

# **Continuity of Courtesy: Challenges Require Change**

With a Ph.D. in Agricultural and Resource Economics from Oregon State University in the USA, Dr. Terry Townsend is a consultant on commodity issues. He is currently working with the African Cotton and Textile Industries Federation (ACTIF). He served as executive director of the International Cotton Advisory Committee (ICAC) and has also worked at the United States Department of Agriculture for five years, analyzing the U.S. cotton industry and editing a magazine devoted to a cross-section of agricultural issues.

I had the honor of knowing Mr. C.H. Mirani and other leaders of the East India Cotton Association (EICA) in the 1980s and 1990s.

As a young statistician newly hired by the International Cotton Advisory Committee, and with no practical experience understanding the cotton industry in India, I first visited Mumbai (still called Bombay at that time) in 1988. Mr. Mirani, and other leaders of EICA, including Mr. D.V. Shah, Mr. Kantilal Shah, Mr. Suresh Kotak, Mr. Pravin Dr. Terry Townsend Thakkar and others, graciously and

patiently received me with great courtesy. Those leaders answered questions about cotton in India, government policies and statistics, their sources, their meaning, units of measure, procedures for estimation, ranges of uncertainty, time periods covered and other matters that must have been mind-numbingly boring to those men but were crucial to my understanding. Beyond the pragmatic information conveyed, the leaders of EICA demonstrated a degree of sophistication, hospitality,

commitment to cotton and courtesy that I remember nearly 30 years later.

And so, when I read the latest press release announcing the election of Mr. Nayan Mirani as President of the Cotton Association of India, and Mr. Udayan Thakkar as Vice President, I could not help but think back to earlier times and reflect on the continuity of courtesy of the EICA/CAI.

#### **Expansion Reflects Growth**

Established in the 1930s, when all of what was

then India, including what are today Pakistan and Bangladesh, produced only about one million tons, the EICA was primarily an organisation for the determination of spot rates, preparation of standards boxes and providing domestic arbitration services. It may seem hard to imagine today, but India produced only one million tons of cotton lint in the 1970s, and only 2 million by the end of the 1980s. Laws in those days still required a physical separation between ginning and pressing factories, and marketing was still heavily distorted with export quotas and interventions by state governments, the largest of which

was a cooperative operated by the government of Maharashtra. As late as the mid-1990s, the main role of EICA and its officers was to travel to New Delhi to lobby government to increase export quotas or avoid some new tax.

By the late 1990s and early 2000s, as production in India started to climb, the role of EICA began to expand and diversify. Under the leadership of Mr. Suresh Kotak, Mr. K.F. Jhunjhunwala and others,



EICA began to advocate for greater unification within the Indian cotton industry, and to provide an expanded range of services. And, as production in India rose to approximately 6 million tons in the 2000s, the effectiveness and expansion of CAI as an organisation increased under the leadership of Mr. Dhiren N. Sheth, Mr. Nayan Mirani and other board members. Today, CAI operates HVI testing laboratories, a crucial necessity of competitiveness in today's world of cotton trading. CAI is establishing a cotton museum and promotes consumption with the School Contact Program. The research arm, COTAAP, has been strengthened, and the world is coming to India on a regular basis for the annual Cotton India conferences. Mr. Sheth did a superb job as President for eight years, and under its new leadership, the growth and change that has characterised the CAI for decades will continue and expand.

#### **Speaking with One Voice**

Many challenges face the cotton industry of India which Mr. Nayan Mirani and the new board of directors must confront. As the apex industry organisation in the largest cotton producing country, CAI represents more than just another cotton association, and the success of CAI in contributing to improvement in the efficiency and productivity of the Indian cotton industry will have international impacts.

As mentioned, one of the functions of EICA in the past and CAI and its officers today is to travel to New Delhi to lobby government. Unfortunately, much of this activity is done in competition with other organisations, resulting in inefficiency for the industry as a whole. Lobbying activity is inherently a zero-sum activity with benefits accruing to one segment representing losses to another segment. Accordingly, a crucial task for the CAI moving forward is to foster a sense of shared purpose around common objectives so that all segments and regional organisations in India "speak with one voice" to government.

The current welter of associations and organisations representing producers and ginners, merchants and textile mills in different regions, serves to fragment the industry and foster inefficiency. As the apex cotton industry body, CAI must lead in consolidation and harmonisation of interests and organisations so as to promote industry efficiency. From the development of permanent bale identification tags with bar codes for every bale, to improved statistical capacities, to rationalised regulation of cotton varieties, there is much work to be done in India, and these challenges will require changes in approach and function.

#### **Continuity of Courtesy**

Nevertheless, even as CAI changes and grows, certain characteristics will continue. The most recent CAI election is an example of the sons of leaders becoming leaders. With new vision and energy, the new officers of CAI, including all Board Members, will carry forward the work of CAI, and the traditions of sophistication, hospitality, commitment to cotton, and courtesy that have characterised the Indian cotton industry for decades will continue for decades more.

(The views expressed in this column are of the author and not that of Cotton Association of India)

#### Monthly Average Cotlook A Index (FE) from 2011-12 onwards (in US Cents per lb.)

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
August	114.10	84.40	92.71	74.00	71.82	80.26
September	116.86	84.15	90.09	73.38	68.74	77.86
October	110.61	82.00	89.35	70.34	70.34 69.03	
November	104.68	80.87	84.65	67.53	69.22	78.92
December	95.45	83.37	87.49	68.30	70.39	
January	101.11	85.51	90.96	67.35	68.75	
February	100.75	89.71	94.05	69.84	66.57	
March	99.50	94.45	96.95	69.35	68.73	
April	99.94	92.68	94.20	71.70	69.28	
May	88.53	92.70	92.71	72.89	70.28	
June	82.18	93.08	90.90	72.35	74.10	
July	83.97	92.62	83.84	72.35	81.06	

Source: Cotton Outlook

# Show You Care For The Cotton Farmer!

Here is a chance to pay your gratitude to the cotton farmers who face instability and hardships due to uncertainty in cotton yield. It is alarming that while India stands first amongst cotton producing countries, it is amongst the last in cotton yield per acre!

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You can drop/courier your cheque to Cotton Association of India, Cotton Exchange Building, 2nd Floor, Cotton Green (East), Mumbai - 400 033

### Production Of Man-Made Filament Yarn

(In Mn. kg.)

Month	Viscose Filament yarn	Polyester Filament yarn	Nylon Filament yarn	Poly propylene Filament yarn	Total	
2005-06	53.09	1075.82	36.84	13.58	1179.33	
2006-07	53.98	1270.83	32.25	13.41	1370.48	
2007-08	51.07	1420.14	27.62	10.51	1509.34	
2008-09	42.42	1332.09	28.07	15.08	1417.66	
2009-10	42.70	1434.88	30.35	14.79	1522.72	
2010-11	40.92	1462.28	33.46	13.14	1549.79	
2011-12	42.35	1379.52	27.95	13.19	1463.01	
2012-13	42.63	1288.15	22.91	17.18	1370.87	
2013-14	43.99	1212.43	24.09	12.91	1293.42	
2014-15	44.24	1158.20	32.55	12.77	1247.76	
2015-16	45.41	1068.80	37.26	12.66	1164.13	
2016-17 (P) (Apr-Oct.)	27.09	617.33	23.75	6.75	674.92	
		201	5-16			
April	3.80	95.97	3.22	1.09	104.08	
May	3.70	96.03	3.01	0.99	103.73	
June	3.69	82.80	2.69	0.95	90.13	
July	3.78	82.67	3.11	1.12	90.68	
August	3.81	86.94	2.96	1.13	94.84	
September	3.82	89.67	2.81	1.00	97.30	
October	3.83	89.49	3.17	1.00	97.49	
November	3.75	87.58	2.86	1.32	95.51	
December	3.82	90.60	3.29	0.91	98.62	
January	3.83	93.31	3.36	1.02	101.52	
February	3.78	86.91	3.32	1.10	95.11	
March	3.80	86.83	3.46	1.03	95.12	
		2016-	17 (P)			
April	3.78	84.08	3.29	0.96	92.11	
May	3.88	85.31	3.38	0.96	93.53	
June	3.90	84.93	3.27	0.95	93.05	
July	3.98	89.83	3.46	0.99	98.26	
August	3.97	90.88	3.38	0.97	99.20	
September	3.75	89.23	3.50	0.96	97.44	
October	3.83	93.07	3.47	0.96	101.33	

P - Provisional

Source : Office of the Textile Commissioner



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# **New Directions in Cotton Research**

(Continued from Issue No.40...)

#### Mehboob-ur-Rahman

ICAC Researcher of the Year 2014 Principal Scientist, National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan

#### Focus On - Cotton Improvement for Environmentally Stressed Economies

Cotton Provides Natural Fiber to the Textile Industry Worldwide, and is the Backbone of Economy of Many Developing Countries. Sustaining cotton yields under stressed environments is and will continue to be a major issue worldwide. Also, the changing climate further worsens the climate crises – that has been witnessed recently in Pakistan where an approximately 35% reduction in yield is expected in current season (2015/16) compared with the previous year.

Efforts towards achieving sustainability in cotton production are handicapped by lack of genetic diversity in the adapted genetic material,

limited knowledge about the genetics of most complex traits and non-availability of robust DNA markers. Consequently, current breeding practices remain unchanged. Bringing new genes under plough from untapped genetic resources (unutilized germplasm and wild cotton species) are not very successful because of the linkage drag of many unwanted genes, which negatively impact the resultant phenotype. Before introducing alien alleles from an untapped genetic

resource, it is important to know about genetic variants through deploying next generation sequencing (NGS) tools - previously not possible. In this regard, "re-sequencing" of germplasm accessions, obsolete cultivars and land races can be undertaken to characterize genome-wide variations. Consequently, new SNPs (including insertions/deletions and substitutions), copy number variations, etc. would be identified. These variations can be translated into functional diversity, and thus DNA markers can be designed that would set a firm foundation for initiating intelligent breeding programs. If the resources are limited or ploidy level (ancient or recent) is high (especially in tetraploid cotton) - thus making computational analysis difficult, a reduced representation approach (for example exome capturing) or sequencing the transcriptomes may help in detecting variations in functionally active

genes. The identified genetic variations can also be used to mine diversity within cultivated cotton varieties. For example, the cotton species evolved in a particular region containing important genes helped in adaptation in a corresponding region would help in developing cotton varieties with high madaptability. G. arboreum has been evolved in drought-prone areas, and presently its cultivation is restricted to marginal land (less than 2% area). It was replaced by the G. hirsutum in Indo-Pak region. Presently, the G. hirsutum cotton varieties (especially in the post GM-cotton era) express their yield potential under high input environmentsmaking the crop vulnerable to insect pests and diseases, and also to harsh environments. Similarly, the natural genetic variations present in obsolete cultivars can be re-introduced in modern cultivars using the generated genomic information. Thus the genetic information would help in selecting cotton genotypes/strains with the traits involved in adaptation to the corresponding environments without losing their yield potential - enabling cotton



Though a significant number of genes present in the cultivated species and their progenitors have been identified using NGS tools, these don't necessarily reflect the whole diversity present in the species. The germplasm present in seed banks could be characterized phenotypically in a range of environments using highthroughput phenotyping platforms recording data both under controlled as

well as field conditions in a non-destructive way. Also, the transcript sequencing and biochemical analysis of diverse accessions grown under different environments would help to gather knowledge about phenotypic variation that is not possible solely with genome sequencing. In this way, one can identify QTLs accurately and efficiently, which can be linked to DNA markers.

TILLING (Targeting Induced Local Lesions IN Genomes) is another approach for inducing mutations randomly by exposing cotton seed to chemical mutagens. The resultant stable mutant lines can be re-sequenced to identify the mutations across the whole genome (genome wide) and/or exome regions can be sequenced (exome capturing approach) for identifying mutations that can be linked to functional diversity. This is a very straightforward



strategy for enhancing genetic diversity – a potential buffer to the spread of diseases. The mutagenized populations of either tetraploids or diploids have shown improvement in lint quality and also the ginning out turn (GOT) percentage. Breeding for high GOT (more than 45%) should be the ultimate aim of cotton breeders. Adapted cultivars with high GOT potential can be the best target to improve GOT percentage. Newly identified tools, such as ZFNs and CRISPR-Cas9, can induce mutations in target genes without disturbing the whole genome. However, their potential is yet to be realized commercially.

Resistance to insect pests in cotton has been engineered using genes (cry genes) excised from a soil bacterium-success has been demonstrated. Now the resistance conferred by these genes has been broken down in different parts of the world. For example, single gene protection enjoyed for couple of years in Pakistan has been overcome due to the infestation of Helicoverpa armigera in June 2014 on early sown cotton crop and Pectinophora gossypiella in 2015/16. During 2015/16, unexpected drought, heavy rainfall, storms and floods, which not only enhance the boll rotting and lodging but also led to weeds outcompeting the cotton crop-resulted in reduced boll number and size. Thus, stressed climatic conditions together with the infestation of pink bollworm badly hammered cotton production in Pakistan. Also, the potential of converting minor pests into major pests is another threat to cotton sustainability.

For example, before the cultivation of Bt-cotton in Pakistan, mealy bug and dusky bug remained unnoticed on cotton—indirectly controlled by the application of insecticides used to kill lepidopteron pests. Now, however, chemical control measures are taken to control these two newly emerged pests.

Such scenarios can emerge in other cottongrowing countries. Other than educating the cotton farmers on taking control measures, it is important to increase the range of novel genes derived from other alien sources under the tissue specific promoters which would help in combating the insect pests much more effectively. Also the genes and/ or their transcription factors (DREBs, ERFs, ZIP, WRKY etc.) conferring tolerance to biotic and abiotic stresses from plant sources including wild species can be characterized followed by their introduction in cotton. It is worth mentioning that the protein expressed by the cry genes did not interact with the complex biochemical pathways involved in shaping phenotypes as these were novel. However, genes of plant origin may interact with host proteinmay change the expression of the transgene. New

horizons of controlling insect populations such as production of intact RNA molecules of essential proteins in plastids should be undertaken. Novel herbicide tolerance genes (other than EPSPS) are required to suppress the emergence of herbicidetolerant weeds in cotton. However, the plant source genes would have high chances of acceptance by the end user. Identifying new marker genes (other than antibiotic-resistant genes) would be another step towards increasing the acceptability of GM-crops worldwide.

#### **Greg A. Constable**

ICAC Researcher of the Year 2015 CSIRO Agriculture, Narrabri, NSW, Australia

#### Focus On - Integration of All Research Disciplines for Future Production Systems

There are many disciplines in cotton research – and each discipline has a wide range of levels from basic to applied, so discussing new directions is a daunting challenge. My areas of specialization have been applied plant breeding and crop physiology, so I will be more comfortable in concentrating on those aspects. However, I have interacted with many other disciplines, so where appropriate, I will highlight the opportunities across research boundaries. In fact, no single research discipline and level will solve all future cotton problems and it is the coordination and collaboration of different research groups that will have the greatest impact in developing solutions and making new discoveries.

Half the world's cotton has lint yields less than 800 kg/ha. Many of those crops are rainfed and the low yield potential reduces grower confidence to invest in pest control or fertilizer inputs. It is a challenging question as to whether research investment into such cropping systems has return on investment. Such questions are becoming more common.

#### Breeding

Good traditional breeding practices will continue to be important. The fundamentals are appropriate population sizes, using the best parents with good genetic diversity and accurate testing of candidate genotypes in the cropping systems of interest.

Breeding with multiple GM traits has become complex and that situation will continue, particularly to introgress multiple traits into new (improved) conventional germplasm. Although breeding with multiple GM traits is slower, the same breeding procedures are required with GM traits as for conventional; a simple backcross and bulk will not necessarily recover elite yield. Our experience is that there is diversity in yield performance within backcross-generated GM populations, so careful evaluation of elite lines is required.

Diseases are significant constraints for cotton in most production systems, so cultivars with (multiple) disease resistance are a priority. The focus in Australia has been on Bacterial Blight, Verticillium Wilt, Fusarium Wilt and Cotton Bunchy Top (a virus similar to Blue Disease), with the objective of having resistance to all diseases in all cultivars. There is potential for other diseases, particularly viral, to appear and pre-emptive research is necessary to prepare contingency plans for such an occurrence.

Cotton is grown primarily for its fiber, but competition with man-made fibers (MMF) has resulted in continued reduction of cotton's use in textiles. Clearly an important direction for cotton is to improve demand from spinners and fiber quality improvements are required. We have coined the term Integrated Fiber Management (IFM) to highlight the need for considering fiber quality across the whole production chain and research disciplines. Plant breeding might improve fiber quality potential, but good agronomy and ginning are required to achieve that potential. Economic viability (price) will continue to be a challenge for producers, as cotton fiber competes with MMF. Research on improving fiber quality therefore may also need to assess reducing loss of market to MMF rather than increasing cotton unit value.

## Collaboration Between Breeding and Other Disciplines

One opportunity for improved outcomes from research is improving the organizational structure in research teams. Better integration of research disciplines is required in some cases. Compare the structure of large commercial biotechnology companies with the situation 15 years ago: Breeding and molecular teams are now more integrated and other resources, such as weather data, are being incorporated into customer services. Other research agencies could replace fragmentation of research groups with coordination. The establishment of an International Cotton Researchers Association (ICRA) has one aim to facilitate more communication and collaboration between researchers.

#### **Molecular Biology**

The development and use of GM cotton resistant to Lepidopterian pests has substantially reduced insecticide inputs (by 80% in Australia) and improved control of those pests. Likewise GM cotton resistant to glyphosate or glufosinate has reduced residual herbicide inputs while improving control of some weeds. Resistance management of these GM traits has not been perfect – hence the need for stacking insector herbicide-resistant genes. However cotton is much better off environmentally and the regulatory lessons have been learnt.

It appears that the number of new GM traits being developed is slowing down, but modern molecular marker tools will facilitate better early generation screening in breeding. This area of research has been mentioned and covered in all contributions to this document and it is clear that such marker technology will become more prevalent, for example to screen breeding material, which contains new sources of disease resistance. Breeders and plant pathologists will still need to search for new sources of disease resistance. SNP-basedmarkers of elite germplasm will assist with more rapid backcrossing of GM traits. Thus it is vital that cotton breeders and biotechnologists work closely together.

#### Agronomy

We have found that selection for increased yield has resulted in cotton cultivars with increased waterlogging tolerance, nutrient use efficiency, water use efficiency and even net leaf photosynthesis rate. These improvements, as well as reduced emissions, are expected from all industries and cotton research is being directed towards a better understanding of interactions between genotype, environment and management to deliver more sustainable cropping systems. Collaboration between researchers can develop integrated cropping systems for pests (IPM), weeds (IWM), diseases (IDM) and fiber quality (IFM). Development of cotton cropping systems, which are water and nutrient use efficient, are also vital and close collaboration between breeders and crop physiologists is necessary.

#### **The Future/Conclusions**

There are many challenges facing cotton, not the least being competition with MMF. In addition, potential climate impact on rainfed and irrigated cotton production systems may reduce production or at least cause variability of production. Changes to water availability may also occur with competition between urban and agricultural demands. These effects may change where cotton is produced. Nevertheless, there is remarkable cotton research capacity across the world and, with proper coordination, solutions can be found to enable cotton to flourish as a commodity.

Source : The ICAC Recorder, Vol. XXXIV No.1, March 2016

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## **COTTON EXCHANGE MARCHES AHEAD**

Madhoo Pavaskar, Rama Pavaskar

### Chapter 2 Improving Cotton Quality

(Continued from Issue No.38....)

#### New Quality Standards

This report of the Technical Committee too did not find favour with the ginning and pressing factories as well as the cotton trade. In his letter addressed to the Textile Commissioner on April 11, 1996, Mr. Suresh Kotak, who became the President of the East India Cotton Association on March 29, 1996, elaborated the difficulties likely to be faced by the factory owners and the cotton merchants. The difficulties mainly pertained to weight, dimension and marking of bales. As Mr. Kotak pointed out, individual bales are normally not weighed at the pressing factories as there is hardly any arrangement to weigh the loose lint to feed the exact quantity into the press box. It was therefore not possible to achieve pressed bales of uniform or near-uniform weight. The weight variations are at times as large as 15 to 20 kg per bale. Moreover, the weight varies according to the humidity and atmosphere - increasing in the monsoon and reducing in the summer. Hence,

marking the weight on the bale is also not practical. Similarly, the pressing factories in different cotton producing States have press boxes of different sizes which are in use for decades and cannot be replaced, except at heavy cost to the press owners. With such boxes, it is hardly feasible to obtain bales of dimensions as specified by the Committee. Mr. Kotak therefore suggested that the weight of a bale should be arrived at as an average for a lot of 50 / 55 bales. The recommendation of the Committee that the

cotton bales not satisfying the trash limits should be marked as 'sub-standard' too was not acceptable to the trade, as it would lead to difficulties in marketing such bales and may result in endless disputes and litigations.

#### **Repeal of Ginning & Pressing Act**

Meanwhile, the Working Group on Cotton Procurement – Marketing and Ginning and Pressing Industry, referred to earlier, of which Mr Mirani, the past President of the East India Cotton Association, was the most active and vocal member, strongly recommended in its report submitted in April 1995 that the Cotton Ginning and Pressing Factories Act, 1925 be removed from the Statute Book. As it is, the Act had outlived its utility. For, but for prescribing maximum processing charges for ginning and pressing annually, the Act was hardly enforced to improve either the ginning efficiency or cotton quality. The uneconomic and uniform ginning and pressing charges fixed by the State Governments under the Act, in the fond hope of curbing domestic cotton prices, actually militated against all the efforts at modernization of the factories.

Paradoxically, the low processing charges, based on weight rather than quality parameters, induced most ginners to retain trash in the lint. Realising its outdated character, the Government of India decided to repeal The Cotton Ginning and Pressing Factories Act, and moved the necessary legislation for the purpose in the Parliament in 1997.

Although the Cotton Exchange was always in the forefront, demanding all along the abolition of the Cotton Ginning and Pressing Factories Act, it was also aware of the usefulness of some of its provisions. It therefore requested the Textile Commissioner to bring forward a suitable legislation with a view to providing some quality standards for cotton bales. Regulations were also needed for labelling bales with

> press marks and press running numbers ( for identifying bales in cases of quality disputes), as also for gathering periodical data on bales pressed, which assist in estimating cotton production.

> In the face of the impending abolition of the Cotton Ginning and Pressing Factories Act, the Union Ministry of Textiles promptly came out in 1997 with yet another proposal to amend the Cotton Control Order 1986. The cotton trade and the ginning and pressing

factories were not so much averse to the Cotton Control Order per se (though differences persisted with the Textile Commissioner on some of the irksome and absurd provisions in it) as invoking the powers under the Essential Commodities Act, 1955 to issue it. The penal provisions of the Act were so draconian in nature, treating even minor violations as grave criminal offences that even normal business practices tended to be unnecessarily disrupted, affecting adversely the processing and marketing efficiency in cotton. The Cotton Exchange was already waging a long crusade against the government to remove kapas and cotton from the purview of the Essential Commodities Act, which has also become an obsolete and antiquated legislation in the context of the changed supply-demand situation in cotton.

Unmindful of the vociferous opposition of the cotton trade and processing industry, the Union Textile Ministry continued to bring out new proposals almost year after year to amend the prevailing Cotton



Control Order. The Bureau of Indian Standards also came out with yet another proposal on specifications for cotton bales in March 1999. In the revised proposal, the trash content levels were proposed at 3 per cent for extra-long staple cotton, 5 per cent for long and superior medium staple, 6 per cent for medium and short staple and 10 per cent for close boll cotton like V-797, Wagad etc. The weight of the bale was suggested at  $170 \pm 10$  kg through the entire cotton season for all staple cotton varieties, and at  $155 \pm 7$  kg for close boll cotton varieties. The other recommended specifications for density, packing, marking etc, remained almost the same as proposed earlier.

In the meantime, the Cotton Ginning and Pressing Factories Act was repealed on January 2, 1999. With the removal of the Act from the Statute Book, the ginning and pressing factories were free to fix such charges as the market could bear. Unfortunately, with near stagnancy in cotton production in recent years, the competition amongst the large number of ginning and pressing factories in the country became intense to acquire as much cotton for processing as possible. In the process, many ginning and pressing factories were constrained to quote low processing charges to keep their plants running for a longer season, with little attention being paid to remove trash and avoid contamination. That underlines the need for upgradation and modernization of the ginning and pressing factories.

#### **Technology Upgradation Fund**

On April 1, 1999, the Government of India launched a Technology Upgradation Fund Scheme (TUFS) for the textile industry, including the ginning and pressing sector. The scheme was proposed to be in operation for a period of 5 years ending March 3, 2004. The scheme did not contemplate any direct financing, but merely provided for a reimbursement of 5 percentage points on the interest charged by the lending agencies on technology upgradation projects. The accent under the scheme was on technology upgradation in the existing units and setting of new hi-tech units to bring about improvement in production, productivity and quality. In view of the limited scope of the scheme, as it provided for mere reimbursement of 5 percentage points on interest charged, the scheme was virtually a non-starter for the ginning and pressing factories.

Luckily, after the onset of the Technology Mission on Cotton, launched on February 20, 2000, TUFS was discontinued for the ginning and pressing sector. The Technology Mission had set a target of modernising / upgrading 150 ginning and pressing factories by providing financial assistance of Rs 18.75 crore. That is truly a drop in the ocean, especially since the country has as many as 5000 units in the sector, of which nearly 1000 are pressing factories. Prima-facie, there seems to be an over-capacity in the ginning and pressing sector, with large number of inefficient and sick units.

#### To conclude

Much needs to be done to reform and restructure the ginning and pressing industry in India so as to improve the quality of Indian cotton. The current efforts of the authorities amount to little more than just tinkering with the grave problem of cotton contamination facing the cotton trade and industry. The BIS efforts at laying down standards for cotton bales are, no doubt, quite commendable. But unfortunately, they too at times lack the vision on the one hand, and ignore the ground reality on the other. It is futile to believe that the quality of Indian cotton can improve overnight by prescribing strict statutory standards through stringent and absurd regulations under the Cotton Control Order.

However, as luck would have it, in view of the strong opposition by the cotton trade and the ginning and pressing factories to some of the recommended BIS standards (like recording of the weight of the bale on press labels, dimension of the pressed bales and standard quality stamping), the government has not yet taken any decision in the matter. So far so good. But the differences between the trade and the government are really not that acute. Nor are they many. The meeting ground should be possible, if the authorities open their eyes to the reality as it exists at present in the ginning and pressing factories and the market yards. Meanwhile, the Cotton Control Order, 1986 continues to be in force, albeit notionally on paper.

But in this needless duel over the quality standards, the issue of modernization / renovation of the ginning and pressing sector has become a casualty. Verily, the Cotton Exchange may still have to march into a long battle with the authorities to seek considerable financial and infrastructural support for improving cotton quality through modernization of the entire ginning and pressing industry rather than through haphazard and hurried legislation. It is only with strong government support in terms of both finance and infrastructure (for which it may even look for aid from either the World Bank or the International Finance Corporation) that the country could eventually benefit from the envisaged MFA phaseout in the export of cotton textiles and even export its surplus in cotton output during the present century.

The corporate and contract farming in cotton as envisaged in the recently announced National Agriculture Policy, if allowed in the cotton growing States through suitable state legislation and policies, would also go a long way in improving the cotton quality and productivity. The Cotton Exchange needs to pursue this matter with the State governments through its long march ahead in the coming years.



#### Ms. Sudha B. Padia

Cotton Association of India, Cotton Exchange Building, 2nd Floor, Cotton Green (East), Mumbai – 400 033 Telephone No.: 3006 3405 Fax No.: 2370 0337 Email: publications@caionline.in

UPCOUNTRY SPOT RATES (Rs./Qtl)												
	Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [ By law 66 (A) (a) (4) ]						Spot Rate (Upcountry) 2016-17 Crop JANUARY 2017					р
Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	2nd	3rd	4th	5th	6th	7th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	8267 (29400)	8267 (29400)	8211 (29200)	8211 (29200)	8211 (29200)	8239 (29300)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	8520 (30300)	8520 (30300)	8464 (30100)	8464 (30100)	8464 (30100)	8492 (30200)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	8464 (30100)	8605 (30600)	8605 (30600)	8745 (31100)	8745 (31100)	8745 (31100)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9476 (33700)	9617 (34200)	9617 (34200)	9758 (34700)	9758 (34700)	9758 (34700)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10686 (38000)	10742 (38200)	10742 (38200)	10826 (38500)	10826 (38500)	10854 (38600)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	11079 (39400)	11192 (39800)	11164 (39700)	11304 (40200)	11304 (40200)	11332 (40300)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	10432 (37100)	10517 (37400)	10517 (37400)	10601 (37700)	10601 (37700)	10657 (37900)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	10686 (38000)	10770 (38300)	10770 (38300)	10854 (38600)	10854 (38600)	10911 (38800)
9	P/H/R	ICS-105	Fine	27mm	3.5.4.9	26	11248 (40000)	11360 (40400)	11332 (40300)	11473 (40800)	11473 (40800)	11501 (40900)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	10545 (37500)	10629 (37800)	10629 (37800)	10714 (38100)	10714 (38100)	10770 (38300)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	10911 (38800)	10995 (39100)	10995 (39100)	11079 (39400)	11079 (39400)	11135 (39600)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	11360 (40400)	11417 (40600)	11389 (40500)	11529 (41000)	11529 (41000)	11557 (41100)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11051 (39300)	11135 (39600)	11135 (39600)	11220 (39900)	11220 (39900)	11276 (40100)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11164 (39700)	11220 (39900)	11220 (39900)	11304 (40200)	11304 (40200)	11360 (40400)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11135 (39600)	11220 (39900)	11220 (39900)	11304 (40200)	11304 (40200)	11360 (40400)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	11248 (40000)	11304 (40200)	11304 (40200)	11389 (40500)	11389 (40500)	11445 (40700)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	11276 (40100)	11360 (40400)	11360 (40400)	11445 (40700)	11445 (40700)	11501 (40900)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	11445 (40700)	11529 (41000)	11529 (41000)	11614 (41300)	11614 (41300)	11670 (41500)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	11670 (41500)	11754 (41800)	11754 (41800)	11838 (42100)	11838 (42100)	11895 (42300)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15185 (54000)	15185 (54000)	15185 (54000)	15325 (54500)	15325 (54500)	15325 (54500)

(Note: Figures in bracket indicate prices in Rs./Candy)