



SITRA e -Techletter

...News during the Year

INSIDE THIS ISSUE...

PRODUCTIVITY CONCEPTS...1

TECHNICAL NOTES....7

PROJECTS....12

NEW TESTING INSTRUMENTS....15

SEMINARS & CONFERENCES.....17

TRAINING PROGRAMMES....19

CONSULTANCY OFFERED.....21

TEXTILE TITBITS....22

PAPER REVIEW....23

STAFF NEWS....24

PRODUCTIVITY DELIBERATIONS

Commercial performance of spinning mills during January – December 2024

SITRA's monthly online survey helps the mills to compare their RMC, YSP and Net output value (NOV) as well as yarn quality with other mills every month. It also gives vital information about the trend in the movement of count-wise YSP and RMC between months. This survey was launched in the year 2013 and has a successful record of publishing the monthly survey reports on time every time.

During the year 2024 (January – December), nearly 60 mills have regularly participated in the survey by submitting their data. SITRA has also developed an index called MPEI (Market Performance Evaluation Index), which is an arithmetic index that is derived by having April 2013 as the base month and the base index set to 100 for that month. The calculation of MPEI is based on the average net output value (yarn selling price – clean raw material cost) in terms of Rs per kg of yarn for 11 popular counts, which occupy a considerable proportion in the market share with a wide range. The popular counts that have been assumed to arrive at the MPEI are 40s K, 60s C, 80s C, 40s C-Comp., 50s C-Comp., 60s C-Comp., 80s C-Comp., 100s C-Comp., 30s CH, 30s CH-Comp. and 40s CH-Comp. counts.

The trend in the movement of MPEI for the period January – December 2024 is shown in Figure 1. Similarly, the trend in the movement of the yarn selling price index and raw material cost index during the period January – December 2024 is shown in Figure 2.

PRODUCTIVITY DELIBERATIONS

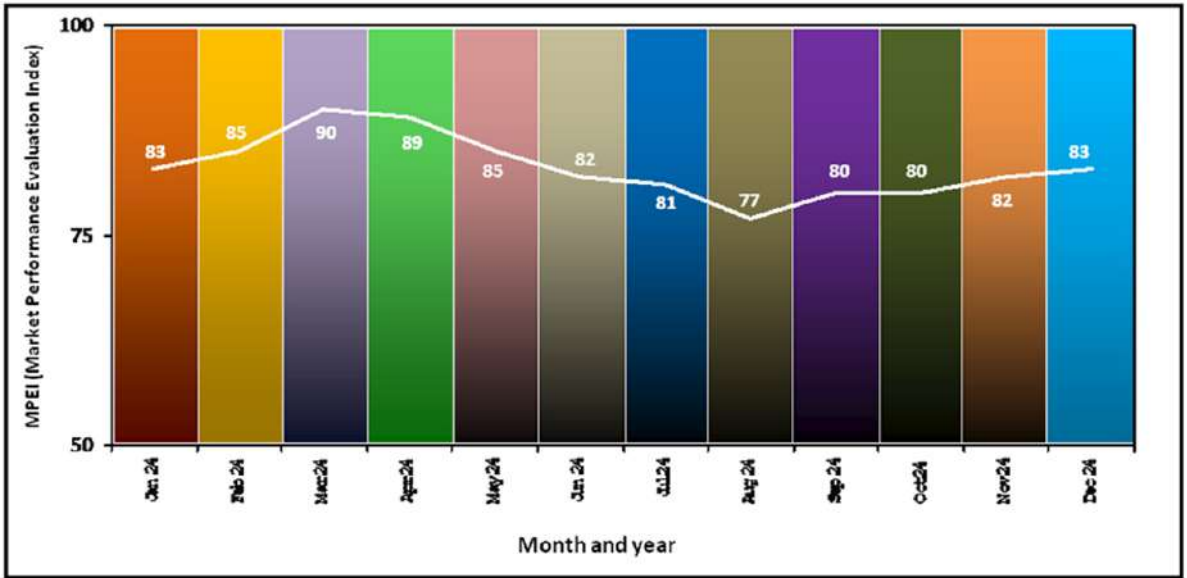


Figure 1 Market Performance Evaluation Index (MPEI)

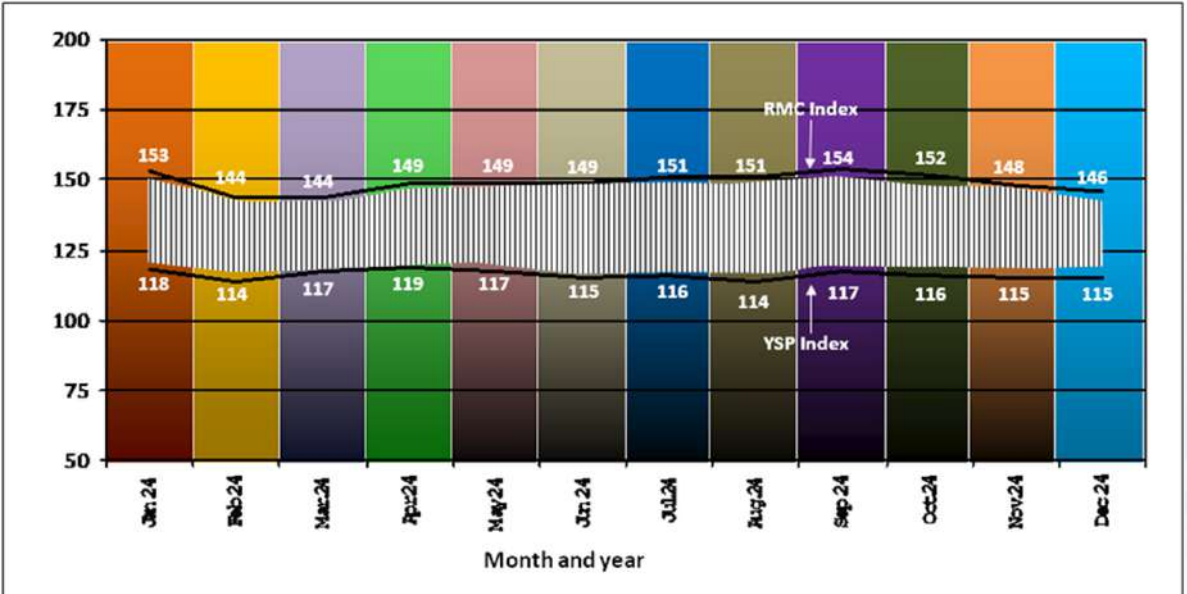


Figure 2 Yarn selling price index (YSPI) and Raw material cost index (RMCI)

During the year 2024, MPEI averaged at 83 index points, which is 8 index points higher than that prevailed in the previous year (2023). Between months, MPEI fluctuated widely, ranging from a low value of 77 index points in August 2024 to 90 index points in March 2024.

PRODUCTIVITY DELIBERATIONS

During the 1st quarter, MPEI witnessed an increasing trend and reached a maximum of 90 index points in March 2024. It was mainly because of the low raw material cost index in March 2024. Only in this quarter, the raw material cost index remained at a low level continuously for 2 months (RMCI: 144 index points).

During the start of the 2nd quarter of 2024, the raw material cost index had registered about a 5 index point increase, whereas the yarn selling price index fluctuated widely in each month of the 2nd quarter. In April 2024, the YSPI had increased by 2 index points when compared with the previous month. However, in the subsequent a 2 months, it registered for 2 index point reduction every month.

In the 3rd quarter, the gap between RMCI and YSPI got still widened in which the YSPI registering a yearly low index point of 114 in August 2024. During the above month, the RMCI had crossed over 150 points, thereby resulting in 77 index points for MPEI, which in turn is the lowest during the year.

The last quarter (October to December 2024) witnessed a consistent recovery due to the effect of the reduction noticed in the raw material cost. The YSPI was found hovering around 115 index points in the 4th quarter. Due to the above, the MPEI had recovered to 83 index points in December 2024, which was the same as that prevailed in January 2024.

The performance of individual counts that have been considered for MPEI during the period January to December 2024 is given in Table 1.

Table 1 Performance of individual counts in 02 24

Count	YSP				RMC				NOV			
	Avg.	Min	Max.	%diff.*	Avg.	Min.	Max.	%diff.*	Avg.	Min.	Max.	%diff.*
30s CH	260	253	273	8	205	194	215	11	55	41	60	46
30s CH-Comp.	269	257	293	14	205	195	223	14	64	52	70	35
40s K	252	244	270	11	196	186	206	11	57	47	68	45
40s CH-Comp.	289	282	300	6	204	197	211	7	85	74	94	27
40s C-Comp.	287	276	297	8	205	196	211	8	81	74	89	20
50s C-Comp.	324	309	356	15	208	196	219	12	116	105	141	34
60s C	331	321	338	5	220	204	232	14	112	97	134	38
60s C-Comp.	342	327	363	11	211	199	234	18	130	124	140	13
80s C	378	364	414	14	210	199	220	11	168	149	215	44
80s C-Comp.	417	408	427	5	230	223	236	6	187	174	200	15

*' [(Maximum/ minimum) – 1] x 100

The above table shows a very wide fluctuation in net output value (NOV) in 30s CH, 40s K and 80s C counts (46%, 45% and 44% respectively). However, the fluctuation is noticed minimum in 60s C-Comp. and 80s C-Comp. counts (13% and 15% respectively).

PRODUCTIVITY DELIBERATIONS

38th Costs, operational performance and yarn quality study (CPQ study)

SITRA conducted the 38th CPQ study covering data for the period April – June 2024. The summary of all mills' average as well as top 20% mills on various costs and operational factors is shown in Tables 2 to 4. Table 5 shows the comparison between 2023 and 2024, which is based on the common mills that have participated in both years.

Table 2 Contribution, sale value and cost factors

Parameters	All mills' avg.	Top 20% mills avg.
<u>Contribution</u>		
- Rs/spindle/year	5140	9850
- Rs/kg of yarn	51	85
- As % of yarn sales	14.0	21.0
<u>Salaries and wages cost</u>		
- As % of yarn sales	10.0	7.3
<u>Power cost</u>		
- Rs/spindle/year	3570	4270
- As % of yarn sales	10.6	8.6
- Rs /unit	6.4	6.1
<u>Raw material cost</u>		
- Rs/kg of yarn	205	223
- As % of yarn sales	65.4	63.1
<u>Yarn sale value</u>		
- Rs/kg of yarn	324	369
- Rs/spindle/year	36620	47630
Average count (Ne)	46	41

Table 4 Product diversification

Type of diversification	All mills' avg.	Top 20% mills avg.
Export	23	42
Combed	73	75
Hosiery	34	34
Ring doubled	5	7
TFO doubled	7	10
Compact	59	76
Gassed	3	11
100% cotton yarn	82	89
100% non-cotton yarn	6	7
Cotton/MMF blended	12	4

Table 3 Machine and labour productivity

Particulars	All mills' avg.	Top 20% mills avg.	SITRA Std.
<u>Machine productivity</u>			
- Prod./spl./8 hrs (g)*	111	114	116
- Spindle utilization (%)	91.9	94.4	98
- Machine Productivity Index (MPI)	89	94	100
<u>Labour productivity</u>			
- HOK (up to ring frames)*	13.9	12.5	10.2
- Ring frame Tenter Assignment Index	83	103	100
- Doffer Assignment Index	86	84	100

Table 5 Comparison of costs and operational performance between 2023 and 2024

Parameters	Common mills' (50) avg.	
	37 th study (Apr.-Jun.23)	38 th study (Apr.-Jun.24)
<u>Contribution</u>		
- Rs/spindle/year	5000	5400
<u>Salaries and wages cost</u>		
- Rs/spindle/year	3230	3410
<u>Power cost</u>		
- Rs/spindle/year	3690	3730
<u>Raw material cost</u>		
- Rs/kg of yarn	216	206
- Rs/spindle/year	25760	25090
<u>Yarn sale value</u>		
- Rs/kg of yarn	332	330
- Rs/spindle/year	37680	37630
Prod./spl./8 hrs (g) adj. to 40s	109	112
Spindle utilization (%)	92.8	92.9
Average count (Ne)	46s	47s

PRODUCTIVITY DELIBERATIONS

Fibre to yarn conversion cost in 2024

Table 6 shows total conversion cost particulars for 12 different counts and types of yarns, which in turn are based on the data that were collected in the 38th CPQ study.

Table 6 Count-wise conversion cost

Period: April – June 2024

S. no.	Count	Conversion cost/kg of yarn (Rs)				Conv. cost/kg/count (Rs)	Conv. cost/spl./shift (Rs) [®]	No. of mills
		Avg.	Min.	Max.	CV (%)			
1.	30s C-Comp.	62.4	41.6	71.3	17	2.08	13.7	5
2.	40s C-Comp.	86.8	64.9	110.3	15	2.17	12.4	6
3.	50s C-Comp.	112.0	87.4	133.3	14	2.24	11.5	5
4.	60s C-Comp.	143.8	125.3	168.6	9	2.40	10.6	7
5.	61s C-Comp.	120.5	101.4	142.2	15	1.98	9.5	4
6.	80s C-Comp.	192.6	155.8	210.0	10	2.41	9.3	5
7.	100s C-Comp.	262.0	239.3	282.4	5	2.62	8.4	5
8.	30s CH	73.0	65.1	77.9	7	2.43	14.9	4
9.	30s CH-Comp.-Ex.	63.5	45.8	75.5	18	2.12	15.2	5
10.	40s CH-Comp.-Ex.	88.1	73.5	97.8	9	2.20	13.8	6
11.	10s OE	23.0	14.4	27.6	23	2.30	92.7	4
12.	20s OE	42.4	31.9	67.0	27	2.12	63.6	6

Conversion cost and profit margin

Average net output value (NOV), conversion cost and net profit/loss in terms of Rs per kg of yarn and also as a percentage of yarn sale value for the 12 counts pertaining to the period April to June 2024 are shown in Table 7.

Table 7 Count-wise conversion cost and profit margin

S. no.	Count	Rs per kg of yarn			As a % of YSP		
		NOV	CC	Net profit	NOV	CC	Net profit
1.	30s C-Comp.	67.8	62.4	5.4	25.6	23.6	2.0
2.	40s C-Comp.	87.2	86.8	0.4	30.0	29.9	0.1
3.	50s C-Comp.	117.7	112.0	5.7	36.4	34.5	1.8
4.	60s C-Comp.	141.8	143.8	(-) 2.0	41.4	41.9	(-) 0.6
5.	61s C-Comp.	130.0	120.5	9.5	39.0	36.1	2.8
6.	80s C-Comp.	195.5	192.6	2.9	47.0	46.3	0.7
7.	100s C-Comp.	274.6	262.0	12.6	53.5	51.0	2.5
8.	30s CH	62.5	73.0	(-) 10.5	23.4	27.3	(-) 3.9
9.	30s CH-Comp.-Ex.	63.6	63.5	0.1	23.8	23.7	0.0
10.	40s CH-Comp.-Ex.	88.2	88.1	0.1	29.7	29.7	0.0
11.	10s OE	33.7	23.0	10.7	20.6	14.1	6.5
12.	20s OE	50.6	42.4	8.2	26.6	22.3	4.3

Note: (-) sign indicates loss; CC – conversion cost; Net profit = NOV - CC

PRODUCTIVITY DELIBERATIONS

Component-wise conversion cost

Table 8 show the component-wise average conversion cost for all the 12 counts in terms of per kg of yarn.

Table 8 Component-wise conversion cost per kg of yarn.

(Amount: Rs/kg of yarn)

S no.	Count	YSP (a)	RMC (b)	Conversion cost						Net profit (a-b-c)
				SWC	Power	Stores & packing	Admn. OH	Int. & Dep.	Total (c)	
1.	30s C-Comp.	264.6	196.8	13.9	24.2	7.3	2.4	14.6	62.4	5.4
2.	40s C-Comp.	290.2	203.0	21.4	34.0	10.2	3.9	17.3	86.8	0.4
3.	50s C-Comp.	325.1	207.4	29.0	45.3	14.3	5.0	18.4	112.0	5.7
4.	60s C-Comp.	342.8	201.0	42.7	49.5	18.8	7.4	25.4	143.8	(-) 2.0
5.	61s C-Comp.	333.5	203.5	34.3	36.1	17.6	16.8	15.7	120.5	9.5
6.	80s C-Comp.	416.2	220.7	64.6	66.6	21.3	12.6	27.5	192.6	2.9
7.	100s C-Comp.	513.5	238.9	80.8	85.4	33.2	20.9	41.7	262.0	12.6
8.	30s CH	267.6	205.1	24.9	24.6	7.0	2.7	13.8	73.0	(-) 10.5
9.	30s CH-Comp.-Ex.	267.6	204.0	14.2	22.0	8.1	3.2	16.0	63.5	0.1
10.	40s CH-Comp.-Ex.	296.5	208.3	24.4	32.7	10.2	3.3	17.5	88.1	0.1
11.	10s OE	163.5	129.8	4.6	8.1	3.0	0.9	6.4	23.0	10.7
12.	20s OE	190.2	139.6	7.2	14.0	7.0	2.2	12.0	42.4	8.2

(-) ve sign indicates net loss; SWC: Salaries and wages cost; OH: Overheads

Trend in the movement of conversion cost between 2010 and 2024

The movement of conversion cost in terms of Rs per kg of yarn for 5 popular counts, for which there were sufficient representation of mills in the inter-firm studies, is shown in Figure 3.

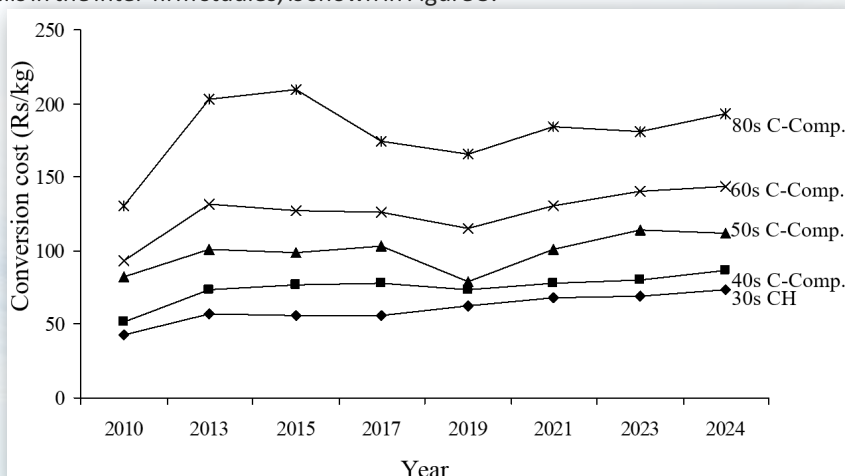


Figure 3 Movement of conversion cost between 2010 and 2024

TECHNICAL NOTES

Investigation on inter-fibre cohesion of cotton and its influence on yarn quality attributes

In the production of yarns and fabrics from staple fibres, one of the key factors influencing both processing efficiency and the quality of the final product is the interaction between fibres. This aspect is critical, as it directly impacts yarn strength or tenacity and indirectly affects spinning productivity. Research has demonstrated that inter-fibre cohesive forces play a significant role in determining the mobility of individual fibres within the yarn and the behavior of yarn within the fabric structure.

To explore this further, SITRA has undertaken a study to examine the inter-fibre cohesion (cohesive force) of both Indian and imported cotton and its impact on tensile properties. The study involved the collection and testing of twenty Indian and twenty-two imported cotton varieties. Tests included basic fibre property analysis using HVI/AFIS PRO2, opening work assessment with the MDTA4 tester, and cohesive force measurement using the Zwick tensile tester.

The quality characteristics of both Indian and imported cotton varieties, along with their cohesive force values measured on the MDTA4 instrument, are presented in Tables 1 and 2.

Table 1: Quality attributes of Indian cotton varieties

Cotton variety	Station	State	2.5% span length (mm)	Mic. ($\mu\text{g}/\text{inch}$)	Slender-ness ratio	Strength (g/tex)	SFC (n)	Cohesive force (mgf/tex)
Mech 1	Shahapur	Karnataka	30.50	4.15	2716	21.90	23.1	15.99
Mech1	Raichur	Karnataka	30.52	3.88	2811	23.30	26.7	16.33
Mech	-	Maharashtra	30.83	3.62	2940	24.30	24.3	17.13
Mech 1	Adilabad	Telangana	31.12	3.56	2992	23.20	24.7	14.98
Bunny	Vijaypur	Karnataka	29.88	3.80	2781	22.20	27.7	16.24
Bunny	Vijaypur	Karnataka	30.55	3.95	2789	22.50	27.8	16.18
Bunny	-	Karnataka	30.96	4.03	2798	27.10	27.1	18.75
Bunny	Gugal	Karnataka	31.37	4.08	2818	22.60	25.7	17.53
Bunny	Bijapur	Karnataka	30.89	3.94	2823	22.50	26.3	16.06
Bunny	Shahapur	Karnataka	32.08	4.10	2874	22.30	27.2	16.37
Bunny	Dharwad	Karnataka	29.81	3.49	2895	22.20	31.2	17.17
Bunny	Chennur	Karnataka	30.42	3.54	2933	21.90	28.1	16.76
Bunny	Raichur	Karnataka	30.48	3.46	2973	23.90	30.9	16.40
MCU-5	Asifabad	Telangana	30.06	3.80	2798	22.10	30.6	17.95
MCU-5	-	Telangana	31.22	4.04	2818	25.90	25.9	17.04
S-4	-	-	30.78	3.63	2931	27.30	27.3	19.49
Surabhi	-	Tamil Nadu	33.50	3.40	3321	28.00	32.8	16.95
DCH -32	-	Madhya Pradesh	35.22	3.42	3455	26.80	30.5	20.20
DCH -32	Bamaniya	Madhya Pradesh	35.34	3.37	3493	27.00	31.7	16.92
SUVIN	Pollachi	Tamil Nadu	37.70	3.17	3842	26.60	27.2	18.97

TECHNICAL NOTES

Table 1 indicates that the cohesive force among different Indian cotton varieties ranged from 14.98 mgf/tex to 20.20 mgf/tex. For the Mech variety, collected from various States and locations, the cohesive force varied between 14.98 mgf/tex and 17.13 mgf/tex. In the Bunny variety, it ranged from 16.06 mgf/tex to 18.75 mgf/tex, while in the DCH 32 variety, values ranged from 16.92 mgf/tex to 20.20 mgf/tex.

A moderate positive correlation ($r = 0.44$) was observed between the slenderness ratio and fibre cohesive force across the Indian cotton varieties.

Table 2: Quality attributes of imported cotton varieties

Cotton variety	2.5% span length (mm)	Mic. ($\mu\text{g}/\text{inch}$)	Slender -ness ratio	Strength (g/tex)	SFC(n)	Cohesive force (mgf/tex)
Turkish Izmir org	29.88	4.54	2544	21.9	22.8	17.79
Tanzania	29.60	4.27	2599	21.0	24.8	14.52
SJV Acala (US)	31.34	4.76	2606	25.0	21.0	16.37
Plebe (Cameroon)	30.16	4.37	2618	24.2	23.4	15.94
Chad	29.92	4.21	2646	21.5	27.2	17.91
Greek organic	30.67	4.35	2668	22.6	25.9	15.53
Australia-1- 7/32	31.99	4.55	2721	23.5	22.3	17.31
SJV Ultima (US)	31.92	4.48	2736	25.6	17.3	17.14
Australian cotton	32.12	4.50	2747	23.2	25.4	18.97
Emots	31.04	4.03	2805	23.7	27.4	18.03
US Upland org.	30.79	3.84	2851	25.5	25.2	15.38
MDTA (US)	29.74	3.46	2901	23.7	36.9	18.47
Brazil	29.94	3.27	3004	22.8	29.4	17.4
Giza 94 (Egypt)	35.64	3.79	3321	29.1	20.8	28.95
Israel Acalpi	35.25	3.70	3325	29.7	19.8	21.53
Peru Pima	37.88	4.16	3370	31.1	20.8	17.37
Spanish 1-7/16	36.55	3.79	3406	27.9	24	22.03
US Pima	38.19	4.10	3422	33.0	21.3	31.15
US Pima	37.64	3.96	3432	33.4	18.0	27.65
US Pima (org.)	39.10	4.26	3437	33.5	18.0	26.47
Israel pima	36.27	3.56	3488	29.2	19.5	20.24
Israel Acalpi	40.40	4.23	3564	32.1	17.2	27.89
Giza 94 (Egypt)	37.30	3.05	3875	31.5	18.4	29.68
Egypt	37.06	2.86	3976	32.4	21.5	27.05

TECHNICAL NOTES

Among the imported cotton varieties, the fibre cohesive force ranged from 14.52 mgf/tex to 31.15 mgf/tex. A clear trend was observed where fibres with a higher slenderness ratio exhibited greater cohesiveness, with a strong correlation $r = 0.82$) identified between these two properties.

However, an exception was noted in two specific imported varieties - Israel Acalpi and Peru Pima - which shared the same slenderness ratio but exhibited different cohesive forces: 21.53 mgf/tex and 17.37 mgf/tex, respectively.

To explore the reason behind this difference, the fibre convolutions were examined at both the raw cotton and sliver stages for these two varieties (refer Table 3). The slivers were prepared using the MDTA4 tester available at SITRA.

Table 3: Convolutions per inch for imported cottons

Cotton variety	Slender -ness ratio	Cohesive Force (mgf/tex)	Convolutions/inch (Raw cotton)	
			Raw cotton	Sliver from MDTA
Israel Acalpi	3325	21.53	89.41	95.55
Peru Pima	3370	17.37	60.74	80.87

Table 3 clearly indicates that the fibre with higher cohesive force exhibited 47% more convolutions in the raw cotton stage and 18% more convolutions in the sliver stage.

To further examine the impact of fibre cohesive force on yarn quality, a trial was conducted using two cotton varieties with similar slenderness ratios but different cohesive forces. Both open-end yarn (15s OE) and ring spun yarn (20s K) were produced from these cottons.

For this study, four slivers from each cotton variety were prepared using the MDTA4 tester and then levelled using an RSB draw frame with a draft of 6. The levelled draw frame sliver was used to spin 15s open-end yarn, while the 20s ring spun yarn was directly produced from the sliver using a 6-spindle ring spinning machine available at SITRA.

Yarn tenacity results, obtained using the Uster UTR instrument (refer Table 4), showed that the fibre with higher cohesive force (Israel Acalpi)—despite having the same slenderness ratio - achieved 20% higher tenacity in open-end yarn and 10% higher tenacity in ring spun yarn.

Table 4: Differences in yarn tenacity

Cotton variety	Slender -ness ratio	Cohesive Force (mgf/tex)	Yarn strength (g/tex)	
			15s OE	20s K
Israel Acalpi	3325	21.53	23.5	18.2
Peru Pima	3370	17.37	19.7	16.6

The above technical note clearly highlights the importance of assessing fibre cohesive force and optimizing process parameters to achieve improved yarn quality. With the MDTA4 and Zwick tensile testing instruments available at SITRA, mills can conveniently evaluate the cohesive force of the cotton varieties they use.

TECHNICAL NOTES

Study on snarling behaviour of yarn

The term “snarling” describes the tendency of yarn to coil or loop upon itself when the applied tension is released. During the twisting of a fibre strand to form yarn, the individual fibres assume a spiral configuration. As a result, every twisted yarn carries a permanent torque. When this torque is released, the yarn begins to twist or coil in the opposite direction—a behavior known as “yarn liveliness.”

This snarling tendency can cause spirality defects in weft-knitted fabrics. In weaving, it interferes with weft insertion, and in processes like skein dyeing, yarn liveliness can lead to tension-related yarn breakages. Therefore, maintaining an optimum twist factor during ring spinning is essential to reduce snarling in downstream processes.

To analyze the intensity of snarling and its effect on fabric spirality, SITRA conducted a study at a hosiery yarn spinning mill. Yarn of 34s CH-Comp. count was produced under both conditioned and unconditioned states, with three different twists per inch (TPI): 19.11, 19.58, and 20.06. These yarns were then knitted on a circular knitting machine, and the resulting fabrics were assessed for spirality after washing and bleaching.

Yarns in cop and cone form, produced at varying twist levels, were evaluated for their snarl index using a snarl index testing board available at SITRA (refer Table 1).

Table 1 Snarl index of cop yarn and cone yarn
(34s CH-Comp.)

TPI	Cop yarn		Cone yarn	
	Unconditioned	Conditioned	Unconditioned	Conditioned
19.11	3.21	2.42	3.41	2.21
19.58	3.57	2.52	3.59	2.50
20.06	3.62	2.54	3.67	2.65

Table 1 indicates that, at both the cop and cone stages, the snarl index is consistently lower in conditioned yarns compared to unconditioned ones, regardless of the twist level applied. Additionally, an increase in twist level leads to a corresponding increase in snarl index for both conditioned and unconditioned yarns.

The yarns were knitted using a circular knitting machine, and the resulting fabrics were subsequently washed and bleached. Fabric spirality was assessed at both the grey and bleached stages, with the consolidated results presented in Table 2 and Figure 1.

Table 2 Spirality of grey and bleached fabric

TPI	With conditioning		Without conditioning	
	Grey (After wash)	Bleached	Grey (After wash)	Bleached
19.11	19.4	0.6	19.4	5.2
19.58	20.0	2.4	21.8	9.0
20.06	21.8	4.0	24.2	13.0

TECHNICAL NOTES

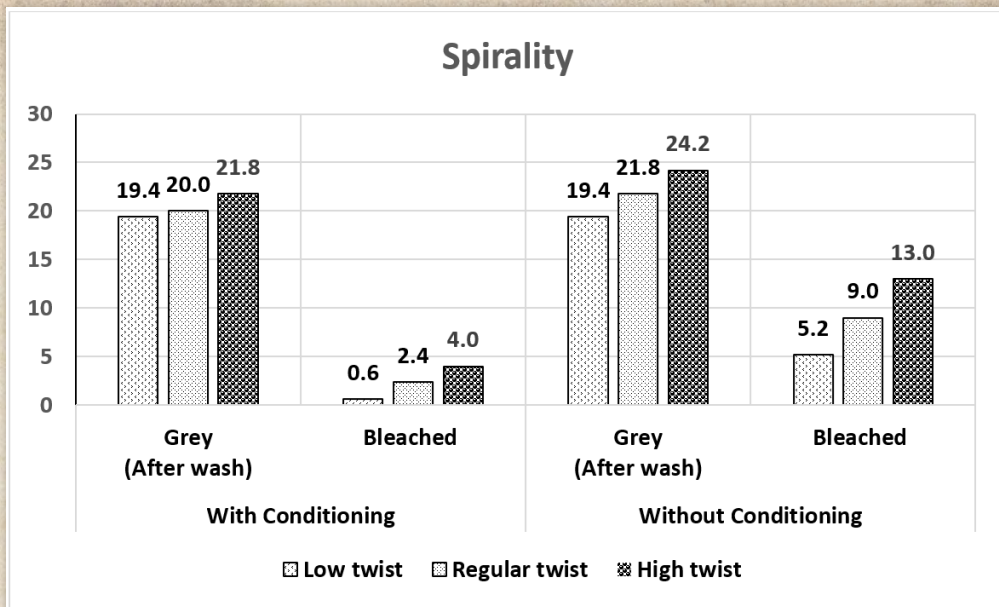


Figure 3 Spirality of grey (after wash) and bleached fabric

Table 2 and Figure 1 reveal that at a lower twist level of 19.11 TPI, fabric spirality remained unchanged between conditioned and unconditioned yarns. This suggests that at lower twist levels, conditioning has little to no impact on fabric spirality. This may be attributed to the inherent stability of low-twist yarns, which exhibit a reduced tendency to develop spirality regardless of conditioning.

For fabrics made from yarns with a twist level of 19.58 TPI, conditioning led to a decrease in spirality from 21.8 (unconditioned) to 20.0 (conditioned), indicating a reduction of 8.2%. This highlights that conditioning enhances fabric dimensional stability after washing by mitigating spirality. Similarly, in knitted fabrics produced using 20.06 TPI yarns, conditioning resulted in a 10% reduction in spirality. In this case, conditioning helps relax the yarn, thereby reducing its tendency to induce spirality in the fabric.

This study underscores the influence of minor variations in yarn twist on fabric spirality. Therefore, to determine the optimal twist level and minimize downstream issues, spinning mills are encouraged to utilize the snarl index testing facility available at SITRA.

PROJECTS



Design and development of facile high throughput needleless electrospinning set up (Funded by National Technical Textiles Mission, Ministry of Textiles, Govt. of India)

Electrospinning is a widely used spinning technique which utilizes electrical forces to produce polymeric nano fibers. Owing to the salient features of nano fibers such as high surface area to volume ratio, smaller pore size with high porosity, strong mechanical property, malleability, and biomimetic nature of Extra Cellular Matrix (ECM), it is used in various applications such as nanocatalysis, tissue engineering scaffolds, protective clothing, filtration, optical, electronics, healthcare, defence & security and environmental engineering. Though electrospinning is a well-established and versatile technique, its utilization in the industry is limited due to production rate. For enhancing the production rate in electrospinning, researchers have focused on multiple needle electrospinning and needle-less electrospinning mechanisms. With multiple needle electrospinning writes with intrinsic problems including mutual interference of electric field and clogging of needles with polymer solution, focus is on needleless electrospinning. In spite of enormous research work carried out in electrospinning, achieving an electrode with continuous jet stability, high throughput and nano fibers with precisely controlled diameter remains a challenge. Hence, SITRA is in the process of developing a needleless high throughput electrospinning step up. The major advantage of this set up will be high productivity, versatility (applicable for both solvent as well as melt spinning), hybrid nano fibrous coating on single substrate and the set up is easy to construct. SITRA has successfully completed the fabrication of prototype of the instrument with a novel wire electrode profile and polymer feeding system. Preliminary trials with the prototype model, produced defect free nano fibers with the fibre diameter ranging between 200 nm and 700 nm. Fabrication of pilot scale model with 500 mm electrode has also been completed. Optimization in the production of hybrid nanofibers for different applications is currently underway.

SITRA funded Projects

Fabrication of a dry microbial penetration resistance tester for evaluating personal protective equipment as per international standard

The effectiveness of personal protective equipment (PPE) in safeguarding individuals against biological hazards is a critical concern in various industries, including healthcare, waste management, and research laboratories. Ensuring the integrity and performance of PPE is essential in minimizing the risk of exposure to infectious agents. Conventional methods for testing the microbial penetration resistance of PPE materials often rely on wet challenge tests, which may not completely simulate real-world conditions where microbes are also carried by dry particles. The development of a dry microbial penetration resistance tester is crucial in addressing this gap and providing a more realistic assessment of PPE performance. Existing international standards, such as ISO 22612:2005, outline the requirements and test methods for evaluating the resistance of PPE materials to the penetration of microbes in dry form. However, the availability and accessibility of such testing equipment can be limited, particularly in regions with limited resources or technological infrastructure. Therefore, SITRA has fabricated an indigenous dry microbial penetration resistance tester to contribute to the advancement of PPE testing capabilities and ensure the availability of reliable and cost-effective testing solutions.



PROJECTS



Supply of pre-dyed and starched cotton yarn in cone form using cheese dyeing machine to hand loom weavers in Tamil Nadu (Sponsored by Department of Handlooms, Government of Tamil Nadu)

The project was to streamline and improve the sizing process to suit the mechanized methods of dyeing and sizing processes. By enhancing the efficiency and consistency of sizing, this project is aimed to contribute to high quality textile products while reducing resource and time wastage. Different methods of carrying out sizing of yarn obtained in cone form viz., dyeing and sizing in HTHP cheese dyeing machine, dyeing in HTHP cheese dyeing machine and sizing in single end sizing machine were tried. Our previous research illuminated the hurdle faced in handloom weaving due to the absence of a sizing process for 80s cotton yarn, making saree production challenging.

COMPARISON OF CHEESE DYEING AND HANK DYEING PROCESS

S.NO	DESCRIPTIONS	CHEESE DYEING MACHINE PROCESS	HANK DYEING PROCESS
1	Lot size	Small, Bigger size	Small size
2	Water consumption in liters	40 – 60	120 – 150
3	Knotless yarn	Knotless	More knotting
4	No. of. Re-winding Process	1	2
5	Washing fastness	Excellent	Reasonable
6	Shade variation	very hardly appears	Possibilities are high
7	Dyes and chemicals consumption	Less	High
8	Effluent treatment	ZLD Process	No proper effluent treatment plant
9	Required manpower	Skilled manpower required	Skilled artesian required
10	Process waste %(approx.)	5	6
11	Production cost in Rs.	742-830	1127-1215

The project "Supply of Pre-Dyed and Starched Cotton Yarn in Cone Form Using Cheese Dyeing Machines to Handloom Weavers in Tamil Nadu" has achieved significant milestones towards enhancing the efficiency, quality, and sustainability of the handloom weaving industry in the region. In summary, the use of cheese dyeing machines for dyeing and sizing processes presents numerous advantages over traditional methods, including smaller lot sizes, reduced water and chemical consumption, improved yarn quality, and lower production costs. Moving forward, it is imperative to continue refining and optimizing these techniques to further enhance the productivity and livelihoods of handloom weavers in Tamil Nadu and beyond.

Development of natural herbal extract coated seed protection bag using natural fibres with long lasting mechanical and insecticidal properties

In India, post-harvest storage losses account for nearly 14 million tons of food grain annually, valued at around Rs. 7,000 crore, with insect damage alone contributing Rs. 1,300 crore to these losses. High storage losses are largely due to inadequate infrastructure, poor management, and lack of awareness among farmers and traders. Conventional storage materials like woven bags are ineffective against mold and insect infestations, which often originate before storage.

PROJECTS



To address this, the project successfully developed low-cost, eco-friendly seed and grain storage bags using *Agave americana* fibres. These underutilized natural fibers, known for their durability and inherent water resistance properties, were spun into yarns and woven into fabrics. Initially, the fabric was coated with naturally derived bio-insecticides and then with an eco-friendly water-repellent agent, which was constructed into the seed protection bag suitable for storage applications.



Various characterization analyses, including physical, chemical, morphological and mechanical assessments, were conducted on the extracted *Agave* fibres and the developed fabric to substantiate their suitability, performance, and durability for use in seed and grain storage applications. In addition, entomological and bio-efficacy studies were also conducted by the Seed Science department of the Tamil Nadu Agriculture University, Coimbatore, for a period of 9 months using paddy and green gram grains. Two crucial parameters taken into consideration for the study were germination rate and vigour index of the stored seeds. The bags have exhibited about 24 times higher tensile strength compared to the commercially available jute seed protection bags, proving their durability. Remarkable performance evaluations of the seed bags are the enhanced moisture vapour transmission rate, with the SITRA-developed bags achieving 1755 g/m²/day compared to 478 g/m²/day in conventional seed bags. A higher MVTR allows moisture to escape more effectively from within the storage bag, thereby reducing humidity buildup that can lead to mold growth.

Additionally, improved MVTR reduces internal humidity levels, creating a less favorable environment for insect breeding, as many storage pests—such as weevils and beetles—require high moisture conditions to reproduce and thrive. Lower humidity can slow down their life cycles, reduce egg viability, and limit infestation severity. This was also substantiated by the bio-efficacy studies, which demonstrated superior seed preservation capabilities. The paddy seeds stored in the treated bags maintained a germination rate of 81.5% after seven months, significantly higher than the 69.0% observed in the untreated bags. Similarly, green gram seeds retained a 75% germination rate after four months in the treated bags, compared to 63% in control samples. Entomological assessments further confirmed the effectiveness of the treated bags in repelling insects due to the presence of bio-pesticides. Through this innovation, the project contributes to improving food security, reducing economic losses, and promoting environmentally responsible agricultural practices.

The use of *Agave americana*, an underutilized, abundant, and drought-resistant plant, adds a cost-effective raw material base, especially in semi-arid regions of India. This can ensure localized production, lower logistics costs, and create rural employment, which enhances its appeal in government-supported schemes like "Make in India" and "Startup India." Further, the Indian market is currently driven by growing demand for sustainable allied agri-products, a supportive regulatory environment, cost-effectiveness, and strong performance benefits. Hence, there is very good potential for commercialization of the developed prototype bags.



New machine installed at SITRA Pilot Mill

Card LC 361

SITRA pilot mill has recently been added with a new LMW LC 361 card to produce high-quality slivers of cotton and synthetic blended varieties. The card offers the flexibility of triple/single licker-in arrangement and incorporates a specially profiled accrual combing segment to reduce lint loss. It also features an expansive carding area of 1.296 metres to ensure better fibre separation and cleaning.

Testing facility added at SITRA

1. Cascade roving strength tester (Stretch 600M)-
To test the Roving Strength a separate lea strength tester with low range load cells with accuracy.
2. Snarling Index testing
SITRA has designed and developed snarling index tester to assess snarling tendency in the yarn.
3. Micro Dust and Trash Analyser (MDTA4)
To check accurate trash, microdust, in both cotton and synthetic fibres
4. Zwick / Roell tensile strength tester:
To measure fiber cohesion in cotton/sliver (cohesive force)

New instrument installed at SITRA Biological Lab

Facility for verifying non-GMO textile claims - RT PCR

Real Time Polymerase Chain Reaction (RT-PCR) is a highly sensitive molecular biology technique used to detect and quantify specific nucleic acid sequences, and it plays a crucial role in the detection of genetically modified organisms (GMOs). In GMO testing, RT-PCR targets commonly used transgenic elements such as the CaMV 35S promoter or the NOS terminator to confirm the presence of genetic modifications. This method has become particularly important in the textile industry for verifying the GMO status of raw materials like cotton. With increasing consumer demand for organic and non-GMO products, RT-PCR is employed to test cotton fibers—even after processing stages like scouring and bleaching—to ensure compliance with organic certification and export regulations, especially to regions with strict GMO policies such as the European Union. The technique provides high specificity and sensitivity, making it suitable for traceability and quality assurance in sustainable textile production. As a result, RT-PCR has emerged as a vital analytical tool for confirming the authenticity of non-GMO claims in cotton-based textiles and plays a key role in promoting transparency across the textile value chain.

**New test recognition**

FSSAI has notified SITRA as a Food Testing laboratory vide Gazette notification dated 04.09.2024. This is also available in public domain now (<https://taxguru.in/corporate-law/fssai-amends-accredited-lab-list-food-testing-wef-4th-september-2024.html>).



SITRA's 34th Technological Conference

SITRA's 34th Technological Conference was held at SITRA on 19th December, 2024. Smt. R.Lalitha, Director of Textiles, Govt. of Tamil Nadu inaugurated the Conference. She pointed out how SITRA has been concentrating on research projects, not just confined to its core speciality of spinning, but has also diversified itself into speciality areas like processing and medical textiles. Shri. Sathyanarayana, Vice Chairman, Council of Administration, SITRA briefed the delegates, the various activities carried out by SITRA and exhorted them to utilize them in greater measure in the coming years.



Dr. S.K.Sundararaman, Executive Director, Siva Tex Yarn and Deputy Chairman, SIMA, who delivered the Keynote address sought to highlight the issues faced by the textile industry and thanked SITRA for offering its services that would mitigate some of them. While complementing SITRA for the excellent work carried out, he also pointed out that the papers discussed in the conference are a reflection of SITRA's efforts to address some of the areas that are of current relevance to the industry in the region.



E. Sathyanarayana,
Vice Chairman,
Council of Administration,
SITRA



J.Thulasidharan, Member,
Council of Administration,
SITRA



Ashok K Malhotra, Mission Director, Ministry of Textile, GoI

SEMINARS AND CONFERENCES



The technical sessions involved the following 10 papers which were chaired by Mr. C.Kamatchisundaram, Strategic Advisor, Akshara group of companies, Tirupur and Mr. Kanthimanthinathan, Director, Winsyns Consultancy, Coimbatore respectively.

- * Trash and microdust accumulation in lattice compact apron and its influence on yarn quality - *N.K.Nagarajan*
- * Optimization of labour requirement in spinning mills : A case study - *P.Subash*
- * Insurance as a means of mitigating risks in textile mills - *R.Babu Ganesh*
- * A Comparative study on the quality of airjet and ring spun yarn made from Cotton - *V.Thanabal*
- * An introduction to G power audit- A novel auditing method to analyse energy efficiency of ring spun single yarn manufacturing process - *M.Muthuvelan*
- * Study on the influence of roving cohesive force on the final yarn quality in 100% Polyester - *L.S.Kumar.*
- * Dyeing and sizing of yarn meant for handloom weavers' society in cheese dyeing machine - *S.Sivakumar*
- * Study on the snarling behaviour of yarn - *N.K.Nagarajan*
- * Effect of loop length variation on the appearance of dyed fabrics - *S.Soundarajan*
- * Investigation on inter-fibre cohesion of cotton and its influence on yarn tensile attributes - *N.K.Nagarajan*

The conference was attended by more than 250 delegates.



TRAINING PROGRAMMES



Pre-employment training and retraining programmes for textile workers

One outstation and one local mill availed themselves of SITRA's training services for their workers. A total of 85 operatives from the preparatory and spinning departments were trained across four batches. The training programmes were conducted in Tamil.

Technical awareness programme for executives of M/s. KTTM, Bangalore

At the request of M/s. Kirloskar Toyota Textile Machinery Pvt. Ltd., Bangalore, SITRA conducted a training programme on *"Foundations of Mechanical Processing of Textile Materials."* The programme focused on raising awareness among participants about various technical aspects, including textile processes, machinery audits, critical areas in maintenance from blowroom to winding, the use of special tools and gauges, and the importance of inventory and cost control. Fifteen participants attended the programme.

Training programme on product development in ring travellers for LRT, Coimbatore

At the request of M/s. Lakshmi Ring Traveller, Coimbatore, SITRA conducted a training programme on *"Product development in ring frame."* The programme aimed to enhance participants' understanding of various technical aspects, including textile processes, machinery audits, the impact of the traveller on yarn quality (particularly in relation to weak places), spinning geometry, the relationship between yarn strength/tension and traveller speed, yarn twist, and the dynamic interaction between the traveller, yarn, and ring. Twenty participants attended the programme.

Training of assessor assessment

At the request of the Textile Sector Skill Council, SITRA conducted assessments for 62 trainers from the Spinning, Knitting, Processing, and Centre of Excellence (CoE) – Medical Textiles departments.

Webinar on "USTER® 6 – How can mills utilise the best of this new-generation evenness tester"

SITRA organized a webinar titled *"USTER® 6 – How Can Mills Utilise the Best of This New-Generation Evenness Tester"* on 30th April 2024. The technical session was led by Mr. Sandeep Sen A., Manager – Product Application, USTER Technologies, India. He covered key modules available in USTER® 6, additional parameters in comparison to UT5, and provided specific insights into raised hairs, diameter and density, twist-related parameters, and differences in hairiness measurement. Positive feedback was received from many of the 42 participants who attended the webinar.

Technical awareness programme

At the request of M/s. Rieter India Private Ltd., Maharashtra, SITRA conducted a three-day training programme for their service engineers. The objective was to sensitize participants to various technical issues encountered in spinning mills and to provide troubleshooting mechanisms. Thirteen service engineers from the company attended the programme, which was held from 2nd to 4th September 2024.

TRAINING PROGRAMMES



Skill Development Programme

The TNSDC scheme, initiated by the Ministry of Skill Development and Entrepreneurship, Government of Tamil Nadu, aims to leverage the strengths of institutions like SITRA to enhance skill development capabilities. Under this scheme, SITRA trained 43 operatives from a member mill over a period of 45 days. The training covered tenting jobs in Ring Frame Tenter, Shuttleless Weaving – Airjet, and Shuttleless Weaving – Rapier. The programmes were conducted in Tamil.

SITRA's 70th International Training Programme

The 70th batch of SITRA's International Training Programme, held during February–March 2024, was inaugurated by Dr. Prakash Vasudevan, Director, SITRA, on 14th February 2024. Nineteen participants from seven countries—Bangladesh, Ethiopia, Kenya, Mauritius, Nigeria, Tajikistan, and Uzbekistan—attended the programme. The valedictory function was held on 22nd March 2024. The participants were sponsored by the Ministry of External Affairs, Government of India, under the ITEC (Indian Technical and Economic Cooperation) plan. Course completion certificates were distributed during the valedictory event.

Visitors

- ✦ **Mr Anup Pandey**, Senior General Manager (R&D), Birla Corporation Limited Unit: Birla Jute Mills, West Bengal
- ✦ **Mr Mark Smith**, Karl Mayer-Ktg Soundarrajan
- ✦ **Dr Alaguvarsini**, IAS, Director of Handloom & Textiles, Govt of Telengana
- ✦ **Dr Prakash** from CSIR
- ✦ **Mr Ivan Vaier**, Saurer, NKN
- ✦ **Ms Sabitha**, Asst Director & OIC, PSC, Secunderabad
- ✦ **Mr. Mark Smith**, Deputy Vice President Sales Business Unit Warp Knitting, Karl mayer, Germany
- ✦ **Mrs. Fleur Deknudt** – Director at Love Home Fabrics & GTA India Mr Abilash
- ✦ **Prof Vijaya Bhaskar**, State Planning Commission Chennai
- ✦ **Mr. Elliot**, Researcher at The Microfibre Consortium (TMC) -UK
- ✦ **Smt. Neelam Shami Rao**, IAS, Secretary, Textiles, Ministry of Textiles. Gol.
- ✦ **Shri Ashok Kumar Malhotra**, Mission Director, National Technical Textiles Mission (NTTM), Ministry of Textiles

CONSULTANCIES OFFERED BY SITRA

S. no.	Nature of consultancy service	No. of services offered
1.	Water consumption and time study of soft flow / Yarn dyeing machines	75
2.	Technicians training program	20
3.	Energy audit.	13
4.	Monthly inter-mill sureveys	12
5.	Technical consultancy study	7
6.	Assessment of laboratories for NABL accreditation purpose	6
7.	Work assignment study / Man power audit	5
8.	Machinery valuation	5
9.	Air compressor study.	4
10.	Humidification plant study	2
11.	Transformer loss study	2
12.	Machine audit	1
13.	Maintenance audit	1
14.	Preliminary study for TEV	1
15.	Yarn realization study	1
16.	Costing study	1
17.	Diagnostic study	1
18.	Electrical safety study	1

Besides the above consultancy studies, SITRA has made 90 liaison visits to mills, solved 18 adhoc problems regarding UKG conversion factors, attended 10 Technical trouble shootings, tested 2778 accessory samples and also calibrated 26527 instruments.

Water consumption audits

Textile Processing industries are the largest water consumer in India. Tamil Nādu Pollution Control Board (TNPCB) has recognized SITRA's textile chemistry department for carrying out water consumption studies at processing units. The actual consumption of water and process time can be identified by the industries through the water consumption audits. It leads to optimization of the sequence of process and parameters. SITRA has audited about 75 dyeing units in the year 2024 and previously audited around 500 dyeing units. The audit report helps in applying for increasing the production capacity and increasing the consent quantity of water to TNPCB

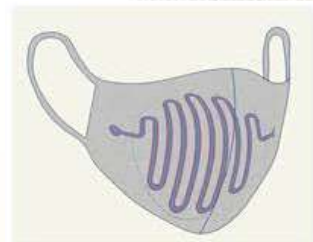
TEXTILE TITBITS

Self-sanitising masks with thermoregulation & nanomaterials

The next wave of face masks combines thermal inactivation and nanotechnology: Photothermal coatings (e.g., graphene-based) can elevate mask surface temperature above 80°C under sunlight, effectively neutralizing bacteria and viruses—while preserving filtration efficiency.

Thermal pasteurization layers enable safe reuse, disabling pathogens at ~70 °C without harming mask structure. Smart heating elements powered by integrated conductive fabrics add an active sanitizing mechanism, enabling multi-use PPE that adapts to environmental conditions.

These developments deliver reusable, pathogen-resistant masks ideal for healthcare workers and consumers alike, dramatically reducing waste while boosting safety and operational flexibility.



Thermoelectric silk threads: Harvesting body heat for wearables

Researchers at Chalmers University have engineered silk yarns coated in conductive polymers that can convert a 30 °C temperature difference into ~6 mV of power—enough to trickle-charge small electronics

These threads are:

- Flexible, safe & stretchable, ideal for wearables.
- Washable, retaining ~66% conductivity after seven home laundry cycles
- Currently produced by hand-stitching, with automation in development for scalability.
- Positioned for powering IoT sensors, health monitors, and low-power LEDs, with ongoing efforts toward USB-level outputs through voltage boosting.

This innovation brings us closer to battery-free, self-powered smart textiles, creating opportunities for continuous health monitoring without charging constraints.

Teijin Frontier Co., Ltd., has developed a next-generation comfort material that uniquely combines contact cooling functionality with sweat stickiness prevention. The new material features a dual-layer, knit structure. The inner layer alternates Teijin Frontier's newly developed hydrophobic WAVERON™ yarn and conventional hydrophilic WAVERON™ yarn. The hydrophilic yarn absorbs perspiration, while the hydrophobic yarn prevents it from adhering to the skin to keep the skin dry. The outer layer disperses absorbed perspiration to the outside.

Teijin Frontier plans to promote and sell this next-generation comfort material as a desirable fabric for the 2026 spring/summer sports and outdoor apparel season, in both domestic and international markets. In advance of that season, the company aims to sell 100,000 meters of the material. Subsequently, it will expand into functional apparel such as fashion clothing. By fiscal 2028, Teijin Frontier expects to sell 1 million meters of this next-generation comfort material per year.

Cooling comfort for a warming planet

In recent years, due to global warming, sports and outdoor apparel retailers are demanding clothing with multiple functions, such as contact cooling and perspiration management, to enhance consumers' comfort in elevated temperatures. However, until now it has been challenging to deliver textiles that provide both contact cooling and sweat stickiness prevention. This is because contact cooling requires enlarging the material's contact area with the skin to improve heat conduction from the skin, while sweat stickiness prevention requires reducing contact with the skin.

Teijin Frontier leveraged the structure and function of two products. One is a specially structured polyester fabric that combines perspiration absorption functionality and sweat adhesion prevention through optimal placement of hydrophobic and hydrophilic yarns. The other product is WAVERON™, a full dull, non-crimped yarn with contact cooling functionality. WAVERON™ yarn contains titanium oxide, which promotes a cooling sensation as heat is transferred from the skin to the fiber, and has a flat, cross-sectional shape that increases the skin contact area. Additionally, this non-crimped yarn maximizes the air gaps between fibers, offering high breathability. By combining these two technologies, the company was able to deliver both contact cooling and sweat stickiness prevention functions in one material.

Contributing to sustainability

The new material uses 100 percent recycled polyester and features water-repellent technology made without per- and polyfluoroalkyl substances (PFAS).

Ref: <https://www.wtin.com/article/2024>



PAPER REVIEW

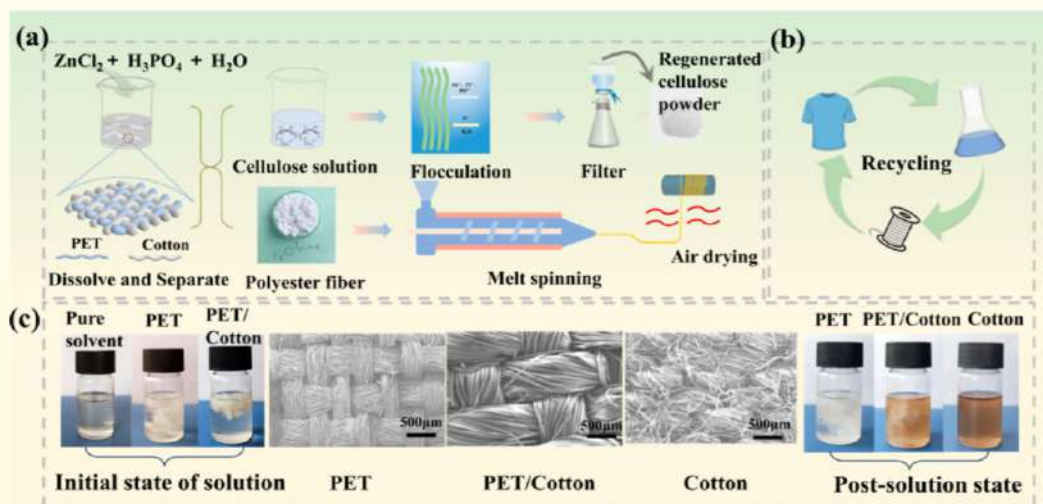
POLYESTER/COTTON-BLENDED TEXTILE WASTE FIBER SEPARATION AND REGENERATION VIA A GREEN CHEMISTRY APPROACH

Kaili Yang, Mengxin Wang, Xinru Wang, Jinyu Shan, Jie Zhang, Guangming Tian, Dong Yang, Jianhua Ma, *ACS Sustainable Chem. Eng.* 2024, 12, 11, 4530–4538

Increased population, faster fashion cycles, and inadequate recycling strategies have raised a prominent issue of dumping waste textiles in urban areas. Though donating the used garments or reusing textiles can aid in waste reduction, a significant portion still ends up in landfills or is incinerated, thereby releasing greenhouse gases and polluting the soil. Waste textiles separated through mechanical methods can be utilized for producing fiber-reinforced composite materials or disposable nonwoven products, while textiles separated via chemical treatment can be converted into spinning raw materials for fiber preparation. These approaches significantly enhance the resource utilization efficiency of waste textiles. From a material standpoint, the primary obstacle to textile recycling lies in the lack of effective sorting and separation technologies. Most clothing fabrics consist of blended fibers, with polyester/cotton blends being the most commonly used. Although the components of cotton or polyester fibers

can be easily recycled, there have been significant challenges in achieving their effective separation, both technically and procedurally.

The authors have identified a low eutectic solvent [deep eutectic solvent (DES)] based on metal salt hydrates for the efficient separation of polyester/cotton blends to effectively recycle polyester/cotton-blended textiles in discarded clothing and enhance resource utilization. The DES is synthesized in a specific proportion from triple components, zinc chloride, water, and phosphoric acid. This solvent can selectively dissolve the cotton fibers in mixed textiles without damaging the polyester fiber component. From Fourier infrared spectroscopy, X-ray diffraction, and thermal performance analysis the authors suggested that the DES can accomplish efficient separation of polyester fibers and cotton fiber components, with no significant damage to the polyester fiber structure postseparation. Upon separation, the two components can be processed for regeneration and reuse: the separated cellulose can be dissolved again and processed through wet spinning to produce cellulose fibers, while the separated polyester fibers can further undergo melt spinning. This article provides new insights into the green and efficient separation and regeneration of polyester/cotton-blended textiles, potentially enhancing the recycling rate of waste textiles and reducing environmental pollution.



STAFF NEWS



Meetings Attended

Dr. Prakash Vasudevan, Director, SITRA attended the following meetings:

- 16th meeting of Project Appraisal & Monitoring Committee -08.01.2024
- Meeting of Project Approval Committee (PAC) (for Component I & III) under the Chairmanship of Shri Rajeev Saxena, Joint Secretary at MoT, Delhi, 13.02.2024
- Review meeting of Textile Research Associations (TRAs) - 10.04.2024
- BIS Meeting - 15.04.2024
- 945th Meeting of the Board of Governors (BoG) of Sardar Vallabhbhai Patel International School of Textiles and Management (SVPISTM) - 17.05.2024
- Meeting with Mr D P Yadav at Secretariate along with Vice Chairman - 22.07.2024
- 46th Meeting of the Board of Governors (BoG) of SVPISTM - 14.08.2024
- NTTM Meeting - 17.10.2024
- TXD36 BIS Meeting - 23.12.2024

Research publications

Kiran Yadav and E. Santhini, A Red Alert on Single-Use Sanitary Pads, Indian Textile Journal, Sep 2024, 74-75.

Papers presented / Lectures delivered

J.Sreenivasan, delivered a guest lecture on "Yarn costing and profitability" in executing training programme organised by Lakshmi Machine Works, Periyanaickenpalayam on 14.02.2024 and 06.08.2024.

S. Sivakumar, delivered a guest lecture during the one-day seminar titled " Novel Technical Textile products, Technology, Production & Application" organised by the Institution of Engineers and PSG Polytechnic college on 19.06.2024.

Dr. E. Santhini delivered the following 5 lectures:

- 1) "Products, Testing Services, and Industry Support – CoE-Medical Textiles" during the National Workshop on Technical Textiles with Centres of Excellence, organized by the Department of Handloom, Khadi and Textiles, Government of Tamil Nadu, jointly with SITRA and PSG Indutech, held at Hotel Jenny's Residency, Coimbatore, from 2nd to 3rd February 2024.
- 2) "Setting Indian Standards High: The Paramount Importance of Standardizing Medical Textiles" during the event "Stepping Forward to Promote Safety of Medical Devices: Materiovigilance Program of India", organized by Royal Care Hospitals, Coimbatore, at Gokulam Park Hotel, Coimbatore, on 16th February 2024.
- 3) "Evaluation of Medical Textile Products" on 22nd February 2024, as part of a short-term course on "Sustainable Textile Manufacturing: Materials, Methods and Quality Assessment (Hybrid Mode)", organized by Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, held from 19th to 23rd February 2024.
- 4) How Medical Textiles are revolutionizing health care sector – strategies and technologies as a part of creating awareness Medical textiles organized by SITRA at Kumaraguru College of Technology on 22nd Apr, 2024.

STAFF NEWS



- 5) Technical aspects and testing methods PPE, bedsheets, pillow cover, dental bib and napkin and absorbent cotton gauze/cotton bandage cloth during One-Day Capsule Course on Medical Textiles organized by BIS on 14th Nov, 2024 at BIS HQ, New Delhi

Dr. Amalorpava Mary L delivered the following 3 lectures:

- 1) Delivered a lecture in the topic “Electrospinning process and its applications” in the Winter school on Nanotechnology for Sustainable Growth and Development program organized by Kumaraguru College of Technology, Coimbatore on 12th January 2024.
- 2) Delivered a key note lecture in the topic “Nanofiber production and its application in Medical Textiles” on current trends in wearable Technologies in Textile industry organized by Department of Electronics and Communication Engineering, Sri Krishna College of Coimbatore on 09.02.2024.
- 3) Delivered a lecture on Applications of nanofibers in Medical Textiles as a part of creating awareness Medical textiles organized by SITRA at Kumaraguru College of Technology on 22nd Apr, 2024.

Dr. Radhai delivered a lecture in the topic “Medical Textiles and its Role in Healthcare Sectors” in BIOM 304: Global Challenges and Collaborations in Biomedical Engineering, a course offered by the School of Biomedical Engineering at Colorado State University on 12th March 2025.

The South India Textile Research Association

13/37, Avinashi Road, Coimbatore Aerodrome Post, Coimbatore - 641 014,

Phone: 0422-2574367-9, 4215333, Fax: 0422-2571896, 4215300

E-mail: info@sitra.org.in, Website: www.sitra.org.in