up of pre-cleaning, cotton handling and pressing facilities should be a top priority and be speeded up by CIRCOT, Dr. Alam added.

Before the deliberations started, two Booklets published by CIRCOT, Mumbai, namely, "Objective Evaluation of Fabric Handle" and "Respirable Cotton Dust, A Health Hazard" were released by Dr. Anwar Alam, DDG (Engg.) and Shri Sunil Kedar respectively.

Shri A.K.Chauhan, Director (Crops), DOA & C, New Delhi told the delegates that TMC is handled by two departments viz. Ministry of Textiles and Ministry of Agriculture. He explained the functions of MM-I, MM-II, MM-III and MM-IV. He said that MM-II is operating Under the DAC's control and its mandates include training programme, front line demonstration and extension activities. He mentioned that Govt. Of India had released Rs.206 lakhs to CIRCOT as the first year component and the entire amount is now revalidated to see that programme is fully implemented. He wholeheartedly supported the programme and gave his best wishes for the success of the project.

Shri Sunil Kedar, while thanking (ICAR) & DOA & C, Ministry of Agriculture for their invitation, expressed his happiness at the prospect of modernisation at GTC Nagpur, so that ginners can see and implement the same in their own factories. He also stressed that the quality evaluation facilities at GTC should be made more sophisticated with modern equipment. Shri Kedar pointed out that farmers are not receiving quality seeds as a result the spinning mills are not getting good cotton and sought help from ICAR and state government for carrying out certification of quality of seeds.

Supporting the modernization project at GTC, Dr. A.M. Narula, Director, DOCD promised to provide the necessary help to make the project a success.

Dr. C.D. Mayee, Director CICR, Nagpur informed that CICR can provide the necessary help in certifying the seeds. He suggested that plastic bags could be used for collection of cotton for picking instead of Jute bags. Also the 'Poly-Houses' can be constructed for storing cotton at the ginning factories or at the collection centre to reduce the contamination. Dr. Mayee felt that lint price should be based on quality. He told that grapes and other horticultural products from India are exported to other countries not only because of their inherent quality factors but also because these are specially produced for export purposes taking into account the customer's preferences, their taste and requirement. He stressed that the same strategy should be adopted in the case of cotton also.

Dr. K. Venugopal, Project Coordinator, AICCIP felt that if the purity of the seeds has to be maintained, then Govt. should make it mandatory to grow only those varieties that are released through AICCIP channel for commercial cultivation. He further commended the efforts being made by CIRCOT for implementation of the project at GTC, Nagpur.

Dr. K.M.Paralikar, Head, TTD, CIRCOT, Mumbai made a presentation on the progress so far achieved in the implementation of the programme for modernisation of Ginning and Pressing facilities and creation of training

First Meeting of the Review Committee on the Progress of the Project "Implementation of ICDP under MM-II of Technology Mission on Cotton for Improvement of Ginning and Pressing and Extension Activities" in progress under the chairmanship of Dr. Anwar Alam, *DDG (Engg.), ICAR, New Delhi*

infrastructure at GTC Nagpur. The presentation included detailed plan of activities for setting up facilities at GTC, Nagpur and usefulness of GTC in present era of modernisation etc.

Dr. R.H.Balasubramanya, Head, CBPD, CIRCOT, Mumbai gave the details of the proposal for creation of modern facilities for crushing of cottonseed, which form a part of the programme. He also highlighted the importance of the various by-products of cottonseed and preparation of value added products from them. He showed with the aid of examples that adoption of scientific methods of crushing of seed is more remunerative than the conventional one.

A video cassette giving details of scientific crushing of cottonseed was also shown at the meeting.

Dr. Alam emphasized the importance of ginning training and asked CIRCOT to take all the necessary steps to increase the number of people receiving the said training. Replying to this suggestion, Dr. Sreenivasan gave an assurance that once the modernization gets completed, all efforts would be made not only to increase number of trainees but also the course content would be enriched.

The meeting ended with a vote of thanks proposed by Shri P.G. Patil, Scientist and Officer In-charge, GTC, Nagpur.

GINNING MACHINERY

Cotton Baling Presses

Bale presses can be classified into Down-packing, Up-packing, Fixed box and Door-less types. Further, they can be semiautomatic or fully automatic and the medium can be either oil or water.

M/s. M. Govind & Sons, Guntur based industrialists and pioneers in the manufacture of Hydraulic Cotton Bale press and Tobacco Processing Machinery, have introduced into the market the door-less **MGS-Automatic Up-Packing Double-Box Hydraulic Cotton Baling Press.** The machine has a production capacity of 20 bales per hour (standard bale of 170kg) and the size of the bale is 18.9" x 18.9" x 48.8". The power requirement is 75 hp. The important features of the machine are:

* *A pre-programmable logic control (PLC) for precisely setting the machine parameters before hand for the required bale weight*
* *Deep' boxes eliminating the need for mechanical dogs*
* *A Pneumatic conveyor to move the lint upwards for depositing it on the Pusher*
* *A Revolving double box made from heavy duty steel with stainless steel lining inside, etc.*

M/s. Bajaj Steel Industries Limited, Nagpur based Industry for DR gins have announced introduction of their ***Bajaj High Capacity Double Box Door-less Down Packing Cotton Baling Press.*** *The production capacity of the machines is stated as 35-40 bales/hour. The salient features of these machines are:*

* *Adjustable Bale Size of 41"x21" x21" to 27"*
* *Multiple density pressing facility*
* *Bale weights ranging from 430 to 650* kg/ M^3
* *Oil medium*
* *Special provision to inject regulated quantities of moisture into the condenser*
* *High capacity condenser to feed 40 bales/ hour*
* *Special fast locking bale straps or wire ties to save strapping time*
* *Safety systems at every stage These machines* are *quite suited for production of BIS and Universal Bales In addition to the above Bajaj is introducing " Energy efficient Airline Pneumatic Systems for transporting cotton" in which the air used for transporting cotton into the gins is recycled to transport the ginned lint into*

the conditioning rooms (Pala Houses). This eliminates the need for two different systems for the cotton and lint. Another energy efficient pneumatic system being introduced by the company is a replacement for the screw conveyor for the seed as per the information provided by them.

G INNERS SPEAK

A soft spoken and thorough gentleman, Shri Rahul Shah is the Director of AVI group of Industries, one of the leading manufactures of ginning machinery. Flailing from a family of entrepreneurs, Shri Shah inherited the business acumen from his father who himself entered the textile field right in 1948 as a manufacturer of textile machinery and accessories. After taking his bachelor degree in commerce in first class from the prestigious Sydenham College of Commerce and Economics, Bombay in 1976, Shri Shah joined his father's concern and worked there until 1988. During the same year he laid the foundation for AVI industries at Ahmedabad and started the manufacture of 'High Production Card Conversion Kits' which were import substitute items badly needed at that time. These units incorporated 'retro-fitting' parts that could be easily mounted on old machines for conversion into high production units.

In 1997 Shri Shah was instrumental in diversifying the activities of the concern into manufacture of gin related machinery especially aimed at automation in a big way. The company started manufacturing the full machinery package that included cotton conveying units, pre-cleaners and post-cleaners to name a few. Notable is the cotton conveying system Janki Rath' which is a special conveying and feeding system designed to cater to as many as 6 DR gins. The unit is microprocessor controlled and is fully automatic. To date more than 100 of these units have been installed in the country.

Rahul Shah informs that they have executed more than 7 turnkey projects, some in Tanzania, Africa, the rest in Central India- Maharashtra, Gujarat and M P- all related to full automation of ginning machinery. These projects involve manufacture, erection and training of personnel. The company also devised special motors for more efficient use of electric power in ginning operation.

Presently the company is attempting to enter into other fields such as 'Industrial Moisturizer systems' suited to ginning industry. They are also contemplating manufacture of press machines for `Modular Packing of Raw Cotton'. As per Shri Shah this modular packing of cotton has great future as it results in saving of space in storage houses and also increases the quantity of cotton that could be accommodated in the trucks.

While discussing the Indian Scenario on cotton Shri Shah avers " Contamination due to human involvement is the major drawback faced by the industry today. I believe if we tackle this problem of contamination by taking recourse to automation of the ginning activity in right earnest we can produce cottons comparable to the best in the world".

His message to CIRCOT Ginning Bulletin: " Ginning Bulletin serves the role of a catalyst between the ginner(end user) and the gin machinery manufacturers by publishing the news and articles of interest to both. I commend the wonderful work they are doing. I wish the Bulletin all success".

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