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A Rising Tide Lifts All Boats

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EXPERT'S Column

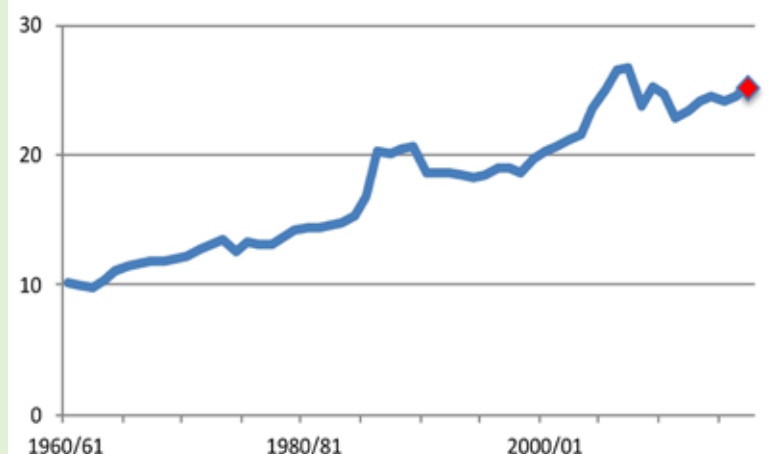


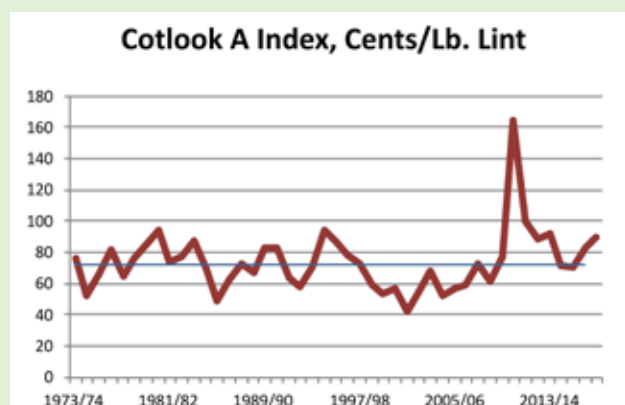
According to the Discover Natural Fibre Initiative (DNFI.org), world production of natural fibres rose by an estimated 8% to approximately 33 million tons during 2017, led by increases in abaca, coir, cotton, jute and wool. A strong world economy with increased purchases of apparel and home furnishings, 5% annual growth in paper production, increased use of natural fibres in composite materials and rising awareness of pollution linked to chemical fibre products are encouraging expanded use of natural fibres.

Cotton is participating in the increase in world natural fibre production and consumption. World cotton mill use is estimated by ICAC to be rising to more than 25 million tons during 2017/18. Despite cotton prices that remain 20 cents per pound above the long run average,

despite polyester prices that remain lower than cotton, despite a drumbeat of efforts to demonise cotton by advocates of organic agriculture and retailers seeking brand differentiation. Despite all this, amazingly, cotton mill use is rising. Cotton use is still several percentage points less than the record of nearly 27 million tons achieved a decade ago, but it is climbing from the post-recession low of 22 million tons in 2011/12. Apparently, the world economy is much stronger than many economists believe, and apparently consumer preference for cotton is sufficiently resilient to withstand the exaggerations and falsehoods told by those who demonise.

World Cotton Mill Use, Million Tons





Cotton is not alone in experiencing growing demand. World demand for abaca, known as Manila hemp, is between 100,000 and 120,000 tons. However, growth to between 120,000 and 150,000 tons is forecast by 2022. World industrial hemp harvested area reached 120,000 hectares in 2016. Prices of hemp short fibres have been trending higher and reached 80 Euro cents per kilogram at the factory gate in Central Europe in 2016. World production of raw jute is increasing from 2.6 million tons in 2015/16 to 3.265 in 2016/17 and an estimated 3.4 million tons in 2017/18.

World Fiber Production

Metric Tons

	2012	2013	2014	2015	2016, Preliminary	2017, Forecast
Natural Fibers						
Vegetable origin						
Abaca	78,100	67,500	76,600	78,200	86,800	90,000
Bastfibres, other	260,262	253,350	240,954	236,902	230,648	236,168
Coir	996,300	960,700	1,048,700	1,092,100	1,156,900	1,099,233
Cotton Lint	27,079,000	26,225,000	26,269,000	21,483,000	22,990,000	25,430,000
Fibre crops not specified elsewhere	284,142	285,396	284,353	281,555	279,714	281,874
Flax fibre and tow, ex scutching mill	331,000	303,000	320,000	312,000	311,667	314,556
Hemp fibre and tow	56,060	60,238	78,041	78,820	71,475	76,112
Jute, Kenaf & Allied Fibres	3,182,000	3,097,000	2,778,900	2,657,200	3,312,000	3,400,000
Kapok fibre	103,100	101,300	96,000	93,612	96,971	95,528
Ramie	133,289	122,758	118,570	111,183	102,467	110,740
Sisal, Henequen and similar hard fibers	258,525	253,527	282,645	283,763	273,480	279,963
Animal origin						
Silk, raw	168,470	167,932	168,333	170,000	165,380	164,546
Wool, clean	1,129,000	1,157,000	1,154,736	1,160,257	1,137,052	1,150,682
Other, greasy weight*	50,644	52,178	55,058	56,104	54,447	55,203
Total Natural Fibers	34,109,892	33,106,879	32,971,890	28,094,696	30,269,000	32,784,604

Sources

2008-2014: Bastfibres, other, Fiber crops not specified elsewhere, Hemp tow waste, Kapok and Ramie: <http://faostat3.fao.org>/2008-2015: Abaca, Coir, Jute, Kenaf & Allied Fibres, and Sisal, Henequen and similar fibres: *FAO Statistics December 2014, 2015, & 2016*

Cotton: *International Cotton Advisory Committee*

Flax: *IWTO Market Information 2015*

Silk: <http://faostat3.fao.org/> and *IWTO Market Information 2015*

Wool: *International Wool Textile Organization*

All other Natural Fibres, Animal origin: *Various sources as reported by the International Wool Textile Organization*

* (Includes: Alpaca, Angora Rabbit, Camelhair, Cashmere, Guanaco, Llama, Mohair, Vicuna, Yakhair)

World production of sisal was about 145,000 tons in 2016. The largest end uses of sisal are twine and pulp and paper production, and demand is rising with increased paper production around the world. World wool production has been negatively affected by droughts in Australia and South Africa during the past year. Nevertheless, demand for fine wools used in active and leisure wear is rising as consumers become more aware of the positive attributes of wool and the negative effects of microfibre pollution.

What is behind the rise in production and use of natural fibres in the face of continuing 6% annual gains in polyester use? The most likely answer is strong economic growth, combined with beneficial consumer preferences for natural fibres.

World mill use has trended upward since World War II and reached 20 million tons by the mid-1980s. The breakup of the Soviet Union led to a decade of decline in the world total of cotton use, and mill use did not reach 20 million tons again until 2000/01. Use rose rapidly in the early 2000s with the end of the Multifiber Arrangement and strong economic growth, but then plummeted during the 2008-09 recession and because of the spike in cotton prices in 2011. Mill use has been climbing since 2011/12, not because of competitive prices or large available supplies or strong promotion efforts by retailers. Rather, mill use of cotton is rising because consumers are buying stuff, and even with a continuing loss of market as a share of total fiber use, mill use of cotton in absolute terms is rising. This suggests that economists are underestimating the strength of the world economy.

World real (inflation adjusted) growth in Gross Domestic Product (GDP) averaged 3.5% per year between 1980 and 2016. International Monetary Fund estimates put real GDP growth in 2017 at 3.6%, barely above the long run average, and growth over the next five years is estimated at 3.7% to 3.8% per year. According to the IMF, growth is slowing in China but rising in other developing countries. Economic growth in the United States and other developed countries is rising this year but declining again over the next five years. Overall, the economic picture painted by IMF data indicates a world economy growing barely faster than average.

However, data on prices and quantities in the world market for cotton and other natural fibres indicates that the picture drawn by the IMF is not capturing something. Economic growth must be stronger than indicated by the IMF for cotton use to be rising despite prices 20 cents per pound above the long run average.

Mill use is climbing in China, India, Vietnam and Bangladesh and remaining steady in the United States while falling slightly in Europe. Statistics on trade in textiles and clothing are lagged by many months, but retail sales of apparel and home furnishings must be climbing in developed countries. Reports of strong sales growth at retail in Europe and the United States during December suggest that pipeline stocks of apparel and textiles are probably low, and this means that mill use is likely to strengthen during 2018.

Overall, the picture is very encouraging for cotton and all natural fibres. Cotton prices remain distorted by the huge state reserve in China, and until that reserve is completely liquidated cotton prices will remain higher than average. That cotton consumption in absolute terms is rising despite high prices indicates that the world economy is growing by more than just an average rate, and it indicates that the underlying consumer preference for cotton remains very strong.

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

World Real GDP, % Change



Doubling of Farmers' Income by 2022 - A Kaleidoscope (Part III)

Tips to Boost Up Cotton Yields & Improve Fibre Quality

(Continued from Issue No. 42 dated 16th January 2018)

Dr. Brijender Mohan Vithal has a Ph.D. Agric (Plant Breeding-Cotton) from Punjab Agriculture University (PAU) Ludhiana. He has been associated with cotton R&D activities for more than three decades. He has worked as a Senior Cotton Breeder with PAU, GM Production / Executive Director with National Seeds Corporation and Director, DOCD, Ministry of Agriculture (MOA). He was Officer on Special Duties (OSD) to look after activities related with Tech Mission on Cotton (TMC) in CCI Ltd during its pre-launch period. He joined CCI Ltd - TMC Cell (MMIII & IV) during 1999 and continued working there till the end of the TMC Project in December 2010. He is still associated with cotton through agencies like ISCI.



GUEST COLUMN

Dr. Brijender Mohan Vithal
Cotton Expert

- Application of chemical fertilizers as supplement to organic or biological fertilizers as per the recommended doses.
- Grow intercrops/ strip crops/ barrier crops. Crops like, Cowpea, Groundnut, Green gram, Soybean, Cluster bean were found better intercrops in increasing the effectiveness of natural enemies like coccinellids, syrphids, chrysopids, spiders, trichogrammids, apanteles, etc. Growing of fodder (sorghum or maize) as barrier crops around cotton and castor and marigold as trap crop were found more advantageous to manage cotton pests.

- Monitor pests by using sticky, pheromone and light traps. The adult monitoring should be supported by egg and larval monitoring following sequential

sampling technique at frequent intervals in case of bollworm. Bird perches should be arranged at the rate of 10 to 20 per acre for encouraging bird predation on bollworm larvae.

- The build up of broad spectrum predators-spiders, coccinellids and chrysopids should be synchronised in other cultural operations.
- Application of organic pesticides in synchrony with early larvae of Heliothis, and to manage whitefly.
- Resort to chemical insecticides on-non Bt. Cotton and need based application of recommended insecticides. This is essential to break the cycles of problem pests in the system as a whole.
- Adopt strategy to control Pink bollworm as has been discussed below separately, since their eggs are mostly protected by calyx.

VI. Pest and Disease Management

a. Reasons for More Pest Attacks on Cotton:

- Use of mono- cropping, or use of sole crops without any field diversity.
- Higher number of irrigations and use of chemical fertilizers, (especially nitrogen) applied for higher yields, increases susceptibility.
- Indiscriminate sprays of chemical insecticides even under low infestations, kills the beneficial insects and upset the ecological balance. This is also responsible for development of insecticide resistance.

b. Integrated Pest Management in Cotton

- Grow cotton as a rotation crop rather than a continuous crop year after year to restore the phenomenon of poly culture in the system.

c. Management Strategy for Pink Bollworm

Since eggs are mostly protected by calyx and the newly hatched larvae bore into the bolls immediately, it is difficult to manage this pest with insecticides. Therefore, hygienic methods are more important than chemical control. However, from literature available, the following integrated methods to control this pest can be suggested.

- 1). Grow early maturing varieties so that the cotton bolls mature before the heavy population of Pink bollworm builds up.
- 2). Avoid staggered sowing in an area and take up timely sowings.
- 3). Adopt efficient and timely agronomic practices such as the use of organic manures and recommended doses of 'N' fertilizers, etc.
- 4). Keep the crop free from weeds.
- 5). Regular monitoring for pests build up with field scouting and pheromone traps.
- 6). Destroy Pink bollworm larvae in rosette flowers and also through periodical removal of dropped squares, dried flowers and pre-matured bolls, to suppress pest population in the initial stage.
- 7). Allow cattle, sheep and goats to graze upon immature green bolls and attacked bolls after final picking, to prevent carry-over of the pest to the next season.
- 8). Prompt removal and destruction of cotton stubbles to prevent carry-over of pest to the next season.
- 9). Use of need-based insecticides.
- 10). Even at the ginning mills, burning the stained kapas should be done regularly

VII. Harvest and Storage of Cotton

BMPs also emphasise safe and clean picking and storage practices to promote clean cotton for better prices and markets as follows:-

- a. The time of picking is an important aspect for maintaining seed quality. Picking should only commence when the cotton is fully mature, i.e., when the bolls begin to open. Several pickings may be necessary since bolls ripen every two to three months. Early cotton picking

gives slightly better seeds for germination. In addition, the planting seed is best gathered at the peak of the harvest. The cotton picked from late-formed bolls (last pickings) should not be kept for seeds.

b. Precautions to be taken in picking:

- Picking should be started when bolls are fully mature.
- Picking should not be done while the bolls are wet from dew or rain.
- Bolls spoiled by rains, or damaged by insects, or otherwise damaged, should be picked separately and discarded. Such bolls can be picked 10 to 15 days ahead of the first picking.
- The damaged bolls should not be picked during normal pickings for seed purposes.
- Cotton should be clean, with a minimum amount of materials such as leaves and other plant parts. This reduces the possibility of mechanical damage from excessive machining of the fibre during ginning.
- Moist cotton should not be picked or stored in any way. Higher moisture content may lead to heating and damage the seed and fibre. Further, damp cotton requires more processing in the gin.
- The picked cotton, when it is completely dry, should be stored in a dry place and should be covered if not ginned immediately.
- Use of cotton picking apron if rested on both shoulders, reduces the stress of carrying the weight of picked cotton, making it easier for women to pick cotton.

VIII. Monitoring Methodology for Assessing Performance of BMPs

The performance of BMPs should be monitored by keeping a record of the activities implemented in the field. Monitoring the performance of BMPs allows the farmer to assess the right level of application of inputs, thereby reducing fertilizer application. It also helps in pest identification, reducing use of chemical pesticides and water consumption, increasing productive use of water and increase in cotton yield and profitability. Farmers should be encouraged to maintain a diary for keeping a record of all the activities performed. This will help

the farmers understand the benefits derived from adoption of BMPs in terms of reduction of inputs, increase in the yield and improved profitability.

IX. Economics and Profitability

It has been observed that by adopting these BMPs, not only do those farmers get financial benefits but also it makes soils more sustainable. The advantages that BMP cotton cultivation has over conventional cotton cultivation is the significant reduction in input costs, which can be confirmed only while making a typical cost benefit analysis among both. Detailed analysis on expenses incurred (cost of cultivation) in both will provide more transparent view of benefits obtained by adoption of BMPs.

A typical cost benefit analysis should include parameters like, mean seed cotton yield (Quintals/ha), mean price (Rs/quintal) and returns (Rs/acre) for calculating gross profits. And for calculating total cost it should include expenses incurred on land preparation, ploughing and harrowing, seed, manures, fertilizers, pesticides, labour and total variable costs. Based on this total cost and gross margin (Rs/acre), benefit cost ratio should be calculated to find out the advantages that BMP cotton cultivation has over conventional cotton cultivation.

X. Tips / Recommendations to Obtain High Yields of Cotton

1. Use only good quality seed of recommended and early maturing Bt/ non- Bt varieties/ hybrids
2. Eradicate alternate hosts of cotton leaf curl virus / volunteer cotton plants before sowing, to avoid the multiplication and spread of diseases.
3. Heavy pre- irrigation/ rain is must to obtain good germination and early establishment of plants.
4. Avoid growing bhindi, moong, arhar, castor, dhancha in and around the cotton fields to avoid simultaneous build-up and spread of pests and diseases to cotton.
5. Maintain the optimal plant population
6. Avoid cotton sowing in / or near the orchards.
7. The incidence of insect pest increases with

excessive use of nitrogenous fertilizers, hence use only recommended doses and the right time of application of these fertilisers.

8. In Bt / non-Bt varieties, spray to control sucking pests only when it reaches economic threshold level of second injury grade i.e. marginal cupping of leaves (jassids).
9. Avoid tank mixing and use of readymade insecticidal mixtures.
10. Control American bollworm in case of non-Bt varieties/ hybrids at the initial stages.
11. Follow Insecticide Resistance Management (IRM) strategy for effective management of insect pests.

XI. Important Hints for Bt Cotton Cultivation

Major areas under cotton in the country have been covered under Bt hybrids only. Farmers have to purchase cotton seed of these Bt hybrids every year, thus benefitting the seed producing companies. Recently under CICR Nagpur, a variety with (*Bacillus thuringiensis*) Bt gene has been developed. This will save farmers a lot of money. This will also contribute to increase cotton farmers' income. In addition to the points mentioned above, farmers should follow these tips while cultivating Bt. variety/ hybrids:

1. Grow only good quality seeds of recommended varieties/ hybrids of Bt cotton.
2. Avoid sowing Bt cotton in light sandy soils.
3. Give first irrigation 4 - 6 weeks after sowing depending on soil type.
4. Control sucking pests as and when situation arises.
5. Grow non- Bt cotton as discussed under 'Resistant Management' above.
6. As Bt hybrids/ varieties are prone to Pink bollworm, farmers should control it as discussed above

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



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The Cotton Association of India (CAI) is respected as the chief trade body in the hierarchy of the Indian cotton economy. Since its origin in 1921, CAI's contribution has been unparalleled in the development of cotton across India.

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Upcoming locations : • **Telangana:** Adilabad



**COTTON
ASSOCIATION
OF INDIA**

Established 1921

COTTON ASSOCIATION OF INDIA

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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) 2017-18 Crop JANUARY 2018					
Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	15th	16th	17th	18th	19th	20th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	11895 (42300)	11838 (42100)	11838 (42100)	11979 (42600)	11867 (42200)	11867 (42200)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	12063 (42900)	12007 (42700)	12007 (42700)	12148 (43200)	12035 (42800)	12035 (42800)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	8717 (31000)	8661 (30800)	8548 (30400)	8605 (30600)	8548 (30400)	8633 (30700)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9561 (34000)	9505 (33800)	9505 (33800)	9505 (33800)	9505 (33800)	9505 (33800)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10348 (36800)	10292 (36600)	10292 (36600)	10292 (36600)	10292 (36600)	10292 (36600)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	11304 (40200)	11248 (40000)	11332 (40300)	11473 (40800)	11417 (40600)	11417 (40600)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	10151 (36100)	10095 (35900)	10095 (35900)	10179 (36200)	10067 (35800)	10151 (36100)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	10601 (37700)	10545 (37500)	10545 (37500)	10629 (37800)	10517 (37400)	10573 (37600)
9	P/H/R	ICS-105	Fine	27mm	3.5-4.9	26	11445 (40700)	11389 (40500)	11529 (41000)	11670 (41500)	11614 (41300)	11670 (41500)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	10376 (36900)	10320 (36700)	10320 (36700)	10404 (37000)	10320 (36700)	10376 (36900)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	10770 (38300)	10714 (38100)	10714 (38100)	10798 (38400)	10742 (38200)	10798 (38400)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	11670 (41500)	11614 (41300)	11754 (41800)	11895 (42300)	11838 (42100)	11895 (42300)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11192 (39800)	11135 (39600)	11192 (39800)	11304 (40200)	11192 (39800)	11192 (39800)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11360 (40400)	11304 (40200)	11417 (40600)	11529 (41000)	11473 (40800)	11529 (41000)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11360 (40400)	11304 (40200)	11389 (40500)	11473 (40800)	11360 (40400)	11501 (40900)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	11670 (41500)	11585 (41200)	11529 (41000)	11642 (41400)	11585 (41200)	11670 (41500)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	11754 (41800)	11698 (41600)	11642 (41400)	11726 (41700)	11642 (41400)	11782 (41900)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	12007 (42700)	11951 (42500)	11895 (42300)	11979 (42600)	11895 (42300)	12035 (42800)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	12401 (44100)	12317 (43800)	12260 (43600)	12345 (43900)	12260 (43600)	12260 (43600)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15635 (55600)	15550 (55300)	15550 (55300)	15550 (55300)	15550 (55300)	15832 (56300)

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