

CIRCOT Leaflet No. 127/2015



# INTERNATIONAL TRAINING COURSE

on  
**Cotton Classing, Ginning, Marketing and  
Value Addition to Crop Residues**



## GINNING TRAINING CENTRE

- ▶ Central Institute for Research on Cotton Technology (CIRCOT),
- ▶ Indian Council of Agricultural Research (ICAR)
- ▶ Department of Agricultural Research and Education (DARE)
- ▶ Ministry of Agriculture, Govt. of India



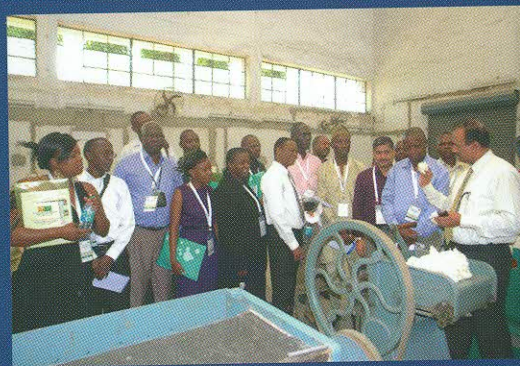


## Importance of Training

Ginning is the first major mechanical operation or processing to which the harvested seed cotton is subjected. The operation links the cotton production with the textile manufacture and has significant effect on quality and quantity of yarns and fabrics manufactured in textile industry. Despite its importance, literature and infrastructure for training and research, especially on roller ginning technology are scarce not only in Asia and Africa but also in the most developed countries. Quality of lint processed from a ginning industry and its productivity depends to a large extent on proper adjustments and maintenance of machinery. Firsthand information of fibre quality parameters and methods to approximate its values are pre-requisites for proper adjustment of gin machinery. Ginning and manual approximation of fibre quality parameters are arts that can be learned and perfected through systematic and scientific training and practice under the guidance of experts and technicians.

Classing and marketing of cotton have become far more important after linking of cotton marketing with future trading and forex market that are extremely volatile and even marginal error can cause considerable loss to traders. A significant percentage of cotton produced is exchanged within and outside country of each cotton growing nation. Hence there is very good employment opportunity in grading, marketing, trading, export and import of cotton. There are unique and dedicated grading practices followed for cotton classing in each and every country. Moreover, knowledge of cotton marketing practices that are followed worldwide, especially in china is extremely important to be competitive in global market.

Roller ginned lint using Indian Double Roller (DR) gins is being preferred worldwide because it preserves the inherent characteristics of cotton and yields higher ginning percentage with lower nep counts, higher staple length and uniformity ratio compared to Saw ginned lint. Besides, roller ginning plant supplied by Indian gin machinery manufacturers are highly competitive in the world market resulting in adoption of roller ginning technology worldwide to the places where mostly saw ginning plants were predominantly used. A number of roller ginning plants are supplied and commissioned every year particularly to African countries by Indian gin machinery manufacturers. India has adopted and standardized roller ginning technology for more than 100 years. India is the only country, which has privilege of having requisite technical expertise for capacity building in roller ginning technology at competitive price.

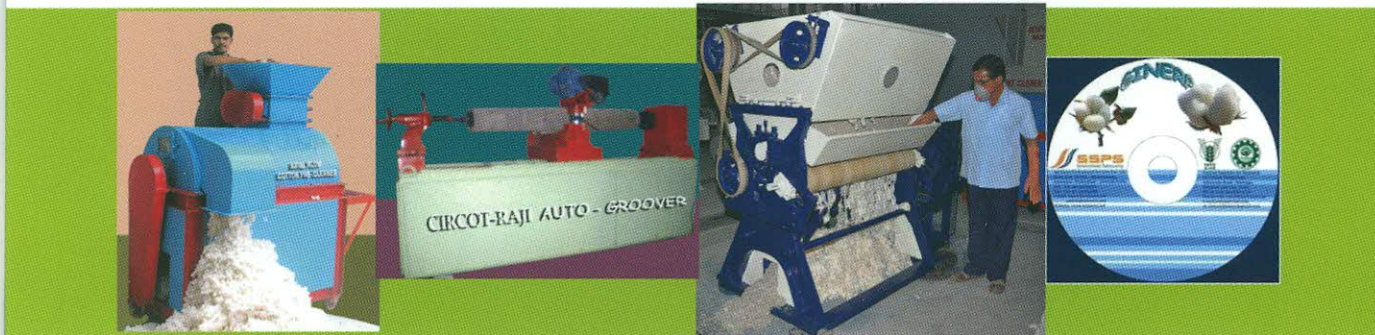






Moreover, with the increase in fossil fuel prices, the demand for energy generation from agro-waste is being rising steadily. Now-a-days, pellets are being increasingly preferred over commercial LPG for cooking in restaurants particularly in southern states of India as it costs 1/3rd while compared with the prices of LPG and it does not produce any smoke and ash (<5%) during burning. Pellets are extremely popular in European countries for heating and cooking and can be purchased from grocery stores. There is ample scope for production of briquettes and pellets using agro-wastes in Africa

and Asian countries as alternative fuel for domestic and industrial consumption. Pioneer research has been reported by CIRCOT for utilisation of agro-wastes and cotton stalks for preparation of different end products like briquettes, pellets, particle boards, medicated cotton etc. that has ample scope for setting up industry, especially in rural areas in Asia and Africa as well. However, there is requirement of trained experts and training infrastructure including demonstration plants for imparting training on by-product utilisations and value addition.



## Introduction of GTC

Looking at the need and importance for capacity building and research for improvement of ginning and pressing sectors and utilisation of cotton stalks and agro-wastes for preparation of value added products, Central Institute for Research on Cotton Technology (CIRCOT) established a regional unit named as Ginning Training Centre (GTC) in 1985 at Nagpur by utilising World Bank assistance through Integrated Cotton Development Programme (ICDP). This centre is unique of its kind and first in Asia and among 3-4 centres in the entire world that imparts training and carry out research exclusively on ginning, cotton by-product utilisations and value additions.

In addition to organising national and international

training programmes, GTC pioneered in designing and development of several essential machines required for processing of cotton. Most prominent among them are cylinder type pre-cleaner amenable for cleaning of Indian hand-picked seed cotton, different variants of laboratory model single roller gins for ginning of small sample of cottons required for analysis of fibre parameters. More than 500 pieces each of the lab model gins and the cylinder type pre-cleaners have been sold to various end users including Africa and different part of Asia by CIRCOT licensed manufacturers.

GTC has distinction of obtaining and implementing a single country project funded by CFC, Netherlands under the supervision of ICAC, Washington DC, USA for preparation of particle boards from cotton stalks. GTC also promotes technology for briquetting and pelleting as alternative fuels and establishment of cottage industries for village level consumption.





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GTC also organizes FLDs on clean cotton pickings, hosts ginners' meet for modernisation and improvement of management practices of Indian ginneries and organised various awareness programmes for utilisation of cotton stalks for different end uses. Besides, the centre has been providing continuous technological support to the country's cotton breeding programmes carried out under the All India Coordinated Cotton Improvement Project (AICCIP) and breeding support to cotton breeders and scientists.

Technical consultancy services and support offered by GTC to ginning and pressing factories for modernisation and liaising machinery manufacturers for design improvement have led to significant improvement in quality of lint produced from Indian ginning and pressing industry, which in turn resulted into revolution of Indian ginning industry and preference of roller ginned Indian cotton in the world market.

GTC has experience of more than 25 years' in imparting training on Cotton Classing, Ginning, Marketing and By-product Utilisations to entrepreneurs, supervisors, shop floor managers, traders, classers, breeders, gin fitters etc. Highly educated and well trained Scientists and Technical Officers are involved in delivering lectures and conducting practical. The curriculum has been enriched by expert lecturers and study tours to gin machinery manufacturers, modern cotton ginners and spinning mills and cottonseed producers.

The centre has trained over 5000 trainees in last 10 years from different states of India and Africa as well. Recently, a training-cum exposure program on 'Post harvest Management and Value Addition to Crop Residues' of 2 weeks was organised by GTC in which 31 participants from 6 African countries have participated. The overall grading by the participants of the course including boarding and lodging facility was over 9.0 out of 10.0. GTC has arranged the visits of several delegations from African and Asian countries, particularly in last 5 years. In year 2010, GTC received 52 delegates sponsored by UNCTAD/WTO (ITC), Geneva for exposure visit from 7 African cotton growing countries.

## Facilities at GTC

GTC is housed in a spiraling lush green campus of 30,000 square metre land situated at Amravati Road – a national highway connecting Nagpur and Mumbai. Nagpur popularly known as orange city is located in central part of India and has very good connectivity with New Delhi (Capital of India) and Mumbai by air, road and rail. The distance of GTC from Railway Station, Nagpur and Baba Saheb Ambedkar International Airport, Nagpur is 7 and 15 km, respectively.

The GTC is equipped with all the latest ginning machines and allied infrastructural facilities i.e. latest double roller (DR) gins, fully automatic material handling systems, different types of cleaning machines, a most modern baling press, etc. Apart from an indigenous saw ginning system, GTC also possesses a Rotary Knife ginning plant and a modern fibre testing laboratory. In addition to cotton processing facilities, GTC is also equipped with a scientific cottonseed processing plant and a particle board preparation plant from cotton stalks.



## Course Content

### Lectures

- ❑ Cotton production and ginning scenario in India and abroad
- ❑ Basics of cotton fibre, physical and mechanical properties of cotton fibre with special reference to cotton produced in Africa and Asia
- ❑ Transportation, classing, pricing and marketing of cotton
- ❑ Insurance, logistics and trading rules for export/import of cotton and documents with special reference to China
- ❑ Cotton contamination (causes - types - damages - methods to obtain trash and contamination free cotton)
- ❑ Ginning (a brief account on ginning technologies and their merits and demerits, roller gin adjustments and settings and their effect on fibre parameters and management of ginneries)
- ❑ Techno-economic feasibility of roller ginning technology
- ❑ Importance of pre and post cleaners in improving fibre quality parameters and types of pre-cleaners and its applications
- ❑ Material handling system for conveying of seed cotton, cottonseed, lint and bales
- ❑ Baling and packaging of bales
- ❑ Causes and prevention of neps
- ❑ Effect of moisture on cotton fibre properties and humidification system in modern ginneries
- ❑ Power requirement and consumption of electrical energy in a modern roller ginning and pressing plant
- ❑ Preparation of particle boards, briquettes, pellets, surgical/medicated cotton
- ❑ Scientific processing of cottonseed and production of linters
- ❑ Methods and parameters of yarn testing

### Practical and Field Training

- ❑ Testing Laboratory: Training on cotton quality parameters using HVI and Micromat and classing
- ❑ Ginning Plant: demonstration of working of roller, saw and rotary knife gin plants, Gin settings and Unit operations including baling

- ❑ Demonstration of Scientific Cottonseed Processing Plant and Particle Board Plant
- ❑ Modern Spinning Mill
- ❑ Modern Commercial Ginning Plant
- ❑ M/s. Bajaj Steel Industries, Nagpur - the largest ginning machinery manufacturer in the world
- ❑ Export house
- ❑ Modern Seed Production and Processing Unit
- ❑ Central Institute for Cotton Research, Nagpur

### Eligibility

- ❑ Scientists, Faculties, Agricultural Engineers, Breeders, Extension Officers, Budding Entrepreneurs, Gin Managers and Supervisors, Traders, Classers, Exporters and Importers, Cottonseed Processors, Gin Operators and Fitters

### Language

- ❑ English as a Medium of Instruction (EMI) for all lectures and practical

### Course Fee\*

- ❑ 500 US \$ for 2 weeks medium term course
- ❑ 350 US \$ for 1 week short term course

### Accommodation

- ❑ Complimentary in the Hostel
- ❑ Accommodation can also be arranged in standard Hostels on payment of charges in advance of around 70 US \$ per day

### Transportation

- ❑ Complimentary from the Hostel to GTC and back

### Food Charges

- ❑ Trainees have to make their own arrangement for foods. However, Indian foods are available at reasonable and subsidised rates at the Hostel Canteen.

\*Payable by Demand Draft in favour of Officer In-charge, GTC, Nagpur or by e-transfer (RTGS) to the account of Officer In-charge, GTC, Nagpur; State Bank of India (SBI), Ravinagar, Nagpur, MS, India A/c No. 10199461255 (IFSC Code: SBIN0007504; MICR Code: 440002015; Branch Code : 007504)

GINNING TRAINING CENTRE, CIRCOT





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