Weekly Publication of

Cotton Association of India

COTTON STATISTICS & NEWS

Edited & Published by Amar Singh

2017-18 • No. 18 • 1st August, 2017 Published every Tuesday

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Forty years of Cotton Crop Protection in India

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Cotton is a major commercial crop, affected by pests like insects, weeds and pathogens that limit its production in the country. This article, in brief, traces the history of cotton crop protection in India, with respect to insect pest control, post 1970. Dividing the entire period of 40 years into 4 decades, it dwells on the evolution of cotton crop protection, from the use of hazardous insecticides to the adoption of Bt technology. It also revisits two landmark pest management programmes, carried out on farmers' fields in the country during the period. The Integrated Pest Management programme of Astha village and the Insecticide Resistance Management programme disseminated across 12 states set a change in the tenets of cotton crop protection. Development of landmark varieties and hybrids, that changed the course of cotton as a commercial crop was an output of conventional breeding for host plant resistance. Conventional breeding of pest resistant varieties, of utmost importance, is not a part of this article.

GUEST COLUMN

Dr. Sandhya Kranthi
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The pre- pyrethroid period (before 1980)

The insect pest complex on cotton before 1980 comprised mainly of the pink bollworm, *Pectinophora gossypiella*, spotted bollworm, *Earias sps* and *Spodoptera litura*. The American bollworm *Helicoverpa armigera* was mentioned in text books but was 'not a regular or a serious pest' of cotton in India (Nair, 1981). Standard text books published in the 70s do not describe *H. armigera* on cotton in more than 5 sentences. Sucking pests especially like the leaf hopper were reported. Popular recommendations for sucking pest control included the use of carbofuran granules, dimethoate and metasystox, with systemic and contact action. Bollworms and other lepidopteran insects were controlled with methyl parathion dust, quinalphos and chlorpyriphos, monocrotophos, carbaryl etc, insecticides with contact and stomach action. Insecticides were recommended at high usage rates, at kilograms per hectare. These insecticides were then unknown or ignored, for their toxicity to natural

Larvae of Pink Bollworm Pectinophora gossypiella

Spotted Bollworm (Earias sps) damaging young cotton boll

enemies by their mode of action, the dose at which they were used and their application methods. Importantly, insect pests were tackled independent of the ecosystem, during this decade. Resistance was first detected in the leaf worm, *Spodoptera litura* to several conventional insecticides in the late 70s (Ramakrishnan et al., 1984). That was when synthetic pyrethroids were introduced into India in 1980 to control *Spodoptera litura*.

During this period, important research pertaining to cotton pests was carried out at agricultural Universities like the Punjab Agricultural University, Tamil Nadu Agricultural University, the Indian Agricultural Research Institute, amongst others. Research across crops involved field trials, testing of chemicals, development and evaluation of simple cultural and mechanical control measures. Research was mostly individual centric and fragmented and papers published during this period are difficult to access as most of the findings were restricted to local journals and theses. Interdisciplinary research in the area of cotton crop protection was limited.

Tobacco caterpillar (Spodoptera litura) feeding on cotton leaves

The decade of pyrethroid use and misuse (1980-1990)

From 1980 to 1985, synthetic pyrethroids, highly effective on a wide range of insect pests at low dose application per unit area were excessively used. Pyrethroids began to lose their efficacy from 1986-87 when insecticide resistance developed in the American bollworm and resistance was recognised as a dominant factor that contributed to poor or inadequate pest control. Farmers in Andhra Pradesh reported acute insect pest problems on cotton in 1987.

As we look back, it was the excessive and indiscriminate use of insecticides belonging to the group of synthetic pyrethroids that led to the outbreaks of *H. armigera* and whiteflies in the next 2-3 years. Insect pest species replacement was also noted where Earias, leaf hopper and pink bollworm went into the background. The American bollworm *Helicoverpa armigera* was found to survive and cause extensive damage to cotton crop despite repeated applications of insecticides, upto 30 times. The pest later caused heavy economic losses to other crops such as chickpea and pigeon pea as well and was found to withstand sustained insecticide pressure. High levels of resistance to synthetic pyrethroids were subsequently confirmed in *H. armigera* by Dhingra et al. (1988) and McCaffery et al. (1989) as a major cause for control failures. Cotton yield worth US $100 million was lost to this insect pest in Andhra Pradesh alone, which led to a severe crisis in the state. Stories on the voracious feeding habit of *H. armigera* were reported. The insecticide resistant larvae were larger in size as compared to those collected on cotton now, very active, with a stinging bite and ate through polythene bags that were used for their collection. Their larval forms were colourful, the colour usually being influenced by the host plant on which

Cotton square being damaged by American bollworm (Helicoverpa armigera)

Adults of whitefly (Bemisia tabaci) on cotton leaves

the larvae were collected from. *H. armigera* was then recorded as a national pest. It was also the period when foreign researchers evinced interest in cotton pest management in India. The absence of data generated in the lab on the baseline susceptibility monitoring of synthetic pyrethroids on cotton insect pests was also felt. Several Masters and Doctoral theses pertaining to cotton pest problems, particularly due to pyrethroid misuse are available with the agricultural universities. The experience in this decade paved the way for integrated pest management not only in cotton but also in other field crops. It was the decade when more than 50% of insecticide use was on cotton in the country. Cotton pest management research extended its boundaries and the importance of disciplines such as agronomy and plant breeding in minimising insect pest problems in cotton was being realised.

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

Rainfall Distribution (01.06.2017 to 28.07.2017)

Sr. No.	State	Day 28.07.2017				Period 01.06.2017 to 28.07.2017			
		Actual (mm)	Normal (mm)	% Dep.	Cat.	Actual (mm)	Normal (mm)	% Dep.	Cat.
1	Punjab	6.0	5.7	5%	N	197.6	210.6	-6%	N
2	Haryana	0.7	6.0	-88%	LD	182.5	194.3	-6%	N
3	West Rajasthan	9.6	2.8	242%	LE	254.2	124.2	105%	LE
	East Rajasthan	10.9	6.7	63%	LE	342.1	267.0	28%	E
4	Gujarat	27.6	10.1	173%	LE	560.1	339.6	65%	LE
	Saurashtra & Kutch	11.2	6.6	70%	LE	440.3	260.2	69%	LE
5	Maharashtra	6.8	11.1	-39%	D	534.4	509.5	5%	N
	Madhya Maharashtra	9.6	8.2	17%	N	451.1	363.7	24%	E
	Marathwada	0.9	7.2	-88%	LD	263.0	306.7	-14%	N
	Vidarbha	3.1	9.4	-67%	LD	394.2	448.8	-12%	N
6	West Madhya Pradesh	30.8	9.5	224%	LE	397.4	365.4	9%	N
	East Madhya Pradesh	17.2	11.4	51%	E	468.0	444.7	5%	N
7	Telangana	1.6	7.9	-80%	LD	339.1	346.5	-2%	N
8	Coastal Andhra Pradesh	4.8	5.3	-10%	N	282.5	248.0	14%	N
	Rayalseema	0.0	4.0	-99%	LD	127.8	152.7	-16%	N
9	Coastal Karnataka	13.8	31.8	-56%	D	1612.2	1928.3	-16%	N
	N.I. Karnataka	0.4	5.1	-92%	LD	202.2	225.0	-10%	N
	S.I. Karnataka	4.6	7.0	-34%	D	228.1	338.3	-33%	D
10	Tamil Nadu & Pondicherry	2.4	2.5	-4%	N	75.5	108.4	-30%	D
11	Orissa	4.0	14.9	-73%	LD	546.1	519.1	5%	N

L. Excess, Excess, Normal, Deficient, L. Deficient
Source : India Meteorological Department, Hydromet Division, New Delhi

COTTON EXCHANGE MARCHES AHEAD

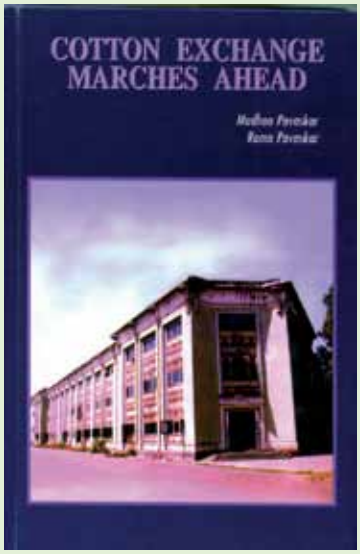
Madhoo Pavaskar, Rama Pavaskar

Chapter 6
March To Freedom - II

(Contd. from Issue No. 16)

Instrumental Financing

The struggle for liberal bank credit against cotton stocks, however, is still not altogether over. The commercial banks often call for margin levels ranging from 25 to 35 percent while granting credit to the trade against cotton. These margin levels are regarded as necessary, since cotton prices not infrequently decline, eroding in the process the value of cotton stocks hypothecated with the banks.



But the resumption of futures trading in cotton from December 1998 has altered the scene. The futures market provides a valuable tool for effective management of price risks in commodities when cotton stocks are hedged in the futures market. The risk of reduction in the value of stocks from the fall in cotton prices is then averted substantially, if not eliminated wholly.

Unsurprisingly, commercial banks in developed countries make a clear distinction between the hedged and unhedged stocks. Lower margins are invariably applied to the advances against hedged stocks than those against unhedged stocks. Banks in India, however, make no such distinction, presumably due to their ignorance about the hedging utility of the futures market for price risk insurance.

In September – October 1999, the Cotton Exchange took up the matter with the RBI as well as the Indian Banks Association to pare the margin levels to 15-20 percent for advances against hedged cotton from 25-35 percent against unhedged stocks. That would not only cut the cost of credit, and as a result the total marketing costs for hedged stocks, but also encourage the cotton merchants and other market functionaries to use the cotton futures market for risk management, improving thereby the liquidity of such a market.

The far-sighted Mr. Suresh Kotak, the current President of the Cotton Exchange, presented lucidly the case for such structured bank finance quite loudly in his Presidential address at the 78th Annual General meeting of the East India Cotton Association held on November 28, 2000. He pointed out that the modern bank credit system now prevalent in many developed countries is "tying up of finance with instruments" and added that the "latest trend in commodity financing is (a) structured finance against stocks of goods or debts and not based on balance sheets and (b) integrated and tied up with futures as provider of price security and price indication. Unfortunately, Indian banks have not been able to imbibe these modern systems and culture, and continue to cling on to worn out practices."

Although what Mr. Kotak has stated is quite true, the Cotton Exchange as well as other commodity exchanges through their apex Federation of Indian Commodity Exchanges need to embark on an intensive training programme to educate the bankers on the risk management and price discovery functions of the commodity futures markets. The Forward Markets Commission should also evolve a system of providing appropriate instruments to enable banks to offer concessional margins for advances against the duly certified hedged stocks. That would call for yet another long drawn out struggle for the Cotton Exchange to change the present mediaeval mindset of the commercial banks in India.

B. Delivery Contracts – Need for Deregulation

Regulation of Delivery Contracts

The definitions of "ready" and "non-transferable specific delivery" (n.t.s.d.) contracts, as provided in the Forward Contracts (Regulation) (F.C.(R)) Act, 1952 are so rigid and restrictive that it is extremely difficult, if not impossible, for the private cotton trade to transact any business in cotton for physical delivery, without committing a technical breach of law, either knowingly or unknowingly.

The scheme of the F.C.(R) Act, as originally envisaged by the framers of that legislation, specifically excluded the ready delivery contracts

for the purchase or sale of any goods, and also unequivocally exempted in normal circumstances the n.t.s.d. contracts from its regulation. Nonetheless, soon after the Act came into force, on August 22, 1957 the Central Government brought under its regulation the n.t.s.d. and "on call" contracts in cotton in Mumbai (then Greater Bombay), for fear of such contracts being misused for speculative purposes, following the imposition of stringent regulatory measures on the futures contracts then traded at the Cotton Exchange. Surprisingly, for some time fortnightly clearings were also introduced in the n.t.s.d. contracts, except for the specified export varieties or where one of the parties to the contract was a mill member. Settlements and abrogation of n.t.s.d. contracts were prohibited, and delivery was compulsory. Subsequently, in October 1960 trading in "on call" contracts was prohibited altogether.

As if this was not enough, the Central Government amended the definition of ready delivery contract in 1971 to make it even more restrictive. The amendment explicitly prohibited the settlement of the ready delivery contracts by the payment of money difference between the contract rate on the one hand, and the settlement rate or the rate of any offsetting contract on the other, or even by tendering documents of title to goods acquired by the seller through purchase, exchange or otherwise. In other words, the law as it stands now requires that the seller must be in the actual possession of physical goods which alone he must either deliver, or tender by way of documents of title to goods like a warehouse receipt or a railway receipt, within 11 days in performance of his sale, and the buyer, in turn, must also pay the full price as contracted within the same 11 days. The settlement of the ready delivery contract in any other manner, or its performance (by even one of the parties to the contract) after 11 days brings such a contract within the purview of regulation under the F.C.(R) Act, since it then no longer remains a ready contract, but ipso facto becomes a n.t.s.d. forward contract.

11 Days Miracle

To be sure, it would really be a miracle if an upcountry ready delivery contract is performed within 11 days. The stipulation of 11 days for the performance of such a contract is, in fact, beset with several difficulties for the trade, both for the delivery of physical goods and the payment of price. Trucks or wagons for transportation are not always available for asking as soon as ready contracts are entered into. Loading and unloading at the seller's godown and subsequently at the truck or rail terminal too take time, depending on the availability of labour or containers. The actual transportation over long distances not only takes much time, but delays also occur at the points of transshipments as well as at various octroi and check points.

The delays likewise occur in the payment of price. The buyer needs to wait till he receives the physical goods or the documents of title thereof. The delays in transportation of goods and the procedural delays by the banks in forwarding the documents of title to goods and effecting the subsequent remittance, either directly or through one or more "correspondent" bank/s, render it well nigh impossible for the buyer to make the full payment of price within 11 days. When the selective credit controls were in force, banks were also prohibited from either opening inland letters of credit against the sale of cotton, or discounting the usance bills. Not much change has taken place in the banking practices, even after the abolition of credit controls.

Recognising the unavoidable delays in the consummation of ready delivery contracts, the Kabra Committee appointed by the Government of India, which submitted its report in September 1994, had recommended that "the period of 11 days which is the time limit for a ready delivery contract under Section 2(i) of the Forward Contracts (Regulation) Act needs to be extended to 30 days." In fact, the Cotton Exchange had suggested as early as in July 1979 to the Committee on Forward Markets appointed under the chairmanship of Prof. A. M. Khusro to remove the requirement of payment within 11 days from the definition of the term 'ready delivery contract'. As per the present definition, even the housewives and households buying cotton for making mattresses, or hospitals and doctors buying surgical cotton on credit, and making thereby payments after 11 days, would be technically violating the law.

Clearly, there seems little sanctity in the 11 days miracle expected by the F.C.(R) Act for fulfilling a ready delivery contract, whatever may have been the justification for such a provision in the early fifties. Following the decentralisation of the spinning industry during the last two decades, the problems of transportation and remittances have become more acute. It is understood that the Working Group for the Review of F.C.(R) Act, appointed in 1999 under the chairmanship of Mr. V.K. Aggarwal, the then Chairman of the Forward Markets Commission, and of which Mr. Hemant Mulky, who was then the Secretary-General of the Cotton Exchange, was an active member, has strongly suggested to the government that the definition of 'ready delivery contract' be modified to extend the period of delivery and payment from 11 days to 30 days. The Cabinet Committee is reported to have approved the suggestion. The Cotton Exchange eagerly awaits the necessary amendment to the Act to escape from the needless technical clutches of law.

(To be continued)

Production & Stock of Spun Yarn (SSI & Non-SSI)

(In Mn. Kgs.)

MONTH / YEAR	PRODUCTION				STOCK			
	COTTON	BLENDED	100% N.C.	G. TOTAL	COTTON	BLENDED	100% N.C.	G. TOTAL
2007-08	2948.36	677.11	377.75	4003.22	104.81	43.57	20.59	168.97
2008-09	2896.15	654.89	360.95	3911.99	89.04	33.54	15.03	137.61
2009-10	3078.97	707.31	407.15	4193.43	85.56	25.68	11.41	122.65
2010-11	3489.77	796.47	426.38	4712.62	186.43	48.79	18.00	253.22
2011-12	3126.34	789.29	457.08	4372.72	110.87	42.20	20.44	173.51
2012-13	3582.68	828.19	456.75	4867.61	107.92	40.37	21.38	169.67
2013-14	3928.26	896.19	484.99	5309.45	133.80	51.33	23.40	208.53
2014-15	4054.51	920.20	512.92	5487.64	140.60	48.30	22.48	211.38
2015-16	4137.83	972.50	554.79	5664.93	140.68	49.46	22.99	213.13
2016-17 (P)	4056.00	1033.00	572.00	5661.00	147.61	57.99	25.47	231.08
2017-18 (P) (Apr.-May)	338.23	85.68	46.64	470.56	141.68	56.67	24.35	222.70
2015-16								
April-15	349.38	77.11	44.07	472.51	141.19	51.45	21.33	213.98
May-15	348.14	80.02	44.74	472.90	153.07	52.34	23.79	229.21
Jun-15	346.72	79.68	45.27	471.66	158.57	55.72	23.93	238.22
Jul-15	356.36	82.15	47.48	485.98	160.33	61.25	26.62	248.20
Aug-15	354.67	82.24	49.97	486.88	166.34	63.73	27.88	257.95
Sept.-15	338.53	79.51	45.41	463.45	165.96	62.33	26.16	254.46
Oct.-15	342.12	83.61	47.35	473.08	170.07	64.46	25.69	260.23
Nov.-15	320.06	77.67	43.27	441.01	173.96	61.59	24.17	259.72
Dec.-15	353.31	81.30	49.86	484.31	158.66	58.22	25.34	242.22
Jan.-16	343.98	83.34	46.84	474.26	158.52	57.55	25.10	241.18
Feb.-16	336.55	80.94	43.12	460.60	155.36	52.18	22.81	230.35
Mar.-16	348.01	83.87	46.35	477.03	140.68	49.46	22.99	213.13
2016-17 (P)								
April-16	334.30	80.55	46.49	461.35	127.63	48.99	24.26	200.88
May-16	360.75	85.95	53.50	500.20	132.43	54.79	26.25	213.47
June-16	352.00	89.10	50.87	491.97	130.99	50.84	21.46	203.30
July-16	343.34	88.21	48.26	479.81	135.93	56.50	23.91	216.34
Aug-16	334.43	91.29	49.75	475.47	155.65	54.65	22.55	232.85
Sept.-16	326.58	88.40	51.75	466.73	153.30	59.84	24.04	237.19
Oct.16	310.67	83.67	49.21	443.55	167.46	63.94	28.84	260.23
Nov.16	326.48	85.28	44.98	456.74	166.74	70.98	32.91	270.63
Dec.16	342.33	84.16	43.75	470.25	165.62	69.09	28.62	263.32
Jan.17	345.69	86.11	44.49	476.29	147.10	61.40	26.95	235.44
Feb.17	330.98	83.40	42.34	456.73	154.12	61.57	26.75	242.44
Mar.17	353.44	87.37	46.61	487.42	147.61	57.99	25.47	231.08
2017-18 (P)								
April-17	335.59	85.42	45.52	466.54	133.82	58.89	25.44	218.15
May-17	338.99	84.57	45.62	469.18	141.68	56.67	24.35	222.70

P - Provisional

Source : Office of the Textile Commissioner

UPCOUNTRY SPOT RATES

(₹\Quintal)

July 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	**10011**	**10264**	**8211**	**9476**	**10573**	**12007**	**9701**	**10432**	**12232**	**10517**	**11023**	**12288**	**11614**	**11642**	**11979**	**12007**	**12176**	**12429**	**12879**	**15747**
3	**10067**	**10320**	**8211**	**9476**	**10573**	**12092**	**9701**	**10432**	**12317**	**10517**	**11023**	**12373**	**11529**	**11557**	**11895**	**11923**	**12176**	**12429**	**12879**	**15747**
4	**10067**	**10320**	**8211**	**9476**	**10573**	**12092**	**9701**	**10432**	**12317**	**10517**	**11023**	**12373**	**11529**	**11557**	**11895**	**11923**	**12176**	**12429**	**12879**	**15747**
5	**10208**	**10461**	**8211**	**9476**	**10573**	**12120**	**9701**	**10432**	**12345**	**10517**	**11023**	**12401**	**11529**	**11557**	**11895**	**11923**	**12176**	**12429**	**12879**	**15747**
6	**10264**	**10517**	**8211**	**9476**	**10573**	**12176**	**9701**	**10432**	**12401**	**10517**	**11023**	**12457**	**11557**	**11585**	**11923**	**11951**	**12176**	**12429**	**12879**	**15747**
7	**10264**	**10517**	**8211**	**9476**	**10573**	**12232**	**9758**	**10489**	**12457**	**10573**	**11079**	**12513**	**11614**	**11642**	**11979**	**12007**	**12232**	**12485**	**12935**	**15747**
8	**10264**	**10517**	**8239**	**9505**	**10601**	**12260**	**9786**	**10517**	**12485**	**10601**	**11107**	**12541**	**11642**	**11670**	**12007**	**12035**	**12260**	**12513**	**12963**	**15747**
10	**10292**	**10545**	**8239**	**9505**	**10601**	**12317**	**9842**	**10573**	**12541**	**10657**	**11164**	**12598**	**11782**	**11810**	**12148**	**12176**	**12401**	**12654**	**13104**	**15747**
11	**10292**	**10545**	**8211**	**9476**	**10573**	**12260**	**9786**	**10517**	**12485**	**10601**	**11107**	**12541**	**11698**	**11670**	**12092**	**12092**	**12345**	**12598**	**13048**	**15747**
12	**10292**	**10545**	**8211**	**9476**	**10573**	**12288**	**9786**	**10517**	**12513**	**10601**	**11107**	**12570**	**11698**	**11670**	**12092**	**12092**	**12345**	**12598**	**13048**	**15747**
13	**10292**	**10545**	**8211**	**9476**	**10573**	**12288**	**9786**	**10517**	**12513**	**10601**	**11107**	**12570**	**11698**	**11670**	**12092**	**12092**	**12345**	**12598**	**13048**	**15747**
14	**10292**	**10545**	**8183**	**9448**	**10545**	**12232**	**9701**	**10461**	**12457**	**10573**	**11079**	**12513**	**11557**	**11529**	**11979**	**11923**	**12232**	**12485**	**12935**	**15747**
15	**10208**	**10461**	**8183**	**9448**	**10545**	**12176**	**9645**	**10404**	**12401**	**10517**	**11023**	**12457**	**11501**	**11417**	**11923**	**11810**	**12176**	**12429**	**12879**	**15747**
17	**10151**	**10404**	**8183**	**9448**	**10545**	**12092**	**9645**	**10376**	**12317**	**10517**	**10995**	**12373**	**11473**	**11389**	**11895**	**11782**	**12176**	**12429**	**12879**	**15747**
18	**10151**	**10404**	**8070**	**9364**	**10461**	**12007**	**9729**	**10404**	**12232**	**10573**	**11023**	**12288**	**11529**	**11445**	**11951**	**11838**	**12232**	**12429**	**12879**	**15607**
19	**10151**	**10404**	**8014**	**9336**	**10432**	**11895**	**9729**	**10404**	**12120**	**10573**	**11023**	**12176**	**11529**	**11445**	**11951**	**11838**	**12232**	**12429**	**12879**	**15466**
20	**10151**	**10404**	**7986**	**9308**	**10404**	**11810**	**9729**	**10404**	**12035**	**10573**	**11023**	**12092**	**11529**	**11417**	**11951**	**11810**	**12232**	**12429**	**12879**	**15382**
21	**10151**	**10404**	**7986**	**9308**	**10404**	**11614**	**9786**	**10404**	**11838**	**10601**	**11023**	**11895**	**11557**	**11417**	**11979**	**11810**	**12260**	**12429**	**12879**	**15325**
22	**10095**	**10348**	**7986**	**9308**	**10404**	**11473**	**9729**	**10348**	**11698**	**10545**	**10967**	**11754**	**11501**	**11360**	**11923**	**11754**	**12232**	**12373**	**12795**	**15325**
24	**10039**	**10292**	**7986**	**9308**	**10404**	**11473**	**9758**	**10348**	**11642**	**10545**	**10967**	**11726**	**11529**	**11389**	**11951**	**11782**	**12232**	**12373**	**12795**	**15325**
25	**10039**	**10292**	**7986**	**9308**	**10404**	**11473**	**9786**	**10348**	**11698**	**10545**	**11023**	**11782**	**11529**	**11389**	**11923**	**11782**	**12204**	**12373**	**12879**	**15325**
26	**10039**	**10292**	**7986**	**9308**	**10404**	**11529**	**9786**	**10348**	**11782**	**10545**	**11023**	**11867**	**11529**	**11445**	**11923**	**11838**	**12204**	**12373**	**12879**	**15325**
27	**10151**	**10404**	**8014**	**9336**	**10432**	**11698**	**9814**	**10348**	**11951**	**10545**	**11023**	**12035**	**11557**	**11473**	**11951**	**11867**	**12204**	**12373**	**12879**	**15325**
28	**10151**	**10404**	**8014**	**9336**	**10432**	**11810**	**9814**	**10348**	**12035**	**10545**	**11023**	**12120**	**11557**	**11529**	**11951**	**11895**	**12148**	**12373**	**12879**	**15325**
29	**10151**	**10404**	**8014**	**9336**	**10432**	**11810**	**9814**	**10348**	**12035**	**10545**	**11023**	**12120**	**11557**	**11529**	**11951**	**11895**	**12148**	**12373**	**12879**	**15325**
31	**10151**	**10404**	**8014**	**9336**	**10432**	**11810**	**9786**	**10320**	**11979**	**10489**	**10967**	**12063**	**11529**	**11501**	**11923**	**11867**	**12120**	**12345**	**12879**	**15325**
H	**10292**	**10545**	**8239**	**9505**	**10601**	**12317**	**9842**	**10573**	**12541**	**10657**	**11164**	**12598**	**11782**	**11810**	**12148**	**12176**	**12401**	**12654**	**13104**	**15747**
L	**10011**	**10264**	**7986**	**9308**	**10404**	**11473**	**9645**	**10320**	**11642**	**10489**	**10967**	**11726**	**11473**	**11360**	**11895**	**11754**	**12120**	**12345**	**12795**	**15325**
A	**10169**	**10422**	**8115**	**9405**	**10502**	**11963**	**9750**	**10419**	**12186**	**10556**	**11038**	**12249**	**11571**	**11527**	**11966**	**11912**	**12225**	**12446**	**12908**	**15571**

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 JULY 2017					
							24th	25th	26th	27th	28th	29th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	10039 (35700)	10039 (35700)	10039 (35700)	10151 (36100)	10151 (36100)	10151 (36100)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	10292 (36600)	10292 (36600)	10292 (36600)	10404 (37000)	10404 (37000)	10404 (37000)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	7986 (28400)	7986 (28400)	7986 (28400)	8014 (28500)	8014 (28500)	8014 (28500)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9308 (33100)	9308 (33100)	9308 (33100)	9336 (33200)	9336 (33200)	9336 (33200)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10404 (37000)	10404 (37000)	10404 (37000)	10432 (37100)	10432 (37100)	10432 (37100)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	11473 (40800)	11473 (40800)	11529 (41000)	11698 (41600)	11810 (42000)	11810 (42000)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	9758 (34700)	9786 (34800)	9786 (34800)	9814 (34900)	9814 (34900)	9814 (34900)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	10348 (36800)	10348 (36800)	10348 (36800)	10348 (36800)	10348 (36800)	10348 (36800)
9	P/H/R	ICS-105	Fine	27mm	3.5.4.9	26	11642 (41400)	11698 (41600)	11782 (41900)	11951 (42500)	12035 (42800)	12035 (42800)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	10545 (37500)	10545 (37500)	10545 (37500)	10545 (37500)	10545 (37500)	10545 (37500)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	10967 (39000)	11023 (39200)	11023 (39200)	11023 (39200)	11023 (39200)	11023 (39200)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	11726 (41700)	11782 (41900)	11867 (42200)	12035 (42800)	12120 (43100)	12120 (43100)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	11529 (41000)	11529 (41000)	11529 (41000)	11557 (41100)	11557 (41100)	11557 (41100)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11389 (40500)	11389 (40500)	11445 (40700)	11473 (40800)	11529 (41000)	11529 (41000)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11951 (42500)	11923 (42400)	11923 (42400)	11951 (42500)	11951 (42500)	11951 (42500)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	11782 (41900)	11782 (41900)	11838 (42100)	11867 (42200)	11895 (42300)	11895 (42300)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	12232 (43500)	12204 (43400)	12204 (43400)	12204 (43400)	12148 (43200)	12148 (43200)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	12373 (44000)	12373 (44000)	12373 (44000)	12373 (44000)	12373 (44000)	12373 (44000)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	12795 (45500)	12879 (45800)	12879 (45800)	12879 (45800)	12879 (45800)	12879 (45800)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15325 (54500)	15325 (54500)	15325 (54500)	15325 (54500)	15325 (54500)	15325 (54500)

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)