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# HVI and PBI's - What's in it for India?

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EXPERT's Column

Dr. Terry Townsend

India has a long, proud and romantic cotton tradition. Pen and ink drawings of merchants in Bombay in the 1800s adorn the walls of hotels. Steam bale presses dating back to the British era still operate throughout the country. Some seven million households grow cotton, and many farmers proudly recount that their fathers, their grandfathers and their great grandfathers grew cotton.

Unfortunately, tradition is not the same as efficiency, and some practices in the Indian tradition have not changed in more than a century. If you took a cotton merchant from the 1800's and taught him modern colour grades with current standards boxes, that merchant would be right at home buying and selling Indian cotton in 2018.

Indian lint is still sold based on varieties and grades against standards boxes. A meagre 2% sampling out of a lot of 100 bales is still the norm, and lots are usually a wretched-looking mess of torn and cut cloth with tufts of cotton sticking out, bale ties missing or broken with oil stains, dirt and moisture damage visible on the exterior of bales. Bale numbers are determined gin-by-gin-by-pressing factory-by pressing factory, and stencils are still used to paint bale numbers onto the sides of the soon-to-be cut and torn outsides. Sometimes a label is affixed to the side of a bale with glue of such poor quality that the label falls off before the bale has left the gin. Other times, labels are tucked into the folds of the bale cover on the end of the bale, but this makes reading difficult.

The resulting "product" cannot be tracked electronically, and mills must determine laydowns using average data for average bales. Bales are almost guaranteed to be contaminated, and bale weights are subject to inordinate change with humidity and loss during handling. Is this any way to manage an industry worth $8 billion a year at the agricultural level? Obviously not. You can send a package worth a thousand Rupees to a friend, and the delivery company will give you a tracking number and tell you almost to the hour when the package will arrive. In contrast, you can send a bale worth nearly 20,000 Rupees to a textile mill, and you're guessing as to

which bale will actually be delivered, and you're lucky if you know within a week when it will arrive.

### HVI & PBaI's

Cotton has been classed by pulling staple for centuries, and before the development of electronic instruments, this was the best mankind could do. However, engineers began developing instruments to measure objective fiber quality parameters in the 1920s. Faster versions were developed in the 1960s, and commercial use of High Volume Instruments (HVI) to test cotton quality were introduced in the United States in the 1970s. Starting in 1992, every bale in the United States has been tested using HVI, and today all cotton produced in Australia, Brazil, China, Israel, Greece and a few other countries is tested using HVI. Numerous countries in Central Asia, Latin America, Africa and Asia have HVI systems that cover some portion of each crop.

Current HVI systems record six parameters agreed by the ICAC Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC). Those parameters are length, length uniformity index, strength, micronaire, +b and Rd. These six tests can be conducted in 30 seconds or less per sample. Other parameters such as trash count, trash percent area coverage, maturity, Short Fiber Index, and stickiness are still under development.

When used in combination with software designed to optimise laydowns, textile mills can use the HVI data from individual bales, assuming 100% sampling, to minimise fibre costs against minimum yarn quality standards. Without HVI data, textile mills almost always over-buy the cotton required to meet yarn performance characteristics.

Married to the use of HVI is the development of Permanent Bale Identification systems (PBI's). PBI tags (printed tags on heavy-stock paper) are usually tucked into the bale wrapping or under one of the bale ties to prevent switching from one bale to another. The tags are bar coded, just like a bottle of drinking water, and handheld scanners allow for the exact identification of each bale. Bar codes contain 16 columns that can be used to record origin and identification numbers that can be tied to bale information such as quality, ownership and other characteristics.

A PBI system must be controlled by a national authority, the Cotton Corporation of India or The Cotton Association of India for example, so that each bale from every gin in the country has a unique identifying number. Once a PBI is affixed to a bale, that bale can be tracked through the value chain station-by-station. Every time ownership changes, or a bale is moved, the information can be recorded electronically, allowing for precise and accurate inventory management. With 100% use of PBI's in India, it would be possible to send specific bales to specific buyers to meet specific spinning needs, thus greatly improving spinning efficiency.

### The Role of CAI

Different countries have different systems for managing and implementing HVI and PBI's. The United States cotton industry relies on the U.S. Department of Agriculture to test all cotton and issue PBI tags to gins to be placed on bales as each is pressed and wrapped. The private sectors of Australia and Brazil have developed national systems in the absence of government capacity. Israel has a national cotton marketing board that tests and identifies all cotton. Uzbekistan uses a government-operated HVI system. Other countries have hybrid systems involving the private sector regulated by government.

The Cotton Association of India has developed a network of HVI laboratories, and other cotton associations and private companies have also purchased equipment and are offering quality testing services on a fee-per-sample basis.

These efforts are laudable, but they are not sufficient. To be worthwhile, HVI results must be both accurate and precise, and the only way to ensure the integrity of quality testing is to follow CSITC guidelines for sample cutting, laboratory construction, instrument operation and data management, and to participate in CSITC quarterly round trials to ensure testing on par with international norms. Currently, only some of the laboratories in India are meeting these standards, rendering the results less than fully useable.

And, even when HVI results are accurate and precise in accordance with international standards, the lack of a PBI system undermines the usefulness of any testing protocol because bales lack unique identifiers. Therefore, a national organisation, whether it be CCI or CAI, must perform the role of issuing PBI tags to gins and pressing factories nationwide to ensure that unique numbers are assigned to every bale.

**Benefits**

India produces a lot of cotton, but quality measurement and inventory management are a century out of date. This costs money. Textile mills are paying more for cotton with intrinsic fibre spinning properties that are better than needed in order to ensure minimum yarn quality standards, and inventory management is a labour intensive and slow process of handwritten ledgers and hard copy bills of lading and ownership titles.

Whether the Textile Commissioner or CCI under the auspices of the Ministry of Textiles takes the lead in developing a national system of HVI testing and PBI identification of bales, or CAI steps up to exercise leadership, one way or the other, India needs a modern system of quality evaluation and inventory management.

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

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# Shri. Arun Sekhsaria, Director, CAI Mumbai, and Shri. Mahesh Sharda, President, ICAL, Punjab, visit Farmers' Fields and Texas Tech University in USA

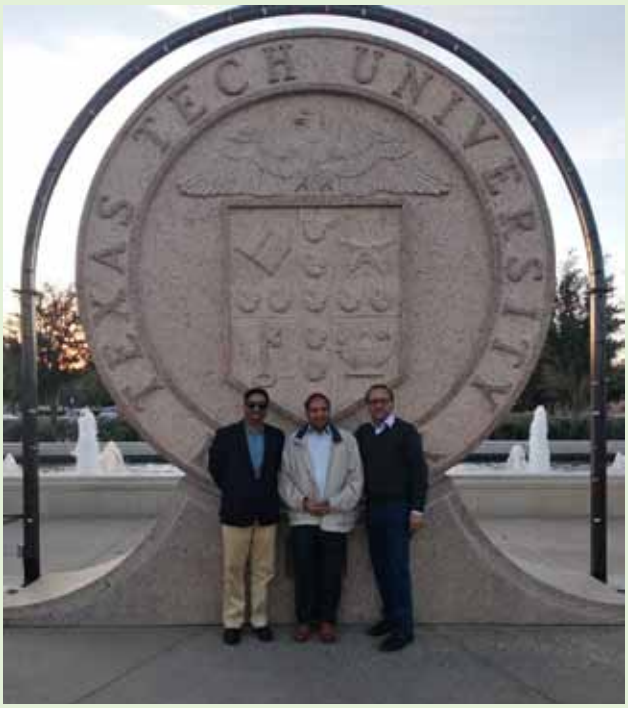
On November 16, 2018, Shri. Arun Sekhsaria, Director of Cotton Association of India, Mumbai and Shri. Mahesh Sharda, President of Indian Cotton Association Ltd., Punjab, visited Lubbock in the High Plains of Texas to explore new developments in the High Plains' cotton sector and interact with the cotton industry leaders in Lubbock.

Shri. Seksaria and Shri. Sharda, both of whom are the fifth generation in their families to be involved in cotton trade and production, started their day by attending an early morning meeting at Plains Cotton Growers (PCG), Inc.

The Indian cotton merchants were impressed at the discussion among various stakeholders in the early morning meeting at the Plains Cotton Growers, Inc., in Lubbock. They felt that Indian cotton farmers too should engage regularly with merchants, government agencies, and local policy makers so that their voices are heard and said that they were impressed with the cooperative initiatives such as PCG. Indian government's schemes such as the support for private-public partnership initiatives are encouraging, which should be effectively utilised to advance the agricultural sector in India.

Consumer preference, expectations for comfort and more importantly, the need for green products in advanced economies will drive the demand for cotton, according to Shri. Sekhsaria and Shri. Sharda.

According to them, while the current trade war between the United States and China may not be favourable for the U.S. cotton sector in the long run; this situation may help India as cotton can flow from India to China. So, India may need to import cotton from the United States, which has indeed started to happen. This new market dynamics will be interesting to watch.




*From l to r. Shri. Mahesh Sharda, Dr. Seshadri Ramkumar and Shri. Arun Sekhsaria.*

The Indian cotton sector leaders also visited the Advanced Cotton Laboratory at Texas Tech University and evaluated the cotton oil absorbent technology developed at the laboratory.

In a question from this scribe on what take-home messages they will carry for the Indian textiles sector, they stated, the coordination effort which they have witnessed in the United States among various cotton stakeholders and the support for value-added research by cotton farmers were very valuable for the Indian cotton and textile sectors.

*Written by Dr. Seshadri Ramkumar, Professor, Nonwovens & Advanced Materials Laboratory,Texas Tech University, Lubbock, Texas, USA.*

# Production of Fibres

(In Mn. Kg)

| As on | Raw Cotton (Oct.-Sept.) | Synthetic | | | Cellulosic | Sub Total |
|---|---|---|---|---|---|---|
| | | PSF | ASF | PPSF | VSF | |
| 2016-17 (P) | -- | 898.97 | 96.37 | 3.64 | 364.99 | 1363.97 |
| 2017-18 (P) | -- | 852.29 | 93.19 | 3.51 | 369.82 | 1318.81 |
| 2018-19 (P) (Apr-Aug) | -- | 334.46 | 41.48 | 1.58 | 225.80 | 603.32 |
| 2016-17 | | | | | | |
| April | -- | 73.56 | 8.86 | 0.37 | 30.32 | 113.11 |
| May | -- | 77.07 | 9.39 | 0.44 | 31.72 | 118.62 |
| June | -- | 77.46 | 9.28 | 0.45 | 21.87 | 109.06 |
| July | -- | 79.32 | 8.07 | 0.30 | 30.41 | 118.10 |
| August | -- | 79.92 | 8.20 | 0.35 | 31.96 | 120.43 |
| September | -- | 76.96 | 9.02 | 0.22 | 31.14 | 117.34 |
| October | -- | 79.51 | 6.75 | 0.16 | 32.46 | 118.88 |
| November | -- | 71.06 | 7.10 | 0.24 | 31.18 | 109.58 |
| December | -- | 71.65 | 7.28 | 0.29 | 32.09 | 111.31 |
| January | -- | 72.68 | 7.78 | 0.20 | 32.11 | 112.77 |
| February | -- | 63.78 | 7.42 | 0.20 | 28.24 | 99.64 |
| March | -- | 76.00 | 7.22 | 0.42 | 31.49 | 115.13 |
| 2017-18 (P) | | | | | | |
| April | -- | 72.23 | 7.62 | 0.26 | 30.51 | 110.62 |
| May | -- | 75.90 | 7.79 | 0.32 | 29.59 | 113.60 |
| June | -- | 71.90 | 7.65 | 0.24 | 31.55 | 111.34 |
| July | -- | 75.73 | 8.47 | 0.13 | 35.52 | 119.85 |
| August | -- | 73.58 | 9.49 | 0.32 | 33.14 | 116.53 |
| September | -- | 68.91 | 8.42 | 0.32 | 29.35 | 107.00 |
| October | -- | 70.40 | 8.84 | 0.32 | 32.86 | 112.42 |
| November | -- | 72.25 | 7.68 | 0.32 | 31.30 | 111.55 |
| December | -- | 70.10 | 7.00 | 0.32 | 30.84 | 108.26 |
| January | -- | 72.36 | 6.17 | 0.32 | 30.89 | 109.74 |
| February | -- | 61.04 | 7.00 | 0.32 | 26.06 | 94.42 |
| March | | 67.89 | 7.06 | 0.32 | 28.21 | 103.48 |
| 2018-19 (P) | | | | | | |
| April | -- | 64.90 | 7.37 | 0.31 | 44.18 | 116.76 |
| May | -- | 68.42 | 7.76 | 0.32 | 46.28 | 122.78 |
| June | -- | 65.05 | 8.93 | 0.32 | 43.70 | 118.00 |
| July | -- | 65.28 | 7.86 | 0.32 | 45.47 | 118.93 |
| August | -- | 70.81 | 9.56 | 0.31 | 46.17 | 126.85 |

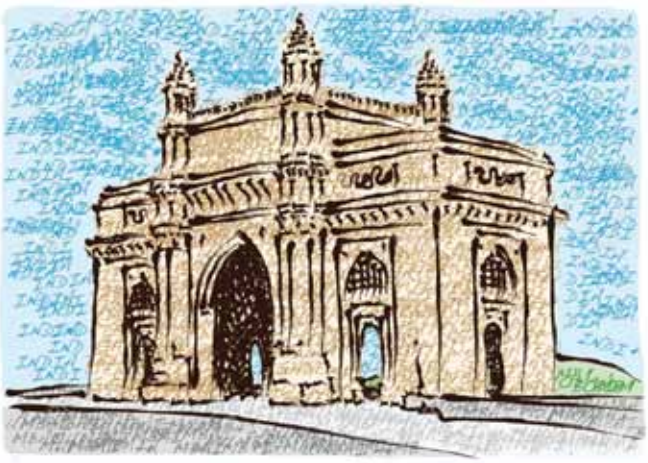
*(P)= Provisional*

*Source : Office of the Textile Commissioner*

# SAVE THE DATES

## 6th – 8th March 2019

COTTON ASSOCIATION OF INDIA
Established 1921



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Cotton India 2019

## INTERNATIONAL CONFERENCE

IN

## HOTEL TRIDENT, MUMBAI (INDIA)

## UPCOUNTRY SPOT RATES

(Rs./Qtl)

| Sr. No. | Growth | Grade Standard | Grade | Staple | Micronaire | Strength /GPT | Spot Rate (Upcountry) 2017-18 Crop November 2018 19th | 20th | 21st | 22nd | 23rd | 24th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [ By law 66 (A) (a) (4) ] | | | | | | | | | | | |
| 1 | P/H/R | ICS-101 | Fine | Below 22mm | 5.0-7.0 | 15 | - - | - - | - - | - - | - - | - - |
| 2 | P/H/R | ICS-201 | Fine | Below 22mm | 5.0-7.0 | 15 | - - | - - | - - | - - | - - | - - |
| 3 | GUJ | ICS-102 | Fine | 22mm | 4.0-6.0 | 20 | 10601 (37700) | 10601 (37700) | 10601 (37700) | 10601 (37700) | 10545 (37500) | 10489 (37300) |
| 4 | KAR | ICS-103 | Fine | 23mm | 4.0-5.5 | 21 | 10686 (38000) | 10686 (38000) | 10686 (38000) | 10686 (38000) | 10686 (38000) | 10629 (37800) |
| 5 | M/M | ICS-104 | Fine | 24mm | 4.0-5.0 | 23 | - - | - - | - - | - - | - - | - - |
| 6 | P/H/R | ICS-202 | Fine | 26mm | 3.5-4.9 | 26 | - - | - - | - - | - - | - - | - - |
| 7 | M/M/A | ICS-105 | Fine | 26mm | 3.0-3.4 | 25 | 11051 (39300) | 10939 (38900) | 10854 (38600) | 10854 (38600) | 10854 (38600) | 10770 (38300) |
| 8 | M/M/A | ICS-105 | Fine | 26mm | 3.5-4.9 | 25 | - - | - - | - - | - - | - - | - - |
| 9 | P/H/R | ICS-105 | Fine | 27mm | 3.5.4.9 | 26 | - - | - - | - - | - - | - - | - - |
| 10 | M/M/A | ICS-105 | Fine | 27mm | 3.0-3.4 | 26 | 11389 (40500) | 11276 (40100) | 11192 (39800) | 11192 (39800) | 11192 (39800) | 11107 (39500) |
| 11 | M/M/A | ICS-105 | Fine | 27mm | 3.5-4.9 | 26 | 11726 (41700) | 11614 (41300) | 11529 (41000) | 11529 (41000) | 11529 (41000) | 11445 (40700) |
| 12 | P/H/R | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | - - | - - | - - | - - | - - | - - |
| 13 | M/M/A | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | - - | - - | - - | - - | - - | - - |
| 14 | GUJ | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | 12513 (44500) | 12457 (44300) | 12373 (44000) | 12373 (44000) | 12373 (44000) | 12288 (43700) |
| 15 | M/M/A/K | ICS-105 | Fine | 29mm | 3.5-4.9 | 28 | 12570 (44700) | 12457 (44300) | 12373 (44000) | 12373 (44000) | 12373 (44000) | 12288 (43700) |
| 16 | GUJ | ICS-105 | Fine | 29mm | 3.5-4.9 | 28 | 12710 (45200) | 12598 (44800) | 12513 (44500) | 12513 (44500) | 12513 (44500) | 12429 (44200) |
| 17 | M/M/A/K | ICS-105 | Fine | 30mm | 3.5-4.9 | 29 | 12710 (45200) | 12598 (44800) | 12513 (44500) | 12513 (44500) | 12513 (44500) | 12429 (44200) |
| 18 | M/M/A/K/T/O | ICS-105 | Fine | 31mm | 3.5-4.9 | 30 | 13076 (46500) | 12963 (46100) | 12879 (45800) | 12879 (45800) | 12879 (45800) | 12795 (45500) |
| 19 | A/K/T/O | ICS-106 | Fine | 32mm | 3.5-4.9 | 31 | - - | - - | - - | - - | - - | - - |
| 20 | M(P)/K/T | ICS-107 | Fine | 34mm | 3.0-3.8 | 33 | - - | - - | - - | - - | - - | - - |

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

## UPCOUNTRY SPOT RATES

(Rs./Qtl)

| Sr. No. | Growth | Grade Standard | Grade | Staple | Micronaire | Strength /GPT | Spot Rate (Upcountry) 2018-19 Crop November 2018 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 19th | 20th | 21st | 22nd | 23rd | 24th |
| 1 | P/H/R | ICS-101 | Fine | Below 22mm | 5.0-7.0 | 15 | 12035 (42800) | 11979 (42600) | 11979 (42600) | 11951 (42500) | 11951 (42500) | 11895 (42300) |
| 2 | P/H/R | ICS-201 | Fine | Below 22mm | 5.0-7.0 | 15 | 12176 (43300) | 12120 (43100) | 12120 (43100) | 12092 (43000) | 12092 (43000) | 12035 (42800) |
| 3 | GUJ | ICS-102 | Fine | 22mm | 4.0-6.0 | 20 | - - | - - | - - | - - | - - | - - |
| 4 | KAR | ICS-103 | Fine | 23mm | 4.0-5.5 | 21 | - - | - - | - - | - - | - - | - - |
| 5 | M/M | ICS-104 | Fine | 24mm | 4.0-5.0 | 23 | 11670 (41500) | 11585 (41200) | 11501 (40900) | 11501 (40900) | 11501 (40900) | 11445 (40700) |
| 6 | P/H/R | ICS-202 | Fine | 26mm | 3.5-4.9 | 26 | - - | - - | - - | - - | - - | - - |
| 7 | M/M/A | ICS-105 | Fine | 26mm | 3.0-3.4 | 25 | - - | - - | - - | - - | - - | - - |
| 8 | M/M/A | ICS-105 | Fine | 26mm | 3.5-4.9 | 25 | - - | - - | - - | - - | - - | - - |
| 9 | P/H/R | ICS-105 | Fine | 27mm | 3.5.4.9 | 26 | 12317 (43800) | 12232 (43500) | 12148 (43200) | 12148 (43200) | 12148 (43200) | 12092 (43000) |
| 10 | M/M/A | ICS-105 | Fine | 27mm | 3.0-3.4 | 26 | - - | - - | - - | - - | - - | - - |
| 11 | M/M/A | ICS-105 | Fine | 27mm | 3.5-4.9 | 26 | - - | - - | - - | - - | - - | - - |
| 12 | P/H/R | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | 12401 (44100) | 12317 (43800) | 12232 (43500) | 12232 (43500) | 12232 (43500) | 12176 (43300) |
| 13 | M/M/A | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | 12598 (44800) | 12513 (44500) | 12429 (44200) | 12401 (44100) | 12401 (44100) | 12345 (43900) |
| 14 | GUJ | ICS-105 | Fine | 28mm | 3.5-4.9 | 27 | - - | - - | - - | - - | - - | - - |
| 15 | M/M/A/K | ICS-105 | Fine | 29mm | 3.5-4.9 | 28 | 12766 (45400) | 12682 (45100) | 12598 (44800) | 12541 (44600) | 12513 (44500) | 12457 (44300) |
| 16 | GUJ | ICS-105 | Fine | 29mm | 3.5-4.9 | 28 | 12851 (45700) | 12766 (45400) | 12654 (45000) | 12710 (45200) | 12626 (44900) | 12570 (44700) |
| 17 | M/M/A/K | ICS-105 | Fine | 30mm | 3.5-4.9 | 29 | 12935 (46000) | 12851 (45700) | 12766 (45400) | 12738 (45300) | 12738 (45300) | 12682 (45100) |
| 18 | M/M/A/K/T/O | ICS-105 | Fine | 31mm | 3.5-4.9 | 30 | 13188 (46900) | 13104 (46600) | 13020 (46300) | 12991 (46200) | 12991 (46200) | 12935 (46000) |
| 19 | A/K/T/O | ICS-106 | Fine | 32mm | 3.5-4.9 | 31 | 13273 (47200) | 13188 (46900) | 13104 (46600) | 13076 (46500) | 13076 (46500) | 13020 (46300) |
| 20 | M(P)/K/T | ICS-107 | Fine | 34mm | 3.0-3.8 | 33 | 16281 (57900) | 16197 (57600) | 16197 (57600) | 16197 (57600) | 16197 (57600) | 16141 (57400) |

Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [ By law 66 (A) (a) (4) ]

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