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Sustainable Cotton Production

(Continued from Issue No. 8 Dated 23 May, 2017)

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Side Effects Of Technological Interventions

During the first phase of India's post-independence era, concerted efforts were made to accelerate cotton output to keep pace with the demand of the textile industry and thereby reduce imports, essentially to sustain our domestic industry. This was through an input intensive process, now perceived as unsustainable, and resulted in decrease in ground water levels, increased water table in canal irrigated areas, decreased soil health in intensive cotton growing districts resulting in multiple nutrient deficiencies (N,P,K,S, Mg, Zn and B). Increased soil erosion on upper regions of watersheds, caused a decline in soils and above ground biodiversity due to intensive use of chemicals (fertilizers and pesticides), created pest resurgence and pest outbreaks. Prior to 1980, pink bollworm Pectinophora gossypiella, spotted bollworms, Earias spp. and the cotton leaf caterpillar, Spodoptera litura were major insect pests of cotton in India. Entomology text books published prior to 1980, considered the American bollworm, Helicoverpa armigera, as 'not a regular or a serious pest' of cotton in India. Sap-sucking insect pests were controlled with carbofuran granules, dimethoate and metasystox. Bollworms and other lepidopteran insects were controlled with methyl parathion dust, quinalphos and chlorpyriphos. The leaf caterpillar Spodoptera litura, assumed importance in Gujarat and Andhra Pradesh, mainly on irrigated hybrid cotton with luxuriant foliage that resulted from excessive urea application. Spodoptera was more severe in areas where groundnut was cultivated in the cotton cropping systems.

Synthetic pyrethroid insecticides were introduced into India in the early 1980s to control the pink bollworm and Spodoptera litura. Synthetic pyrethroids had broad spectrum

toxicity to all insect pests including beneficial naturally occurring predators and parasitoids of insect pests. These were cheap. Within 4-5 years of introduction, synthetic pyrethroids became the most preferred insecticides across the country and were being used indiscriminately in cotton fields. Pink bollworm and Spodoptera became minor pests, but whiteflies and American bollworm appeared as major pests, because of ecological disruption caused by the pyrethroids. By 1987, the American bollworm, Helicoverpa armigera developed high levels of resistance to almost all the recommended insecticides to the extent that even 20-25 continuous spray applications did not deter the pest from causing severe damage to cotton. The insecticide resistant American bollworm also started causing heavy losses to vegetables, oilseed crops and pulses.

The decade 1990 to 2000 can be considered as a 'Helicoverpa-stress' decade in cotton. Integrated pest management (IPM) and Insecticide resistance management (IPM) were recommended to tide over the crisis. However, the introduction of Bt-cotton in 2002 came as a relief to cotton growers. From 2002 to 2012, there were no major insect pest calamities in India. The Bt-technology was so potent, that within 3-4 years of its introduction, the area under Bt-cotton increased to more than 50% in almost all the countries. Thereafter, there were changes in the cropping patterns, ecosystems comprising pest spectrum and the associated parasite, predator complex, thus altering IPM perspectives significantly. It must be reiterated that per se there is hardly anything wrong with Bt-technology, but its deployment only in hybrids, mostly of the long duration kind, leads towards un-sustainability. Risks are being experienced now with 'Bt-resistant pink bollworm', which causes severe damage mainly to long duration cotton.

A cursory analysis to understand the sustainability of cotton production in India during the Bt- hybrid era is summarised here. Bt-hybrids along with associated agro-techniques allowed India to emerge as the largest producer (380 lakh bales) of cotton in 2014-15, as well as the largest consumer (306 lakh bales) and the largest exporter (118 lakh bales) of raw cotton in 2013-14. The production of cotton seed oil increased from 488 thousand tons in 2002 to 1305 thousand tons in 2013. There was an increase in cotton acreage from 78 lakh ha in 2002 to 126.5 lakh ha in 2014-15; a quantum jump of 62%. Other structural changes include the spread of intra-hirsutum hybrids from 40-45% of the cotton area in 2002 to 92% in 2012, a concomitant decline in the area under Desi (G. arboreum and G. herbaceum) and Egyptian (G. barbadense) cotton from 31% to 3%, thus threatening biodiversity an essential indictor of sustainability. It also created a skewed market surplus of long staple cotton and a huge shortage of both short staple cotton needed for non-spinning application and extra long staple cotton.

The land use changes (area changes) accompanying this technology was a decline in the area under groundnut, sorghum and pearl millet in Maharashtra; sunflower, groundnut and sorghum in Andhra Pradesh; pearl millet, sorghum, pigeon pea and groundnut in Gujarat, coarse cereals in south Rajasthan and finger millet in south Karnataka. This has raised a serious issue of food security. The expansion of rainfed cotton into red soil areas of Telangana and Karnataka and into shallow black soils of Maharashtra, sub-humid areas of eastern Vidarbha (Maharashtra) are other ecological concerns. The higher rate increase in Minimum Support Price (MSP) of cotton compared to its competing crops and the lower risks associated with Bt-cotton lured farmers to cultivate cotton beyond its preferred niches. Consequently, the average productivity hovered between 500 and 568 kg/ha during the last 5 years, while the cost of cultivating the crop continued to spiral upwards.

Other consequences include the switch over from cotton legume/cereal rotation and intercropping systems to mono/sole cotton based cropping systems; re-emergence of cotton leaf curl virus disease, resurgence of secondary pests, whitefly, etc. There is a perceptible increase in the insecticides used to control sucking pests. The fertilizer use by cotton increased from 9-12 lakh tons in 2000 to 20-25 lakh tons in 2013. The factor productivity of fertilizers has shown a perceptible decline in various states.

Indian cotton was subjected to heavy use of fertilizers and insecticides over the past 35-40 years, mainly on hybrid cotton. Over the last 10 years after 2006, fertilizer and insecticide usage more than doubled. Prior to the introduction of Bt-cotton in 2002 in India, about 0.6 to 1.0 kg insecticides per hectare were used for bollworm control and about 0.3 to 0.5 kg insecticides per hectare were used for the control of sap sucking

pests. Thus prior to the introduction of Bt- cotton, insecticide usage on cotton was 1.0 to 1.5 kg per hectare. Though insecticide usage fell rapidly to 0.5 kg per hectare in 2006, by 2015 insecticide use increased gradually to the pre-Bt levels of more than 1.0 kg per hectare within 7-8 years after 2006.

This happened primarily because of the indiscriminate approval of a large number of Bt-cotton hybrids which were of long duration and were highly susceptible to sap-sucking insects. Recently, farmers have been advised to resort to chemical sprays to control the pink bollworm menace in Bt-cotton. With bollworm resistance to Bt-cotton and the continuous releases of a large number of Bt-hybrids, it is quite likely that insecticide usage would increase to levels higher than the pre-Bt era. The national average fertilizer usage on cotton has increased from about 100 kg per hectare 10 years ago, to 250 to 280 kg per hectare in recent years. Though chemical inputs more than doubled, yields were either stagnant or were declining to levels less than 560 kg lint per hectare, after 2006.

However, it must be remembered that if India had followed the route of short duration varieties, as was done by all major cotton growing countries, the country may not have had to suffer the bollworms as much it did over the past few decades. Clearly, there is a need for a robust road-map towards sustainability.

The Roadmap For Sustainable Cotton Farming

Cotton crop needs 80-85% of its total water and nitrogen requirement during flowering and fruiting phase. Water and nutrient availability during flowering and fruiting is crucial for good yields. In the Indian context, some of the basic principles for sustainable cotton production, especially in dry-land farming are

Varietal Traits

1. Short duration (140-160 days) with early maturing with synchronous flowering and fruiting
2. High root vigour
3. Resistance to sap sucking insects such as leaf hoppers, aphids, thrips and whiteflies
4. Resistance to 'bacterial leaf blight', 'cotton leaf curl virus' and other diseases.
5. Desirable fibre qualities

Production Practices

1. Early or timely sowing
2. Conservation tillage
3. Crop health monitoring for abiotic and biotic stress.
4. Timely crop termination
5. Convergence of Integrated Nutrient Management (INM), Integrated Water management (IWM) and Integrated Pest management (IPM)

Moisture Conservation

1. Sowing in ridges-furrow method
2. Crop residue mulches
3. Drainage of excessive water
4. Drip irrigation and furrow irrigation

Re-invigorating the Soil and Nutrient Management

1. Intercropping or rotation with legumes or green manure crops
2. Cotton crop needs about 80% of its total nitrogen requirement during flowering and fruiting phase. Nutrient availability during flowering and fruiting is crucial for good yields.
3. Optimising nutrients based on soil health conditions
4. Application of farm yard manure @ 5 to 10 t/ ha or compost after the first rain.
5. Seed treatment with Azotobacter and PSB (phosphate solubilizing bateria) @ 25 g each/ kg seed
6. Application of (1/4 nitrogen (N) + full phosphorus (P) + full potash (K)) during early vegetative phase and rest of nitrogen in three equal split applications all through during flowering and fruiting phase.
7. Appropriate application of micronutrients during the flowering and fruiting phase.

(To be continued)

Courtesy : Cotton India 2016-17

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

High Prices Persist Despite Rising Stocks Outside of China

In 2016/17, world cotton production is estimated at 22.9 million tons while world mill use is projected at 24.3 million tons, which represents the second consecutive season where mill use has exceeded production. As a result, world ending stocks are forecast to decrease by 7% to 17.3 million tons. However, this decline occurs entirely within China where stocks at the end of July 2017 are projected down 17% to 9.2 million tons. Stocks held outside of China, however, are forecast to rise by 6% to 8 million tons. Despite the growth in stocks held outside of China, international cotton prices as measured by the Cotlook A Index have averaged 82 cts/lb from August 2016 through May 2017, which is well above the long-term average of 70 cts/lb.

Sales from China's reserve through May 2017 reached over 1.1 million tons, which brings the total volume of cotton held by the Chinese government to 7.2 million tons. China's cotton production declined by 2% to 4.9 million tons in 2016/17, but its mill use is projected to increase by 2% to 7.7 million tons. Imports by China are anticipated to increase by 10% to 1.06 million tons, which is the first increase since 2011/12, though any further increase is limited by the import quota. Thus, sales from the reserve are being used to make up for the shortfall in production while mill use is forecast to remain unchanged at 7.7 million tons in 2017/18.

Production outside of China is estimated up by 10% to 18 million tons in 2016/17 and is expected to grow by 5% to 19 million tons in 2017/18 due to the high prices prevailing this season. Cotton area in India is forecast to expand by 7% to 11.3 million hectares, and assuming yield is similar to the 4-year average of 528 kg/ha, production could increase by 3% to 6 million tons in 2017/18. Farmers in the United States are projected to expand cotton area to 4.6 million hectares with production expected to rise by 12% to 4.2 million tons. Pakistan's cotton production is projected to increase by 13, and if high prices continue through the end of 2017, cotton production in Brazil could increase to 1.5 million tons. In 2017/18, world trade is expected to remain unchanged from 2016/17 at 8.1 million tons. Given that cotton production is projected to grow in the large consuming countries the need to import cotton will likely decrease.

After falling by 1% to 16.5 million tons in 2016/17, mill use outside of China may increase by 2% to 16.9 million tons in 2017/18 due to much stronger growth in the global economy in 2017 and 2018. Consumption in India is forecast to increase by 3% to 5.2 million tons in 2017/18 as prices for cotton and yarn are likely to be competitive due to the increase in supply. Pakistan's mill use is expected to rise modestly by 1% to 2.3 million tons as competition from other mills in Asia remains stiff. Consumption in Bangladesh is projected to rise by 5% to 1.5 million tons while Turkey's mill use is expected to decline by 15,000 tons to 1.4 million tons due to completion from other countries and weak domestic demand.

Source : ICAC Press Release, June 1, 2017

Supply and Distribution of Cotton

May 30, 2017

Seasons begin on August 1 — Million Metric Tons

	2012/13	2013/14 Est.	2014/15 Est.	2015/16 Est.	2016/17 Proj.	2017/18 Proj.
BEGINNING STOCKS						
WORLD TOTAL	**15.227**	**18.266**	**20.265**	**21.699**	**18.62**	**17.26**
China	6.181	9.607	12.026	12.707	11.05	9.22
USA	0.729	0.827	0.512	0.795	0.83	0.70
PRODUCTION						
WORLD TOTAL	**26.774**	**26.170**	**26.235**	**21.300**	**22.89**	**24.01**
India	6.290	6.766	6.562	5.746	5.80	5.96
China	7.300	6.950	6.550	4.988	4.87	5.02
USA	3.770	2.811	3.553	2.806	3.74	4.18
Pakistan	2.002	2.076	2.305	1.537	1.66	1.88
Brazil	1.310	1.734	1.563	1.289	1.49	1.50
Uzbekistan	1.000	0.910	0.885	0.832	0.79	0.77
Others	5.102	4.923	4.817	4.101	4.54	4.71
CONSUMPTION						
WORLD TOTAL	**23.811**	**24.115**	**24.733**	**24.294**	**24.26**	**24.60**
China	8.290	7.600	7.657	7.580	7.73	7.71
India	4.762	5.087	5.377	5.296	5.14	5.24
Pakistan	2.216	2.470	2.492	2.256	2.23	2.26
Europe & Turkey	1.560	1.611	1.692	1.687	1.63	1.61
Bangladesh	1.023	1.146	1.204	1.324	1.40	1.47
Vietnam	0.492	0.673	0.875	1.007	1.17	1.26
USA	0.762	0.773	0.778	0.751	0.72	0.74
Brazil	0.910	0.862	0.797	0.733	0.70	0.74
Others	3.796	3.893	3.860	3.661	3.53	3.57
EXPORTS						
WORLD TOTAL	**10.051**	**9.028**	**7.704**	**7.591**	**8.06**	**8.08**
USA	2.836	2.293	2.449	1.993	3.16	3.06
India	1.690	2.015	0.914	1.258	0.89	0.84
CFA Zone	0.825	0.973	0.893	0.962	0.98	1.08
Brazil	0.938	0.485	0.851	0.939	0.61	0.69
Uzbekistan	0.690	0.615	0.550	0.543	0.45	0.45
Australia	1.343	1.057	0.520	0.616	0.80	0.80
IMPORTS						
WORLD TOTAL	**10.203**	**8.936**	**7.783**	**7.547**	**8.06**	**8.08**
Bangladesh	1.044	1.190	1.177	1.355	1.40	1.50
Vietnam	0.517	0.687	0.934	1.001	1.20	1.28
China	4.426	3.075	1.804	0.959	1.06	1.08
Turkey	0.803	0.924	0.800	0.918	0.83	0.87
Indonesia	0.686	0.651	0.728	0.640	0.70	0.70
TRADE IMBALANCE 1/	**0.152**	**-0.092**	**0.079**	**-0.043**	**0.00**	**0.00**
STOCKS ADJUSTMENT 2/	**-0.075**	**-0.063**	**-0.047**	**-0.042**	**0.00**	**0.01**
ENDING STOCKS						
WORLD TOTAL	**18.266**	**20.265**	**21.699**	**18.619**	**17.26**	**16.67**
China	9.607	12.026	12.707	11.046	9.22	7.59
USA	0.827	0.512	0.795	0.827	0.70	1.09
ENDING STOCKS/MILL USE (%)						
WORLD-LESS-CHINA 3/	**56**	**49**	**53**	**45**	**49**	**54**
CHINA 4/	**116**	**158**	**166**	**146**	**119**	**98**
COTLOOK A INDEX 5/	**88**	**91**	**71**	**70**		

1/ The inclusion of linters and waste, changes in weight during transit, differences in reporting periods and measurement error account for differences between world imports and exports.
2/ Difference between calculated stocks and actual; amounts for forward seasons are anticipated.
3/ World-less-China's ending stocks divided by World-less-China's mill use, multiplied by 100.
4/ China's ending stocks divided by China's mill use, multiplied by 100.
5/ U.S. Cents per pound

(Source : ICAC Cotton This Week, May 30, 2017)

Production of Fibres

(In Mn. Kg)

As on	Raw Cotton (Oct.-Sept.)	Synthetic			Cellulosic	Sub Total
		PSF	ASF	PPSF	VSF	
2005-06	4097	628.15	107.81	3.08	228.98	968.02
2006-07	4760	791.99	97.13	3.52	246.83	1139.47
2007-08	5219	879.61	81.23	3.43	279.90	1244.17
2008-09	4930	750.12	79.50	3.44	232.75	1065.81
2009-10	5185	872.13	90.45	3.38	302.09	1268.05
2010-11	5765	896.33	79.48	3.74	305.10	1284.65
2011-12	6239	829.74	77.71	4.08	322.64	1234.17
2012-13	6290	848.05	73.59	4.26	337.49	1263.39
2013-14	6766	845.95	96.12	3.71	361.02	1306.80
2014-15	6562	881.56	92.54	4.62	365.17	1343.89
2015-16	5746	893.95	106.81	4.70	341.91	1347.37
2016-17 (P)	--	898.97	96.37	3.64	364.99	1363.97
2015-16						
April	--	73.62	9.45	0.35	28.62	112.03
May	--	75.55	9.50	0.30	18.42	103.77
June	--	67.17	7.88	0.31	19.50	94.86
July	--	70.75	9.15	0.40	29.70	110.00
August	--	74.07	9.35	0.47	30.63	114.52
September	--	74.24	7.95	0.46	30.42	113.07
October	--	76.66	9.23	0.38	31.34	117.61
November	--	74.98	8.15	0.30	30.72	114.15
December	--	76.65	9.36	0.45	31.49	117.95
January	--	79.10	9.40	0.46	31.33	120.29
February	--	73.52	8.58	0.42	28.07	110.59
March	--	77.64	8.81	0.41	31.67	118.53
2016-17 (P)						
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

(P)= Provisional

Source : Office of the Textile Commissioner

UPCOUNTRY SPOT RATES

(₹\Quintal)

May 2017

2016-17 Crop

Growth	P/H/R	P/H/R	GUJ	KAR	M/M	P/H/R	M/M/A	M/M/A	P/H/R	M/M/A	M/M/A	P/H/R	M/M/A	GUJ	M/M/A/K	GUJ	M/M/A/K	M/M/A/K/T/O	A/K/T/O	M(P)/K/T
G. Standard	ICS-101	ICS-201	ICS-102	ICS-103	ICS-104	ICS-202	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-105	ICS-106	ICS-107
Grade	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine	Fine
Staple	22 mm	22 mm	22 mm	23 mm	24 mm	26 mm	26 mm	26 mm	27 mm	27 mm	27 mm	28 mm	28 mm	28 mm	29 mm	29 mm	30 mm	31 mm	32 mm	34 mm
Micronaire	5.0-7.0	5.0-7.0	4.0-6.0	4.0-5.5	4.0-5.5	3.5-4.9	3.0-3.4	3.5-4.9	3.5-4.9	3.0-3.4	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.5-4.9	3.0-3.8
Strength/GPT	15	15	20	21	23	26	25	25	26	26	26	27	27	27	28	28	29	30	31	33
1	...			...		...		HOLIDAY					...		...			...		
2	9729	10011	7958	9251	10432	12260	9364	9870	12429	9898	10264	12513	11417	11501	11698	11838	12007	12288	12935	16169
3	9729	10011	7958	9251	10432	12260	9364	9870	12429	9898	10264	12513	11417	11501	11698	11838	12007	12288	12935	16169
4	9729	10011	7930	9223	10404	12260	9308	9870	12429	9842	10179	12513	11332	11417	11614	11754	11923	12288	12935	16169
5	9729	10011	7930	9223	10404	12317	9308	9870	12485	9842	10179	12570	11332	11417	11614	11754	11923	12288	12935	16169
6	9701	9983	7902	9195	10376	12176	9251	9814	12345	9786	10123	12429	11276	11360	11557	11698	11867	12288	12935	16169
8	9701	9983	7902	9195	10376	12120	9251	9814	12288	9842	10179	12373	11276	11360	11614	11754	11923	12288	12935	16169
9	9645	9926	7902	9195	10376	12063	9251	9814	12232	9842	10179	12288	11276	11360	11614	11754	11923	12288	12935	16169
10	9645	9926	7958	9195	10376	12063	9251	9814	12232	9842	10264	12288	11276	11360	11614	11754	11923	12288	12935	16169
11	9645	9926	7958	9195	10376	12063	9251	9814	12232	9842	10264	12288	11276	11360	11614	11754	11923	12288	12935	16169
12	9758	10039	8014	9251	10432	12148	9167	9729	12317	9842	10404	12373	11360	11445	11698	11838	12063	12373	12935	16310
13	9786	10067	8014	9251	10432	12232	9251	9814	12401	9926	10489	12457	11417	11501	11782	11895	12120	12429	12963	16028
15	10039	10320	8099	9336	10517	12429	9336	9842	12598	10011	10545	12654	11529	11614	11895	12007	12176	12485	13020	16028
16	10039	10320	8099	9336	10517	12345	9280	9786	12513	9954	10489	12570	11501	11670	11867	12007	12176	12457	12991	16028
17	9983	10264	8099	9336	10517	12288	9251	9701	12457	9842	10432	12513	11501	11585	11867	12007	12176	12457	12991	15747
18	9926	10208	8099	9336	10517	12204	9251	9701	12373	9842	10404	12429	11417	11529	11810	12007	12176	12457	12991	15691
19	9926	10208	8099	9336	10517	12204	9251	9701	12373	9701	10404	12429	11417	11557	11838	12035	12176	12457	12991	15550
20	10067	10348	8099	9336	10517	12232	9251	9758	12401	9758	10461	12457	11445	11585	11838	12035	12176	12457	12991	15466
22	10067	10348	8014	9280	10432	12232	9336	9842	12401	9758	10686	12457	11445	11585	11782	11951	12120	12401	12935	15466
23	10011	10264	8014	9280	10432	12176	9336	9926	12345	9814	10770	12401	11445	11585	11782	11923	12092	12401	12935	15466
24	9954	10208	8070	9336	10489	12176	9308	10067	12345	9898	10770	12401	11473	11642	11838	11979	12148	12429	12935	15466
25	9954	10208	8070	9336	10489	12204	9308	10095	12373	9926	10798	12429	11501	11670	11867	12007	12176	12429	12935	15466
26	9898	10151	8127	9392	10545	12232	9308	10123	12401	9954	10826	12457	11529	11698	11895	12035	12176	12429	12935	15607
27	9898	10151	8183	9448	10573	12288	9336	10151	12457	10011	10854	12513	11557	11726	11923	12063	12204	12457	12935	15607
29	9898	10151	8211	9476	10573	12345	9364	10179	12513	10067	10882	12570	11585	11754	11951	12092	12232	12485	12991	15607
30	9898	10151	8267	9505	10601	12401	9336	10123	12570	10067	10826	12626	11585	11754	11951	12092	12232	12457	12991	15607
31	9898	10151	8267	9505	10601	12401	9336	10123	12570	10067	10826	12626	11585	11754	11951	12092	12232	12457	12991	15607
H	**10067**	**10348**	**8267**	**9505**	**10601**	**12429**	**9364**	**10179**	**12598**	**10067**	**10882**	**12654**	**11585**	**11754**	**11951**	**12092**	**12232**	**12485**	**13020**	**16310**
L	**9645**	**9926**	**7902**	**9195**	**10376**	**12007**	**9167**	**9701**	**12176**	**9701**	**10123**	**12232**	**11276**	**11360**	**11557**	**11698**	**11867**	**12288**	**12935**	**15466**
A	**9856**	**10129**	**8046**	**9308**	**10471**	**12233**	**9293**	**9893**	**12402**	**9887**	**10488**	**12465**	**11430**	**11550**	**11776**	**11922**	**12087**	**12389**	**12957**	**15856**

H = Highest L = Lowest A = Average

UPCOUNTRY SPOT RATES

(Rs./Qtl)

Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	Spot Rate (Upcountry) 2016-17 Crop MAY – JUNE 2017 29th	30th	31st	1st	2nd	3rd
	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	9898 (35200)	9898 (35200)	9898 (35200)	9898 (35200)	9898 (35200)	9898 (35200)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	10151 (36100)	10151 (36100)	10151 (36100)	10151 (36100)	10151 (36100)	10151 (36100)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	8211 (29200)	8267 (29400)	8267 (29400)	8295 (29500)	8295 (29500)	8267 (29400)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9476 (33700)	9505 (33800)	9505 (33800)	9505 (33800)	9533 (33900)	9505 (33800)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10573 (37600)	10601 (37700)	10601 (37700)	10601 (37700)	10629 (37800)	10601 (37700)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	12345 (43900)	12401 (44100)	12401 (44100)	12401 (44100)	12429 (44200)	12345 (43900)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	9364 (33300)	9336 (33200)	9336 (33200)	9392 (33400)	9505 (33800)	9505 (33800)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	10179 (36200)	10123 (36000)	10123 (36000)	10123 (36000)	10179 (36200)	10151 (36100)
9	P/H/R	ICS-105	Fine	27mm	3.5.4.9	26	12513 (44500)	12570 (44700)	12570 (44700)	12570 (44700)	12598 (44800)	12513 (44500)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	10067 (35800)	10067 (35800)	10067 (35800)	10123 (36000)	10236 (36400)	10236 (36400)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	10882 (38700)	10826 (38500)	10826 (38500)	10826 (38500)	10826 (38500)	10798 (38400)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	12570 (44700)	12626 (44900)	12626 (44900)	12626 (44900)	12654 (45000)	12570 (44700)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11585 (41200)	11585 (41200)	11585 (41200)	11585 (41200)	11585 (41200)	11529 (41000)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11754 (41800)	11754 (41800)	11754 (41800)	11782 (41900)	11782 (41900)	11726 (41700)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11951 (42500)	11951 (42500)	11951 (42500)	11951 (42500)	11951 (42500)	11895 (42300)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	12092 (43000)	12092 (43000)	12092 (43000)	12120 (43100)	12120 (43100)	12063 (42900)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	12232 (43500)	12232 (43500)	12232 (43500)	12232 (43500)	12232 (43500)	12176 (43300)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	12485 (44400)	12457 (44300)	12457 (44300)	12485 (44400)	12485 (44400)	12429 (44200)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	12991 (46200)	12991 (46200)	12991 (46200)	12991 (46200)	12991 (46200)	12935 (46000)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15607 (55500)	15607 (55500)	15607 (55500)	15607 (55500)	15607 (55500)	15607 (55500)

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