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Does the Better Cotton Initiative Help Farmers?

With a Ph.D. in Agricultural and Resource Economics from Oregon State University in the USA, Dr. Terry Townsend is a consultant on commodity issues. He is currently working with the African Cotton and Textile Industries Federation (ACTIF). He served as executive director of the International Cotton Advisory Committee (ICAC) and has also worked at the United States Department of Agriculture for five years, analyzing the U.S. cotton industry and editing a magazine devoted to a cross-section of agricultural issues.

EXPERT's Column

Dr. Terry Townsend

The Better Cotton Initiative (BCI) was created by a coalition of NGOs, retailers and brands in2005. BCI is envisioned as a pragmatic initiative involving the entire value chain that couldinclude all cotton producers around the world and reassure consumers of the sustainability ofproduction practices. The first BCI cotton was produced in 2010/11, and the initiative is nowabout a decade old. In 2018/19 producers participating in BCI, including Cotton made in Africa(CmiA), accounted for 5.6 million tons of production, more than one-fifth of the world total.

Cotton has a vested interest in the success of BCI/CmiA. Cotton depends on consumerpreference to maintain demand in competition with polyester, and BCI can help reassureconsumers that cotton production practices are responsible. However, if BCI is ineffective, theinitiative will generate more cynicism than confidence.

A BCI Project in India

BCI is funding a project in Adoni Mandal of the Kurnool District, Andhra Pradesh, India(population 250,000). Cotton is the main source of income for most households in the district,and almost all cotton in the region is rainfed.

The BCI project is being implemented by an organisation named Participatory RuralDevelopment Initiatives Society (PRDIS), the Implementing Partner. PRDIS facilitated thecreation of a Producer Unit (PU) of farmers. The PU is made up of 98 Learning Groups with3,425 farmers (average group size was 35) which were formed within the target villages.

Commonly, the PRDIS team visited a village and interacted with Gram Panchayat (villagecouncil) leaders who then organised a farmers' meeting. In that meeting, the PRDIS teamexplained the objectives of the project and identified a farmer with knowledge andcommunication skills to motivate others. This lead farmer, then provided the names of fellowfarmers in the village and formed a Learning Group. In some cases, the list of members in theLearning Group were prepared by local leaders.

Women accounted for just 6% of participants in the BCI project. Landless farmers were notincluded in the Learning Groups, but they could attend Learning Group meetings if they choseto.

The Implementing Partner imparted knowledge of recommended practices to farmers in theLearning Groups through monthly meetings. According to PRDIS, BCI recommendations forcotton production practices are in alignment with those promoted by the Central Institute ofCotton Research (CICR), the Government of Andhra Pradesh and state agriculture universities.

This is meant to ensure that the package of BCI recommendations is scientifically valid and willlead to improved soil fertility, higher cotton yields and increased farmer incomes.

Actual Results

The Final Evaluation of the Early Impacts of the Better Cotton Initiative on Smallholder CottonProducers in Kurnool District, India was completed in 2018.https://community.isealalliance.org/sites/default/files/ISEAL%20DIPI-ResearchDesign_India.pdf

The authors of the Evaluation Report drew a sample of 694 farmers from ten clusters, half ofwhom participated in the project (treatment group) and half who did not (control group) andcompared the results before and after the BCI project.

A baseline study was conducted during July -September 2015, with data recorded from 2014/15production. An interim study was completed during August-November 2017, and the finalevaluation was conducted during August-November 2018, based on data from 2017/18.

No Improvement in Profit Margins

According to the evaluation, profits per hectare earned by both treatment and control farmersincreased between 2014/15 and 2017/18, but treatment farmers (those who participated in theLearning Groups) did not earn significantly higher profits than control farmers (farmers whowere not members of the Learning Groups). This is remarkable because there was selectionbias, in that the best farmers in each village were recruited for the project. Therefore, treatmentfarmers should have achieved higher yields and higher profits than control farmers.

The cost of production per hectare during 2017/18 were Rs.28,964 for the Control Group offarmers and Rs.28,994 for the Treatment Group. The Control Group achieved an average yield of616 kilograms of lint per hectare, compared with 628 kilograms for the Treatment Group.

The Control Group earned a gross profit of Rs.45,441 per hectare in 2017/18, compared withRs.46,668 for the Treatment Group, a difference that is not statistically significant and is easilywithin in the range of measurement error. (Collecting data from illiterate small holders on yields,prices received and costs of production is an imprecise exercise. The study authors usedsophisticated techniques in sampling farmers and gathering data, but a high level of precision insuch measurements is inherently impossible. Thus, the small difference in gross profit outcomesof less than 3% is meaningless.)

Reduction in Pesticide Use

BCI has a strong bias against the use of pesticides, even those recommended by researchersand even when used as labelled.Use of all insecticides among the control group of farmers fell from 8,574 grams/milliliters perhectare (some of the chemicals used are in powder form and some are liquid) to 3,197 perhectare, and use among the treatment group of farmers fell from 9,800 grams/milliliters/ha to1,678 per hectare.

Monocrotophos is an insecticide acutely toxic to humans and birds that is banned in the USAand Europe but is still available and approved for use on cotton in India. The state agricultureuniversities still recommend its use at 791 ml/ha. Monocrotophos is popular among farmersbecause it is an all-kill, it is effective and persistent, and it is cheap.

The evaluation study found that both control and treatment farmers were using 8 or 9 times therecommended dosage of monocrotophos in 2014/15. However, by 2017/18, both groups offarmers, control and treatment, had reduced their use of monocrotophos significantly. The control group of farmers reduced their use of the chemical to an average of 1.4 times therecommended dosage (870 ml/ha), and treatment farmers had reduced their use of thechemical to just one-sixth the recommended dosage (108 ml/ha).

Acephate, Fipronil and Chloropyriphos are broad-use insecticides used to kill bollworms andother chewing insects.Imidacloprid and Fipronil mimic nicotine and are used to control sucking insects. The state agriculture universities in Andhra Pradesh recommend that farmers spray a mixture ofacephate and imidacloprid, and/or a mixture of fipronil and acetamiprid. Such mixtures providebroad spectrum insect control in one application. Farmers in both the control and treatmentgroups were using the

insecticide mixtures at only one-half to one-third the recommendeddosages in 2014/15, and the evaluation study showed that applications of the mixtures fell tojust one-third to one-tenth of the recommended doses by 2017/18, with the decline amongtreatment farmers much larger than among control farmers.

Farmers also reduced their use of chloropyriphos and acephate between the initial and finalevaluations, but their use of imidacloprid and fipronil increased, perhaps because of increasedpopulations of sucking pests in 2017/18.

The decline in the use of monocrotophos among both control and treatment farmers was a clearsuccess of the project. Declines in the use of chloropyriphos and acephate and the increaseduse of imidacloprid and fipronil may have reflected the vagaries of pest pressures during2017/18.

In total, farmers in both the control and treatment groups went from using more insecticide thanrecommended by CICR and the state universities to using much less than the amountsrecommended. If the guidance provided by PRDIS under the BCI project were truly in alignmentwith recommended practices, and if pest pressure during 2017/18 were normal, farmers wouldhave increased their use of acephate, chloropyriphos, and fipronil.

Fertilizer

BCI encourages the use of farmyard manure and discourages the "excessive" use of purchasednitrogen (N), phosphorus (P) and potassium (K). According to the authors of the FinalEvaluation, CICR recommends that fields be treated with 4 or 5 tonnes of compost made fromfarmyard manure each year. However, only 30% of farmers who participated in the project and36% of farmers who did not participate in the project used such compost in 2017/18, and eventhose farmers used only about half the recommended levels. The study authors drily note thatthis might be because of the extra labour required to gather, compost, spread and incorporateinto the soil 5 tonnes of composted manure per hectare per year.

To the chagrin of the Implementing Partner, the use of commercial fertilizer actually increasedbetween 2014/15 and 2017/18, from around 700 kilograms of N,P,K per hectare to around 900kilograms for both groups. These rates of fertilizer application were deemed "excessive" by theImplementing Partner because they exceed CICR recommendations.

The authors of the evaluation study noted that soil testing services are not available to farmersin the region. Therefore, nutrient applications are being made without soil test data, leading to"unbalanced" and "excessive" use. There was no explanation of why soil testing was notincluded in the package of services provided as part of the BCI project.

Social Standards

BCI places great emphasis on improvements in social indicators through the elimination offorced labour and child labour and improvements in working conditions, and the Evaluation Studyfound that awareness of these topics and knowledge of the definitions of each increasedbetween 2014/15 and 2017/18.

However, there were no observed improvements in the provision of drinking water to fieldworkers, a significant gender pay gap continued, there was little evidence that the incidence ofchild labour changed, and no changes were observed with respect to working conditions, wagesand health and safety measures to protect workers, especially migrant workers and theirchildren.

Labour Requirements

A glaring omission in the Final Evaluation is that no effort was made to measure the days oflabour required to produce a hectare of cotton and the differences in labour requirements betweenthe control and treatment groups from 2014/15 to 2017/18.

The evaluators went to great effort to collect data on purchased inputs and the cash costs ofcotton production. As noted above, the evaluation concluded that there were no differences inprofitability between the control and treatment groups of farmers after three years of projectimplementation.

However, there would have been significant differences between the control and treatmentgroups of farmers in the amount of labour required per hectare. All farmers need to provide aboutthe same amount of labour to plant, cultivate and harvest a crop, but the treatment farmers whowere following all recommendations to reduce the use of monocrotophos while increasing theirapplications of organic compost would require weeks of additional labour per hectare per year.

Less toxic, less persistent and more specifically targeted pesticides must be applied more oftenthan monocrotophos. A farmer using a backpack sprayer to apply a single application ofinsecticide to one hectare of cotton planted at one-meter row spacing walks 5 km. whilecarrying the weight of the

sprayer and water. Therefore, additional insecticide applications meanadditional labour.

It requires 15 tonnes of green material to produce 5 tonnes of organic compost. Gathering thegreen material, turning it occasionally to facilitate microbial activity, shovelling the compost into awagon and transporting it to a field, and then distributing the compost over the field andincorporating it into the soil requires several additional weeks of labour per year per hectare. Iffarmers hire labour to do this work, the cost of labour would have been accounted for. However,most small holders do this work themselves, and the implicit cost of own-labour is not included in

The Final Evaluation Calculations of Production Costs

It was also revealed in the Final Evaluation that BCI is promoting the use of neem oil and "bio-sprays" that farmers make from cow dung, urine, and chilis, onions and anything else thatfarmers think might deter insects.

No Market Demand for Better Cotton

As the authors of the Final Evaluation note, the main driver for expansion of BCI in the valuechain is commitment from brands and retailers towards sourcing "Better" cotton. Marketengagement is critical to the success of BCI.

However, by the final evaluation in 2018, no brand level uptake of Better Cotton had beenevident to ginners in the Adoni Mandal.

According to the authors of the Final Evaluation, "ginners have not received market signals fromspinners, who in turn have not received market demand from international buyers. Marketdemand is not apparent, and uptake in the value chain has not yet occurred."

Conclusions

According to PRDIS, a reduction in the cost of production of cotton is the key outcome which willmotivate an increasing number of farmers to meet the BCI standards. Therefore, the incentivefor farmer participation is a reduction in the cost of production through lower input costs.

The flow of economic benefits to cotton farmers is expected to lead to positive environmentalimpacts. When farmers reduce their use of pesticides and fertilizers and implement improvedsoil fertility management practices, there will be a long run benefit in terms of improved soilhealth.

Except, these benefits did not occur. After three years of effort and expense to trainapproximately 3,000 farmers, there was no measurable increase in yields or net profit fortreatment farmers compared with control farmers, and ginners were not aware of any differentialdemand for cotton produced under BCI standards.

The BCI package of recommendations, with their aversion to the optimised use of pesticidesand commercial fertilizers and their infatuation with farmyard manure and cow urine ismisplaced. Some chemicals, such as monocrotophos should be eliminated from agriculturalproduction systems. However, labelled pesticides are legitimate tools of production that raiseyields and enhance farmer welfare through increased incomes without detrimental health orenvironmental impacts when used properly. BCI seems not to realise this.

Bio-sprays made from cow dung, urine and chopped up chilis and onions are voodoo plantprotection; they don't work, but apparently the Implementing Partner in this project isencouraging their use.

Organic fertilizer is effective and helps to build soil fertility, but organic compost is very labourintensive to produce and deploy, and BCI seems not to care about farmer's labour requirements.

The authors of the Evaluation report say that consistency of adoption of Better Cotton practicesis variable, and that farmers report that poor rains and indebtedness may have preventedadoption. This implies that Better Cotton recommendations only work in years of good rains andcan only be implemented at a cost that is prohibitive to indebted farmers.

The Final Evaluation contains a devastating summary observation on page 93, "There is noevidence that desired impacts have been achieved, …"

The authors of the Final Evaluation state that achieving the goals of BCI may take more timethan the three-year phase of the research. Let's hope that as the project continues, BCI ensuresthat the implementing partner operates effectively and that agronomic recommendations trulyare in line with CICR and university recommendations.

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

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; Yavatmal; Aurangabad • **Gujarat :** Rajkot; Kadi; Ahmedabad • **Andhra Pradesh :** Adoni • **Madhya Pradesh :** Khargone • **Karnataka :** Hubli • **Punjab :** Bathinda • **Telangana:** Warangal, Adilabad

COTTON ASSOCIATION OF INDIA
Established 1921

COTTON ASSOCIATION OF INDIA
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All India Weather Summary and Forecast

Meteorological Analysis as on 8th September 2020

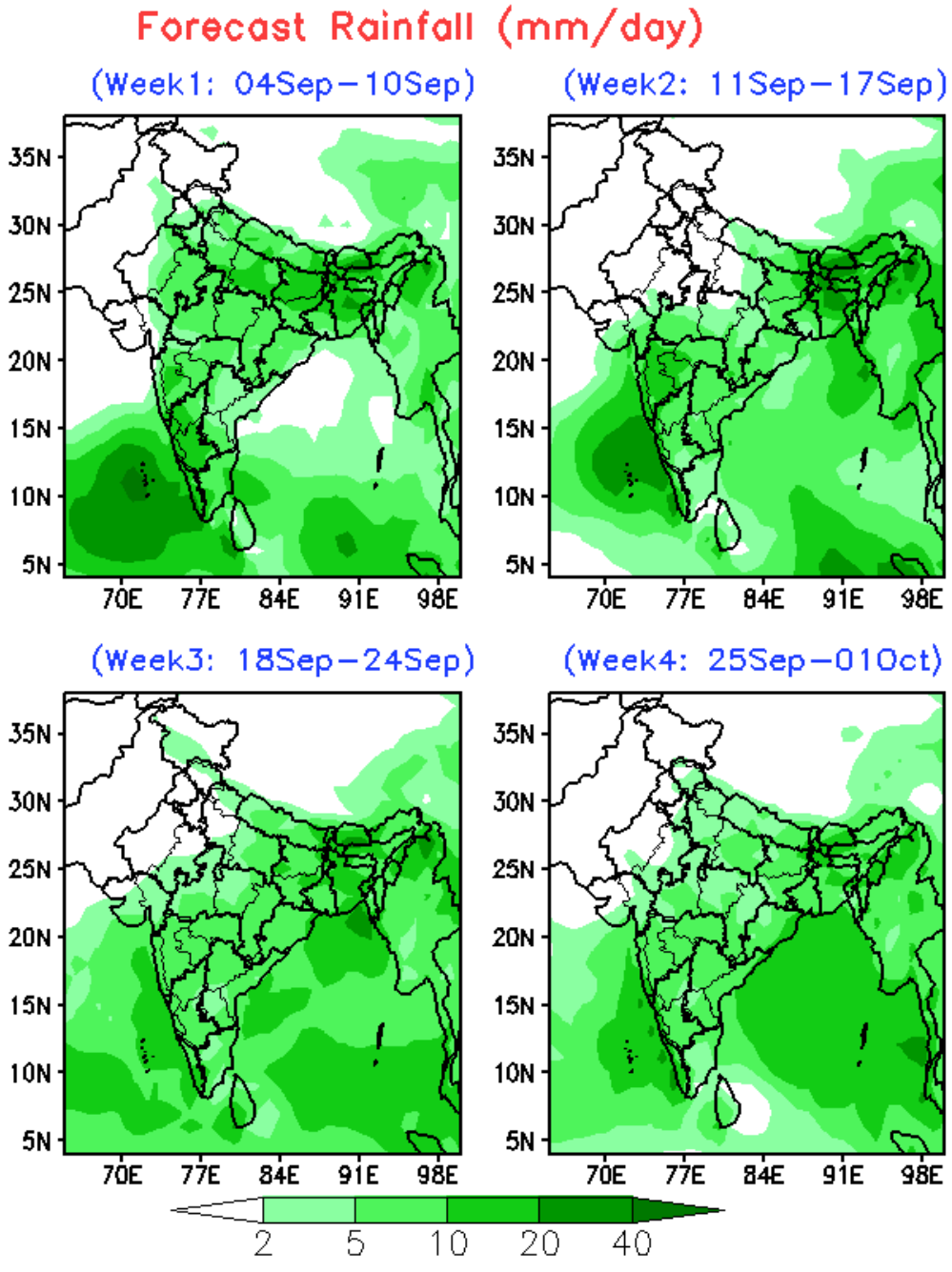
♦ The Monsoon Trough at mean sea level now passes through Amritsar, Karnal, Bareilly, Gorakhapur, Patna, Jalpaiguri and thence eastwards to Nagaland across Assam.

♦ The Low Pressure Area over Eastcentral Arabian Sea off Karnataka coast and the associated cyclonic circulation extending upto 3.1 km above mean sea level persists. It is very likely to weaken over the same region during next 24 hours.

♦ The east-west shear zone roughly along 13°N across the cyclonic circulation associated with the Low Pressure Area over Eastcentral Arabian Sea off Karnataka coast at 3.1 km above mean sea level persists.

♦ The cyclonic circulation over northeast Rajasthan & neighbourhood between 1.5 & 3.1 km above mean sea level persists.

♦ The trough in mid tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 69°E to the north of Lat. 30°N.



♦ The cyclonic circulation over east Assam & neighbourhood extending upto 0.9 km above mean sea level persists.

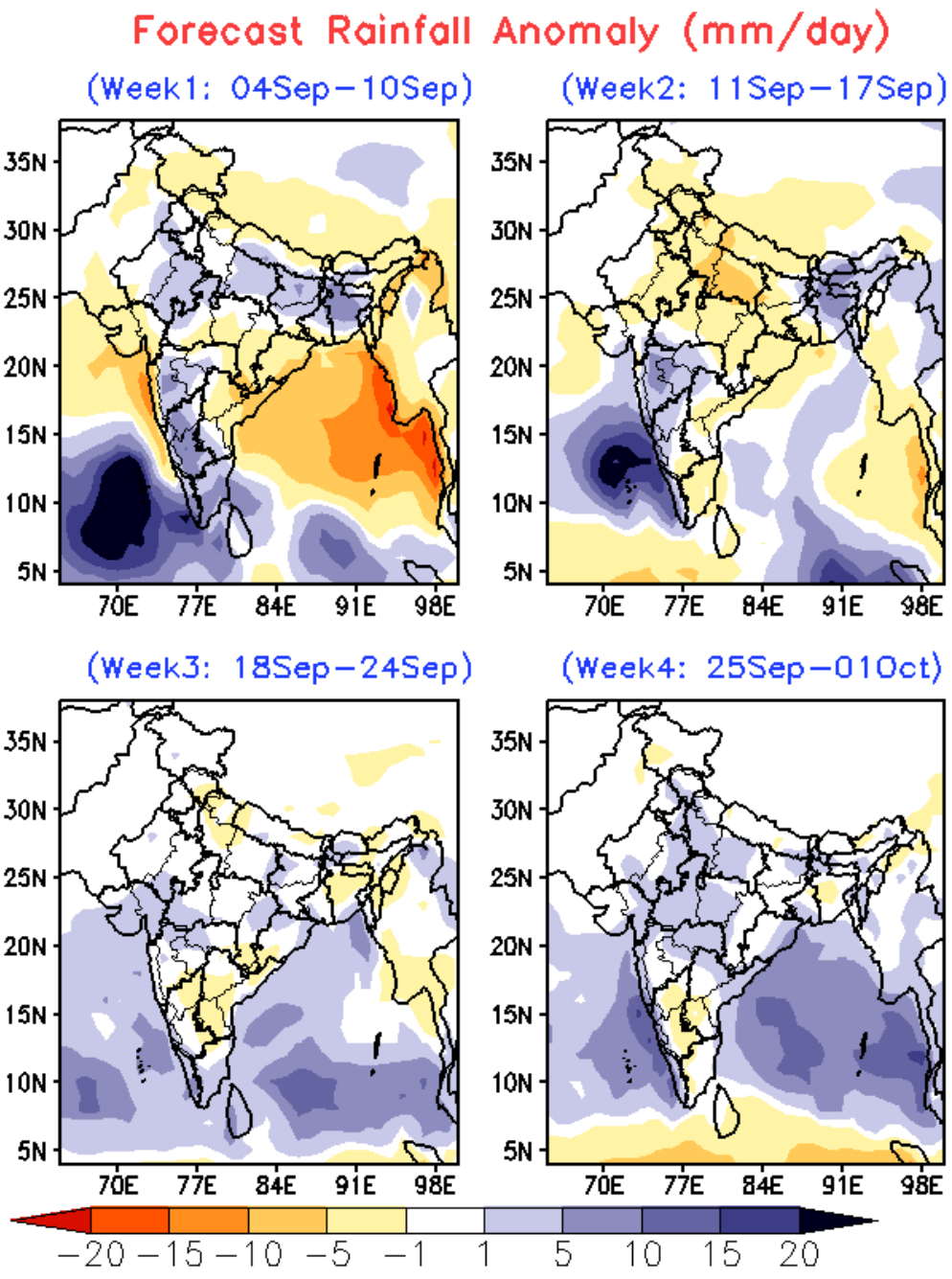
♦ The cyclonic circulation over northwest Uttar Pradesh & neighbourhood at 1.5 km above mean sea level persists.

Weather Forecast for next 5 days * upto 0830 hours IST of 13th September, 2020

♦ Meteorological sub-division wise detailed 5 days precipitation forecast is given in Table-1. ♦ No significant change in temperatures very likely over most parts of the country during next 3-4 days.

Weather Outlook for subsequent 2 days from 13th September, 2020 to 15th September, 2020

♦ Fairly widespread rainfall with isolated heavy falls likely over East & Northeast India and over scattered to fairly widespread rainfall over south Peninsular India and West coasts of India. Isolated to scattered rainfall over parts of Central India. Dry weather likely over Northwest India except over East Uttar Pradesh.



UPCOUNTRY SPOT RATES

(Rs./Qtl)

Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Gravimetric Trash	Strength /GPT	Spot Rate (Upcountry) 2019-20 Crop August - September 2020					
								31st	1st	2nd	3rd	4th	5th
1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	4%	15	10320 (36700)		10236 (36400)	10236 (36400)	10236 (36400)	10236 (36400)
2	P/H/R (SG)	ICS-201	Fine	Below 22mm	5.0 – 7.0	4.5%	15	10489 (37300)	H	10489 (37300)	10489 (37300)	10489 (37300)	10489 (37300)
3	GUJ	ICS-102	Fine	22mm	4.0 – 6.0	13%	20	6468 (23000)		6439 (22900)	6439 (22900)	6439 (22900)	6439 (22900)
4	KAR	ICS-103	Fine	23mm	4.0 – 5.5	4.5%	21	7086 (25200)		7086 (25200)	7086 (25200)	7086 (25200)	7086 (25200)
5	M/M (P)	ICS-104	Fine	24mm	4.0 – 5.5	4%	23	8802 (31300)	O	8802 (31300)	8802 (31300)	8802 (31300)	8802 (31300)
6	P/H/ R (U) (SG)	ICS-202	Fine	27mm	3.5 – 4.9	4.5%	26	9983 (35500)		9926 (35300)	9926 (35300)	9870 (35100)	9926 (35300)
7	M/M(P)/ SA/TL	ICS-105	Fine	26mm	3.0 – 3.4	4%	25	7536 (26800)		7592 (27000)	7620 (27100)	7620 (27100)	7620 (27100)
8	P/H/R(U)	ICS-105	Fine	27mm	3.5 – 4.9	4%	26	10179 (36200)	L	10179 (36200)	10179 (36200)	10123 (36000)	10179 (36200)
9	M/M(P)/ SA/TL/G	ICS-105	Fine	27mm	3.0 – 3.4	4%	25	7845 (27900)		7902 (28100)	7930 (28200)	7930 (28200)	7930 (28200)
10	M/M(P)/ SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	9139 (32500)		9195 (32700)	9223 (32800)	9223 (32800)	9223 (32800)
11	P/H/R(U)	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	10264 (36500)	I	10264 (36500)	10264 (36500)	10208 (36300)	10264 (36500)
12	M/M(P)	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	9814 (34900)		9870 (35100)	9898 (35200)	9898 (35200)	9898 (35200)
13	SA/TL/K	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	9898 (35200)		9954 (35400)	9983 (35500)	9983 (35500)	9983 (35500)
14	GUJ	ICS-105	Fine	28mm	3.7 – 4.5	3%	27	9842 (35000)	D	9898 (35200)	9926 (35300)	9926 (35300)	9926 (35300)
15	R(L)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	10320 (36700)		10320 (36700)	10320 (36700)	10264 (36500)	10320 (36700)
16	M/M(P)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	10095 (35900)		10151 (36100)	10179 (36200)	10179 (36200)	10179 (36200)
17	SA/TL/K	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	10151 36100	A	10208 36300	10236 36400	10236 36400	10236 36400
18	GUJ	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	10123 (36000)		10179 (36200)	10208 (36300)	10208 (36300)	10208 (36300)
19	M/M(P)	ICS-105	Fine	30mm	3.7 – 4.5	3.5%	29	10320 (36700)		10376 (36900)	10404 (37000)	10404 (37000)	10404 (37000)
20	SA/TL/K/O	ICS-105	Fine	30mm	3.7 – 4.5	3%	29	10404 (37000)	Y	10461 (37200)	10489 (37300)	10489 (37300)	10489 (37300)
21	M/M(P)	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	10489 (37300)		10545 (37500)	10573 (37600)	10573 (37600)	10573 (37600)
22	SA/TL/ K / TN/O	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	10545 (37500)		10629 (37800)	10657 (37900)	10657 (37900)	10657 (37900)
23	SA/TL/K/ TN/O	ICS-106	Fine	32mm	3.5 – 4.2	3%	31	10714 (38100)		10770 (38300)	10798 (38400)	10798 (38400)	10798 (38400)
24	M/M(P)	ICS-107	Fine	34mm	3.0 - 3.8	4%	33	14819 (52700)		14819 (52700)	14819 (52700)	14819 (52700)	14819 (52700)
25	K/TN	ICS-107	Fine	34mm	3.0 - 3.8	3.5%	34	15100 (53700)		15100 (53700)	15100 (53700)	15100 (53700)	15100 (53700)

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