GUIDELINES FOR AFIS TEST RESULTS

1 Sampling at Different Process Stages

In order to utilize the USTER® AFIS for process control, samples need to be taken at different processing stages in the spinning mill. It is also necessary to test the incoming and the out coming material of a process that is evaluated. For example, for the carding process, samples need to be taken and tested from card mat and card sliver. It is useful to randomly check your incoming raw cotton for nep, seed coat nep and excessive trash content.

Table 1

Process Stage	Materials
Opening & Cleaning (BLOWROOM)	Opened cotton in different stages of Cleaning
Carding	Card Mat & Card Sliver
Combing	Comber Lap & Sliver
Finisher Drawing	Draw frame Sliver
Roving	Roving

1.1 Opening & Cleaning (BLOWROOM):

- Samples of the opening and cleaning line should be collected in the ductwork leaving each critical piece of cleaning equipment.
- Samples should be taken while at a normal flow rate. For safety reasons, machine manufacturer's recommendations have to be followed for sample collection.
- Samples should not be collected from inside or at the bottom of a machine, where excessive trash and foreign matter is accumulated. This can bias the test results, since the sample does not represent the regular cotton after cleaning
- Blow room line samples should be collected after 50% of the Laydown for homogenous of sample

1.2 Carding:

1.2.1 Card Mat

- Collect samples either after the chute feed or after the picker for lap fed cards
- Do not mix samples that are fed to different card lines
- Samples taken after the last reserve condenser are sufficient as a average for regular card lines of 8-10 cards
- Do not change your sampling technique once it is established (be consistent).

SSM Tex LAB
424, Shivalik Satyamev, Ambli – Bopal Junction, Near Vakil Saheb Bridge, S P Ring Road, Bopal , Ahmedabad – 380 058. Gujarat PH: 095107 26053 Mobile: 09825060309 Email.: ssmtexlab@gmail.com

- If you have a larger amount of cards per line, test card mat after the chute feed in the beginning, in the middle and at the end of the entire card line. Average the results.

- If you want to have 100% control, test the chute feed material in front of every card.
- It is important not to mix card mat samples that go to different card lines.
- Once a sampling technique has been established within a plant, it should not be changed for reasons of consistency

1.2.2 Card Sliver

- It is preferable to collect samples while the card is operating at full speed
- Card sliver samples should not be collected when the card slows for doffing and can changing
- High-speed cards allow for samples taken from the top of the can
- Do not damage sliver when taking it from the card or can
- Take a sliver sample by gently pulling it apart at a distance of app. 2 inches or 5 cm.
- Do not change your sampling technique once it is established (be consistent).

1.3 Combing

- Follow machine manufacturer's recommendations
- Do not change your sampling technique once it is established (be consistent).
- Comber samples should be collected from sliver the same way as card sliver mentioned above

1.4 Finisher Drawing

- Draw frame samples should be collected from sliver the same way as card sliver mentioned above
- Finisher Draw frame testing is must and top priority. If any deviation or abnormality found in finisher test results then all back process to be checked and conclude the problem

1.5 Roving

- Roving of flyer samples should be taken randomly from finished bobbins or packages before going to the ring spinning frame.

2 Frequency of Testing

After establishing general procedures for obtaining the samples, it is necessary to tested do on a regular basis. The following table shows our recommendations for the frequency of USTER® AFIS testing:

Table 2

Process Stage	Materials Testing Frequency
Opening & Cleaning	Monthly Once
Carding	Weekly or Twice in Month
Combing	Weekly or Twice in Month
Finisher Drawing	Monthly Once
Roving	Monthly Once

3 AFIS Test Parameters

Table 3

Test Parameters	Abbreviation	Test Parameters	Abbreviation
LENGTH PARAMETER		**NEP PARAMETERS**	
Mean Length by Weight	L(w)	Nep Count per gram	Nep Cnt/g
Length Variation by weight	L(w) CV%	Nep Size [micron]	Nep Size [µm]
Upper Quartile Length by weight	UQL (w)	Seed Coat Nep Count per gram	SCN Cnt/ g
Short Fiber Content by weight	SFC (w) % <12.7 mm	Seed Coat Nep Size [micron]	SCN Size [µm]
Mean Length by Number	L(n)	**TRASH PARAMETERS**	
Length Variation by number	L(n) CV%	Total Count per gram	Dust + Trash Cnt/g
Short Fiber Content by number	SFC (n) % <12.7 mm	Mean Size (micron)	Mean size of Dust & Trash [µm]
5% Length by number	5.0% mm	Dust Count per gram	Dust Cnt/g (<500 µm)
2.5% Length by number	2.5% mm	Trash Count per gram	Trash Cnt/ g (>500 µm)
MATURITY PARAMETERS		Visible Foreign Matter [%]	VFM [%]
Fineness [millitex]	FINE [mtex]		
Immature Fiber Content [%]	IFC [%]		
Maturity Ratio	MAT		

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424, Shivalik Satyamev, Ambli – Bopal Junction, Near Vakil Saheb Bridge, S P Ring Road, Bopal , Ahmedabad – 380 058. Gujarat PH: 095107 26053 Mobile: 09825060309 Email.: ssmtexlab@gmail.com

4 AFIS TEST RESULTS – QUALITY RANGE

- **We have analyzed our last 5 years AFIS Test results (more than 40000 testing) and removed outlier data to conclude the Quality range for each process stage**
- **These data contribute more than 90 customer's (all in GUJARAT) regular testing samples**
- **Proposed these analysis is to help the customer to understand the optimum quality level at every stage**

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Table 4 **LENGTH / MATURITY MODULE TEST RSULTS**

			L w (mm)	Lw CV%mm	UQL w	SFC w	Ln	Ln CV	SFCn	5.0%	2.5%	Fine	IFC	MAT Ratio
A	LOT SAMPLE	Min	22.0	28.2	26.0	4.6	17.7	33.0	11.6	29.2	31.9	134	2.0	0.60
		Max	26.0	40.3	32.9	13.9	22.8	52.7	32.7	38.8	41.9	195	10.2	0.99
		Mean	24.6	35.3	29.9	10.0	20.6	45.5	24.5	34.2	36.9	166	5.0	0.90
B	MIXING	Min	23.0	30.0	27.3	5.7	18.4	38.1	15.5	30.4	32.8	136	2.3	0.74
		Max	26.8	40.4	39.9	15.9	29.5	51.9	34.7	37.8	40.9	190	10.5	0.99
		Mean	24.8	34.7	29.9	9.5	20.8	44.7	23.4	34.2	36.9	166	4.9	0.91
C	LAYDOWN	Min	22.0	31.9	26.3	7.0	18.1	40.5	19.0	30.0	32.5	144	3.3	0.75
		Max	26.0	40.3	38.9	13.9	22.8	52.7	32.7	38.8	41.9	195	10.2	0.99
		Mean	24.6	35.3	29.9	10.0	20.6	45.4	24.5	34.2	36.9	166	5.0	0.90
D	BLENDOMAT BALE PLUCKER UNIFLOC	Min	22.7	30.7	27.1	5.6	18.1	38.3	15.8	30.7	33.1	146	2.8	0.80
		Max	26.9	39.1	32.8	14.7	23.3	52.7	33.5	38.0	40.7	180	7.6	0.99
		Mean	24.6	35.1	29.8	9.8	20.6	45.0	23.9	34.2	37.0	165	5.1	0.90
E	VARIOCLEAN UNICLEAN CLP	Min	22.0	30.5	27.0	5.5	17.5	38.7	16.1	30.4	32.7	143	2.9	0.75
		Max	27.5	40.5	36.0	17.9	23.7	56.5	38.2	38.6	41.4	182	9.0	0.99
		Mean	24.5	35.2	29.8	10.0	20.5	45.3	24.4	34.1	36.9	164	5.3	0.89
F	UNIMIX MPM MXU	Min	21.8	31.1	26.5	6.1	17.9	39.7	16.6	31.1	33.6	143	3.3	0.76
		Max	27.3	40.0	32.7	15.5	23.2	51.3	33.6	37.6	40.3	180	9.8	0.98
		Mean	24.3	35.6	29.4	10.4	20.3	45.8	25.2	34.0	36.7	163	5.5	0.88
G	FLEXICLEAN / SUPREMOCLEAN UNISTORE CLC1 / CLC3 / CLU	Min	21.9	30.8	26.7	5.7	18.0	39.6	16.0	30.8	33.0	148	3.3	0.78
		Max	27.4	39.5	32.9	15.2	24.4	51.4	33.6	37.6	40.4	179	8.4	0.98
		Mean	24.2	35.7	29.4	10.6	20.1	45.9	25.5	33.8	36.5	162	5.6	0.87
H	CARD MAT	Min	22.0	30.0	26.5	5.9	17.6	38.0	17.1	30.7	33.2	140	3.0	0.74
		Max	27.1	41.9	33.0	16.8	23.0	55.8	37.5	38.6	41.9	180	8.9	0.98
		Mean	24.0	35.9	29.3	10.9	20.0	46.4	26.1	33.8	36.5	161	5.8	0.87
I	CARD SLIVER	Min	22.0	24.5	26.9	5.7	18.0	26.3	15.6	31.0	33.6	150	3.4	0.76
		Max	27.0	40.4	32.8	16.4	23.2	51.3	35.0	39.8	40.8	182	8.7	0.98
		Mean	24.2	35.8	29.4	10.5	20.2	45.3	24.9	34.0	36.8	163	5.6	0.88
J	BREAKER DRAWFRAME	Min	23.0	27.2	28.1	5.8	18.8	39.2	16.0	32.7	35.3	153	3.4	0.64
		Max	27.7	40.3	33.3	14.1	23.6	50.8	31.8	38.2	41.2	178	7.5	0.98
		Mean	24.8	35.6	30.1	9.8	20.8	45.1	23.8	34.8	37.7	166	5.0	0.91
K	FINISHER D/F CARDED	Min	23.0	31.9	28.2	6.0	19.0	40.4	16.9	32.6	35.0	159	3.1	0.85
		Max	26.9	38.6	32.3	13.6	23.2	49.2	30.1	37.1	40.3	180	6.2	0.99
		Mean	25.1	35.4	30.4	9.3	21.1	44.6	22.8	35.1	38.1	167	4.6	0.93
L	COMBER LAP	Min	23.1	30.3	28.2	4.8	19.0	36.2	11.6	32.4	35.2	154	2.9	0.85
		Max	28.2	39.2	33.5	13.1	24.5	50.3	30.0	38.1	41.7	182	6.8	0.99
		Mean	25.1	35.3	30.3	9.4	21.1	44.7	23.0	35.1	38.0	167	4.8	0.92
M	COMBER SLIVER	Min	23.8	28.5	28.6	2.5	19.8	32.8	6.9	32.8	35.5	154	2.7	0.85
		Max	29.0	38.5	34.3	12.4	33.9	47.5	28.1	39.7	44.0	198	9.3	0.99
		Mean	26.1	33.1	31.0	5.8	22.9	38.2	13.9	36.1	39.5	170	4.4	0.95
N	FINISHER D/F COMBED	Min	24.0	29.8	28.6	3.5	20.6	34.0	8.9	33.7	36.2	159	2.5	0.88
		Max	26.9	37.6	33.0	10.2	24.2	47.2	25.5	38.4	42.3	184	6.2	0.99
		Mean	26.2	33.0	31.2	5.7	23.0	38.3	13.7	36.3	39.6	171	4.2	0.96

Min – Minimum reading observed in total testing
Max – Maximum reading observed in total testing
Mean / Average – Average reading observed in total testing

SSM Tex LAB
424, Shivalik Satyamev, Ambli – Bopal Junction, Near Vakil Saheb Bridge, S P Ring Road, Bopal , Ahmedabad – 380 058. Gujarat PH: 095107 26053 Mobile: 09825060309 Email.:
ssmtexlab@gmail.com

Table 5 **NEPS / TRASH MODULE TEST RSULTS**

			Nep um	Nep Cnt/g	SCN um	SCN Cnt/g	Total Cnt/g	Mean Size	Dust Cnt/g	Trash Cnt/g	VFM %
A	LOT SAMPLE	Min	518	42	715	1	20	138	20	0	0.01
		Max	852	578	1325	55	4702	435	4438	264	6.80
		Mean	688	114	1013	15	782	244	711	70	1.65
B	MIXING	Min	535	44	769	3	162	162	131	14	0.38
		Max	823	458	1230	35	2830	376	2702	873	5.17
		Mean	685	105	1013	14	742	245	676	68	1.57
C	LAYDOWN	Min	679	54	866	4	250	174	122	18	0.43
		Max	852	578	1325	55	4702	435	4438	264	6.80
		Mean	688	115	1012	15	782	244	711	70	1.65
D	BLENDOMAT BALE PLUCKER UNIFLOC	Min	570	71	819	5	164	157	149	15	0.32
		Max	770	339	1177	44	2228	350	2009	247	5.54
		Mean	679	130	1007	16	762	249	690	73	1.71
E	VARIOCLEAN UNICLEAN CLP	Min	554	89	832	5	127	161	135	13	0.33
		Max	778	531	1192	47	2332	443	2114	254	6.08
		Mean	673	173	1011	17	697	258	628	70	1.63
F	UNIMIX MPM MXU	Min	562	113	717	6	180	195	156	18	0.42
		Max	777	521	1156	41	1884	376	1740	185	3.84
		Mean	670	215	1008	19	654	264	585	69	1.60
G	FLEXICLEAN / SUPREMOCLEAN UNISTORE CLC1 / CLC3 / CLU	Min	589	129	888	7	190	195	162	18	0.51
		Max	756	479	1177	39	1714	369	1572	169	4.15
		Mean	668	250	1011	19	618	269	550	68	1.59
H	CARD MAT	Min	523	168	827	0	164	184	146	14	0.29
		Max	781	666	1180	56	2798	463	2653	194	4.52
		Mean	669	314	1009	21	645	271	573	71	1.64
I	CARD SLIVER	Min	512	23	0	0	16	22	14	0	0.01
		Max	888	388	1160	41	841	870	919	80	2.13
		Mean	618	86	844	9	85	217	80	6	0.10
J	BREAKER DRAWFRAME	Min	540	24	725	1	17	106	18	0	0.01
		Max	758	351	1020	28	262	312	242	22	0.31
		Mean	624	80	845	9	84	216	78	6	0.10
K	FINISHER D/F CARDED	Min	531	22	695	1	30	115	30	0	0.02
		Max	697	323	1110	24	307	308	300	25	0.31
		Mean	624	96	838	9	92	212	85	7	0.10
L	COMBER LAP	Min	518	17	0	0	14	113	14	0	0.01
		Max	729	198	1138	24	238	330	232	22	0.35
		Mean	625	77	843	9	83	218	77	6	0.10
M	COMBER SLIVER	Min	450	2	0	0	2	78	2	0	0.00
		Max	963	102	1475	10	316	350	315	16	0.37
		Mean	608	20	704	1	32	159	31	1	0.02
N	FINISHER D/F COMBED	Min	518	1	0	0	2	88	2	0	0.00
		Max	766	74	1275	8	146	295	145	8	0.13
		Mean	614	19	709	1	30	160	29	1	0.02

Min – Minimum reading observed in total testing
Max – Maximum reading observed in total testing
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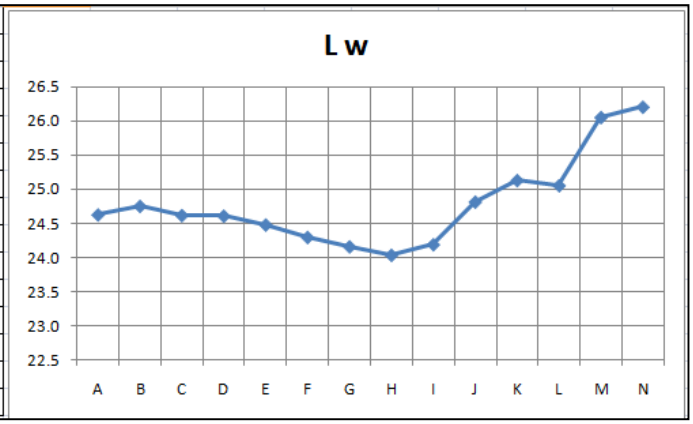
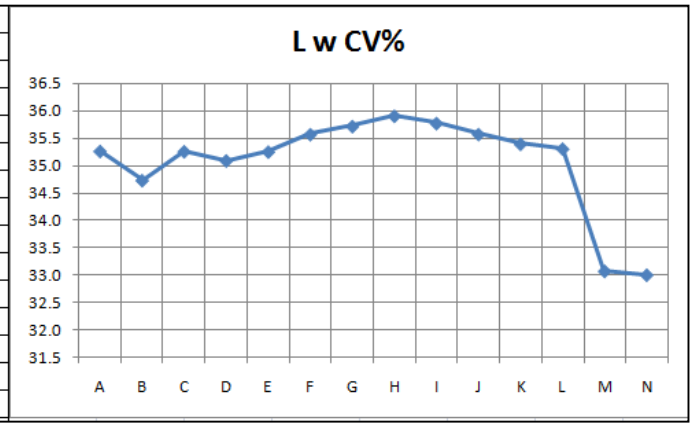
424, Shivalik Satyamev, Ambli – Bopal Junction, Near Vakil Saheb Bridge, S P Ring Road, Bopal , Ahmedabad – 380 058. Gujarat PH: 095107 26053 Mobile: 09825060309 Email.: ssmtexlab@gmail.com

4.1 LENGTH PARAMETERS

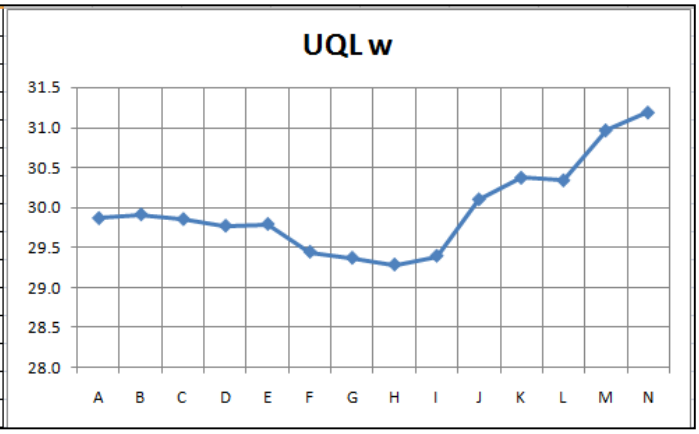
		Min	Max	AVG
A	LOT SAMPLE	22.0	26.0	24.6
B	MIXING	23.0	26.8	24.8
C	LAYDOWN	22.0	26.0	24.6
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	22.7	26.9	24.6
E	VARIOCLEAN / UNICLEAN / CLP	22.0	27.5	24.5
F	UNIMIX / MPM / MXU	21.8	27.3	24.3
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	21.9	27.4	24.2
H	CARD MAT	22.0	27.1	24.0
I	CARD SLIVER	22.0	27.0	24.2
J	BREAKER DRAWFRAME	23.0	27.7	24.8
K	FINISHER D/F- CARDED	23.0	26.9	25.1
L	COMBER LAP	23.1	28.2	25.1
M	COMBER SLIVER	23.8	29.0	26.1
N	FINISHER D/F- COMBED	24.0	26.9	26.2



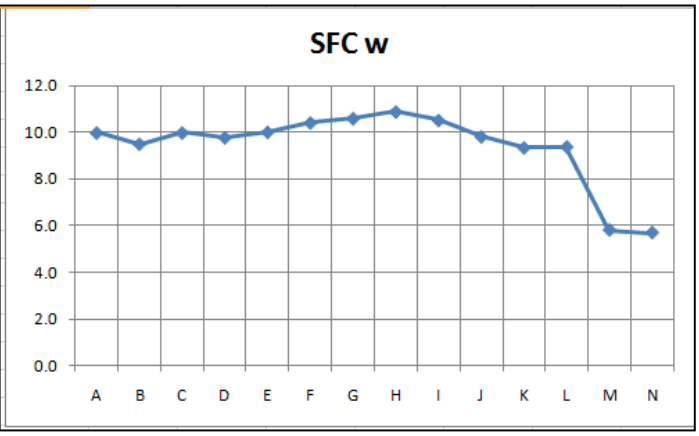
		Min	Max	AVG
A	LOT SAMPLE	28.2	40.3	35.3
B	MIXING	30.0	40.4	34.7
C	LAYDOWN	31.9	40.3	35.3
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	30.7	39.1	35.1
E	VARIOCLEAN / UNICLEAN / CLP	30.5	40.5	35.2
F	UNIMIX / MPM / MXU	31.1	40.0	35.6
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	30.8	39.5	35.7
H	CARD MAT	30.0	41.9	35.9
I	CARD SLIVER	24.5	40.4	35.8
J	BREAKER DRAWFRAME	27.2	40.3	35.6
K	FINISHER D/F- CARDED	31.9	38.6	35.4
L	COMBER LAP	30.3	39.2	35.3
M	COMBER SLIVER	28.5	38.5	33.1
N	FINISHER D/F- COMBED	29.8	37.6	33.0



		Min	Max	AVG
A	LOT SAMPLE	26.0	32.9	29.9
B	MIXING	27.3	39.9	29.9
C	LAYDOWN	26.3	38.9	29.9
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	27.1	32.8	29.8
E	VARIOCLEAN / UNICLEAN / CLP	27.0	36.0	29.8
F	UNIMIX / MPM / MXU	26.5	32.7	29.4
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	26.7	32.9	29.4
H	CARD MAT	26.5	33.0	29.3
I	CARD SLIVER	26.9	32.8	29.4
J	BREAKER DRAWFRAME	28.1	33.3	30.1
K	FINISHER D/F- CARDED	28.2	32.3	30.4
L	COMBER LAP	28.2	33.5	30.3
M	COMBER SLIVER	28.6	34.3	31.0
N	FINISHER D/F- COMBED	28.6	33.0	31.2



		Min	Max	AVG
A	LOT SAMPLE	4.6	13.9	10.0
B	MIXING	5.7	15.9	9.5
C	LAYDOWN	7.0	13.9	10.0
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	5.6	14.7	9.8
E	VARIOCLEAN / UNICLEAN / CLP	5.5	17.9	10.0
F	UNIMIX / MPM / MXU	6.1	15.5	10.4
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	5.7	15.2	10.6
H	CARD MAT	5.9	16.8	10.9
I	CARD SLIVER	5.7	16.4	10.5
J	BREAKER DRAWFRAME	5.8	14.1	9.8
K	FINISHER D/F- CARDED	6.0	13.6	9.3
L	COMBER LAP	4.8	13.1	9.4
M	COMBER SLIVER	2.5	12.4	5.8
N	FINISHER D/F- COMBED	3.5	10.2	5.7



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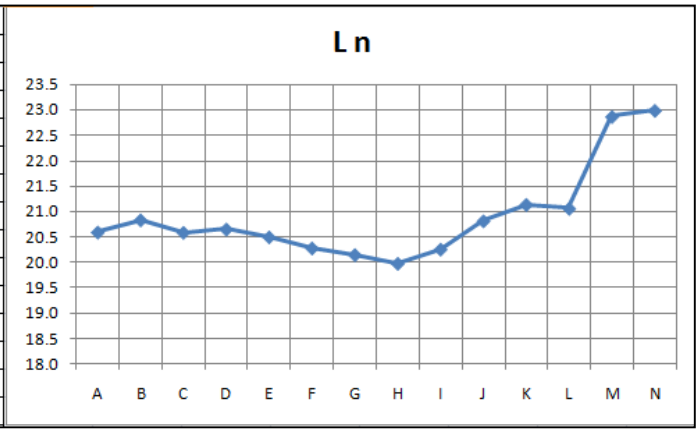
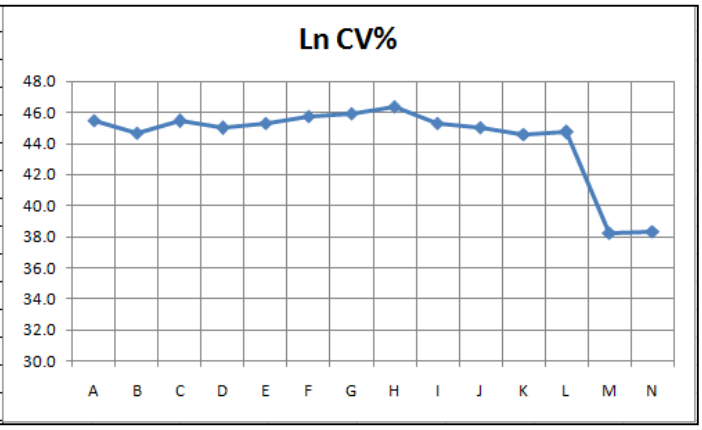
424, Shivalik Satyamev, Ambli – Bopal Junction, Near Vakil Saheb Bridge, S P Ring Road, Bopal , Ahmedabad – 380 058. Gujarat PH: 095107 26053 Mobile: 09825060309 Email.: ssmtexlab@gmail.com

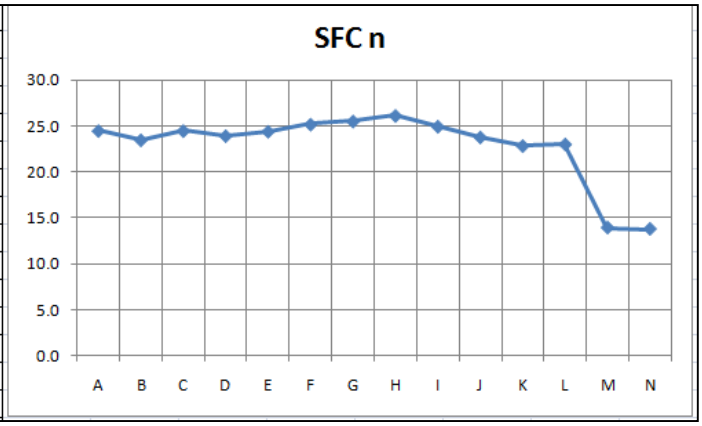
		Min	Max	AVG
A	LOT SAMPLE	17.7	22.8	20.6
B	MIXING	18.4	29.5	20.8
C	LAYDOWN	18.1	22.8	20.6
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	18.1	23.3	20.6
E	VARIOCLEAN / UNICLEAN / CLP	17.5	23.7	20.5
F	UNIMIX / MPM / MXU	17.9	23.2	20.3
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	18.0	24.4	20.1
H	CARD MAT	17.6	23.0	20.0
I	CARD SLIVER	18.0	23.2	20.2
J	BREAKER DRAWFRAME	18.8	23.6	20.8
K	FINISHER D/F- CARDED	19.0	23.2	21.1
L	COMBER LAP	19.0	24.5	21.1
M	COMBER SLIVER	19.8	33.9	22.9
N	FINISHER D/F- COMBED	20.6	24.2	23.0



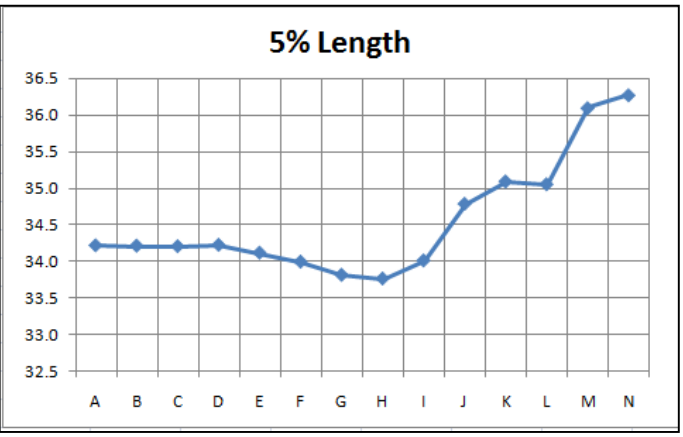
		Min	Max	AVG
A	LOT SAMPLE	33.0	52.7	45.5
B	MIXING	38.1	51.9	44.7
C	LAYDOWN	40.5	52.7	45.4
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	38.3	52.7	45.0
E	VARIOCLEAN / UNICLEAN / CLP	38.7	56.5	45.3
F	UNIMIX / MPM / MXU	39.7	51.3	45.8
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	39.6	51.4	45.9
H	CARD MAT	38.0	55.8	46.4
I	CARD SLIVER	26.3	51.3	45.3
J	BREAKER DRAWFRAME	39.2	50.8	45.1
K	FINISHER D/F- CARDED	40.4	49.2	44.6
L	COMBER LAP	36.2	50.3	44.7
M	COMBER SLIVER	32.8	47.5	38.2
N	FINISHER D/F- COMBED	34.0	47.2	38.3



		Min	Max	AVG
A	LOT SAMPLE	11.6	32.7	24.5
B	MIXING	15.5	34.7	23.4
C	LAYDOWN	19.0	32.7	24.5
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	15.8	33.5	23.9
E	VARIOCLEAN / UNICLEAN / CLP	16.1	38.2	24.4
F	UNIMIX / MPM / MXU	16.6	33.6	25.2
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	16.0	33.6	25.5
H	CARD MAT	17.1	37.5	26.1
I	CARD SLIVER	15.6	35.0	24.9
J	BREAKER DRAWFRAME	16.0	31.8	23.8
K	FINISHER D/F- CARDED	16.9	30.1	22.8
L	COMBER LAP	11.6	30.0	23.0
M	COMBER SLIVER	6.9	28.1	13.9
N	FINISHER D/F- COMBED	8.9	25.5	13.7



		Min	Max	AVG
A	LOT SAMPLE	29.2	38.8	34.2
B	MIXING	30.4	37.8	34.2
C	LAYDOWN	30.0	38.8	34.2
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	30.7	38.0	34.2
E	VARIOCLEAN / UNICLEAN / CLP	30.4	38.6	34.1
F	UNIMIX / MPM / MXU	31.1	37.6	34.0
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	30.8	37.6	33.8
H	CARD MAT	30.7	38.6	33.8
I	CARD SLIVER	31.0	39.8	34.0
J	BREAKER DRAWFRAME	32.7	38.2	34.8
K	FINISHER D/F- CARDED	32.6	37.1	35.1
L	COMBER LAP	32.4	38.1	35.1
M	COMBER SLIVER	32.8	39.7	36.1
N	FINISHER D/F- COMBED	33.7	38.4	36.3



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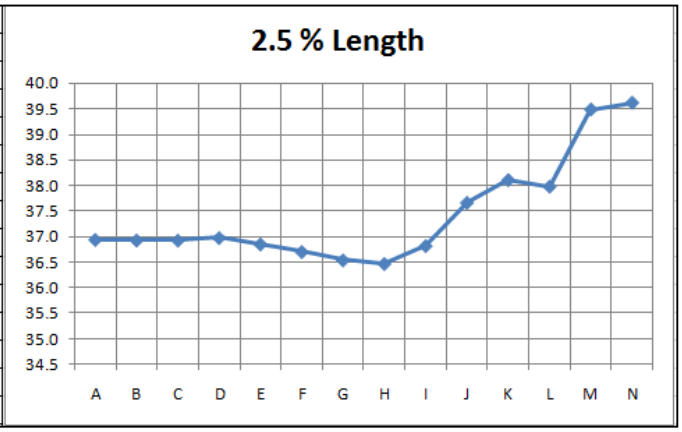
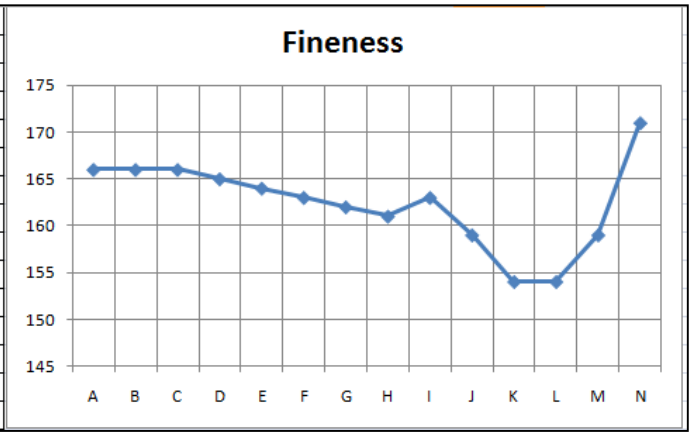
		Min	Max	AVG
A	LOT SAMPLE	31.9	41.9	36.9
B	MIXING	32.8	40.9	36.9
C	LAYDOWN	32.5	41.9	36.9
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	33.1	40.7	37.0
E	VARIOCLEAN / UNICLEAN / CLP	32.7	41.4	36.9
F	UNIMIX / MPM / MXU	33.6	40.3	36.7
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	33.0	40.4	36.5
H	CARD MAT	33.2	41.9	36.5
I	CARD SLIVER	33.6	40.8	36.8
J	BREAKER DRAWFRAME	35.3	41.2	37.7
K	FINISHER D/F- CARDED	35.0	40.3	38.1
L	COMBER LAP	35.2	41.7	38.0
M	COMBER SLIVER	35.5	44.0	39.5
N	FINISHER D/F- COMBED	36.2	42.3	39.6

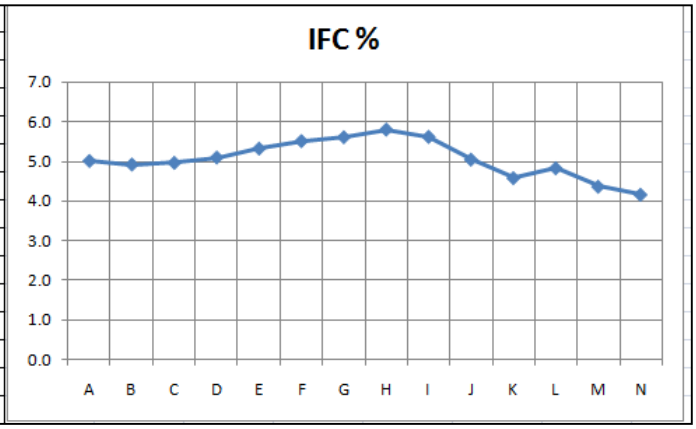


4.2 MATURITY PARAMETERS

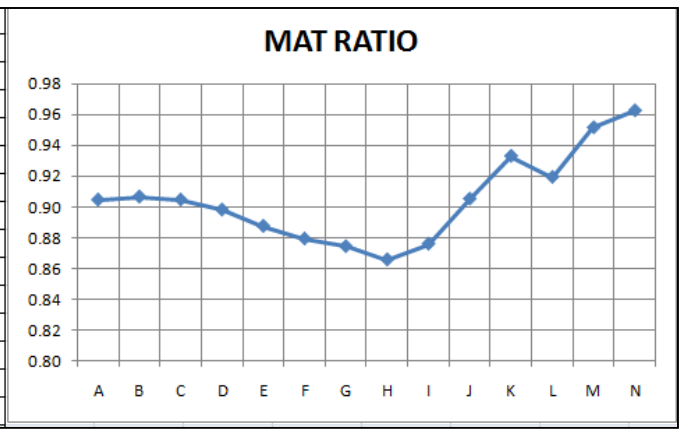
		Min	Max	AVG
A	LOT SAMPLE	134	195	166
B	MIXING	136	190	166
C	LAYDOWN	144	195	166
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	146	180	165
E	VARIOCLEAN / UNICLEAN / CLP	143	182	164
F	UNIMIX / MPM / MXU	143	180	163
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	148	179	162
H	CARD MAT	140	180	161
I	CARD SLIVER	150	182	163
J	BREAKER DRAWFRAME	153	178	159
K	FINISHER D/F- CARDED	159	180	154
L	COMBER LAP	154	182	154
M	COMBER SLIVER	154	198	159
N	FINISHER D/F- COMBED	159	184	171



		Min	Max	AVG
A	LOT SAMPLE	2.0	10.2	5.0
B	MIXING	2.3	10.5	4.9
C	LAYDOWN	3.3	10.2	5.0
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	2.8	7.6	5.1
E	VARIOCLEAN / UNICLEAN / CLP	2.9	9.0	5.3
F	UNIMIX / MPM / MXU	3.3	9.8	5.5
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	3.3	8.4	5.6
H	CARD MAT	3.0	8.9	5.8
I	CARD SLIVER	3.4	8.7	5.6
J	BREAKER DRAWFRAME	3.4	7.5	5.0
K	FINISHER D/F- CARDED	3.1	6.2	4.6
L	COMBER LAP	2.9	6.8	4.8
M	COMBER SLIVER	2.7	6.3	4.4
N	FINISHER D/F- COMBED	2.5	6.2	4.2



		Min	Max	AVG
A	LOT SAMPLE	0.60	0.99	0.90
B	MIXING	0.74	0.99	0.91
C	LAYDOWN	0.75	0.99	0.90
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	0.80	0.99	0.90
E	VARIOCLEAN / UNICLEAN / CLP	0.75	0.99	0.89
F	UNIMIX / MPM / MXU	0.76	0.98	0.88
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	0.78	0.98	0.87
H	CARD MAT	0.74	0.98	0.87
I	CARD SLIVER	0.76	0.98	0.88
J	BREAKER DRAWFRAME	0.64	0.98	0.91
K	FINISHER D/F- CARDED	0.85	0.99	0.93
L	COMBER LAP	0.85	0.99	0.92
M	COMBER SLIVER	0.85	0.99	0.95
N	FINISHER D/F- COMBED	0.88	0.99	0.96



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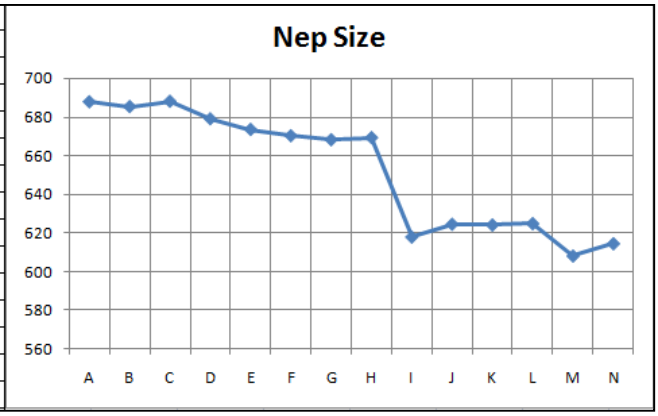
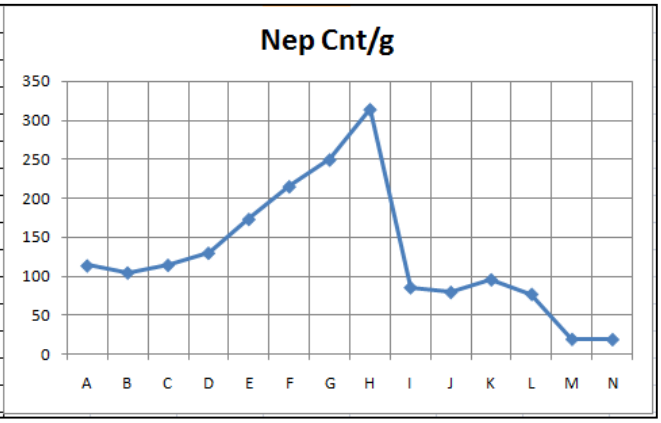
4.3 NEPS PARAMETERS

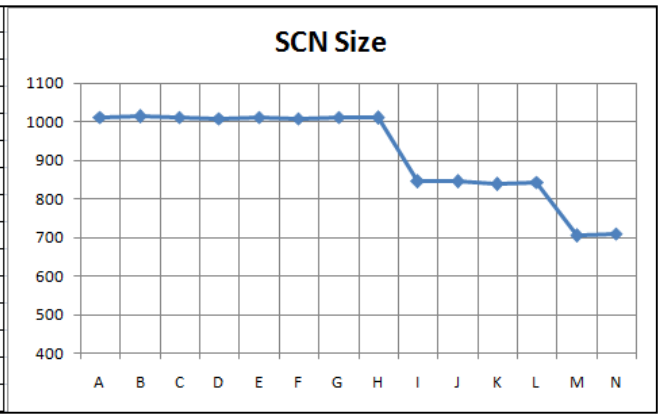
		Min	Max	AVG
A	LOT SAMPLE	518	852	688
B	MIXING	535	823	685
C	LAYDOWN	679	852	688
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	570	770	679
E	VARIOCLEAN / UNICLEAN / CLP	554	778	673
F	UNIMIX / MPM / MXU	562	777	670
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	589	756	668
H	CARD MAT	523	781	669
I	CARD SLIVER	512	888	618
J	BREAKER DRAWFRAME	540	758	624
K	FINISHER D/F- CARDED	531	697	624
L	COMBER LAP	518	729	625
M	COMBER SLIVER	450	963	608
N	FINISHER D/F- COMBED	518	766	614



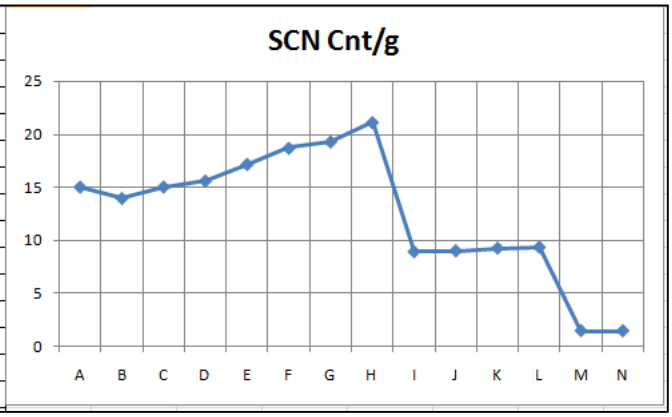
		Min	Max	AVG
A	LOT SAMPLE	42	578	114
B	MIXING	44	458	105
C	LAYDOWN	54	578	115
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	71	339	130
E	VARIOCLEAN / UNICLEAN / CLP	89	531	173
F	UNIMIX / MPM / MXU	113	521	215
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	129	479	250
H	CARD MAT	168	666	314
I	CARD SLIVER	23	388	86
J	BREAKER DRAWFRAME	24	351	80
K	FINISHER D/F- CARDED	22	323	96
L	COMBER LAP	17	198	77
M	COMBER SLIVER	2	102	20
N	FINISHER D/F- COMBED	1	74	19



		Min	Max	AVG
A	LOT SAMPLE	715	1325	1013
B	MIXING	769	1230	1013
C	LAYDOWN	866	1325	1012
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	819	1177	1007
E	VARIOCLEAN / UNICLEAN / CLP	832	1192	1011
F	UNIMIX / MPM / MXU	717	1156	1008
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	888	1177	1011
H	CARD MAT	827	1180	1009
I	CARD SLIVER	0	1160	844
J	BREAKER DRAWFRAME	725	1020	845
K	FINISHER D/F- CARDED	695	1110	838
L	COMBER LAP	0	1138	843
M	COMBER SLIVER	0	1475	704
N	FINISHER D/F- COMBED	0	1275	709



		Min	Max	AVG
A	LOT SAMPLE	1	55	15
B	MIXING	3	35	14
C	LAYDOWN	4	55	15
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	5	44	16
E	VARIOCLEAN / UNICLEAN / CLP	5	47	17
F	UNIMIX / MPM / MXU	6	41	19
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	7	39	19
H	CARD MAT	0	56	21
I	CARD SLIVER	0	41	9
J	BREAKER DRAWFRAME	1	28	9
K	FINISHER D/F- CARDED	1	24	9
L	COMBER LAP	0	24	9
M	COMBER SLIVER	0	10	1
N	FINISHER D/F- COMBED	0	8	1



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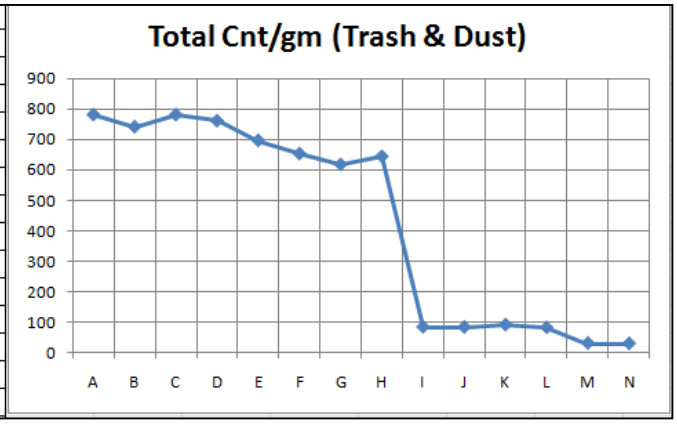
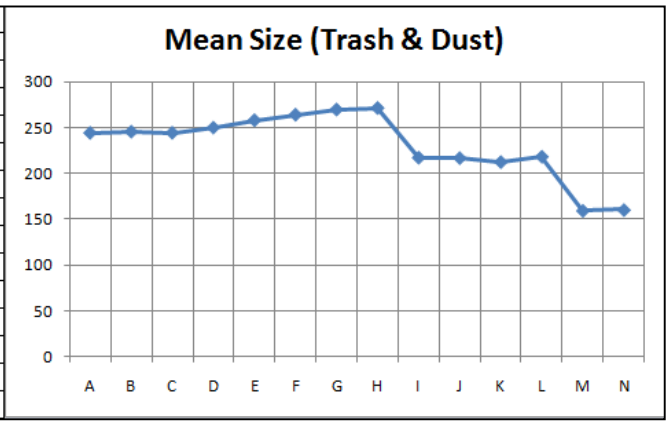
4.4 TRASH & DUST PARAMETERS

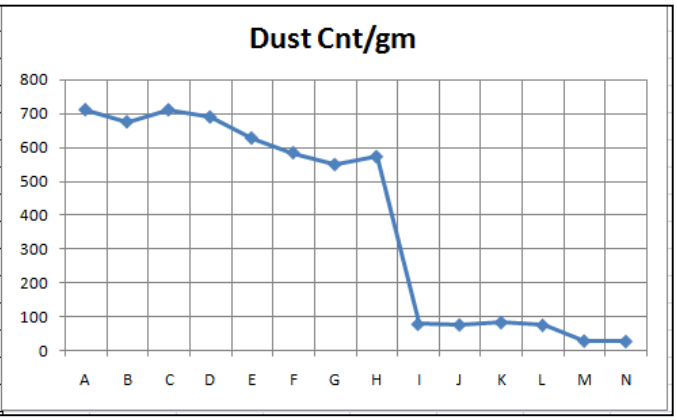
		Min	Max	AVG
A	LOT SAMPLE	20	4702	782
B	MIXING	162	2830	742
C	LAYDOWN	250	4702	782
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	164	2228	762
E	VARIOCLEAN / UNICLEAN / CLP	127	2332	697
F	UNIMIX / MPM / MXU	180	1884	654
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	190	1714	618
H	CARD MAT	164	2798	645
I	CARD SLIVER	16	841	85
J	BREAKER DRAWFRAME	17	262	84
K	FINISHER D/F- CARDED	30	307	92
L	COMBER LAP	14	238	83
M	COMBER SLIVER	2	316	32
N	FINISHER D/F- COMBED	2	146	30



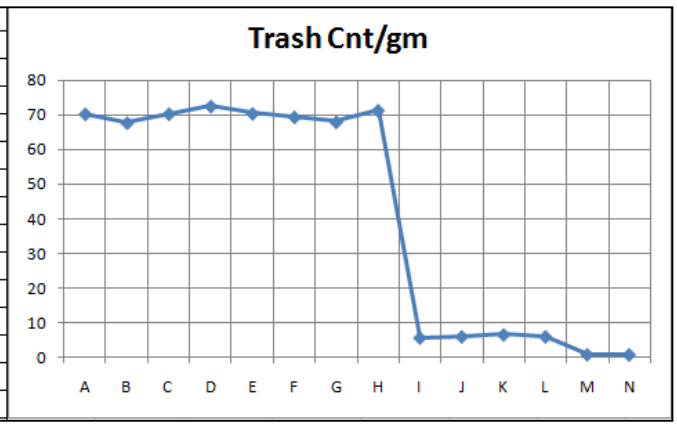
		Min	Max	AVG
A	LOT SAMPLE	138	435	244
B	MIXING	162	376	245
C	LAYDOWN	174	435	244
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	157	350	249
E	VARIOCLEAN / UNICLEAN / CLP	161	443	258
F	UNIMIX / MPM / MXU	195	376	264
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	195	369	269
H	CARD MAT	184	463	271
I	CARD SLIVER	22	870	217
J	BREAKER DRAWFRAME	106	312	216
K	FINISHER D/F- CARDED	115	308	212
L	COMBER LAP	113	330	218
M	COMBER SLIVER	78	350	159
N	FINISHER D/F- COMBED	88	295	160



		Min	Max	AVG
A	LOT SAMPLE	20	4438	711
B	MIXING	131	2702	676
C	LAYDOWN	122	4438	711
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	149	2009	690
E	VARIOCLEAN / UNICLEAN / CLP	135	2114	628
F	UNIMIX / MPM / MXU	156	1740	585
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	162	1572	550
H	CARD MAT	146	2653	573
I	CARD SLIVER	14	919	80
J	BREAKER DRAWFRAME	18	242	78
K	FINISHER D/F- CARDED	30	300	85
L	COMBER LAP	14	232	77
M	COMBER SLIVER	2	315	31
N	FINISHER D/F- COMBED	2	145	29



		Min	Max	AVG
A	LOT SAMPLE	0	264	70
B	MIXING	14	873	68
C	LAYDOWN	18	264	70
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	15	247	73
E	VARIOCLEAN / UNICLEAN / CLP	13	254	70
F	UNIMIX / MPM / MXU	18	185	69
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	18	169	68
H	CARD MAT	14	194	71
I	CARD SLIVER	0	80	6
J	BREAKER DRAWFRAME	0	22	6
K	FINISHER D/F- CARDED	0	25	7
L	COMBER LAP	0	22	6
M	COMBER SLIVER	0	16	1
N	FINISHER D/F- COMBED	0	8	1



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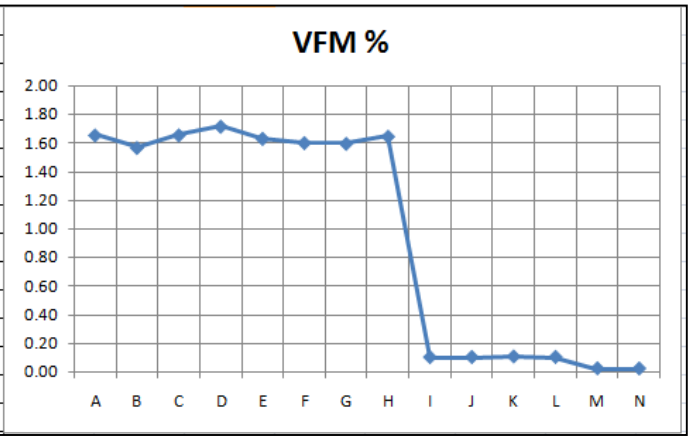
		Min	Max	AVG
A	LOT SAMPLE	0.01	6.80	1.65
B	MIXING	0.38	5.17	1.57
C	LAYDOWN	0.43	6.80	1.65
D	BLENDOMAT / BALE PLUCKER / UNIFLOC	0.32	5.54	1.71
E	VARIOCLEAN / UNICLEAN / CLP	0.33	6.08	1.63
F	UNIMIX / MPM / MXU	0.42	3.84	1.60
G	FLEXICLEAN / SUPREMO CLEAN / UNISTORE /CLC / CLU	0.51	4.15	1.59
H	CARD MAT	0.29	4.52	1.64
I	CARD SLIVER	0.01	2.13	0.10
J	BREAKER DRAWFRAME	0.01	0.31	0.10
K	FINISHER D/F- CARDED	0.02	0.31	0.10
L	COMBER LAP	0.01	0.35	0.10
M	COMBER SLIVER	0.00	0.37	0.02
N	FINISHER D/F- COMBED	0.00	0.13	0.02



4.5 ***APPLICATION TIP:***

→ **Variation of Nep counts between cards should not exceed 10% of the average Nep count of all cards. Critical yarn counts may need tighter control**

→ **Variation of SFC between combers should not exceed 10% of the average SFC of all combers. Critical yarn counts may require a tighter control**

→ **Seed Coat Neps (SCN) in CARD Sliver should be less than 10 and in Comber Sliver should be less than 2**

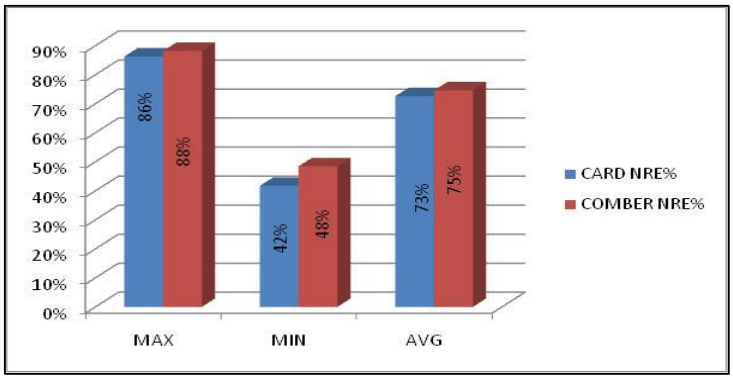
→ **SFCn Removal Efficiency in Comber should be more than 70%**

- **SFCn RE% = ((Comber Lap SFCn- Comber Sliver SFCn) / Noil) x 100%**

→ **Visible Foreign Matter (VFM%) in CARD Sliver should be less than 0.10 and in Comber Sliver should be less than 0.02**

→ **Nep Removal Efficiency (NRE%) in the CARD should be more than 70%**
NRE% = ((Neps in Card Mat – Neps in Card Sliver) / Neps in Card Mat)x 100%

→ **Nep Removal Efficiency (NRE%) in the COMBER should be more than 70% (depends on Noil% extraction)**
NRE% = ((Neps in Comber Lap – Neps in Comber Sliver) / Neps in Comber Lap)x 100%



NEPS REMOVAL EFFICIENCY	MAX	MIN	AVG
CARD NRE%	86%	42%	73%
COMBER NRE%	88%	48%	75%

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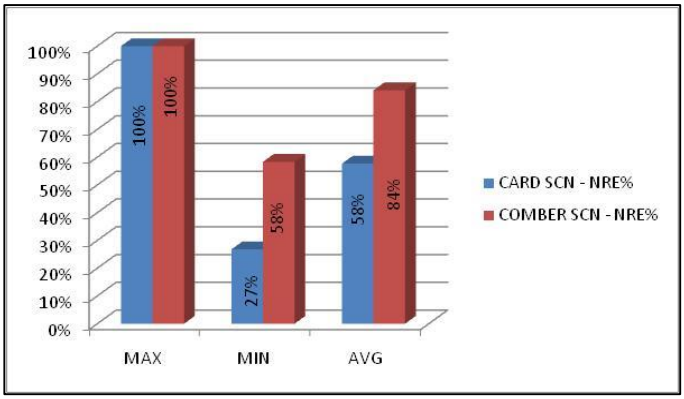
→ **Seed Coat Neps Removal Efficiency(SCN – NRE%) in the CARD should be more than 55%**
SCN – NRE% = ((SCN in Card Mat – SCN in Card Sliver) / SCN in Card Mat) x 100%

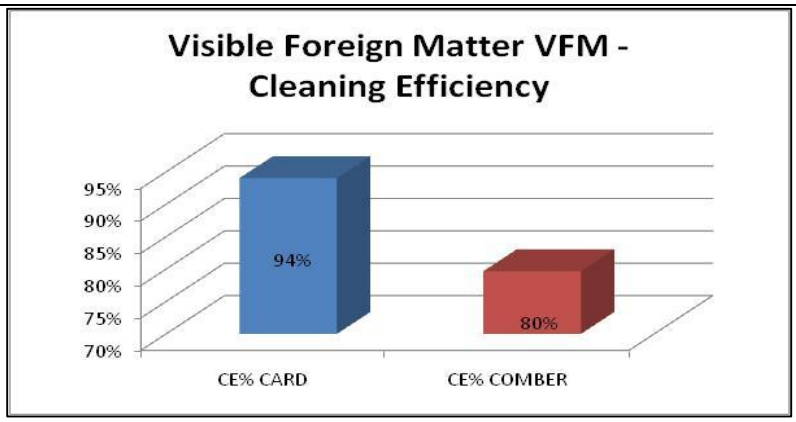
→ **Seed Coat Neps Removal Efficiency(SCN – NRE%) in the COMBER should be more than 80%**
SCN – NRE% = ((SCN in Comber Lap – SCN in Comber Sliver) / SCN in Comber Lap) x 100%



SCN -NEP REMOVAL EFFICIENCY	MAX	MIN	AVG
CARD SCN - NRE%	100%	27%	58%
COMBER SCN - NRE%	100%	58%	84%

→ **CLEANING EFFICIENCY (CE%) = ((VFM in Input – VFM in Output) / VFM in Output) x 100%**

- VFM CE% - In Card Sliver should be more than 92% and In Comber Sliver should be more than 80%
- Dust (less than 500 Microns) – Should be below 800 in Lot sample and below 90 in Card Sliver and below 35 in Comber Sliver
- Trash (more than 500 Microns) – Should be below 80 in Lot Sample and below 10 in Card Sliver and below 2 in Comber Sliver



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