Weekly Publication of

Cotton Association of India

COTTON STATISTICS & NEWS

Edited & Published by Amar Singh

2019-20 • No. 47 • 18th February, 2020 Published every Tuesday

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Cotton's New Avatar: Reasserting Itself

GUEST COLUMN

Shri. Suresh A. Kotak
Chairman, Kotak Group of Companies

Shri. Suresh A. Kotak is a Chairman of the Kotak Group of Companies. He has been serving the cotton and textiles business and industry and its research in various capacities, since the last 60 years. He is an astute Rotarian. He was President of Cotton Association of India. He was also a Director on the Board of International Cotton Association, Liverpool. He has been serving on Private Sector Advisory Panel (PSAP) of ICAC. He has been serving in CITI Management Committee (Confederation of Indian Textile Industry). He was he conferred the Cotton & Finance Merit Award by then Chief Minister of Gujarat, Shri. Narendra Modi for his work in cotton and general business in 2009/2010. He has received Lifetime Achievement Award at Ahmedabad during International Conference on Challenges facing Indian cotton organized by the Textile Association (India), Ahmedabad. Shri Kotak has also been conferred the Lifetime Achievement Award by the Hon'ble Vice-President of India, Shri. M. Venkaiah Naidu during Global Textile Conclave organised by Confederation of Indian Textile Industry (CITI) on 27th November 2018 in New Delhi.

At ITMF 2018 annual conference held during 7-9th September 2018 at Nairobi, Kenya had a very interesting agenda namely - Supply chains and business model in times of rapid change.

The conference had a lot of discussion on fibres of all kind. Cotton was particularly addressed with a focus as usual at ITMF.

The presentations made at Joint Cotton Committee, Cotton Consumer Committee, Spinners Committee were full of aspirational discussion about cotton being on a revival spree.

One of the speakers mentioned - to quote "Coming events cast their shadow before" - during a discussion centred on the environmental pressures which is compelling us to get into different models of fibre use, supply chain as well as business model. There were pointers that cotton is replacing polyester to an extent, because cotton is bio degradable and polyester is a clear threat to the environment.

Environmental Compulsion in Favour of Cotton Use

There was a growing feeling that environmental compulsion and the trend of giving a go-bye to plastics / polyester – reducing their use – even recycling, all that portend that cotton will emerge out of diminutive position to a position of eminence once again. Along with the discussion on cotton, the discussion centred on other natural fibre also like jute, mast fibres, flax, bamboo fibres, pineapple fibre, banana fibre, kapok and also man-made fibre celluloses.

Man-made fibre celluloses are different types of viscose and acetate fibre. Acetate fibre production can use cotton linters as raw materials.

An Austrian company like Lenzing has also started using second hand clothing and turns it into pulp and uses it. The cotton linters have also given good alternatives and companies like Fushing & Sateri in China are using the linters as a raw material for manufacturing of man-made cellulosic fibre.

The man-made cellulosic fibre is changing its course as an environmentally more sustainable fibre than polyester.

In this context it is worthwhile to know that Neeti Ayog (former Planning Commission of India) has appointed a special director for Natural Fibres. The inspiration also comes from the World Conference on Natural Fibre held in 2009 by FAO –Food and Agriculture Organization, headquartered in Rome, Italy.

The manufacturers of polyester have been now taking a new environmental approach by changing metamorphically to Reuse & Recycle of Polyester. The sister and brothers of the polyester group fibres are polyethane, nylon, acrylic, etc. The thinking is that 'Cotton is a Better Wear Fibre and Polyester is Better Tear Fibre' due to its differing functionality.

The general approach was that cotton has to come up with better productivity, improved qualities, create cost effectiveness and also add new attributes to the fibre.

It may be worthwhile to know that Indian scientist are working "Genes of Silk" into cotton cultivation which can result in very high tensile steely cotton fibres.

Essentially cotton's importance is likely to increase because of one single factor i.e. cotton is a renewable resource obtainable every year, whereas polyester which comes from oil as an origin will finally have universal resource problem – susceptible to inherent global resource depletion.

Cotton thus gets into the category of sustainable fibre with new technologies which optimises and reduces the applications of fertilizers and pesticides.

ITMF meetings also discussed about transparency, traceability and sustainability in cotton. Lot of discussion and deliberation took place and sustainable efforts of various organisations like Better Cotton Initiative, Fair Cotton, Organic Cotton and other efforts were discussed.

The broad classification - Mass Balance Sustainable Model – includes all the above mentioned methods.

These are the methods essentially used by the retailers like IKEA for branding their goods. Other requirement that emerged at the meeting is Customised Sustainability Model which is under development where greater stress is on traceability. Discussion also considered the future of cotton and the general view was that globally, cotton would rise up to 55% in next 5-7years.

Discussion on African Cotton at ITMF

ITMF took special note of CmiA - Cotton made in Africa. Mr. Christian Barthel gave a remarkable presentation on the developments of the Cotton made in Africa. In Africa, there is one African Cotton & Textile Industries Federation (ACTIF), which is a central organisation for new developments all over Africa.

Remarkably fresh views were tabled by Dr. Terry Townsend in his talk on for 'Keeping Cotton Competitive'. The main point was there are a number of methods which can enhance the competitiveness, capability, applicability

and cost economics of cotton. This was much appreciated as a way forward to make cotton competitive in price as price is one of the significant factors which pits cotton against polyester.

Other important points that the speaker explored and expounded was the use of technology and genomics particularly biotechnology, etc. to give the cost competitiveness and quality enhancement to cotton.

Cotton Hand App

Mr. Walter Simeoni from South Africa has developed a cotton hand app to guide and help the cotton farmers from length preparation till harvesting, with good suggestions on cultural practices, irrigation, seeds, inputs, etc. This cotton app was much appreciated by many countries.

When I came back, I had a discussion on this Cotton Hand App with Ms. Rani Ali, Chairman cum Managing Director of Cotton Corporation of India who has already developed an app at CCI pertaining to Indian conditions.

Discussion on Supply Demand Balance on Cotton Chemical Fibres

The year 2016 will always be remembered from the fibres perspective as a historic milestone, because the world market size surpassed the incredible volume of 100 million tonnes, that is size of 35% overall, but the greatest contributory factor is 8% rise in cotton production.

Man-made fibres now occupy 70% of the global market. This includes viscose which is a cellulosic fibre. There is a gain in man-made cellulosic fibre also.

Recycling of Cotton

There was a special presentation on Filament Cotton Yarn from Recycled Cotton presented by Gemmit Bouwhuis (Saxion University of applied sciences, Netherlands) with revealing fact that people dispose some 40 billion items of clothing every year, which concerns all of us, out of which cotton could be recycled easily.

Innovation has started with recycling of clothing into cotton pulping and filaments. All these will increase cotton use and applications.

7 Green Economics Signia

This was a session where the World Bank took a good lead for driving sustainability and value chain responsibly. In this section, requirement of cotton and other man-made fibres were also mentioned and new thinking seems to be emerging.

Fibre Evaluation New Innovative Test Methods

ITMF along with German Institutes has been working on improving evaluation methods for cotton and other fibres so that its use and utilisation productivity improves. This discussion usually takes place at the Bremen Conference where ITMF takes an active interest.

Conclusion

Very interesting discussions regarding supply chain, new fibre applications, cottons resurgence, resurgence in mobilisation of fibres, applicability and various kinds of innovations and changing fibre balance towards 55% in natural fibres were the hall mark of ITMF conference. 'The Time for Rapid Change' concept was well discussed and appreciated.

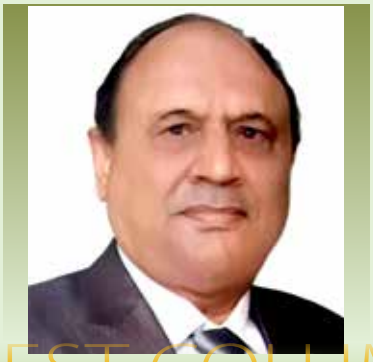
As I was also nominated by Cotton Association of India, it is my duty to give the kind of account which can be useful to CAI members. I have tried to give a synoptic review and report of the conference with my few points added to that. Anybody desiring more information is welcome to meet me, I will surely spend some time with any friend who desires to know more.

Courtesy: Cotton India 2018 (Aurangabad)

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

Precision Farming In Cotton - Global / Indian Scenario

(Continued from Issue No. 46 Dated 11-02-2020)



GUEST COLUMN

Dr. Brijender Mohan Vithal
Cotton Expert

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.

D. Applications of Digital Technologies in Precision Farming

1. Drones

a. Crop Monitoring By Drones

➢ Spraying pesticides on crops is one of those jobs where the margin for error is very narrow. While accomplishing the job, a neighbor's fields must be protected. A tiny droplet, which is 100 microns in diameter, takes 11 seconds to fall 10 feet. At 50 microns, it takes 40 seconds to fall that far, because of the drag that air friction puts on them. That's sufficient time for a wind current to move that droplet to an unintended target. One to two feet above the crop canopy will usually have little drift. But at three feet, the drift distance goes up significantly.

➢ Aided by lasers and ultrasonic echoing technology, spraying drones have greater precision which reduces the overspray risk, plus the amount of chemical applied. As a bonus, spray drones are about five-times faster than traditional spray methods.

➢ There are drone-planting systems that achieve an uptake rate of 75 percent and decrease planting costs by 85 percent. These systems shoot pods with seeds and plant nutrients into the soil, providing the plant all the nutrients necessary to sustain life.

➢ The world burns or cuts down about 26 billion trees a year. It replants about 15 billion, resulting in a shortfall. Presently, not enough trees are being planted to combat deforestation—a problem with big implications for climate change.

b. Crop Sowing by Drones

- A drone flies above a targeted area, mapping its level of forestation and reporting back on the potential for restoration. Then, the drone flies 6-10 feet above ground and fires out a seed pod at an adequate speed to penetrate the soil surface. These seeds are pre-germinated and covered in a nutritious hydro-gel, giving them a higher chance of taking hold. This method is not better than hand planting, just cheaper. A drone can plant 10 seeds per minute. With two operators manning multiple drones, it would be possible to plant up to 36,000 trees in a day. This same technique can be used for other crops too.

- With 3-D mapping technology on board, drones collect information on critical factors, including field geography and soil composition early in the planting process which helps farmers adjust seed-planting patterns. The same drones continue to assist by collecting nitrogen levels and irrigation data once the crops are growing.

- To improve irrigation, drones are equipped with multispectral, hyper-spectral, and

thermal sensing technology. These drones can cover enormous fields to collect crop moisture data, and then sound the alarm whenever critically dry areas are identified.

- As a starter, check out DJI's Smarter Farming package, which is an affordable and easy-to-fly agriculture surveying solution for professional agriculture service providers and serious farm operators. This rig is a suitable multispectral agriculture surveying platform.

- Agriculture drones are not your run-of-the-mill consumer-grade camera drone or racing drone. The FAA considers all agricultural drone activity as a commercial drone operation. This means the drone operator must have a Remote Pilot Certificate to fly a drone. This is true, even if no money changes hands. The operator must pass the initial aeronautical knowledge exam at an FAA approved knowledge testing center.

In global agriculture, drones are being used for collecting high-spatial and temporal-resolution images over wide ranges of regions in a very timely manner. When the farmer needs information quick and in a hurry, the drone can provide it promptly. A typical drone package comes available with three types of software that includes the drone, camera and the brain that flies the drone. When connected to a computer, the computer can tell the drone what area to fly over

c. Use of Drones in India

Drones are becoming a critical tool for farmers. In other parts of the world, many farmers are already benefitting from drone (UAV) technology; and we've only scratched the surface of what this relatively new technology can do for agriculture.

There is a lot of room for growth with agricultural drones in India. With technology constantly improving, imaging of the crops will need to improve as well. With the data that drones record from the crops the farmers are able to analyse their crops and make educated decisions on how to proceed given the accurate crop information. Software programs for analysing and correcting crop production have the potential to grow in this market. Farmers will fly a drone over their crops, accurately identify an issue in a specific area, and take the necessary actions to correct the problem. This gives the farmer time to focus on the big picture of production instead of spending time surveying their crops..

2. Existing Smart Phone Tools (Smart phone Apps) in Indian Cotton Cultivation

Automated Disease Detection Technology-Smart Phones

Farmers can takie a photo of damaged plant part and match it with set symptoms of diseases/ pest attack and to apply recommended treatment. This has made farmers comfortable in handling their disease and pest problems

Many smart phone applications have begun to incorporate Internet of Things (IoT) ideals, data aggregation, and speedy processing to bring up-to-date, actionable information to small farmers regarding seeding, weeding, fertilizing, and watering. These applications gather data from handheld sensors, remote sensors, and weather stations, creating in-depth analyses and valuable recommendations. Several applications have been developed specifically targeting the small-scale farmer:

- Disease Detection and Diagnosis: Photos taken of suspect plants can be forwarded to experts for analysis.

- Fertilizer Calculator: Soil sensors and leaf color can determine what nutrients are needed.

- Soil Study: Capturing soil images, as well as pH and chemical data from sensors, allows farmers to monitor and adjust to changing soil conditions.

- Water Study: Determining Leaf Area Index from photos and brightness logging can help farmers determine water needs.

- Crop Harvest Readiness: Camera photos with UV and white lights accurately predict ripeness.

When specialised applications improve farm productivity by analysing soil, crop, weed and pest variables, as well as offer valuable feedback for agricultural decisions, the small farmer's quality of life can noticeably improve.

4. Future of Digital Technologies in Precision Farming

These digital transformation trends in agriculture, give farmers freedom from concerns over the environment, a better yielding crop and the ability to manage their crops with new and efficient methods. As our population continues to grow, our agricultural methods must keep pace too. It's time to take advantage of the technology we have at our disposal to put food on our table and create peace of mind for our farmers

5. Is Indian Agriculture Sector Ready for Disruptive Technologies?

The governments of different countries need to develop a regulatory and financial framework for introduction and adoption of disruptive technologies. The key components of these frameworks should be finalised with the help of different stakeholders including private players with focus on incentivising farmers as well as industry incentives for increased adoption of disruptive technologies in agriculture to meet the increasing demands for foods. A conducive atmosphere and regulatory framework for helping in large scale adoption of disruptive technologies coupled with innovations in all-encompassing digital technologies can drive the FIFTH revolution in agriculture.

6. What Role Should the Governments Play?

- The Governments should improve the ecosystem and enable the environment. Offer financial incentives, regulatory flexibility, and provide infrastructure at an affordable price.
- It must enable progress through judicious incentives and smart regulation.
- Increase in-process transparency of quality
- Develop a national center of excellence in food safety research and collaboration
- Investigate and consider the impacts of non-tariff barriers to trade
- Enhance domestic testing capabilities
- Depending on the stage of technology and maturity of the players, governments may play different roles:
  - In the case of mature companies, this may involve support through longer-term partnerships and access to markets, incentives via direct investment or tax breaks, and regulatory flexibility.
  - For startups and emerging players, governments can assist by easing administrative work, leveraging their connections, providing seed capital, land, and infrastructure.

7. Various Programs the Governments May Take Up

- Create educational programs and awareness initiatives:
  - Launch educational programs around the urgency to address this global issue and educate people.
  - Plan a strong communication campaign
  - Cover every relevant entity and event, including schools, universities, private companies and local and international events
- Establish incentives and/or an award system to ensure good behavior and consciousness around the issue
- Channel energies. To create programs that work, be started from scratch. Give direction, ambition, and urgency to initiatives in place.
- Don't be prescriptive: Get the best possible expertise from outside to add to your own.
- Take small steps. The best programs string together smaller projects in the service of the vision
- Partner with others: Get the best possible expertise from outside to add to your own.
- Get return on your investment as you go: Develop programs so that the returns to the farmers don't pay out only at the end.
- Communicate progress. Tell your story well to the farmers who matter most.

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

UPCOUNTRY SPOT RATES

(Rs./Qtl)

Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Gravimetric Trash	Strength /GPT	Spot Rate (Upcountry) 2018-19 Crop February 2020 10th	11th	12th	13th	14th	15th
	Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [By law 66 (A) (a) (4)]												
1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	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	9167 (32600)	9167 (32600)	9167 (32600)	9167 (32600)	9167 (32600)	9167 (32600)
4	KAR	ICS-103	Fine	23mm	4.0 – 5.5	4.5%	21	9758 (34700)	9758 (34700)	9758 (34700)	9758 (34700)	9758 (34700)	9758 (34700)
5	M/M (P)	ICS-104	Fine	24mm	4.0 – 5.5	4%	23	- -	- -	- -	- -	- -	- -
6	P/H/ R (U) (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	- -	- -	- -	- -	- -	- -
8	P/H/R(U)	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%	25	- -	- -	- -	- -	- -	- -
10	M/M(P)/ SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	- -	- -	- -	- -	- -	- -
11	P/H/R(U)	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	- -	- -	- -	- -	- -	- -
12	M/M(P)	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	- -	- -	- -	- -	- -	- -
13	SA/TL	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	- -	- -	- -	- -	- -	- -
14	GUJ	ICS-105	Fine	28mm	3.7 – 4.5	3%	27	- -	- -	- -	- -	- -	- -
15	R(L)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	- -	- -	- -	- -	- -	- -
16	M/M(P)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	- -	- -	- -	- -	- -	- -
17	SA/TL/K	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	- -	- -	- -	- -	- -	- -
18	GUJ	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	- -	- -	- -	- -	- -	- -
19	M/M(P)	ICS-105	Fine	30mm	3.7 – 4.5	3.5%	29	- -	- -	- -	- -	- -	- -
20	SA/TL/K/O	ICS-105	Fine	30mm	3.7 – 4.5	3%	29	- -	- -	- -	- -	- -	- -
21	M/M(P)	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	- -	- -	- -	- -	- -	- -
22	SA/TL/ K / TN/O	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	- -	- -	- -	- -	- -	- -
23	SA/TL/K/ TN/O	ICS-106	Fine	32mm	3.5 – 4.2	3%	31	- -	- -	- -	- -	- -	- -
24	M/M(P)	ICS-107	Fine	34mm	3.0 - 3.8	4%	33	- -	- -	- -	- -	- -	- -
25	K/TN	ICS-107	Fine	34mm	3.0 - 3.8	3.5%	33	- -	- -	- -	- -	- -	- -

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

UPCOUNTRY SPOT RATES

(Rs./Qtl)

Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Gravimetric Trash	Strength /GPT	Spot Rate (Upcountry) 2019-20 Crop February 2020 10th	11th	12th	13th	14th	15th
	Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [By law 66 (A) (a) (4)]												
1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	4%	15	10208 (36300)	10151 (36100)	10151 (36100)	10151 (36100)	10151 (36100)	10011 (35600)
2	P/H/R (SG)	ICS-201	Fine	Below 22mm	5.0 – 7.0	4.5%	15	10348 (36800)	10292 (36600)	10292 (36600)	10292 (36600)	10292 (36600)	10151 (36100)
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	9617 (34200)	9617 (34200)	9617 (34200)	9617 (34200)	9617 (34200)	9617 (34200)
6	P/H/ R (U) (SG)	ICS-202	Fine	27mm	3.5 – 4.9	4.5%	26	10742 (38200)	10742 (38200)	10742 (38200)	10742 (38200)	10714 (38100)	10686 (38000)
7	M/M(P)/ SA/TL	ICS-105	Fine	26mm	3.0 – 3.4	4%	25	- -	- -	- -	- -	- -	- -
8	P/H/R(U)	ICS-105	Fine	27mm	3.5 – 4.9	4%	26	10882 (38700)	10882 (38700)	10882 (38700)	10882 (38700)	10854 (38600)	10826 (38500)
9	M/M(P)/ SA/TL/G	ICS-105	Fine	27mm	3.0 – 3.4	4%	25	- -	- -	- -	- -	- -	- -
10	M/M(P)/ SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	- -	- -	- -	- -	- -	- -
11	P/H/R(U)	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	10995 (39100)	10967 (39000)	10967 (39000)	10967 (39000)	10939 (38900)	10911 (38800)
12	M/M(P)	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	10854 (38600)	10882 (38700)	10882 (38700)	10882 (38700)	10854 (38600)	10854 (38600)
13	SA/TL	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	10939 (38900)	10967 (39000)	10967 (39000)	10967 (39000)	10939 (38900)	10939 (38900)
14	GUJ	ICS-105	Fine	28mm	3.7 – 4.5	3%	27	10911 (38800)	10939 (38900)	10939 (38900)	10939 (38900)	10911 (38800)	10911 (38800)
15	R(L)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	11079 (39400)	11107 (39500)	11107 (39500)	11107 (39500)	11107 (39500)	11107 (39500)
16	M/M(P)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	11051 (39300)	11079 (39400)	11079 (39400)	11079 (39400)	11051 (39300)	11051 (39300)
17	SA/TL/K	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	11107 (39500)	11135 (39600)	11135 (39600)	11135 (39600)	11107 (39500)	11107 (39500)
18	GUJ	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	11079 (39400)	11107 (39500)	11107 (39500)	11107 (39500)	11079 (39400)	11079 (39400)
19	M/M(P)	ICS-105	Fine	30mm	3.7 – 4.5	3.5%	29	11220 (39900)	11248 (40000)	11248 (40000)	11248 (40000)	11220 (39900)	11220 (39900)
20	SA/TL/K/O	ICS-105	Fine	30mm	3.7 – 4.5	3%	29	11304 (40200)	11332 (40300)	11332 (40300)	11332 (40300)	11304 (40200)	11304 (40200)
21	M/M(P)	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	11698 (41600)	11726 (41700)	11726 (41700)	11726 (41700)	11698 (41600)	11698 (41600)
22	SA/TL/ K / TN/O	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	11810 (42000)	11838 (42100)	11838 (42100)	11838 (42100)	11810 (42000)	11810 (42000)
23	SA/TL/K/ TN/O	ICS-106	Fine	32mm	3.5 – 4.2	3%	31	12232 (43500)	12260 (43600)	12260 (43600)	12260 (43600)	12232 (43500)	12232 (43500)
24	M/M(P)	ICS-107	Fine	34mm	3.0 - 3.8	4%	33	15860 (56400)	15888 (56500)	15888 (56500)	15888 (56500)	15860 (56400)	15719 (55900)
25	K/TN	ICS-107	Fine	34mm	3.0 - 3.8	3.5%	33	16422 (58400)	16450 (58500)	16310 (58000)	16169 (57500)	16028 (57000)	16028 (57000)

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