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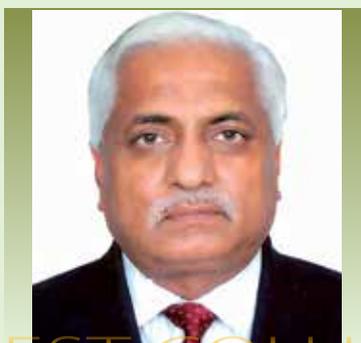
Enhancing the Brand Value of Indian Cotton

Late Shri. I J Dhuria was associated with Vardhman Group for almost three decades, with work experience of over 41 years in the procurement of Textile Raw Materials. He represented Vardhman Group at the International Cotton Association (ICA), International Textile Manufacturers Federation (ITMF), The Brazilian Cotton Shippers Association, Australian Cotton Association and China Cotton Association Conferences and many other international forums.

He was member of Global 'Cotton Consumers Committee' of the International Cotton Association

(ICA), Member of Product Committee Cotton of Multi Commodity Exchange, Member of Advisory Committee of Board of Control Union Certifications of India, Member of Sub-Committee of Cotton Development & Research Activities (CDRA) and Member of CITI Sub-Committee of Cotton Fibre & Related Issues.

Cotton is a crucial commodity in Indian agriculture and it has played a major role throughout in India's history. At present, India is the world's largest producer of cotton as well



GUEST COLUMN

Late Shri. I. J. Dhuria
Former Director (Materials)
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the second largest consumer and exporter of the cotton. It has about 35 % of the world area under cotton cultivation and amounts for about 23% of the world cotton production. Cotton is an important cash crop for Indian farmers. It is the third largest in total acreage planted in the country after wheat and rice only. India has the maximum area under cotton cultivation among the largest cotton producing countries. India has almost three times of the area under cotton cultivation in China; more than four times of the area of Pakistan and about three times of the USA under cotton cultivation. But there is considerable difference

in the yield level of India as compared to other cotton growing countries. At present, India is a net exporter of cotton.

A. Advantage Indian Cotton

1. Roller Ginned Indian Cotton:

Most of the Indian cotton (more than 95%) is ginned on double roller gins. Whereas in the other major cotton producing countries (China, USA, Brazil, and Australia) cotton is saw ginned. In largest exporting country - USA - more than 98 percent of the cotton is saw ginned. Only ELS

cotton (Pima cotton) and very less quantity of the Upland cotton is roller ginned.

Roller ginned cotton has the following advantage over the saw ginned cotton:

- Roller ginning uses a rotary knife to separate the seed from the lint and this separation process is gentle on the fibre that better retains the fibre length.
- Neps generation in the roller ginned cotton is lower as compared to the saw ginned cotton and this helps the spinners to make lower degree of adjustments while spinning the cotton.
- Ginning out turn of the roller ginned cotton is comparatively higher by the saw ginned cotton by 1% to 2%.
- As roller ginning is more fibre friendly, it improves the fibre properties of cotton like Length, Uniformity, fineness and it also has lower short fibres.

2. Handpicked Indian Cotton

Among the major cotton producing countries Indian, Chinese, African and Turkish cotton is handpicked whereas in USA, Australian and Brazil cotton is mechanically picked. Although mechanically picked cotton has lower level of contamination presence in the cotton, yet it has a higher degree of trash content, leaf and plant extraneous matter. In the hand picking, seed cotton is picked delicately so it has comparatively lower trash and plant extraneous matter.

In the Xinjiang region of China, where both handpicked and mechanically picked cotton are available in the market, the handpicked cotton commands a premium of 800 to 1000 Yuan per ton over the mechanically picked cotton because of the better spinning value of the handpicked cotton.

3. Touch Feel of the Fabric Made from Indian Cotton

Convolution of the Indian cotton fibre along with its quality parameters makes the Indian cotton's touch feel very soft and smooth. Fabrics made from the Indian cotton has a better touch and feel.

B. Enhancing the Brand Value of Indian Cotton:

Despite certain advantages, there are some issues with Indian cotton that need to be addressed so as to better place it in international market.

i. By improving cotton farming methods, logistic and handling

1. Contamination: The key reason which discounts the Indian cotton:

ITMF has been conducting survey once in every two years on the level of contamination found in different cotton growths. Although contamination level in the Indian cotton has come down with the passage of time, but still Indian cotton is considered as the most contaminated cotton. Being handpicked and because of logistic issues, Indian cotton gets contaminated with the contaminants like hairs, colour threads, polypropylen, feather, plastic, jute, etc. during its movement right from the collection of the seed cotton from the cotton field to ginning and pressing stage.

During the spinning, contaminants in the raw cotton are processed into the yarn and further in the fabric that apparently appears different in the dyed fabric.

As a result, despite having better quality parameters, Indian cotton is discounted by USC 6 to 7 per pound over the other least contaminated growths like US, Australia and Brazil. Indian cotton is losing more than 1 billion US dollars every year in value terms against the least contaminated growths on its present production of about 6.35 million tons.

Measures to improve contamination in the raw cotton:

In order to improve the contamination in the raw cotton, there needs to be some improvements in cotton farming and handling practices.

- Farmers should be encouraged to collect the seed cotton in cotton bags instead of plastic bags. The seed cotton should be further transported up to the ginning factory in cotton bags only.
- As average farm holding of Indian farmers are small, mechanical pickers suitable to the

Indian farm size can be used to reduce the human intervention, which will result in to reduction in contamination.

ii. By improving upon its seed technology:

Since the introduction of BT cotton hybrid seed in India in the year 2002-03, Indian cotton yield improved from the level of about 300 kgs/hectare to more than 500 kgs/hectares. India recorded highest yield of about 565 kgs/hectares in the year 2013-14.

Still there is a significant difference between the Indian cotton yield and yield of other major cotton producing countries:

Comparative yield of India and other major cotton producing countries for the cotton year 2017-18:

Country	Yield (kgs/hectare)
China	1758
USA	1014
Australia	2088
Brazil	1671
India	519

Source: ICAC

Indian cotton yield is stagnant from last many years with no major improvements. This is mainly because of the technology fatigue. Indian cotton seed has developed resistance to the pests.

Appearance of the pink boll worm in the Maharashtra, Telangana and Gujarat state and attack of white fly in the north zone (particularly Punjab and Haryana) in the last couple of years, is affecting the yield and quality of the Indian cotton crop.

Therefore, there is an urgent need to have the right quality of the seed so as to prevent from the pest attacks and to have seed suitable to the Indian agronomic and climatic conditions.

iii. By improving upon the ginning & pressing practices:

1. Trash level in Indian cotton:

With the passage of time and since the launch of Technology Mission on Cotton in the year 2000 and with the transfer of technology in

ginning and pressing factories, the trash level of Indian cotton has improved. However the trash level in the Indian cotton is still higher as compared to the other growths. Normally it ranges between 2.5% to more than 4.5% against the 1.5% or even lower in the certain cotton growths like USA and Australia

Trash level can be reduced by the way of modernisation of ginning factories. Proper infrastructure, house-keeping and maintenance of ginning factory also play a crucial role in processing the quality lint cotton. Pre-cleaners can be installed at the ginning factories so as to clean the seed cotton before feeding it in to the ginning factories so as to reduce the trash content.

2. Reduction in moisture content:

Some ginners in order to make more money, are introducing artificial moisture beyond a certain limit to the cotton during the ginning process. Due to lack of proper infrastructure, sometimes moisture is not applied on a uniform basis and is excessively applied on certain parts. When lint cotton with high moisture content is processed for bale pressing, then such hard-pressed bale may form a hard lump type material. Such hard lumps cannot be processed in spinning or in any use. Therefore became a complete loss not only to the buyer but also to the nation.

3. Cotton packing material and covering cloth:

Indian ginners need to improve on the quality standards for the packing material. Cotton bales should be tied with iron hoops. Iron hoops in most of the factories have been replaced with plastic strips. The poor quality plastic strips are not able to withstand the full press bale pressure, leading to opening up of the bales either at the time of loading or unloading and thus becomes a logistic issue for the mills and the trade. This should be avoided by all means by using the right quality of plastic strips.

Some ginners are also using the non-cotton or blended cover for packing the cotton bales. Some threads from the cotton packing covers gets into the cotton during transportation and handling and ultimately is processed into the yarn. Such threads look apparently different in the dyed fabric. Bales should also be fully

covered and should not be exposed from any side.

There should be bale tags on the cotton, which should contain relevant details pertaining to the cotton bales.

4. Adulteration or false packing:

In order to make more money, ginners in a few areas have indulged in mal-practices such as mixing of inferior quality or by-products of cotton with good cotton. Such type of unethical conduct decreases the confidence of buyer in Indian cotton. Buyer will give the right price, if he is supplied with the right quality. It is imperative to create Indian Cotton Brand quality supplier of cotton, not only within the country but outside the country as well. This will definitely improve the value of our cotton.

5. Grading of the cotton:

Ginners are not segregating the seed cotton based on its quality parameters. Under the present system, ginners are making the heaps of the seed cotton and mixing the superior quality of the seed cotton with the average quality of the material. Under this practice, ginners are not able to get the premium for better quality cotton over the average quality.

There should be a proper system for classification and grading of the cotton in line with the system adopted in leading cotton economies like USA and Australia. Each and every bale should be tested for HVI parameters and traded on the basis of the HVI parameters.

iv. By improving marketing:

6. Branding of Indian cotton:

Leading cotton economies are putting emphasis on building a branding image of their cotton fibre in the cotton consuming markets worldwide. This is helping in marketing their product. USA has differentiated its upland cotton under the brand 'Cotton USA' and ELS cotton under 'Supima' Brand. Likewise, Australia and Egypt have also given branding to their cotton.

Such type of branding is also required for Indian upland and ELS cotton also. India has one of the finest cotton in its cotton basket i. e. Suvin. There is a need to brand its ELS cotton

and promote it for the niche segment worldwide so as to get the true value from it.

v. By doing research work to derive more value from the cotton and its byproducts:

Leading countries like US and Australia are continuously doing research so as to improve upon their seed technology, so as not only to improve upon the yield level and fibre traits but they are also working to put less burden on the limited available natural resources. They are continuously working for developing the seeds and methods that require less water and energy usage towards their sustainability goals.

India should not be keep itself away from similar research work. There is a need to improvise the cotton seeds to get a better yield levels, better ginning out-turn and promote use of less pesticides and chemical in cotton farming so as to reduce toxic effects on the cotton and on its by-products including edible oil.

Research institutions should be encouraged for obtaining more value from cotton and its by-products like cotton linter, cotton stalk utilisation and making cotton seeds gossypol free to reduce the toxic impact.

To sum up, it can be said that by reducing the contamination level, improving upon the ginning and pressing practices, by proper grading of the cotton, reducing trash, moisture and using right quality of the packing material with proper bale tags, will lead to uniform quality of yarn with better productivity and realization which will ultimately lead to better quality of the fabric.

Branding of the Indian cotton will help in building trust of the consumers on the product made from the Indian cotton worldwide and will lead to fetching true value to all the textile value chain.

Courtesy : Cotton India 2018 - (Aurangabad)

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

Eco - Textile Industry- Friendly Hirsute Cotton Variety, Indica

Dr. V.T. Sundaramurthy served as Associate Professor at Tamilnadu Agricultural University. He was also Principal Scientist at Central Institute for Cotton Research and Project Coordinator of All India Coordinated Research Project for Cotton Improvement [ICAR] in the country.

He has many research papers to his credit. He was included in the Who's Who in Science and Engineering® 2016- 2017, Albert Nelson Marquis Lifetime Achievement Award 2018, Marquis Who's Who in the world, (USA) and has won several awards including, Man of the Year 2013" & "one of 2000 Intellectuals of the world in 21st Century" (IBC UK), The National

Award for an Extension film on IPM (Cotton), Indian Society for Cotton Improvement Award, The Plant Protection Association of India Award, ICAR Commendation award, East India Cotton Association Award, International Professional of the Year 2007 (IBC UK), Leading Educators of the World 2007 (IBC UK) and also ICAR Fellowships

Cotton is one of the most important crops interlinked with the culture, civilization and economy of mankind. It gives fibres, food related products including vegetable oil, protein and cellulose for making plastic and explosives. Among the different species of cotton, *Gossypium arboreum*, *G. herbaceum*, *G. hirsutum* and *G. barbadense* are being cultivated in 122.35 lakh hectares in different ecosystems under rain fed system with the assured rainfall, irrigated situations and rice fallows in India and producing annually 35.10 million bales of cotton. Cotton contributes about 14% to industrial production and 4% to India's Gross Domestic Product.



GUEST COLUMN

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The native species *G. arboreum* and *G. herbaceum*, were predominately cultivated in earlier days. Since their yielding potential and quality of fibres were poor, the high yielding quality cotton species of *G. hirsutum* and *G. barbadense* were brought into India from other ecological zones of the world to meet the demand of the growing population. The exotic species of cotton are tall growing and bushy, with different morphological features and growth habits. These are able to grow in India by utilising about 6 percent of total fertilizer and

45 percent of pesticides as compared to other agricultural crops in India. Such varieties may not meet the demand of industries under the global warming situation. *Indica*, a non-bushy short statured hirsute cotton variety, with an open type of canopy and maturing in a short period over the popular varieties of cotton grown in India and with better penetrability of applied insecticides, giving good yield with quality fibres having high degree of polymerisation, was developed¹.

Indica has sparsely open type of canopy and grows to the height of 120 -130 cm with short internodes with 16 to 18 bolls bearing sympodial branches and matures in 130 days. The sympodial branches that bear the reproductive parts are capable of growing further in the event of shedding buds, flowers and bolls due to insect bites and other biotic and abiotic changes and produce new reproductive parts to compensate the losses if any. This is a unique trait that does not exist in other popular varieties including hybrids, in which the main stem will grow if the reproductive parts fall from the sympodial branch of the plant and increase not only the duration of the crop, but also the height and size of the canopy. As a result of these changes,

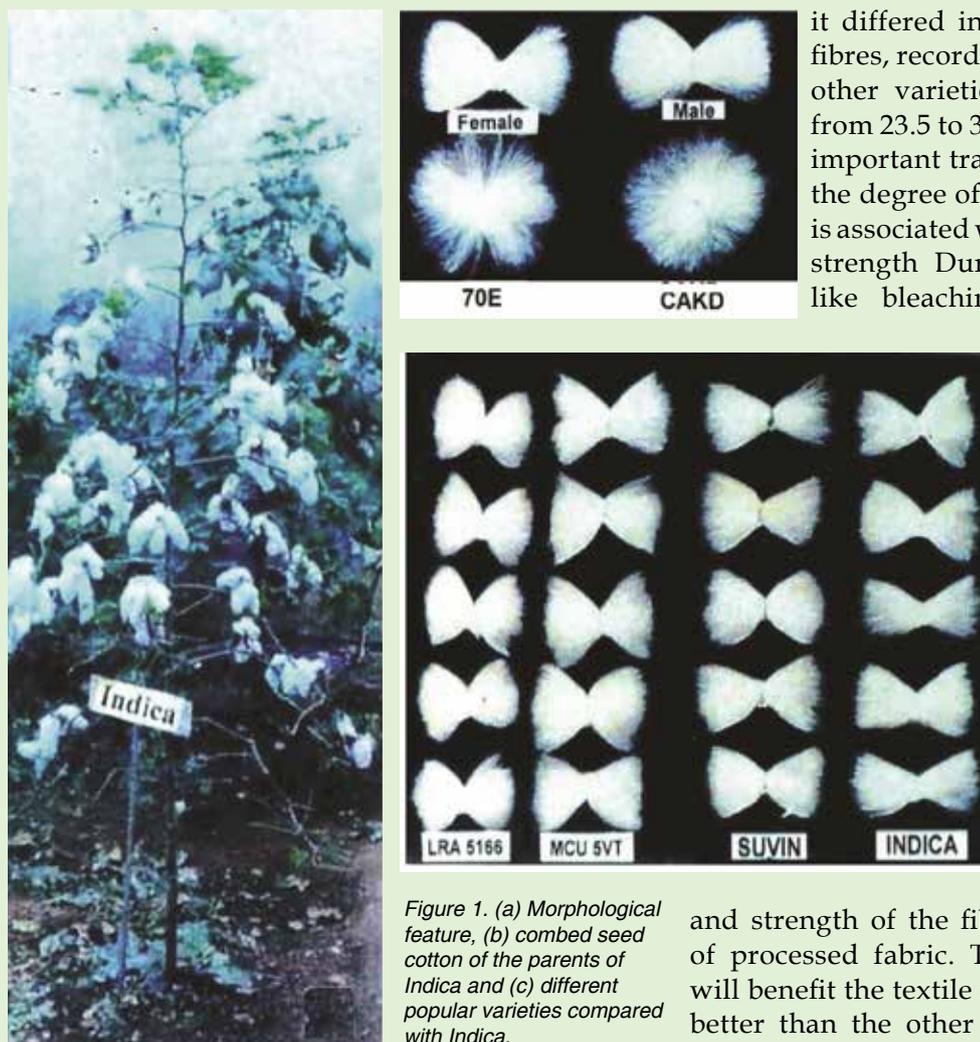


Figure 1. (a) Morphological feature, (b) combed seed cotton of the parents of Indica and (c) different popular varieties compared with Indica.

several biotic and environmental problems show up in the agro system. Since the plants have an open canopy and boll bearing branches are well exposed, the applied pesticides reach the desired sites and cause less pollution as drift. Indica requires 4 to 5 applications of pesticides, as compared to other varieties and hybrids grown in India. The open type of canopy of Indica also enables easy harvest of cotton kappas, whether by manual or mechanical means.

The productivity of Indica was assessed in farmers' fields having different soil types in four villages in Tamilnadu, along with the commonly grown popular varieties in the villages and recorded a higher yield of 2246 kg/ha as against 1973, 2020 and 2100 kg/ha recorded by Surabhi, MCU5 and MCU5 VT respectively .

The quality attributes of the fibers of Indica such as ginning outturn, lint and seed indexes including the strength and micronaire, were almost the same as that of other varieties. But

it differed in respect of the length of fibres, recording 34.27mm; whereas the other varieties had a length ranging from 23.5 to 33.55.mm (Fig 1).The most important trait of the cotton fibers was the degree of polymerisation (DP) as it is associated with the higher fibre /yarn strength During chemical processing like bleaching, the chemicals used reduce the DP and the fabric gets weakened. A higher initial DP results in better strength of processed fabric Interestingly, the degree of polymerisation of the Indica fibers was 3926, which is 18 to 39 percent higher than the other popular varieties including Suvin The higher initial DP indicates that Indica, besides contributing much to lustre, dyeing,

and strength of the fibre, gives better strength of processed fabric. These qualities of Indica, will benefit the textile industries and consumers better than the other popular varieties grown in India.The short statured cotton varieties and hybrids2 with the open type of canopy with proper agronomy can enhance the productivity of cotton for meeting the demand of the textile industries and growing population, with the least disturbances to the agro ecosystem under the global warming situation in India, as the global warming will increase the use of garments and bedding made out of cotton.

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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) 2018-19 Crop October 2019						
Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Gravimetric Trash	Strength /GPT	14th	15th	16th	17th	18th	19th	
1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	4%	15	-	-	-	-	-	-	
2	P/H/R (SG)	ICS-201	Fine	Below 22mm	5.0 – 7.0	4.5%	15	-	-	-	-	-	-	
3	GUJ	ICS-102	Fine	22mm	4.0 – 6.0	13%	20	8998 (32000)	8998 (32000)	8998 (32000)	8998 (32000)	8998 (32000)	8998 (32000)	
4	KAR	ICS-103	Fine	23mm	4.0 – 5.5	4.5%	21	10320 (36700)	10320 (36700)	10320 (36700)	10320 (36700)	10320 (36700)	10320 (36700)	
5	M/M (P)	ICS-104	Fine	24mm	4.0 – 5.5	4%	23	10826 (38500)	10826 (38500)	10826 (38500)	10826 (38500)	10826 (38500)	10826 (38500)	
6	P/H/R (SG)	ICS-202	Fine	27mm	3.5 – 4.9	4.5%	26	-	-	-	-	-	-	
7	M/M(P)/SA/TL	ICS-105	Fine	26mm	3.0 – 3.4	4%	25	10376 (36900)	10376 (36900)	10376 (36900)	10376 (36900)	10376 (36900)	10376 (36900)	
8	P/H/R	ICS-105	Fine	27mm	3.5 – 4.9	4%	26	-	-	-	-	-	-	
9	M/M(P)/SA/TL/G	ICS-105	Fine	27mm	3.0 – 3.4	4%	26	10573 (37600)	10573 (37600)	10573 (37600)	10573 (37600)	10573 (37600)	10573 (37600)	
10	M/M(P)/SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	10798 (38400)	10798 (38400)	10798 (38400)	10798 (38400)	10798 (38400)	10798 (38400)	
11	P/H/R	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	-	-	-	-	-	-	
12	M/M(P)/SA/TL	ICS-105	Fine	28mm	3.5 – 4.9	3.5%	27	11501 (40900)	11501 (40900)	11501 (40900)	11501 (40900)	11529 (41000)	11529 (41000)	
13	GUJ	ICS-105	Fine	28mm	3.5 – 4.9	3.5%	27	11389 (40500)	11389 (40500)	11389 (40500)	11389 (40500)	11417 (40600)	11417 (40600)	
14	M/M(P)/SA/TL/K	ICS-105	Fine	29mm	3.5 – 4.9	3.5%	28	11698 (41600)	11698 (41600)	11698 (41600)	11698 (41600)	11726 (41700)	11726 (41700)	
15	GUJ	ICS-105	Fine	29mm	3.5 – 4.9	3.5%	28	11557 (41100)	11557 (41100)	11557 (41100)	11557 (41100)	11585 (41200)	11585 (41200)	
16	M/M(P)/SA/TL/K/O	ICS-105	Fine	30mm	3.5 – 4.9	3%	29	11979 (42600)	11979 (42600)	11979 (42600)	11979 (42600)	12007 (42700)	12007 (42700)	
17	M/M(P)/SA/TL/K/TN/O	ICS-105	Fine	31mm	3.5 – 4.9	3%	30	12092 (43000)	12092 (43000)	12092 (43000)	12092 (43000)	12120 (43100)	12120 (43100)	
18	SA/TL/K/TN/O	ICS-106	Fine	32mm	3.5 – 4.9	3%	31	12429 (44200)	12429 (44200)	12429 (44200)	12429 (44200)	12457 (44300)	12457 (44300)	
19	M/M(P)/K/TN	ICS-107	Fine	34mm	3.0 – 3.8	3.5%	33	14904 (53000)	14904 (53000)	14904 (53000)	14904 (53000)	14904 (53000)	14904 (53000)	

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

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1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	4%	15	10826 (38500)	10798 (38400)	10798 (38400)	10798 (38400)	10798 (38400)	10798 (38400)	
2	P/H/R (SG)	ICS-201	Fine	Below 22mm	5.0 – 7.0	4.5%	15	10939 (38900)	10911 (38800)	10911 (38800)	10911 (38800)	10911 (38800)	10911 (38800)	
3	GUJ	ICS-102	Fine	22mm	4.0 – 6.0	13%	20	-	-	-	-	-	-	
4	KAR	ICS-103	Fine	23mm	4.0 – 5.5	4.5%	21	-	-	-	-	-	-	
5	M/M (P)	ICS-104	Fine	24mm	4.0 – 5.5	4%	23	-	-	-	-	-	-	
6	P/H/R (SG)	ICS-202	Fine	27mm	3.5 – 4.9	4.5%	26	10348 (36800)	10292 (36600)	10348 (36800)	10404 (37000)	10404 (37000)	10404 (37000)	
7	M/M(P)/ SA/TL	ICS-105	Fine	26mm	3.0 – 3.4	4%	25	-	-	-	-	-	-	
8	P/H/R	ICS-105	Fine	27mm	3.5 – 4.9	4%	26	10461 (37200)	10432 (37100)	10489 (37300)	10545 (37500)	10545 (37500)	10545 (37500)	
9	M/M(P)/ SA/TL/G	ICS-105	Fine	27mm	3.0 – 3.4	4%	26	-	-	-	-	-	-	
10	M/M(P)/ SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	-	-	-	-	-	-	
11	P/H/R	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	10545 (37500)	10517 (37400)	10573 (37600)	10629 (37800)	10629 (37800)	10629 (37800)	
12	M/M(P)/ SA/TL	ICS-105	Fine	28mm	3.5 – 4.9	3.5%	27	-	-	-	-	-	-	
13	GUJ	ICS-105	Fine	28mm	3.5 – 4.9	3.5%	27	-	-	-	-	-	-	
14	M/M(P)/ SA/TL/K	ICS-105	Fine	29mm	3.5 – 4.9	3.5%	28	-	-	-	-	-	-	
15	GUJ	ICS-105	Fine	29mm	3.5 – 4.9	3.5%	28	-	-	-	-	-	-	
16	M/M(P)/SA/ TL/K/O	ICS-105	Fine	30mm	3.5 – 4.9	3%	29	-	-	-	-	-	-	
17	M/M(P)/SA/ TL/K /TN/O	ICS-105	Fine	31mm	3.5 – 4.9	3%	30	-	-	-	-	-	-	
18	SA/TL/K/ TN/O	ICS-106	Fine	32mm	3.5 – 4.9	3%	31	-	-	-	-	-	-	
19	M/M(P)/ K/TN	ICS-107	Fine	34mm	3.0 – 3.8	3.5%	33	-	-	-	-	-	-	

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