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Cotton Exchange Building, 2nd Floor, Cotton Green, Mumbai - 400 033
Phone: 30063400 Fax: 2370 0337 Email: cai@caionline.in
www.caionline.in

Let Not The Whitefly See Red

(Dr. K.R. Kranthi, Director of Central Institute for Cotton Research (CICR), Nagpur has completed his Ph.D in Entomology from IARI, New Delhi. He has more than 20 years of experience in the field of cotton research.)

The first part of the whitefly problem was dealt in my article 'Whitefly -The Black Story' published in the 8th September 2015 issue of the 'Cotton Statistics and News'. In this article, I would like to focus more on the ground realities of the 'CLCuD and whitefly malaise' in north India with proposed solutions that can mitigate the problem in the 2016 cropping season.

As the 2015 cotton season draws to a close, a small insect called the 'whitefly' declared rebellion and won the battle. Though miniscule in size, it brought cotton farming in Punjab on to its knees. The small insect became 'Bahubali' in 2015 and threatens to return as 'Bahubali-II' in 2016.

On 8th October, the Times of India Headlines screamed 'Whitefly destroys 2/3rd of Punjab's cotton crop, 15 farmers commit suicide' The article stated that the cotton crop losses due to whitefly in Punjab were Rs 4200 crores despite

the use of pesticides worth Rs 150 crores. The article also mentioned that the state Government announced a compensation of Rs 640 crores, which was dismissed by angry farmers as peanuts.

EXPERT'S Column



Dr. K.R. Kranthi

*Leave the whitefly white, let it not turn red
Oh what have we done in our greed?
What kind of farming at beak neck speed
On plants and soils we spray poisons to harm
Manmade disasters forced on the farm
Are chemical pesticides advanced technologies?
When they kill microbes, animals, birds and bees
To protect our crops, are these poisons a must?
See how the tiny little insects turn them to dust
The more we spray -in droves do they return
God's own little creatures make us to learn
To care for the earth's life forms in symphony
To respect nature and to live in harmony
For our daily bread, we till and toil
Pray, not at the cost of nature's turmoil
Leave the little whitefly white, let it not turn red
Lest in anger it may destroy our bread instead
Remember, insects own the earth with god's own spirit
We only live on rent, come what may, never to inherit
So that we live in peace to make our daily bread
Leave the little whitefly white, never let it see red*

-Kranthi

While insecticides rained on the crop, the whitefly roared its way silently to victory. The whitefly refused to die even with cocktails of insecticides. A farmer in Bhatinda exclaimed in despair 'Kya karen.. shayad zehar me bhi milavat hai' "what to do.. even the poison may be adulterated"). Did spurious pesticides cause the problem? But spurious pesticides have been in existence over the past several decades in Punjab.

What then could have triggered the whitefly? Clearly four factors fanned the fire. 1. Late sowing, after 15th May. 2. Cultivation of hybrids susceptible to whitefly and cotton leaf curl disease (CLCuD). 3. Excessive nitrogen application, especially during vegetative stage of the crop. 4. Indiscriminate use of chemical insecticides or mixtures that disrupt ecology and cause whitefly

resurgence. Another factor 'hot-humid weather' favours the whitefly more when all the above four factors operate together in a combined manner.

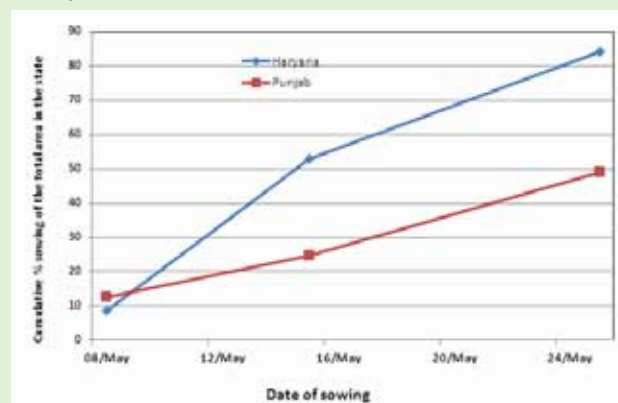
Why cotton in Haryana suffered less than Punjab: It is also important to analyze the reasons as to why the whiteflies ravaged Punjab and not Haryana, which has similar cropping systems, climate and ecology. The main differences were that Haryana farmers cultivated hybrids that were tolerant to the leaf curl virus, while Punjab farmers didn't. Further, more than 75% of Punjab's cotton was sown later than 15th May. In comparison, only about 47% of Haryana's cotton area was sown after 15th May (Figure 1).

Whereas more than 85% sowing in Haryana was completed by the third week of May, Punjab could not exceed 49.0% sowing even by the third week of May. Late sowing in the four main cotton growing districts of Punjab was the main factor that triggered the whitefly and CLCuD crisis in the state. May 15th is a scientifically decided cut off date for cotton sowing in north India. In Bhatinda 64% of 149,000 hectares of the crop were sown after 15th May. The entire 99,000 hectares of cotton in Fazilka were sown after 15th May. Similarly, 59% of the 90,000 hectares in Mansa and 94.4% area of 72,000 hectares in Muktsar were sown late after 15th May 2015. Farmers informed that late harvest of wheat and late release of canal water were responsible for late sown cotton. But late sown cotton leads to late sowing of wheat and the problem can continue in a cyclic manner year after year.

Thus the two factors of susceptible hybrids and late sowing firmly laid the foundation for an impending whitefly attack and intense CLCuD infestation. I would like to emphasize here that some factors associated with late sowing actually contribute to enhanced insect pest attacks. Early or timely sown crop picks up good growth and has healthy leaves that are not vulnerable to either the whitefly or the leaf curl virus. Late sowing leads to poor plant growth prompting farmers to use more urea to enhance seedling growth. The crop picks up growth rapidly but the fresh succulent tender foliage coincides with the whitefly peaks and supports proliferation. Whiteflies occur under hot and humid conditions that are associated with delayed monsoon and intermittent drought.

To make matters worse -is the common belief that 'insecticides if sprayed properly on the under-surface of the leaves can actually solve the problem'. The fact is that whitefly problem only gets worse with indiscriminate insecticide use. This is what happened precisely in Punjab. Farmers who sprayed more and more lost the battle. The best way to keep the whiteflies at bay is to select varieties that tolerate CLCuD, sow in time, use

Figure 1. Cotton sowing in Haryana and Punjab 2015



urea judiciously and then by chance if the insects turn up in good numbers due to bad weather, rely on integrated pest management approaches of botanicals, biopesticides, yellow sticky traps, vacuum traps, reflective sheets etc., all through the initial phase. This approach works well. Just in case for some reason, unlikely though, if the whiteflies increase, turn towards insecticides such as buprofezin or pyriproxifen or diafenthiuron or soil application of the highly systemic neonicotinoids near the root zone.

Impact of voice mail weekly advisories on mobile phone: CICR implemented a voice-mail mobile weekly advisory programme called 'E-Kapas' during 2014 and 2015. A total number of 72,114 farmers were registered from the three north Indian states. Results on the ground showed that E-Kapas played a key role in Haryana being able to combat the whitefly menace effectively, whereas Punjab could not harness the benefits. The number of 'E-Kapas' registered farmers was highest at 46,805 in Haryana, 19,823 registered farmers of Rajasthan had only 5,486 in Punjab. A total of 44 weekly messages were sent to 66,628 farmers of Haryana and Rajasthan totalling at 898,559 voice calls. The number of successful calls was only 121,000 for Punjab. The initial messages on the need for timely sowing sent to Haryana farmers resulted in timely sowing in Haryana in 53.10% of the area before 15th May and 84.0% of the area by 25th May. On the contrary, the less number of registered farmers in Punjab resulted in cotton sown at 24.0% by 15th May and only 49.10% by 25th May 2015.

Preliminary surveys showed that the use of urea and indiscriminate misuse of chemicals was less in Haryana and Rajasthan compared to Punjab. Thus whitefly and the virus were more effectively managed in Haryana and Rajasthan as compared to Punjab.

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Chrysoperla eggs

Photo by Dr. K.R. Kranthi



CLCuD

Photo by Dr. Shailesh Gawande

Weekly advisories on the ICAR-CICR website: weekly advisories were published on ICAR-CICR web-site in 9 languages. The advisories were released every Wednesday on the institute web page at http://www.cicr.org.in/weekly_advisory.htm and also sent by mail regularly to KVKs, SAUs & State Departments.

Research on whitefly and CLCuD at ICAR-CICR: At several points in time over the past three years, scientific evidence was accumulating to point out that the CLCuD could become a major issue in north India. Whitefly was on the radar, but wasn't expected to declare war at this scale this soon. We initiated several experiments that could lead to management strategies. Under the aegis of the AICCIP (All India coordinated cotton Improvement project) ICAR-CICR coordinated multilocation field trials with 143 Bt-hybrids to evaluate their susceptibility to CLCuD and whiteflies at 5 locations (Hisar, Sirsa, Sriganganagar, Bhatinda and Faridkot) in the three north India states of Haryana, Rajasthan and Punjab. A unified list of recommended hybrids for north India was prepared by the AICCIP and sent to the ICAR Delhi head quarters for further needful. Additionally, the three State Agricultural Universities, PAU Punjab, CCS-HAU Haryana and RAU Rajasthan processed the data separately

to finalize a list of recommended Bt-hybrids for their respective states. At ICAR-CICR we made an assessment of the geographical and temporal diversity of whitefly races across India; Seasonal dynamics of whiteflies at 16 locations across India; ecology of whitefly eco-systems; insecticide induced whitefly resurgence; insecticide resistance in whiteflies; epidemiological and loss estimation studies on whiteflies & CLCuD; variability in the CLCuV races in north India; RNAi constructs for CLCuD management and evaluation of biopesticides, unconventional biological sprays, cultural methods and insecticides for whitefly and CLCuD management. A new grafting method was developed to screen for resistance to CLCuD. A New technology of inexpensive ICAR-CICR sticky traps was designed.

The studies clearly diagnosed the causes for outbreaks of whitefly and CLCuD. The diagnosis was used to formulate the following Management strategies.

1. Promote Desi cotton varieties: Desi cotton species *Gossypium arboreum* is resistant to the whiteflies and immune to the CLCuV. Desi cotton may be preferred in regions which are highly prone to CLCuD disease.
2. Do not permit susceptible Bt-hybrids: Bt-hybrids that are susceptible to the CLCuD



Whitefly

Photo by Dr. Prabhu Linga-1



Whitefly

Photo by VS Nagare

WITH BEST COMPLIMENTS

Inspired of our founder



M/S CHANDMAL HUKUMCHAND JAIN
Cotton Merchant & Financer
Ramkrishna Ganj Khandwa (M.P) 450001
Email: Rajujain.cotton@gmail.com

Late Shri Chandmal ji Jain



RAJU BHAJI

Shri Rajendra Kumar Chandmal Jain (Raju Bhai)
Associate Director
Cotton Association of India
Raju Bhai Mob-No. 94253-26291
Office-No- 0733-2225205



SHUBHAM JAIN

M/S Shubham Kumar Rajendra Kumar Jain
Cotton Merchant; Ramkrishna Ganj
Khandwa (M.P)-450001
Shubham Jain Mob.No.94259-28505
Office-No- 0733-2225205



and whiteflies must not be permitted to be cultivated. Such list for 2016 is prepared by the respective state agricultural universities in north India.

3. Cultivate short duration Bt-hybrids for north India: Choose early maturing short duration varieties. These escape whiteflies especially when sown in time. Additionally they facilitate timely sowing of wheat and cotton in the cotton-wheat rotation system.
4. Timely sowing (before 15th May): Timely sown crop tolerates whitefly and CLCuV
5. Avoid excessive urea during vegetative phase of the crop. Excessive urea makes the crop vulnerable to sap-sucking insects especially whiteflies and leaf hoppers. Balanced nutrients of N with adequate P and K assist plants to combat whiteflies and the CLCuD.
6. Weeding: Keep fields and the vicinity free of weeds especially during July.
7. Barrier crop: Grow two rows of sorghum or pearl-millet or maize as border around cotton fields.
8. Conserve naturally occurring natural enemy fauna: A 2014 report by Santosh Kedar, CCS-HAU Haryana showed that at least three whitefly predators, *Serangium parcesetosum* (Sicard), *Cheilomenes sexmaculata* (Fabricius) and *Brumoides suturalis* (Fabricius) were most commonly in cotton ecosystems in north India. Two other predators *Coccinella septempunctata* L., *Chrysoperla zastrowi sillemi* (Esbens-Petersen) (see *Chrysoperla* eggs: photograph by K. R. Kranthi) were found to occur albeit at lesser population densities. The parasitoid *Encarsia lutea* (Masi) was also reported. Reports also indicate that *Eretmocerus* spp. Is an important parasitoid of whiteflies in north India. Naturally occurring biological control in the field is reported to have been effective to the extent of 65.0%. Therefore care must be exercised to ensure that the natural ecosystems are not disrupted with indiscriminate choice and indiscriminate use of insecticides.
9. Yellow sticky traps and vacuum suction traps: The use of yellow sticky traps and vacuum suction traps must be encouraged during the early phase of infestation.
10. Botanicals: Sprays based on Neem oil, castor oil, cotton seed oil, fish oil rosin soap etc., must be preferred in the initial stages of whitefly infestation.
11. Insecticides: For effective management of whitefly, insect growth regulating (IGR) chemicals should be preferred, because they are less toxic to natural enemies of whiteflies.
12. Avoid indiscriminate use of synthetic

pyrethroids and all kinds of insecticide mixtures during the initial phase of whitefly infestation. These insecticides are known to aggravate resurgence of whiteflies when used indiscriminately.

CONCLUSION

The mute point is, were any lessons learnt from the 2015 episode? If not, then, it is quite likely that there would be a repeat performance of the whitefly in north. I am listing out some suggestions based on the diagnosis of the malady. 1. The state agricultural universities (SAU) must prepare a list of Bt-hybrids and varieties that are susceptible to CLCuD and whiteflies based on the coordinated trial data of the AICCIP. This list must be considered by the State Government to ban such Bt-hybrids and varieties from being cultivated in the state. 2. The State Government must ensure the release of canal water in time so that sowing is completed before 15th May. 3. IPM recommendations must be finalized by the State agricultural universities based on insecticide resistance data, resurgence data and eco-toxicological data. 4. The SAUs especially PAU must enrol large number of farmers in the E-Kapas programme and ensure that voice mail messages on the above three aspects are efficiently delivered.

Recent insecticide bioassays conducted by ICAR-CICR scientists showed that whiteflies developed resistance to a wide range of insecticides. Also, some insecticides were found to cause resurgence of whiteflies, thrips and mealybugs. These data are important and must be considered seriously while insecticide recommendations are finalized. Any small mistake in insecticide choice can lead to serious ecological problems and resurgence of whiteflies. Similarly it would be very important to ensure that the hybrids susceptible to CLCuD, however high yielding these may be, must be banned so that the dreaded disease inoculum load is minimized in the ecosystems. Some business houses and the corporate sector may oppose the choice of hybrids and insecticides to foster their business interests, many a times disregarding the pain it may cause to the farming community. But it is the responsibility of good Governments to ensure that science and scientific recommendations must prevail in the interest of the farmer. I earnestly hope that it happens this year in 2016 and the whitefly will not get a chance to go berserk once again.

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

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SAGA OF THE COTTON EXCHANGE

By Madhoo Pavaskar

Chapter 7

The Confrontation

(Continued from Issue No.37)

The Vice-President of the Association, Mr. Chimanlal B. Parikh also followed the footsteps of Sir Purshotamdas and tendered his resignation on April 24, 1956. The Board of Directors at its meeting held on April 27, 1956 requested both of them to withdraw their resignations. But as Frank Moraes aptly puts it, Sir Purshotamdas was "not a man to make or change his mind lightly." At last, on May 14, 1956, the Board accepted with great reluctance the resignations of both Sir Purshotamdas and Mr. Chimanlal B. Parikh, Mr. Madanmohan Ruia was elected as the new President of the East India Cotton Association.

Thus ended the long association of Sir P.T. with King Cotton. In fact, the exit of Sir Purshotamdas from the East India Cotton Association was nearly the exit of King Cotton himself. While recording its keen appreciation of the meritorious service to the cotton trade over a period of 50 years and as President of the Association for more than 32 years, the Board observed: "The unique position occupied by him during all these years is due to his foresightedness and exemplary devotion of service in the cause of the cotton trade and the high esteem in which the entire trade holds him is a homage to his towering personality. The Board deeply regrets that the benefit of his ripe experience and guidance will not be available to the trade in steering its ship in safe channels as he has done till now directly."

The Showdown

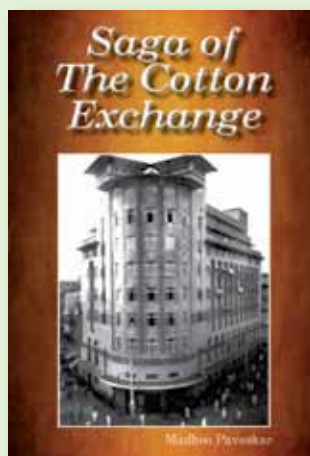
Meanwhile, annoyed by Sir Purshotamdas's direct attack on the Forward Markets Commission in his letter of resignation, the Commission issued a lengthy rejoinder by way of a press statement. It argued: "The Association could not have been unaware of the implications of the Forward Contracts (Regulation) Act when it sought recognition under it and recognition has been granted to it on the express condition that it shall comply with such directions as may from time to time be given by the Commission. The Commission has, however, always believed that the regulations of forward market is a business in which the recognised

association and the Commission have to work hand in hand. The initiative rests with either and the final decision has to be taken after full discussion of the issues involved."

The commission went on to observe that it was curious that trading interests should claim to be the "sole custodians" of the interests of the growers. Surprisingly, the Commission also insisted that the question of prices was not one which could be determined merely by the forces of supply and demand. "It has to be decided in the context of various factors such as the national income of the country and the requirements of planned development. The closure of the cotton market in December 1955 was necessary in order to prevent a squeeze on the February 1956 contract. The interests of the growers, however, were not prejudiced as they were able to sell their stocks in the ready market."

Explaining its statutory responsibilities, the Commission emphasised that it had to keep the forward markets under observation and that it would discharge its duties without fear or favour. "While it is anxious not to hurt the susceptibilities of the trade or cause it any inconveniences, it cannot allow itself to be overawed into abdicating its functions", the Commission concluded.

As Frank Moraes describes it: "So peremptory and frontal a rejoinder could not but provoke a counter reply, the more so since it contained various allegations against the E.I.C.A. in general and Sir Purshotamdas in particular. On April 25, Sir Purshotamdas returned to the fray in a blunt statement which minced no words." Sir Purshotamdas wrote, "If freedom to express one's views and to persist in holding to one's convictions differing from official views is to be considered as overawing the Commission, I stand guilty of that charge." He added: "It is strange that the Commission should complain of being overawed when they reportedly did not hesitate to draw attention to their powers to (a) withdraw the recognition of the Association, and (b) to supersede



the Board of Directors. These drastic powers are meant to be used as a last resort and to counteract gross mismanagement and misconduct. If there can be any overawing by anybody, it can only be on the part of the party having wide powers."

While denying the accusation that the trading interests claim that they were the 'sole custodian' of the growers, Sir Purshotamdas retorted: "It is strange that the Commission should in one breath say that they permitted Futures Trading for the protection of the cotton grower without explaining whether it was in the interest of the grower that they closed the Futures Market, and again whether it was with a view to benefiting the grower that the Government's official ceiling price of cotton was sought to be lowered from Rs. 845 to Rs. 700 during the middle of the marketing season." He added : "I tried in vain to seek an explanation of the Government policy, but I was told that it was an order from the Minister himself and was not subject to discussion. The attempt at regimentation of the Futures Market led to the unexpected result of the spot market asserting itself under the play of economic forces."

In conclusion, Sir Purshotamdas prophesised "that the radical alterations in the bye-laws and

procedures of the East India Cotton Association suggested or sought to be imposed in the series of letters dated 10th April 1956 will so change the complexion of the cotton trade that before long the edifice so laboriously built up during the last 35 years may come down. The Forward Market will be reduced to registering the wishes of the Forward Markets Commission and may be divorced from realities."

Disappointingly though, as we shall soon see subsequently, the events of the last 25 years have justified much of what Sir Purshotamdas had prophesised. With repeated government interventions, not only did the futures market at Kalbadevi breathe its last only a decade after Sir Purshotamdas left the East India Cotton Association, but even the spot market at Sewri is now limping to eke out a rather miserable existence. True, the edifice so laboriously built up by Sir Purshotamdas and other cotton stalwarts before Independence has yet not come down; but, it has lost its past glory. The only solace is that King Cotton is still surviving and can therefore hope to yet regain his old splendour.



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GROWTH IN CAPACITY OF COTTON / MAN- MADE FIBRE TEXTILE MILLS (NON SSI)

YEAR	NO. OF MILLS			INSTALLED CAPACITY		
	SPINNING	COMPOSITE	TOTAL	SPINDLES(Mn.)	ROTOR (000)	LOOMS (000)
31-03-2005	1566	223	1789	34.24	385	86
31-03-2006	1570	210	1780	34.14	395	73
31-03-2007	1608	200	1808	35.61	448	69
31-03-2008	1597	176	1773	35.01	461	56
31-03-2009	1653	177	1830	37.03	485	57
31-03-2010	1673	180	1853	37.68	494	57
31-03-2011	1757	183	1940	42.69	518	52
31.03.2012	1761	196	1957	43.31	523	52
31.03.2013	1771	198	1969	44.17	546	52
31.03.2014	1757	197	1954	44.47	553	51
31.03.2015	1776	200	1976	45.08	565	52
2013-14 (P)						
April	1765	197	1962	44.15	543	51
May	1766	197	1963	44.17	543	51
June	1768	197	1965	44.22	545	51
July	1774	197	1971	44.59	555	51
August	1759	197	1956	44.46	551	51
September	1762	197	1959	44.49	553	51
October	1759	199	1958	44.59	580	51
November	1744	197	1941	44.32	576	51
December	1748	197	1945	44.31	551	51
January	1757	197	1954	44.47	553	51
February	1757	197	1954	44.47	553	51
March	1757	197	1954	44.47	553	51
2014-15 (P)						
April	1757	197	1954	44.47	553	51
May	1757	197	1954	44.47	553	51
June	1757	197	1954	44.48	553	51
July	1761	198	1959	44.55	553	52
August	1765	198	1963	44.61	557	52
September	1770	198	1968	44.72	557	52
October	1772	198	1970	44.73	558	52
November	1773	198	1971	44.75	561	52
December	1772	200	1972	44.79	562	52
January	1773	200	1973	44.81	562	52
February	1774	200	1974	45.04	564	52
March	1776	200	1976	45.08	565	52
2015-16 (P)						
April	1776	200	1976	45.09	565	52
May	1776	200	1976	45.09	565	52
June	1776	200	1976	45.10	565	52
July	1776	200	1976	45.24	565	52
August	1776	200	1976	45.08	565	52
September	1776	201	1977	45.54	5.11	52
October	1778	201	1979	45.57	5.15	52
November	1778	201	1979	44.65	5.73	52
December	1778	201	1979	44.69	5.75	52

(P) - PROVISIONAL

Source : Office of the Textile Commissioner



**COTTON
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COTTON INDIA 2015-16

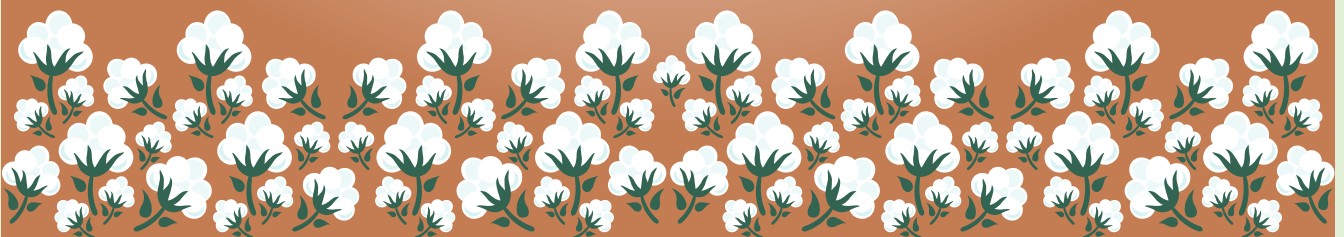
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Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	1st	2nd	3rd	4th	5th	6th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	8605 (30600)	8492 (30200)	8380 (29800)	8380 (29800)	8323 (29600)	8295 (29500)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	8745 (31100)	8633 (30700)	8520 (30300)	8520 (30300)	8464 (30100)	8436 (30000)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	6355 (22600)	6243 (22200)	6186 (22000)	6186 (22000)	6158 (21900)	6130 (21800)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	7227 (25700)	7199 (25600)	7171 (25500)	7171 (25500)	7142 (25400)	7114 (25300)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	8492 (30200)	8464 (30100)	8464 (30100)	8464 (30100)	8436 (30000)	8408 (29900)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	9139 (32500)	9139 (32500)	9167 (32600)	9167 (32600)	9111 (32400)	9083 (32300)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	8577 (30500)	8577 (30500)	8577 (30500)	8577 (30500)	8520 (30300)	8492 (30200)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	8773 (31200)	8773 (31200)	8773 (31200)	8773 (31200)	8717 (31000)	8689 (30900)
9	P/H/R	ICS-105	Fine	27mm	3.5-4.9	26	9420 (33500)	9420 (33500)	9448 (33600)	9448 (33600)	9392 (33400)	9364 (33300)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	8802 (31300)	8802 (31300)	8802 (31300)	8802 (31300)	8745 (31100)	8717 (31000)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	9026 (32100)	9026 (32100)	9026 (32100)	9026 (32100)	8970 (31900)	8942 (31800)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	9533 (33900)	9533 (33900)	9561 (34000)	9561 (34000)	9505 (33800)	9476 (33700)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	9280 (33000)	9280 (33000)	9280 (33000)	9280 (33000)	9223 (32800)	9195 (32700)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	9364 (33300)	9392 (33400)	9392 (33400)	9392 (33400)	9336 (33200)	9308 (33100)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	9420 (33500)	9420 (33500)	9420 (33500)	9420 (33500)	9364 (33300)	9336 (33200)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	9476 (33700)	9505 (33800)	9505 (33800)	9505 (33800)	9448 (33600)	9420 (33500)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	9561 (34000)	9561 (34000)	9561 (34000)	9561 (34000)	9505 (33800)	9476 (33700)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	9814 (34900)	9814 (34900)	9814 (34900)	9814 (34900)	9758 (34700)	9729 (34600)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	10236 (36400)	10320 (36700)	10320 (36700)	10320 (36700)	10320 (36700)	10292 (36600)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	13835 (49200)	13835 (49200)	13835 (49200)	13835 (49200)	13835 (49200)	13835 (49200)

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