

Weekly Publication of



**Cotton
Association
of India**

COTTON STATISTICS & NEWS

Edited & Published by Amar Singh

2017-18 • No. 46 • 13th February, 2018 Published every Tuesday

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Today's Need – Cotton with Least Contamination

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

of them say "According to a recent survey by ITMF, Indian cotton is amongst the most contaminated cotton in the world, so producing yarns of world class quality from Indian cottons is a greater challenge".

What is ITMF?

In an effort to shed more light on spinners' perception of the problem of cotton contamination and foreign matter, the International Textile Manufacturers Federation (ITMF) Zürich, Switzerland, has been conducting regular surveys since 1982 with spinning mills affiliated to its

world-wide membership. By accumulating evidence of contamination and foreign matter at regular intervals, ITMF helps cotton producers, merchants and spinners to better identify problem areas and thus contribute towards their eradication.

The 2016 edition of ITMF's Cotton Contamination Survey has been published to encourage multi-year comparison of results. This has included the survey results for the five previous editions, i.e., 2005, 2007, 2009, 2011, 2013 and also 2016. The contents are organised by year and by topic, to track contamination

This article is based on information I have gathered during my lifelong experience in R&D activities in cotton and also from what could be collected from various public and private publications, for the benefit of our readers.

Contamination in Indian Cottons

I could find references about Indian cotton contamination levels in many publications. Most

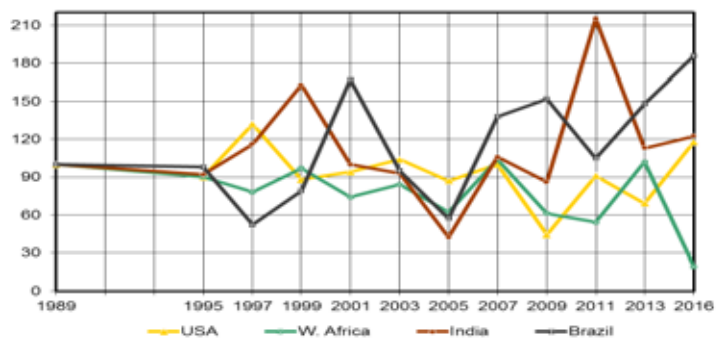
developments in a given cotton description over time.

Relevant information from Press Release Summary of Survey Results 2016 of ITMF Report is presented below for the benefit of our readers to understand better the problems associated with Indian cottons. In the three diagrams below, details have been provided along with remarks of ITMF, regarding stickiness, contamination level and seed coat fragments in cotton received from different countries.

Stickiness

Descriptions that were affected most by stickiness were those from Brazil, India (DCH, MCU-5), the USA (Arizona, California, Pima and South Eastern), Spain and Pakistan (Pakistan Others). On the other end of the range, cottons from China (Hebei, Henan, Hubei, Shandong), Cameroon, Argentina and Benin were not or hardly affected by stickiness.

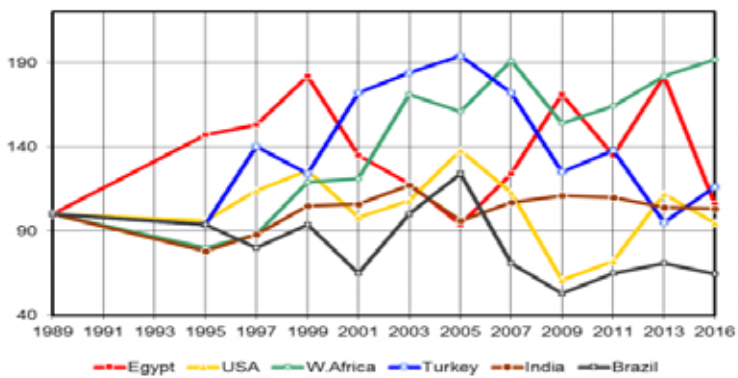
Diagram 1 Stickiness by Country 1989-2016 (1989-100)



Contamination

The most contaminated cotton descriptions considered for the survey originated in India (DCH, Shankar-4/6, MCU-5, J-34, India-Others),

Diagram 2 Contamination by Country 1989-2016 (1989-100)

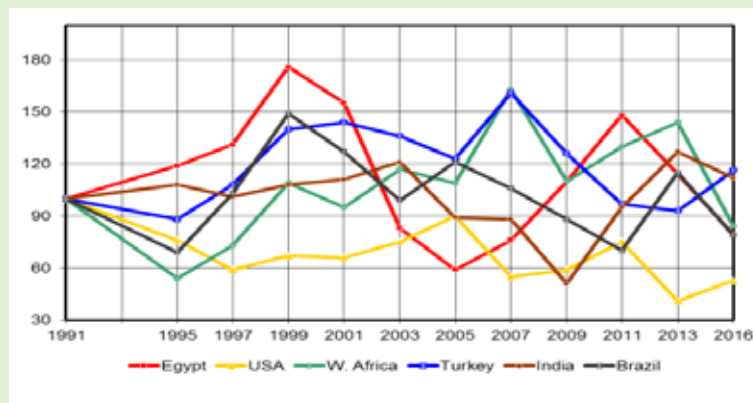


Pakistan (Pakistan Others), Uzbekistan (Medium Staples) and Ivory Coast. In contrast, very clean raw cottons were produced in Australia, Brazil, the USA, (Arizona, California, USA-Others, Memphis Territory, South Eastern and Pima) and China (Shandong, Xinjiang).

Seed-coat Fragments

The origins affected most by seed-coat fragments are those from India (DCH, J-34, Shankar-4/6, MCU5, India-Others), Pakistan-Others, Mali and Turkey (Izmir). Countries for which the existence of seedcoat fragments was negligible (prevalence of less than 30%) included those from the USA (Arizona, California, Pima, USA-Others), Australia, China (Hebei, Henan, Hubei, Shandong) and Burkina Faso.

Diagram 3 Seed-coat Fragments by Country (1989-100)



Cotton Stickiness

Cotton stickiness contaminants are mainly sugar deposits produced either by the cotton plant itself (physiological sugars) or by feeding insects (entomological sugars), with the later being the most common source of stickiness. The main honeydew-producing insects that infest cotton plants are cotton whitefly, (*Bemisia Tabaci*) and the cotton Aphid (*Aphis Gossypii*).

Stickiness is a complex, three-component interaction that involves the source sugars, harvested seed cotton and processing equipment. Stickiness caused by honeydew contamination has been reported to cause residue build-up on textile machinery, which may cause subsequent irregularities or yarn breakage. The complexity of this interaction indicates the need for an integrated solution that includes prevention, in-field mitigation, and processing adjustments.

Effects of stickiness on:

Spinning - Stickiness will cause lint to stick to card clothing and draft rollers in subsequent processes.

Ginning - Sticky cotton tends to clog/choke the ginning machines. Stickiness reduces roller gin production by 10 to 15 pounds of lint per hour. It also causes additional financial losses due to frequent replacement of blades/saws.

Solutions to eradicate stickiness

Stickiness can be eradicated at all the three stages - during cultivation, in ginning and at the textile mill.

During cultivation:

The most efficient way now to prevent stickiness is by managing sugar sources in the field. These honeydew-producing insects may be managed by avoiding conditions leading to outbreaks, carefully sampling pest populations, and using effective insecticides when populations reach predetermined thresholds. The risk of having excessive plant sugars can be minimised by harvesting mature seed cotton.

In ginning:

If stickiness is a problem while ginning, the ginning rate of honeydew contaminated cotton can be increased by increasing the heat of the drying towers to reduce humidity.

At the textile mill:

At the textile mill, stickiness may be managed by blending bales and by reducing humidity during carding. A lubricant in fog form may be introduced at the end of the hopper conveyor, and card crush rolls may be sprayed sparingly with a lubricant to minimise sticking.

Why We Need Contamination Free Cotton?

The biggest problem which automation presents for cotton relates to cleanliness. Automated equipment can detect and eliminate contamination or foreign matter only to a limited degree. In the case of plastic material - one of the most vicious forms of contamination - the damage becomes visible only by the time the fabric leaves the final finishing process, at which stage it is too late for any remedial measures. Contamination not only affects the quality and appearance of the final textile product, but it may actually damage the processing machinery itself.

Cotton harvested with machine contains a much higher percentage of undesirable contamination of plant parts, such as leaves, branches, flowers, buds, etc. Cleaning of such cotton requires additional machinery such as pre-cleaners and energy, and thus will cost extra.

What is Contamination?

Any foreign material present in pure cotton is contamination. There are 16 types of contaminants identified in Indian cottons. Indian cottons being processed are either moderately or seriously contaminated by 'organic matter', i.e. leaves, feathers, paper, leather, etc. or by other serious contaminants such as 'fabrics' made of cotton, 'strings' made of woven plastic and plastic film and 'inorganic matter' in the form of sand or dust. Also of concern are in descending order of incidence, woven plastic and plastic film fabrics, cotton strings, jute/hessian fabrics and grease or oil.

Contamination represents a significant threat and element of cost to spinning mills which forces them to implement a range of costly methods to remove the contamination. On analysis, it has been found that amongst all the areas of textile sectors, "Fibre cultivation to yarn spinning stage" remains a major source of contamination.

Producing cotton with least contamination is the biggest task for the country. According to Cotton Corporation of India Limited (CCI), due to this problem of high contamination, Indian cotton is sold on discounted rates in comparison to equivalent foreign cotton. The problem is of special significance because though Indian cottons are handpicked, but still contain a high percentage of undesirable components of contamination.

The quality of Indian cotton also gets deteriorated because of varietal admixture. In India, there are thousands of varieties, hybrids and Bt. hybrids duly approved by competent authorities. Indian farmers have the privilege to cultivate any variety/hybrid and right to get all varieties/hybrids to mix them before bringing the same to markets. There is no rule/control of governments to stop it. This adds up to the problems faced by Indian cottons.

(To be continued)

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

CAI Estimates Cotton Crop for the 2017-18 Season at 367 Lakh Bales – Reduces Crop by 8 Lakh Bales from its Earlier Estimate of 375 Lakh Bales

Cotton Association of India (CAI) has released its January 2018 estimate of the cotton crop for the year 2017-18 beginning from 1st October 2017. In its latest estimate, the CAI has estimated cotton crop for the ongoing 2017-18 crop year at 367 lakh bales of 170 kgs. each. The CAI has lowered its estimate of the cotton crop for the ongoing season by 8 lakh bales. The reason for this reduction is severe infestation of the cotton crop by pink bollworm. In accordance with the advice of the scientists, the farmers in several areas particularly in Maharashtra and Telangana States have uprooted their cotton crop without waiting for further pickings.

The projected Balance Sheet drawn by the CAI estimated total cotton supply for the season at 417 lakh bales of 170 kgs. each including the opening stock of 30 lakh bales at the beginning of the season and the imports which the CAI estimated at 20 lakh bales for 2017-18 crop year. The domestic consumption is estimated to be 320 lakh bales while CAI estimates exports for the season to be 55 lakh bales. The carry over stock at the end of this season on 30th September 2018 is estimated to be 42 lakh bales.

As per the data received from each cotton growing local state association, the CAI estimates cotton arrivals upto 31st January 2018 at 211 lakh bales as compared to 157.75 lakh bales arrived during the same period last season.

A statement containing the state-wise estimate of the cotton crop and the balance sheet for the cotton season 2017-18 with the corresponding data for the 2016-17 crop year is given below:-

CAI's Estimates of Cotton Crop as on 31st January 2018 for the Seasons 2017-18 and 2016-17

(in lakh bales)

State	Production *		Arrivals As on 31st January 2018 (2017-18)
	2017-18	2016-17	
Punjab	11.00	8.75	6.00
Haryana	24.00	20.50	16.00
Upper Rajasthan	10.00	7.25	7.00
Lower Rajasthan	11.00	9.25	8.20
Total North Zone	56.00	45.75	37.20

Gujarat	105.00	89.00	56.00
Maharashtra	81.00	88.00	49.00
Madhya Pradesh	21.00	20.50	15.50
Total Central Zone	207.00	197.50	120.50
Telangana	53.00	48.00	32.50
Andhra Pradesh	21.00	18.50	8.00
Karnataka	20.00	17.00	9.05
Tamil Nadu	5.00	5.50	2.00
Total South Zone	99.00	89.00	51.55
Orissa	3.00	3.00	0.75
Others	2.00	2.00	1.00
Total	367.00	337.25	211.00

* Including loose

The Balance Sheet drawn by the Association for 2017-18 and 2016-17 is reproduced below:-

(in lakh bales)

Details	2017-18	2016-17
Opening Stock	30.00	36.50
Production	367.00	337.25
Imports	20.00	27.00
Total Supply	417.00	400.75
Mill Consumption	275.00	265.00
Consumption by SSI Units	30.00	27.00
Non-Mill Use	15.00	15.75
Total Domestic Demand	320.00	307.75
Available Surplus	97.00	93.00
Exports	55.00	63.00
Closing Stock	42.00	30.00

Global Production Gains Largely from Increased Planted Area

Consumption has been greater than production for the past two seasons. While both consumption and production are experiencing growth since the 2015/16 season, global production is increasing at a faster rate. Current estimates for the season have production at 25.5 million tons and consumption at 25.4 million tons. Production increases are coming off the gains in planted area rather than yields this season. Global average yield for 2017/18 is currently being estimated at 773 kilograms per hectare, a 1% decrease from the previous season with a 12% growth in planted area. India and Pakistan, with estimated area increases of 16% and 24% respectively, encountered production losses from pink bollworm this season. While most major cotton producing countries have estimated increased planted area for 2017/18 over the previous season, Australia has decreased planted area yet still increased cotton production with yield growth of 16%.

Northern hemisphere production which accounts for 88% of world production is estimated at 22.5 million tons for the 2017/18 season, an increase of 12% from the 2016/17 season. Following two seasons of negative growth, India's production estimates for the 2017/18 season should be around 6.3 million tons representing a 9.8% growth based on planted area increase. Production in China is estimated at 5.25 million tons for the season representing a 7.1% growth over the previous season. With increases in both planted area and yields, production in the United States is estimated for the 2017/18 season to come to 4.6 million tons, a 23.6% increase from 2016/17. Despite low yields, planted area increases in Pakistan led to a 9.1% growth in production for the 2017/18 season to 1.8 million tons.

Production increases are expected in major exporting countries in the southern hemisphere. Brazil's 2017/18 crop produced 1.6 million tons with a 2.7% increase over the previous season. Australia production continues to increase for the

third consecutive season reaching 968,000 tons in 2017/18, up 4%. Cotton production in West Africa is expected to rise 4.1% during 2017/18 reaching 1.1 million tons. Argentina has reversed three seasons of negative growth in production with an estimated 200,000 tons for the 2017/18 season at a 11.6% increase over the previous season.



ICAC

Global trade is projected at 8.2 million tons this season. Leading importers include Bangladesh and China with an estimated 19% and 16% of global share respectively. East Asia's volume of imports continues to increase and could represent approximately 36% of global share or 2.95 million tons. The USA will continue to lead all exporters in 2017/18 with 39% of the global share and 3.2 million tons.

West Africa exports are expected to increase slightly by 0.5% to 980,000 tons and could represent approximately 12% of the global share of exports. Australian exports in 2017/18 are projected to continue growing reaching 944,000 tons and accounting for 11.4% of global share. India, despite a lower than expected production is projected to export 935,000 tons representing 11.3% of global exports. Exports from Brazil for the season are expected to grow 7% in 2017/18 reaching 654,000 ton. Uzbekistan exports in 2017/18 should remain stable at 330,000 accounting for 4% of world exports.

In 2017/18, world ending stocks are estimated at 18.9 million tons, slightly higher than the 18.7 million tons for the previous season. The Cotlook A Index during January 2018 averaged 91 cents per pound, up from 80 cents per pound recorded in October and November 2017 with a 2017/18 season to date average of 82.4 cents per pound, comparable to the 2016/17 season average of 82.7 cents per pound. Stocks in China are estimated to decline to 9 million tons at the end of 2017/18. Competing price of polyester has risen over the course of the season and continues to increase relative to cotton, even as cotton prices have moved upward.

Source: ICAC Cotton This Month, February 01, 2018

Supply and Distribution of Cotton

February 01, 2018

Seasons begin on August 1

Million Metric Tons

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
		Est.	Est.	Est.	Est.	Proj.
BEGINNING STOCKS						
WORLD TOTAL	15.708	19.428	21.317	22.973	20.27	18.74
China	6.696	10.811	13.280	14.118	12.65	10.63
USA	0.729	0.827	0.512	0.795	0.83	0.60
PRODUCTION						
WORLD TOTAL	27.079	26.225	26.269	21.489	22.98	25.51
India	6.290	6.766	6.562	5.746	5.73	6.30
China	7.600	7.000	6.600	5.200	4.90	5.25
USA	3.770	2.811	3.553	2.806	3.74	4.62
Pakistan	2.002	2.076	2.305	1.537	1.66	1.82
Brazil	1.310	1.734	1.563	1.289	1.53	1.57
Uzbekistan	1.000	0.910	0.885	0.832	0.79	0.80
Others	5.107	4.928	4.801	4.079	4.63	5.16
CONSUMPTION						
WORLD TOTAL	23.450	24.101	24.587	24.180	24.55	25.37
China	7.900	7.600	7.550	7.600	8.00	8.12
India	4.762	5.087	5.377	5.296	5.15	5.30
Pakistan	2.216	2.470	2.467	2.147	2.15	2.35
Europe & Turkey	1.560	1.611	1.692	1.687	1.61	1.63
Bangladesh	1.045	1.129	1.197	1.316	1.41	1.44
Vietnam	0.492	0.673	0.875	1.007	1.17	1.31
USA	0.762	0.773	0.778	0.751	0.71	0.73
Brazil	0.910	0.862	0.797	0.701	0.73	0.76
Others	3.802	3.896	3.854	3.675	3.63	3.74
EXPORTS						
WORLD TOTAL	10.048	9.029	7.779	7.548	8.07	8.25
USA	2.836	2.293	2.449	1.993	3.25	3.22
India	1.690	2.015	0.914	1.258	0.99	0.94
CFA Zone	0.821	0.973	0.966	0.963	0.97	0.98
Brazil	0.938	0.485	0.851	0.939	0.61	0.65
Uzbekistan	0.690	0.615	0.550	0.500	0.34	0.33
Australia	1.343	1.058	0.527	0.616	0.76	0.94
IMPORTS						
WORLD TOTAL	10.213	8.858	7.800	7.572	8.12	8.25
Bangladesh	1.055	1.112	1.183	1.378	1.41	1.57
Vietnam	0.517	0.687	0.934	1.001	1.20	1.43
China	4.426	3.075	1.804	0.959	1.10	1.34
Turkey	0.803	0.924	0.800	0.918	0.80	0.72
Indonesia	0.686	0.651	0.728	0.640	0.75	0.79
TRADE IMBALANCE 1/	0.166	-0.171	0.020	0.023	0.06	0.00
STOCKS ADJUSTMENT 2/	-0.075	-0.063	-0.047	-0.034	-0.01	0.00
ENDING STOCKS						
WORLD TOTAL	19.428	21.317	22.973	20.271	18.74	18.88
China	10.811	13.280	14.118	12.650	10.63	9.09
USA	0.827	0.512	0.795	0.827	0.60	1.27
ENDING STOCKS/MILL USE (%)						
WORLD-LESS-CHINA 3/	55	49	52	46	49	57
CHINA 4/	137	175	187	166	133	112
COTLOOK A INDEX 5/	88	91	71	70	83	

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 Month, February 01, 2018



Since 1921, we are dedicated to the cause of Indian cotton.

Just one of the reasons, you should use our Laboratory Testing Services.

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.

The CAI is setting benchmarks across a wide spectrum of services targeting the entire cotton value chain. These range from research and development at the grass root level to education, providing an arbitration mechanism, maintaining Indian cotton grade standards, issuing Certificates of Origin to collecting and disseminating statistics and information. Moreover, CAI is an autonomous organization portraying professionalism and reliability in cotton testing.

The CAI's network of independent cotton testing & research laboratories are strategically spread across major cotton centres in India and are equipped with:

- State-of-the-art technology & world-class Premier and MAG cotton testing machines
- HVI test mode with trash% tested gravimetrically

LABORATORY LOCATIONS

Current locations : • **Maharashtra :** Mumbai; Akola; Aurangabad • **Gujarat :** Rajkot; Mundra; Ahmedabad • **Andhra Pradesh :** Guntur, Warangal
• **Madhya Pradesh :** Indore • **Karnataka :** Hubli • **Punjab :** Bathinda
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 FEBRUARY 2018					
Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Strength /GPT	5th	6th	7th	8th	9th	10th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0-7.0	15	11501 (40900)	11501 (40900)	11445 (40700)	11698 (41600)	11923 (42400)	11923 (42400)
2	P/H/R	ICS-201	Fine	Below 22mm	5.0-7.0	15	11642 (41400)	11642 (41400)	11585 (41200)	11838 (42100)	12063 (42900)	12063 (42900)
3	GUJ	ICS-102	Fine	22mm	4.0-6.0	20	8548 (30400)	8492 (30200)	8492 (30200)	8436 (30000)	8436 (30000)	8436 (30000)
4	KAR	ICS-103	Fine	23mm	4.0-5.5	21	9448 (33600)	9392 (33400)	9392 (33400)	9392 (33400)	9392 (33400)	9392 (33400)
5	M/M	ICS-104	Fine	24mm	4.0-5.0	23	10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)
6	P/H/R	ICS-202	Fine	26mm	3.5-4.9	26	11135 (39600)	11107 (39500)	11051 (39300)	11051 (39300)	11051 (39300)	11051 (39300)
7	M/M/A	ICS-105	Fine	26mm	3.0-3.4	25	9898 (35200)	9842 (35000)	9842 (35000)	9786 (34800)	9729 (34600)	9729 (34600)
8	M/M/A	ICS-105	Fine	26mm	3.5-4.9	25	10292 (36600)	10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)
9	P/H/R	ICS-105	Fine	27mm	3.5-4.9	26	11417 (40600)	11389 (40500)	11332 (40300)	11332 (40300)	11332 (40300)	11332 (40300)
10	M/M/A	ICS-105	Fine	27mm	3.0-3.4	26	10011 (35600)	9954 (35400)	9954 (35400)	9898 (35200)	9842 (35000)	9842 (35000)
11	M/M/A	ICS-105	Fine	27mm	3.5-4.9	26	10461 (37200)	10404 (37000)	10404 (37000)	10404 (37000)	10404 (37000)	10404 (37000)
12	P/H/R	ICS-105	Fine	28mm	3.5-4.9	27	11529 (41000)	11501 (40900)	11445 (40700)	11445 (40700)	11445 (40700)	11445 (40700)
13	M/M/A	ICS-105	Fine	28mm	3.5-4.9	27	10911 (38800)	10854 (38600)	10854 (38600)	10854 (38600)	10854 (38600)	10854 (38600)
14	GUJ	ICS-105	Fine	28mm	3.5-4.9	27	11107 (39500)	11051 (39300)	11051 (39300)	11107 (39500)	11135 (39600)	11135 (39600)
15	M/M/A/K	ICS-105	Fine	29mm	3.5-4.9	28	11079 (39400)	11023 (39200)	11023 (39200)	11079 (39400)	11107 (39500)	11107 (39500)
16	GUJ	ICS-105	Fine	29mm	3.5-4.9	28	11276 (40100)	11248 (40000)	11248 (40000)	11304 (40200)	11332 (40300)	11332 (40300)
17	M/M/A/K	ICS-105	Fine	30mm	3.5-4.9	29	11389 (40500)	11332 (40300)	11332 (40300)	11389 (40500)	11389 (40500)	11389 (40500)
18	M/M/A/K/T/O	ICS-105	Fine	31mm	3.5-4.9	30	11726 (41700)	11726 (41700)	11726 (41700)	11782 (41900)	11782 (41900)	11782 (41900)
19	A/K/T/O	ICS-106	Fine	32mm	3.5-4.9	31	11951 (42500)	11951 (42500)	11951 (42500)	11951 (42500)	11951 (42500)	11951 (42500)
20	M(P)/K/T	ICS-107	Fine	34mm	3.0-3.8	33	15747 (56000)	15747 (56000)	15747 (56000)	15747 (56000)	15747 (56000)	15747 (56000)

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