ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

Bremen, 26.05.2014

Evaluation of the Test Results 2014 / 1

Tested Cotton: **Sudan Barakat**
Cotton Number: **RM 43**
Number of Laboratories: **138**

Argentina	2	Mozambique	-
Australia	1	The Netherlands	-
Bangladesh	1	Pakistan	4
Brazil	5	Poland	2
China, PR	20	Portugal	-
Czech Republic	4	Russia	2
Egypt	3	Serbia	1
France	1	Slovenia	2
Germany	12	South Africa	-
Greece	6	Spain	3
Hungary	1	Sudan	-
India	37	Switzerland	3
Iran	1	Tanzania	2
Israel	1	Thailand	2
Italy	1	Turkey	1
Japan	2	Uganda	1
Kazakhstan	1	United Kingdom	1
Korea, R	1	United States	7
Latvia	-	Uzbekistan	2
Mali	1	Vietnam, SR	2
Mauritius, Rep of	1	Zimbabwe	1

For any questions, please mail to gerardi@faserinstitut.de

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Explanations:

test material

The sample material is generally unprocessed cotton lint without additional homogenisation from varying origins with a wide spectrum of properties. The Bremen Fibre Institute (FIBRE) usually avoids origins with high result variations.

In this Round Test the cotton is: **Sudan Barakat (RM 43)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 with 10 tests on samples from 10 different layers with the following results:

HVI HVICCS	SD between bale layers (based on 10 tests per layer)	SD between single tests (based on 10 times 10 tests)
Mic	0,059	0,089
Strength, g/tex	0,651	1,606
Length, UHM, inch	0,013	0,029
Length, UHM, mm	0,324	0,727

The test material is not suitable as a reference for calibration.

result evaluation

The results of the participating laboratories for one test method and one parameter are grouped in one table implying that the used instruments yield comparable results despite different instrument types or different national standard test methods. The results are partitioned in different tables as soon as significant differences appear.
Based on the compilation of the results, an identification of outliers is carried out, which is according to Grubbs' Test for Outliers described in ISO 5725 with one slight modification: the algorithm is applied repeatedly to ensure that all outliers are excluded. All outliers are marked by putting the result in brackets. The statistical parameters for all tables and characteristics are calculated after the exclusion of outliers. For the usage of the statistical data, the different numbers of repetitions in each lab have to be considered.

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assessment of the laboratory performance

From the results, the bias of each laboratory can be calculated. Stability and repeatability cannot be assessed.

The ICA Bremen Cotton Round Test does not include any benchmarking or rating of the laboratories and their results. Rather the results can be used by each laboratory to evaluate its own performance.

- For estimating a bias to results of other laboratories, please calculate the difference between your result and either the average or the median of all laboratories (after exclusion of outliers).
- For evaluating the bias, the z-score calculation may be applied:

$$z = \frac{your\ value - average\ (or\ median)}{StdDev}$$

- If the z-score is between -1 and 1 your lab belongs to the better 68% of all labs and no measures are necessary. In the z-score range of -2 to 2 are 95 % of all values. The closer your z-score is to 2 (-2) the more urgently it is to take measures to improve performance. If your z-score is above 2 (below -2) a basic revision of all conditions will be necessary.
- For assessing permanent deviations, please monitor all deviations in subsequent ICA Bremen Round Tests or in comparison to other round trial programmes like the CSITC Round Trials or the USDA HVI Checktest.

laboratory numbers

The laboratory numbers for each laboratory are confident. The numbers are usually kept constant for subsequent Round Tests. In case that any laboratory has doubts in the anonymity of its number, a new laboratory number should be requested.

In case of more than one instruments of the same type, an adjunct number or character is given (e.g. 123-1 and 123-2). In order to distinguish between your instruments, please provide specific adjunct characters for each of your instruments with your data sheet.

registration and participation

To register a new laboratory to the ICA Bremen Round Test, please send the laboratory's contact details to Mrs Hannelore Gerardi – contact details provided below
In the case that a laboratory does not send any results back for a whole year's period, we have to exclude it from the participants.

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choice of test methods included in the round test

The ICA Bremen Round Test strives to include every commonly used test method.

- Test methods will remain included as long as sufficient participant numbers are given, although the Bremen Fibre Institute (FIBRE) maintains the right to exclude methods.
- Proposals for the inclusion of new methods/instruments/parameters are appreciated. For this, an adequate number of long term participants should be given.
- Test methods for stickiness are excluded due to difficulties in sample provision.

improvement of the ica bremen cotton round test

Any proposals for improving the Round Test are highly appreciated. For this, please contact Mr Axel Drieling – contact details provided below.

important notes

Please take care to fill in all the necessary information on the test forms (e.g. the test methods, the instrument types and the number of repetitions for each test). Please provide one or two reliable e-mail addresses to Mrs Gerardi - contact details are provided in the last section.

Contact

For any questions regarding the ICA Bremen Cotton Round Test, please contact:

- Mr Axel Drieling for general questions relating to the Round Test and cotton testing,
  Tel. +49 421 218 58650, e-mail: axel@ica-bremen.org
- Mrs Hannelore Gerardi for questions relating to the realization of the current tests,
  Tel. +49 421 218 58671, e-mail: gerardi@faserinstitut.de

With kind regards,

Axel Drieling
Hannelore Gerardi

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MICRONAIRE				
Lab.	Rep.	Mic.	Instrument	Standard Test Method
12		4.1	775	GB/T6498-05
17		4.2		
22	3	4.2	Fibronaire	
29	5	4.3	Sheffield	ISO 2403
35	3	4.1	775	
56	2	4.1	Fibronaire	JIS
67	4	4.0	Fibronaire	
70	6	4.0	MK.1	ASTMD3818-92
76	3	3.9	RM 1070	
77		3.8		
79	5	4.3	Sheffield	ASTMD1448
92	10	4.1	DigiMic XT	ASTMD1448
93	4	4.2		ASTMD1448
102	3	3.8	Fibronaire	ICCS
112	2	4.0	Fibronaire	ASTM
115	8	4.1	Kaisokki	ASTM
116	4	3.7	STATEX	
128	8	4.1	Fibronaire	ASTM
129	4	4.0		BS 3181
131	6	4.1		ASTM
132	3	4.0	WIRA	DIN 53941
133	2	3.9	PortAr 275	
136	4	4.0	675	internal
142	3	4.0	80400	ISO
155		4.3	275	DIN 53941
162	6	3.9	WIRA	
167	2	4.0	275	
168		4.1		
169	3	4.1	Sheffield	
177	3	3.9	DPM 60	DIN 53941
183	3	4.0	Fibronaire	ASTMD1448
186	6	3.8	FMT	
193	2	4.0	Y145	GB/T6498-08
201	2	4.1	275	
203		4.0	900-1	
Average		4.03		
Median		4.0		
StdDev		0.14		
CV		3.55		
Min		3.7		
Max		4.3		
n		35		

PRESSLEY, STELOMETER								
Lab.	Pressley Tester				Stelometer			
	Rep.	PI (0)	PI (3.2)	Standard Test Method	Rep.	Bundle Tenacity gf/tex	Elongation %	Standard Test Method
29	5	8.9		ISO 3060				
35					6	26.4	7.5	
46	10	11.9	4.7	ISO 3060				
56	5	10.1		JIS				
76	5	9.6						
79	6	9.4		ASTMD1445				
92					5	26.5	7.0	ASTM 1445
93	6	10.1	5.1	ASTM1445		28.9	6.7	ASTM 1445
102					5	30.8	5.8	ICCS
112					3	32.4	6.3	ASTM
116					10	29.7	8.0	
128	8	9.5	5.0	ASTM	8	29.1	6.2	ASTM
131	6	8.7	5.1	ASTM	6	25.1	6.5	ASTM
136	4		(96.1)	internal				
162	6	10.8			6	30.2	6.0	
177	4	8.7		DIN 53942				
193					12	31.2	5.8	GB/T13783-92
206					10	26.8	5.8	DIN ISO3060
Average		9.76	4.97			28.83	6.5	
Median		9.54	5.03			29.1	6.25	
StdDev		1.0	0.18			2.33	0.73	
CV		10.25	3.59			8.09	11.23	
Min		8.7	4.7			25.1	5.8	
Max		11.9	5.1			32.4	8.0	
n		10	4			11	11	

Pressley	PI(0)	Av., gf/tex	52.33	StdDev, gf/tex	5.36	CV, %	10.25
	(3.2)	Av., gf/tex	33.79	StdDev, gf/tex	1.21	CV, %	3.59

DIGITAL - FIBROGRAPH *(further information see page "Multiple Devices")*									Span Length
Lab.	Rep.	2.5 % SL		50 % SL		UR	SFC (N)	SFC (W)	SFI
		mm	inch	mm	inch	%	%	%	
28	7	32.7	1.29	14.4	0.57	44	10.9		2.4
35	6	34.8	1.37	16.1	0.63	46			3.3
92	5	34.5	1.36	16.1	0.63	47			7.2
93	4	34.8	1.37	17.9	0.70	51			
102	5	35.1	1.38	15.7	0.62	45			
116	5	36.3	1.43	17.4	0.69	48			
131	6	33.5	1.32	15.9	0.63	48			
136	10	33.8	1.33	(28.0)	(1.10)	(83)			
143		34.3	1.35	16.2	0.64	47			
238	10	34.7	1.36	16.3	0.64	47	25.5	6.4	
Average		34.44	1.356	16.22	0.639	47.0			
Median		34.58	1.361	16.10	0.634	46.9			
StdDev		0.97	0.038	1.00	0.039	2.1			
CV		2.83	2.827	6.15	6.15	4.5			
Min		32.7	1.29	14.4	0.57	44			
Max		36.3	1.43	17.9	0.70	51			
n		10	10	9	9	9	2	1	3

COMB SORTER *(further information see page "Multiple Devices")*						Staple Length		
Lab.	Rep.	Instrument	N			W		
			ML	CV	< 12.5 mm	ML	CV	<12.5 mm
			mm	%	%	mm	%	%
85	1	Joh.-Zweigle				31.3	34.7	9.8
85-2	1	Keisokki				31.8	26.1	4.0
85-3	1	Keisokki				31.8	29.9	7.0

ALMETER *(further information see page "Multiple Devices")*							Staple Length
Lab.	Rep.	N			W		
		ML	CV	< 12.5 mm	ML	CV	<12.5 mm
		mm	%	%	mm	%	%
58	3	22.7	44.1	21.1	27.1	35.1	9.0
132	5	23.5	41.2	16.6	29.3	30.9	5.9

Maturity, Fineness *(further information see page "Multiple Devices")*					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		81			
70					1.60
79					1.45
85					1.53
85-2					1.53
85-3					1.58
112					1.79
129		70			
131		80			
177		98			1.69
193					1.52

IIC/SHIRLEY FM-TESTER *(further information see page "Multiple Devices")*				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
70	6	83.8	0.95	156
93	4	83.5	0.92	157
102	2	80.8	0.91	171
128	8	86.0	0.99	159
186	6	82.3	0.93	149
Average		83.28	0.94	158.4
Median		83.5	0.93	157.0
StdDev		1.92	0.032	8.0
CV		2.31	3.364	5.0
Min		80.8	0.91	149
Max		86.0	0.99	171
n		5	5	5

HVI *(table is divided into 3 pages)*					General		
Lab.	Manufacturer	Instrument	Std. Test Method	Rep.	Each rep. consisting of		
					Mic. meas.	Combs for length/strength	Color readings
4	USTER	900		5	1	2	2
5	USTER	1000		12	1	2	2
5-2	USTER	1000		12	1	2	2
6	USTER	1000			1	2	2
7	USTER			10			
8	USTER	Spectrum I	ASTMD5867-05	6	1	2	2
10	USTER	1000C	GB/T20392-06	3	1	2	2
10-10	USTER	1000C	GB/T20392-06	3	1	2	2
10-11	USTER	1000C	GB/T20392-06	2	1	2	2
10-12	USTER	1000C	GB/T20392-06	3	1	2	2
10-2	USTER	1000C	GB/T20392-06	3	1	2	2
10-3	USTER	1000C	GB/T20392-06	3	1	2	2
10-4	USTER	1000C	GB/T20392-06	3	1	2	2
10-5	USTER	1000C	GB/T20392-06	3	1	2	2
10-6	USTER	1000C	GB/T20392-06	3	1	2	2
10-7	USTER	1000C	GB/T20392-06	3	1	2	2
10-8	USTER	1000C	GB/T20392-06	3	1	2	2
10-9	USTER	1000C	GB/T20392-06	3	1	2	2
12	USTER	Spectrum I	SN/T1512-11	12	1	1	1
13	USTER	Spectrum	internal	10	1	1	1
15	USTER	900 SA			1	2	2
16	USTER	Spectrum	SN/T1512-11	12	1	1	1
19	USTER	1000	SN/T1512-11		1	2	2
24	USTER	Spectrum	USDA	10	1	2	2
27	USTER	900 A	ASTMD5867-05	6	1	2	2
28	Textechno	Fibrotest		7			
31	USTER	900		6	1	2	2
33	Premier	HFT	ICC	5	1	1	1
34	Premier	HFT	HVI Mode	5	1	1	1
38	USTER	1000			1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000		5	1	2	2
44	USTER	Spectrum	Manufacturer	10	1	1	1
47	USTER	900 A	ASTMD5867	10	1	2	2
48	Premier	HFT	ASTMD5867-05	8	1	2	2
49	USTER	1000M700			1	2	2
50	USTER	1000	internal	6	1	2	
50-2	USTER	1000	internal		1	2	
50-3	USTER	1000	internal	6	1	2	
52	USTER	1000	ASTM	6	6	6	4
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	USDA		1	2	2
56	USTER	Spectrum I	HVI Mode	5	1	2	2
58	USTER	1000	internal	10	1	2	2
59	USTER	1000	USDA	10	1	2	2
59-2	USTER	Classing	USDA	10	1	2	2
59-3	USTER	900 A	USDA	10	1	2	2
60	USTER	1000	ASTM	6	1	2	2
60-2	USTER	1000M700	ASTM	6	1	2	2
68	USTER	1000	USDA	10	1	2	2
71	USTER	Spectrum	SN/T1512-11	6	1	1	1
71-2	USTER	1000	SN/T1512-11	6	1	2	2
72	USTER	1000		10	2	2	2
75	USTER	Spectrum	SN/T1512-11	6	1	2	2
79	USTER	900			1	2	2

HVI *(table is divided into 3 pages)*							General
Lab.	Manufacturer	Instrument	Std. Test Method	Rep.	Each rep. consisting of		
					Mic. meas.	Combs for length/strength	Color readings
81	USTER	1000M700	ASTM	6	1	2	2
83	USTER	Spectrum I	SN/T1512-11	6	1	2	2
84	USTER	1000	USDA	12	1	1	1
89	USTER	1000		10	1	2	2
89-2	USTER	1000		10	1	2	2
90	USTER	1000	ASTMD5867	10	1	2	2
91	USTER	1000		6	1	2	2
92	MAG	HVT Expert 1201	ASTMD5867	6	1	2	2
93	USTER	900 A	ASTMD5867	6	1	2	2
96	USTER	1000	GB/T20392-06	10	1	2	2
98	USTER	1000	USDA	10	1	2	2
101	USTER	1000	ASTMD5867-12	6	1	2	2
102	USTER	900 B	ASTMD5867	1	3	6	4
102-2	USTER	Spectrum 1	ASTMD5867	6	1	1	1
102-3	USTER	SW700V3.1.3.18	ASTMD5867	6	1	1	1
103	USTER	1000	SN/T1512-11	12	1	2	2
104	USTER	1000			1	2	2
105	USTER	Spectrum	Manufacturer	6	1	2	2
106	Premier	ART		6	1	1	2
107	Premier	ART 2	ASTMD5867-05	6	1	2	2
108	USTER	1000	ASTMD5867-12	12	1	1	1
109	USTER	900		10	1	2	2
111	USTER	1000	internal	6	1	2	2
112	USTER	1000	ASTM		1	2	2
113	Premier	ART	ASTMD5867-05	10	1	2	2
115	Statex	Fibrotex	ASTM	6	1	2	
117	USTER	Spectrum	SN/T1512-11	12	1	1	1
121	USTER	1000	SN/T1512-11		1	2	2
122	USTER	1000		5	1	2	2
123	USTER	Spectrum	ASTMD5867-05	10	1	1	1
125	USTER	1000	ASTM	6	6	6	6
128	USTER	1000	ASTMD5867-12	10		2	2
129	USTER	900	ASTMD5867	6	1	2	2
130	Premier	ART 2	ICC	6	1	2	2
131	USTER	Spectrum	USDA	6	1	2	2
132	Textechno	Fibrotest		1		10	
134	USTER	1000C	ASTMD5867-95	6	1	2	2
135	USTER	Spectrum I	ASTMD5867-95	6	1	2	2
143	Premier	ART		6	1	2	2
143-2	USTER	Spectrum		6	1	2	2
146	USTER	Spectrum			1	2	2
148	USTER	1000		6	1	2	2
153	USTER	Spectrum	Manufacturer	6	1	2	2
153-2	USTER	Spectrum	Manufacturer	6	1	2	2
156	USTER	Spectrum	USDA. ASTM	6	1	2	2
158	USTER	900		6	1	2	2
158-2	USTER	900		6	1	2	2
162	USTER	900 A	HVI Mode	6	1	2	2
163	USTER	900	ASTMD5867-12	6	3	6	2
172	USTER	900	ASTMD5867-12	6	1	2	2
176	USTER	1000	HVICC	10	1	2	2
183	USTER	1000	ASTMD5867-05	6	1	2	2
186	USTER	900		10	2	10	
186-2	USTER	900		10	2	10	
193	USTER	1000	GB/T20392-06	6	1	2	2

HVI *(table is divided into 3 pages)*					General		
Lab.	Manufacturer	Instrument	Std. Test Method	Rep.	Each rep. consisting of		
					Mic. meas.	Combs for length/strength	Color readings
200	USTER	900 A	ASTMD5867	12	1	2	2
201	USTER	900		6	1	2	2
202	Premier	ART	HVI Mode	10	1	2	2
203	USTER	900			1	2	2
204	Premier	HFT	GB/T20392-06	10	1	2	2
204-2	USTER	1000	GB/T20392-06	10	1	2	2
206	USTER	900 B	GOST R53031-08	10	1	2	2
207	USTER	1000	ASTMD5867-12	10	1	2	2
207-2	USTER	1000	ASTMD5867-12	10	1	2	2
207-3	USTER	1000	ASTMD5867-12	10	1	2	2
207-4	USTER	1000	ASTMD5867-12	10	1	2	2
208	USTER	1000	ASTMD5867-12	10	1	2	2
208-2	USTER	1000	ASTMD5867-12	10	1	2	2
209	Premier	ART 2	ASTMD5867-05	6	1	2	2
209-2	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
213	Premier	ART	ICC	6	1	2	2
215	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
216	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
217	MAG	HVT Expert 1201	ASTM2005	6	1	2	2
219	Premier	HFT		8	1	2	
234	Premier	ART 2		4	1	1	2
237	USTER	Spectrum II	ASTM	6	1	2	2
238	Premier	ART	ICC	10	1	1	1
242	USTER	Spectrum		6	1	2	2
242-2	USTER	1000		6	1	2	2
251	Premier	ART	ICC	10	1	2	2
267	Premier	ART 2			1	1	1
271	Premier	ART	internal	10	1	1	1
271-2	USTER	900	internal	10	1	1	1
272	Premier	ART		5	1	1	2
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	ART 2	ICC		1	2	2
295	Premier	HFT		4	1	1	
300	Premier	ART	ASTM	6	1	2	2
315	Premier	HFT			1	2	
318	Premier	HFT			1	2	
320	MAG	HVT Expert 1201	ASTM	10	1	2	2

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
4	4.2		33.6		7.3
5	4.2		39.3		6.2
5-2	4.2		38.9		7.4
6	4.4		35.3		5.3
7	4.2		36.3		4.8
8	3.9		37.4		(9.8)
10	4.1		38.4		5.1
10-10	4.1		37.4		3.7
10-11	4.4		37.1		7.9
10-12	4.2		35.4		7.5
10-2	4.4		32.3		4.7
10-3	4.5		37.9		5.5
10-4	4.4		35.3		5.4
10-5	4.3		35.0		8.8
10-6	4.4		34.4		6.0
10-7	4.4		35.4		9.2
10-8	4.5		34.1		8.8
10-9	4.2		37.3		6.5
12	4.0		36.8		6.3
13	4.0		37.6		6.1
15	4.0		35.3		8.7
16	4.0		36.5		6.1
19	4.1		(43.0)		5.4
24	4.0		35.4		5.7
27	4.2		39.1		5.1
28			33.2		
31	3.8	27.3	40.5	6.2	6.0
33	4.2	25.0		6.9	
34	4.1		42.4		7.3
38	4.2		36.4		(2.9)
41	4.2		37.9		(11.5)
43	4.3		36.7		5.3
44	4.2		35.6		7.4
47	4.3		36.9		6.0
48	4.2		35.4		7.0
49	4.1		38.4		6.1
50	4.4		37.6		7.0
50-2	4.3		40.6		9.5
50-3	4.2		38.8		7.6
52	4.0		41.9		(3.3)
53	4.1		39.2		7.0
54	4.2		37.8		6.1
56	3.8		39.9		5.6
58	4.0		36.3		6.8
59	4.1		40.7		
59-2	4.0		40.6		
59-3	4.0		38.9		
60	3.9		(44.5)		(10.5)
60-2	4.2		(43.6)		5.2
68	4.3		35.4		
71	4.0		37.9		6.3
71-2	4.2		35.7		7.9
72	4.2		36.5		

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
75	4.0		36.5		4.2
79	4.2		37.4		7.2
81	4.1		37.5		5.5
83	4.2		(26.1)		5.8
84	4.1		36.4		5.7
89	4.0		37.0		6.2
89-2	4.0		37.2		7.0
90	4.1		36.4		6.8
91	4.1		34.4		(3.0)
92	4.1	26.8	34.1	7.1	7.1
93	4.3		39.8		6.6
96	4.1		37.7		6.3
98	4.4		36.5		
101	4.2		35.8		6.1
102	3.8		36.4		5.4
102-2	4.1		37.4		5.7
102-3	3.8		37.6		6.7
103	4.2		38.0		5.8
104	4.0		39.5		
105	4.1		38.7		7.4
106	4.3		36.9		7.2
107	4.0		37.5		7.1
108	4.3		39.3		5.1
109	4.2		36.4		
111	4.0		38.1		7.6
112	4.1		37.9		7.7
113	4.0		37.5		7.2
115	4.0	23.9		5.8	
117	4.1		37.7		6.3
121	4.2		38.7		6.7
122	4.1		38.1		6.0
123	4.1	26.5	35.6	7.1	7.3
125	4.0		40.3		7.4
128			36.7		6.1
129	4.0	26.4	34.2	6.2	6.1
130	4.0	25.0	36.0	7.0	7.1
131	4.1		32.2		6.6
132			33.6		(11.3)
134	4.1		39.3		6.7
135	4.3		37.1		5.9
143	4.1		39.5		6.9
143-2	4.0		37.6		7.1
146	4.0		35.0		6.2
148	4.1		36.1		6.9
153	3.9		40.4		5.5
153-2	4.5		38.6		6.3
156	4.2		38.1		7.6
158	4.0		36.8		7.1
158-2	3.9		37.4		7.0
162	3.9		34.6		7.2
163	3.9	27.3		5.8	
172	4.1		37.8		5.9
176	4.2		37.6		5.9

HVI	*(table is divided into 3 pages)*			Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
183	4.2		38.9		6.0
186	3.9		37.8		6.1
186-2	3.9		35.0		6.2
193	4.0		37.5		5.1
200	4.0		37.4		
201	4.1		35.3		7.5
202	4.0		36.0		6.6
203	4.0		(31.0)		
204	4.1		35.3		6.7
204-2	4.3		35.7		7.6
206	4.1		38.6		5.5
207	4.0		35.9		5.9
207-2	4.1		35.6		7.3
207-3	4.1		35.3		7.0
207-4	4.1		35.7		7.8
208	4.1		35.6		
208-2	4.0		36.5		5.9
209	4.0		37.1		7.2
209-2	4.0		37.4		7.2
213	4.0	24.4		6.8	
215	4.0		37.2		7.3
216	4.0		37.8		7.2
217	4.1		36.8		7.0
219	4.1		38.1		
234	(4.6)		37.0		6.0
237	4.3		37.5		6.3
238	3.7	27.0		6.9	
242	4.2		36.8		5.3
242-2	4.2		37.0		7.6
251	3.9	26.2		6.5	
267	4.2		39.2		7.2
271	3.9		37.6		7.0
271-2	4.3		36.6		6.1
272	4.4		36.4		6.9
287	3.9	26.3	40.1	8.0	7.2
288	4.2	26.8		6.2	
295	4.1	25.9		6.7	
300	4.2		38.3		7.0
315	4.0	24.1			
318	4.2		35.5		
320	4.0	26.9		7.0	
Average	4.11	25.98	37.1	6.68	6.56
Median	4.1	26.35	37.15	6.8	6.6
StdDev	0.15	1.14	1.83	0.58	0.99
CV	3.71	4.38	4.92	8.66	15.05
Min	3.7	23.9	32.2	5.8	3.7
Max	4.5	27.3	42.4	8.0	9.5
n	143	16	132	15	116

HVI *(table is divided into 3 pages)*						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
4				34.9	1.37	84.5
5				35.1	1.38	85.3
5-2				35.4	1.39	86.0
6				34.6	1.36	86.2
7				34.3	1.35	85.4
8				33.7	1.33	86.5
10				35.3	1.39	85.3
10-10				35.3	1.39	83.4
10-11				34.3	1.35	84.3
10-12				35.5	1.40	85.5
10-2				34.7	1.37	82.7
10-3				35.3	1.39	87.4
10-4				34.7	1.36	84.9
10-5				36.1	1.42	85.3
10-6				33.7	1.33	83.4
10-7				35.1	1.38	85.9
10-8				34.2	1.35	84.9
10-9				33.8	1.33	84.5
12				35.1	1.38	86.5
13				34.5	1.36	86.2
15				32.5	1.28	84.8
16				34.9	1.38	87.7
19				35.9	1.42	86.0
24				34.0	1.34	85.6
27				(29.9)	(1.18)	86.4
28				32.6	1.28	84.7
31	33.9	1.33	50.4	33.4	1.31	(90.0)
33	36.6	1.44	48.5			
34				34.9	1.37	86.6
38				35.2	1.39	87.0
41				34.4	1.35	85.2
43				35.8	1.41	86.1
44				34.6	1.36	85.5
47				34.9	1.37	85.9
48				35.6	1.40	86.5
49				36.9	1.45	87.0
50				35.6	1.40	85.2
50-2				33.4	1.31	85.0
50-3				35.1	1.38	84.5
52				35.1	1.38	86.2
53				34.5	1.36	(28.9)
54				35.6	1.40	86.8
56				35.4	1.39	86.5
58				36.1	1.42	86.6
59				34.6	1.36	84.4
59-2				34.6	1.36	83.6
59-3				33.6	1.32	85.1
60				35.9	1.41	86.8
60-2				36.0	1.42	85.8
68				34.9	1.37	85.6
71				34.1	1.34	
71-2				34.4	1.36	
72				35.5	1.40	85.7

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
75				34.5	1.36	85.4
79				34.8	1.37	86.4
81				34.5	1.36	86.1
83				(27.6)	(1.09)	(80.5)
84				35.1	1.38	85.4
89				35.0	1.38	87.2
89-2				34.8	1.37	86.1
90				35.2	1.39	86.3
91				34.3	1.35	85.0
92	34.6	1.36	46.9	34.1	1.34	84.3
93				34.9	1.37	86.4
96				34.7	1.37	85.3
98				34.1	1.34	84.4
101				34.3	1.35	85.8
102				33.6	1.32	84.1
102-2				34.1	1.34	86.1
102-3				34.9	1.37	86.6
103				35.5	1.40	85.7
104				34.8	1.37	85.9
105				34.3	1.35	85.9
106				34.2	1.35	85.3
107				33.6	1.32	85.0
108				34.9	1.38	85.1
109				34.9	1.37	88.0
111				34.5	1.36	84.6
112				35.1	1.38	85.5
113				33.8	1.33	84.8
115	32.9	1.30	44.0			
117				35.0	1.38	86.5
121				36.2	1.42	85.6
122				34.0	1.34	86.0
123	34.9	1.37	45.4	35.1	1.38	86.6
125				35.2	1.39	84.1
128				34.7	1.37	86.4
129	34.9	1.37	45.0	33.7	1.33	85.0
130	34.6	1.36	44.0	34.3	1.35	(82.0)
131				33.5	1.32	(82.5)
132				34.3	1.35	85.6
134				35.0	1.38	85.5
135				35.4	1.39	85.0
143				34.4	1.35	86.5
143-2				34.2	1.35	86.0
146				34.9	1.38	86.3
148				34.8	1.37	86.1
153				33.6	1.32	86.1
153-2				32.9	1.30	85.7
156				35.2	1.39	85.8
158				35.3	1.39	86.5
158-2				35.1	1.38	84.6
162				34.9	1.37	86.8
163	34.5	1.36	46.7			
172				35.1	1.38	86.2
176				35.2	1.38	86.8

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
183				36.3	1.43	86.4
186				34.5	1.36	85.3
186-2				34.2	1.35	86.0
193				34.5	1.36	85.9
200				34.6	1.36	86.1
201				34.8	1.37	84.9
202				34.9	1.37	87.3
203				34.7	1.37	
204				34.5	1.36	85.9
204-2				34.6	1.36	85.9
206				34.5	1.36	86.1
207				34.3	1.35	85.5
207-2				34.7	1.37	85.3
207-3				35.1	1.38	85.2
207-4				34.4	1.35	85.1
208				34.5	1.36	85.7
208-2				34.8	1.37	85.5
209				33.6	1.32	84.2
209-2				33.8	1.33	84.3
213	33.5	1.32	43.8			
215				33.6	1.32	84.2
216				33.7	1.33	84.5
217				33.7	1.33	84.5
219				35.2	1.39	86.0
234				34.1	1.34	87.1
237				35.5	1.40	
238	34.7	1.37	46.9			
242				34.3	1.35	
242-2				35.1	1.38	85.1
251	34.6	1.36	44.0			
267				35.6	1.40	84.7
271				33.7	1.33	84.2
271-2				34.0	1.34	85.8
272				35.3	1.39	83.2
287	35.4	1.39	43.5	35.4	1.39	86.2
288	36.7	1.44	43.2			
295	33.5	1.32	48.1			
300				34.7	1.37	83.5
315	34.0	1.34	46.4			
318				35.1	1.38	84.5
320	34.7	1.37	46.0			
Average	34.62	1.363	45.8	34.68	1.365	85.57
Median	34.62	1.363	45.7	34.74	1.368	85.7
StdDev	1.01	0.040	2.06	0.73	0.029	0.97
CV	2.92	2.921	4.5	2.12	2.116	1.13
Min	32.9	1.3	43.2	32.5	1.28	82.7
Max	36.7	1.44	50.4	36.9	1.45	88.0
n	16	16	16	135	135	127

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
4	69	13.8	24-2	3	0.2	15
5	69	13.2	24-2	2	0.23	16
5-2	69	13.2	24-2	2	0.23	19
6	70	13.0	14	2	0.32	26
7	68	13.5	24-2		0.37	34
8	67	13.9	24-2	4	0.37	16
10	70	13.5	14			
10-10	68	13.7	14			
10-11	69	13.7	14			
10-12	70	13.2	14			
10-2	70	13.4	14			
10-3	71	13.7	14			
10-4	69	13.7	14			
10-5	70	13.7	14			
10-6	70	13.6	14			
10-7	71	13.4	14			
10-8	70	13.5	14			
10-9	71	13.1	14			
12	67	13.3	34-1	2	0.25	20
13	69	12.8			0.2	8
15	68	12.4	24-2	3	0.4	15
16	67	13.5	2	3	0.34	18
19	69	13.6	24-2	4	0.51	17
24	69	13.0	24-2			
27	67	13.5	24-2	2	0.4	23
31	68	13.5	24-2	4	0.44	30
33	68	13.0	24-2		(1.46)	
34	70	13.3	24-2			
38	71	12.8	23-4	3	0.32	25
41	68	13.3	24-2		0.46	17
43	70	13.2	24-2		0.31	24
44	68	13.1	24-2		0.12	9
47	69	12.7	34-1	3	0.4	12
48	69	(12.0)	33-3			
49	69	13.2	24-2	2	0.2	28
52	70	13.2	34-2	23	0.52	4
53	68	13.1	24-2	6	(0.95)	(59)
54	70	12.9	24-2	1	(12.00)	5
56	68	13.0	34-1	1	0.11	9
58	70	13.3	24-2	2	0.26	28
59	69	13.1	24-2	4	0.43	39
59-2	69	13.0	34-1	5	(0.80)	46
59-3	69	13.8	34-1	4	0.6	43
60	70	13.1	24-2	2	0.21	23
60-2	71	12.7	23-3	3	0.3	24
68	71	12.7	1	2	0.24	18
71	70	13.5			0.08	5
71-2	71	13.2			0.32	26
72	71	13.4	24-1	0	(24.00)	
75	67	13.1	34-1		0.1	11
79	69	12.6	33-3	1	0.62	26
81	70	13.5	24-2	4	0.51	31
83	69	(10.9)				

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
84	71	13.7	24-1	2	0.2	21
89	70	13.2	24-2	3	0.26	24
89-2	69	12.9	24-2	3	0.29	23
90	71	12.9	23-3		0.29	23
91	70	13.5	24-2	3	0.27	21
92	(73)	12.8	13-3			
93	68	12.7	23-3	1	0.2	17
96	70	13.2				
98	69	13.4			0.26	20
101	70	12.9	24-2	2	0.31	33
102	71	12.9				
102-2	69	13.1		1	0.15	15
102-3	71	13.2		3	0.38	25
103	71	12.9	23-3	2	0.2	16
104	70	13.0	24-2		0.42	26
105	69	13.0	24-2	2	0.2	16
106	71	12.9	24-2			
107	70	13.4	24-2			
108	70	13.5	24-2	3	0.32	21
109	70	14.0	24-2			
111	68	12.9			(1.41)	37
112	70	12.9	24-2	2	0.21	20
113	69	(11.6)	24-1			
117	67	13.0	34-1	2	0.2	15
121	70	13.3	1		0.24	28
122	68	13.9	24	2	(1.00)	27
123	67	13.0	34-1	4	0.47	22
125	71	13.4	24-1	21	0.21	2
128	70	13.2			0.27	24
129	70	13.1	24-2			
130	70	12.9	24-2			
131	67	13.8				
134	70	13.6	24-2	2	0.25	21
135	68	12.7	34-1	3	0.28	21
143	71	(11.8)	1	2	0.27	13
143-2	68	13.6	1	1	0.08	7
146	67	12.8	34-1	1	0.08	10
148	70	13.0	24-2	2	0.26	22
153	69	12.8	33-1		0.19	16
153-2	66	13.0	33-1		0.15	13
156	68	13.4	24-2			
158	69	12.8	24-2	2	0.3	4
158-2	69	13.0	24-2	1	0.2	12
162	68	13.6	24-2			
163	70	13.1	24-2			
172	69	12.4		1	0.1	10
176	70	12.9		3	0.31	28
183	68	13.5	24-2	2	0.25	26
193	70	13.3	24-2	3	0.39	30
200	70	13.4	24-2			
201	69	13.1	1	3	0.27	20
202	67	12.7	34-1			
203	70	(11.1)	33-2	7	(1.10)	(52)

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
204	66	13.3				
204-2	69	13.1	24-2	2	0.26	17
206	66	(15.1)	24-3			
207	71	13.1	23-3	3	0.29	28
207-2	71	13.2	24-1	2	0.24	23
207-3	71	13.1	23-3	2	0.24	15
207-4	70	13.2	24-2	2	0.27	18
208	71	13.4	24-1	2	0.27	22
208-2	71	13.3	24-1	2	0.18	16
209	69	(11.4)	33-2			
209-2	69	(11.8)	33-4			
213	70	12.4	23-4			
215	67	(11.5)	43-3			
216	69	(11.4)	33-4			
217	69	(11.8)	33-3			
234	69	12.4	34-2	2	0.17	20
237	69	13.8	24-2	1	0.17	16
238	65	(18.2)	25-1			
242	67	12.6	33-3		0.3	15
242-2	71	13.3	24-2	3	0.34	27
251	67	12.9	34-1			
267	69	12.8	24-2			
271	68	13.0	34-1	8	(1.25)	(71)
271-2	68	13.6	24-2			
272	70	13.0	24-2			
287	69	13.2	24-2			
288	68	13.7	24-2			
300	68	13.3	34-1			
320	(65)	12.8	34-2			
Average	69.1	13.19			0.28	20.2
Median	69.3	13.2			0.265	20.0
StdDev	1.2	0.35			0.115	8.6
CV	1.8	2.66			41.15	42.5
Min	65	12.4			0.08	2
Max	71	14.0			0.62	46
n	133	123			78	82

HVI	*(table is divided into 3 pages)*		Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
4		3.1		
5		4.0		0.87
5-2		4.0		0.86
6		4.3		
7		5.8		
8		6.5		0.9
12		5.3		0.9
13		5.4		0.89
15		3.5	79	
16		6.1		0.89
19		7.5		0.87
24		6.3		0.89
27		5.5		0.87
28		2.4		
33	3.5			0.85
34		3.5		0.86
38				0.87
41		4.2		0.91
43		6.0		
44		7.2		0.9
47		5.3	85	
48		3.5		
49		2.4		0.85
50		4.4		0.87
50-2		5.0		0.84
50-3		4.4		0.85
52		3.9		0.88
53		4.4		0.85
54		6.8		0.91
56		6.1		
58		4.2		0.85
59		5.0		0.85
59-2		6.2	85	
59-3		6.1	84	
60		6.7		0.83
60-2		7.0		0.87
68		4.7		0.86
71				0.9
71-2				0.85
72		4.7		
75		5.4		0.89
81		5.9		0.87
84		5.6	86	
89		5.3		0.86
89-2		3.6		0.85
90		6.9		0.86
91		3.7		0.88
92	7.3	7.2		0.85
93		3.5		
101		7.4		0.86
102-2		5.9		0.91
102-3		6.4		0.86
103		5.1		0.87

HVI *(table is divided into 3 pages)*			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
104		4.6	86	
105		6.2		
106		3.5		0.85
107		5.1		0.9
108		6.4		0.87
109		8.2	83	
111		4.3		0.85
112		5.0		0.85
113		5.3		0.85
115	3.0			
117		6.4		0.9
121		7.4		0.86
122		6.0		0.86
123	7.8	6.4		0.86
125		4.5		0.85
128		5.7	77	0.86
130	3.5	5.9		0.9
131		8.7		0.88
132		1.3	75	0.84
134		4.7		0.86
135		4.8		0.91
143		3.8		0.86
143-2		5.2		0.9
146		6.2		0.89
148		4.4		0.86
153		(10.5)		0.91
153-2		9.5		0.92
156		7.1		0.91
158		4.9		0.86
158-2		5.3		0.84
163	5.0			
172		4.4		0.9
176		6.0		0.86
183		4.2		0.87
186		3.5		
186-2		3.2		
193		3.6		0.87
200		3.4		
201		5.4		0.84
202		5.9		0.84
203		5.2		0.86
204		5.8		0.84
204-2		2.4		0.86
207		7.0		0.86
207-2		5.7		0.85
207-3		6.2		0.85
207-4		7.5		0.85
208		7.5		0.88
208-2		6.3		0.86
209		5.4		0.88
209-2		5.2		0.91
213	3.5			
215		5.3		0.91

HVI	*(table is divided into 3 pages)*			Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
216		5.2		0.89
217		5.2		0.83
219		3.5		0.85
234		6.4		0.86
237		5.0		
238	4.5			0.84
242		5.0		0.91
242-2		5.1		0.85
251	3.5			0.85
267		5.1		0.91
271		4.7		
272		3.5		0.85
288	10.0			
295	3.5			0.85
300		3.5		0.85
315	5.3			0.84
318		3.7		0.84
320	3.9			(0.79)
Average	4.94	5.23	82.1	0.869
Median	3.9	5.2	84.0	0.86
StdDev	2.13	1.41	4.2	0.023
CV	43.18	26.99	5.1	2.672
Min	3.0	1.3	75	0.83
Max	10.0	9.5	86	0.92
n	13	110	9	97

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
4	USTER			10
5-2	USTER	Neptester 720		5
7	USTER			5
21	USTER	1190064		5
22	USTER			10
24	USTER		USDA	10
27	USTER			
31	USTER			5
38	USTER			
39	USTER			
41	USTER			5
43	USTER			5
44	USTER	AFIS Pro	internal	10
51	USTER	AFIS Pro 2	ISO-9001	5
58			internal	10
59	USTER		USDA	5
59-3	USTER		USDA	5
75	USTER		ASTMD5866-12	5
90	USTER		Manufacturer	10
91	USTER	AFIS Pro 2		10
91-2		MN100		10
101	USTER	296350	B-PA F02	5
102	USTER		ICCS	3
105	USTER		Manufacturer	5
109	USTER			
111	USTER	AFIS Pro 2	internal	10
112	USTER	AFIS Pro		
123	USTER		ASTMD5866-05	10
123-2	USTER	AFIS Pro	ASTMD5866-05	10
123-3	USTER	AFIS Pro 2	ASTMD5866-05	10
128	USTER	Neptester 720	ASTM	5
132	USTER			
134	USTER	AFIS Pro	ASTMD5848-95	5
142	USTER			5
143	USTER		ASTM5866	5
148	USTER	AFIS Pro 2		10
148-2	USTER	AFIS Pro		10
148-3	USTER	Neptester		10
158	USTER			5
163	USTER		ASTMD5866-12	5
172	USTER			5
176	USTER			10
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER	Afis old	Manufacturer	10
186-2	USTER	AFIS Pro	Manufacturer	10
193	USTER	AFIS Pro	ASTMD5866-05	6
207	USTER	AFIS Pro	ASTMD5866-05	10
208	USTER	AFIS Pro	ASTMD5866-05	10
238	USTER			10
271	USTER		internal	10
272	USTER			5

AFIS L								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
4	24.5	0.96	49.0	45.4	1.79	42.8	1.69	20.9
7	21.5	0.85	54.2	43.7	1.72	40.6	1.60	26.3
21	21.9	0.86	47.6	40.4	1.59	37.9	1.49	22.5
22	22.6	0.89	51.5	43.4	1.71	40.4	1.59	23.8
24	25.3	1.00	45.0			41.2	1.62	17.1
31	24.4	0.96	46.8	43.7	1.72	41.2	1.62	18.8
38	24.7	0.97	51.7	45.1	1.78	42.5	1.67	21.5
39	19.4	0.76	56.5	40.8	1.61	37.9	1.49	29.9
41	22.2	0.87	47.2	41.7	1.64	38.9	1.53	20.4
43	22.6	0.89	51.0			41.1	1.62	22.6
44	23.0	0.91	49.6			40.4	1.59	21.8
51	22.5	0.89	51.9			40.2	1.58	22.5
58	24.1	0.95	47.8	43.8	1.72	41.1	1.62	19.9
75	23.3	0.92	(6.6)			42.2	1.66	24.6
90	22.4	0.88	53.5	42.9	1.69	40.2	1.58	25.0
91	23.1	0.91	49.4			40.1	1.58	20.0
101	21.7	0.85	57.4	44.5	1.75	41.5	1.63	30.2
102	24.6	0.97	45.2	43.2	1.70	40.9	1.61	17.4
105	23.6	0.93	50.1	43.4	1.71	40.9	1.61	22.0
109	24.0	0.94	46.5	43.5	1.71	40.8	1.61	19.3
111	22.1	0.87	53.8			40.1	1.58	25.6
112	25.9	1.02	46.1			42.2	1.66	18.2
123	23.6	0.93	48.2			40.0	1.57	20.6
123-2	23.1	0.91	51.5			40.7	1.60	21.6
123-3	21.6	0.85	55.3			40.0	1.57	25.8
134	24.1	0.95				41.7	1.64	21.1
142	21.4	0.84	51.2	41.7	1.64	38.8	1.53	23.1
143	23.3	0.92	53.6	44.8	1.76	41.9	1.65	23.7
148	22.4	0.88	51.6			39.8	1.57	22.8
148-2	22.7	0.89	51.0			40.2	1.58	22.4
158	22.4	0.88	53.6	43.2	1.70	40.4	1.59	24.4
163	22.8	0.90	51.0	43.9	1.73	40.8	1.61	23.4
172	24.9	0.98	44.1	43.7	1.72	41.4	1.63	16.3
176	23.6	0.93	50.5	44.5	1.75	41.2	1.62	21.0
183	24.9	0.98	48.1			42.2	1.66	19.1
186	23.5	0.93	49.3	42.5	1.67	39.7	1.56	21.4
186-2	23.1	0.91	52.8			41.5	1.63	23.0
193	24.1	0.95	47.8			40.6	1.60	20.1
207	23.7	0.93	49.2			41.1	1.62	18.8
208	24.6	0.97	47.9			41.7	1.64	17.8
238						40.0	1.57	25.5
271	22.4	0.88	53.2	42.4	1.67	39.9	1.57	25.8
272	22.1	0.87	49.2	41.7	1.64	39.1	1.54	21.0
Average	23.18	0.913	50.27	43.21	1.701	40.64	1.60	22.07
Median	23.1	0.909	50.3	43.43	1.71	40.7	1.602	21.8
StdDev	1.26	0.05	3.15	1.31	0.052	1.1	0.043	3.1
CV	5.46	5.456	6.27	3.03	3.029	2.72	2.715	14.03
Min	19.4	0.76	44.1	40.4	1.59	37.9	1.49	16.3
Max	25.9	1.02	57.4	45.4	1.79	42.8	1.69	30.2
n	42	42	40	23	23	43	43	43

AFIS L						Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
4	30.4	1.20	34.3	37.9	1.49	6.6
7	27.8	1.09	37.0	34.7	1.37	
21	26.8	1.06	34.5	33.2	1.31	8.1
22	28.7	1.13	35.2	35.3	1.39	7.2
24	30.4	1.20	30.7	36.5	1.44	4.6
31	29.7	1.17	32.9	36.3	1.43	5.5
38	31.2	1.23	31.0	37.6	1.48	
39	25.6	1.01	38.2	32.5	1.28	9.9
41	27.1	1.07	34.5	33.5	1.32	
43	28.4	1.12	34.3	36.1	1.42	6.5
44	28.7	1.13	34.6	35.4	1.39	6.6
51	(23.6)	(0.93)	33.9	35.8	1.41	6.1
58	29.6	1.17	32.8	36.2	1.43	5.8
75	30.5	1.20	(10.9)	37.4	1.47	5.7
90	28.7	1.13	34.7	35.5	1.40	7.1
91	28.7	1.13	33.2	35.0	1.38	5.3
101	28.8	1.13	38.3	36.6	1.44	9.9
102	29.7	1.17	31.3	36.1	1.42	4.9
105	29.7	1.17	33.3	36.3	1.43	6.1
109	29.3	1.15	33.0	35.9	1.41	5.9
111	28.4	1.12	35.0	35.3	1.39	7.3
112	31.5	1.24	30.7	37.6	1.48	4.8
123	29.1	1.15	33.3	35.7	1.41	6.2
123-2	29.2	1.15	33.5	35.8	1.41	5.5
123-3	28.2	1.11	36.0	35.1	1.38	7.1
134	30.2	1.19		37.1	1.46	5.8
142	27.1	1.07	35.1	33.8	1.33	7.1
143	30.0	1.18	33.2			5.9
148	28.3	1.11	34.4	35.2	1.39	6.5
148-2	28.6	1.13	34.8	35.4	1.39	6.6
158	28.9	1.14	33.8	35.4	1.39	6.3
163	28.8	1.13	35.5	36.0	1.42	7.4
172	29.7	1.17	31.3	36.6	1.44	4.8
176	29.7	1.17	33.4			5.4
183	30.7	1.21	33.1	37.3	1.47	5.3
186	29.2	1.15	33.0	35.6	1.40	6.0
186-2	29.6	1.17	34.3	36.5	1.44	6.1
193	29.5	1.16	32.9	36.1	1.42	5.8
207	29.5	1.16	33.1	36.0	1.42	4.8
208	30.2	1.19	31.7	36.6	1.44	4.2
238			35.2			6.4
271	28.7	1.13	34.5	35.3	1.39	7.4
272	27.4	1.08	34.8	34.3	1.35	6.5
Average	29.09	1.145	33.91	35.76	1.408	6.28
Median	29.2	1.15	33.9	35.86	1.412	6.1
StdDev	1.2	0.047	1.74	1.18	0.047	1.21
CV	4.13	4.132	5.12	3.31	3.307	19.34
Min	25.6	1.01	30.7	32.5	1.28	4.2
Max	31.5	1.24	38.3	37.9	1.49	9.9
n	41	41	41	40	40	40

AFIS D / M					Diameter, Maturity
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio
4			155	7.7	0.9
22			151	8.3	0.86
24			156	7.4	0.9
31			144	8.2	0.86
38			146	6.5	0.87
41	12.7				
43			157	5.4	0.96
44			151	6.1	0.89
51			145	6.6	0.86
58			154	7.3	0.88
75			162	6.0	0.91
90			157	5.6	0.92
91			154	5.6	0.93
102			148	8.4	0.88
105			154	7.1	0.87
109			149	7.3	0.94
111			155	6.5	0.91
112			159	3.8	0.94
123			161	6.7	0.93
123-2			151	6.6	0.9
123-3			149	6.2	0.88
134			159	5.2	0.93
143			147	5.6	0.88
148			156	5.0	0.93
148-2			159	5.7	0.94
158			146	7.0	0.89
172			153	6.8	0.88
176			160	4.4	0.94
183			152	5.9	0.91
186			148	9.1	0.83
186-2			146	8.0	0.87
193			161	5.2	0.93
207			151	7.8	0.88
208			144	8.2	0.87
238			146	7.6	0.87
271			149	9.8	0.82
272	10.9				
Average			152.4	6.7	0.896
Median			152.0	6.6	0.89
StdDev			5.4	1.34	0.033
CV			3.5	19.94	3.723
Min			144	3.8	0.82
Max			162	9.8	0.96
n	2	0	35	35	35

AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
4	169	30	661	0.77
21	130	16	1059	0.49
22	186	43	702	1.1
31	160	31	709	0.64
38	(6185)	34	897	1.03
43	234	42	413	1.01
51	192	42	636	0.96
58	196	31	623	0.91
90	182	24	493	0.51
91	191	37	618	0.89
102	237	17	200	0.39
111	191	(498)	470	0.68
112	210	23	300	0.52
134	190	39	574	0.76
142	162	29	743	0.7
143	144	18	744	0.51
148	149	31	818	0.82
148-2	176	36	746	1.11
158	186	42	840	1.15
183	189	37	646	0.74
186	181	26	555	0.72
186-2	176	33	726	0.69
193	200	30	484	0.6
207	233	46	480	1.36
208	230	(74)	802	(1.88)
272	171	22	611	0.59
Average	186.6	31.6	636.5	0.786
Median	186.0	31.0	641.0	0.74
StdDev	27.6	8.6	185.8	0.244
CV	14.8	27.3	29.2	31.056
Min	130	16	200	0.39
Max	237	46	1059	1.36
n	25	24	26	25

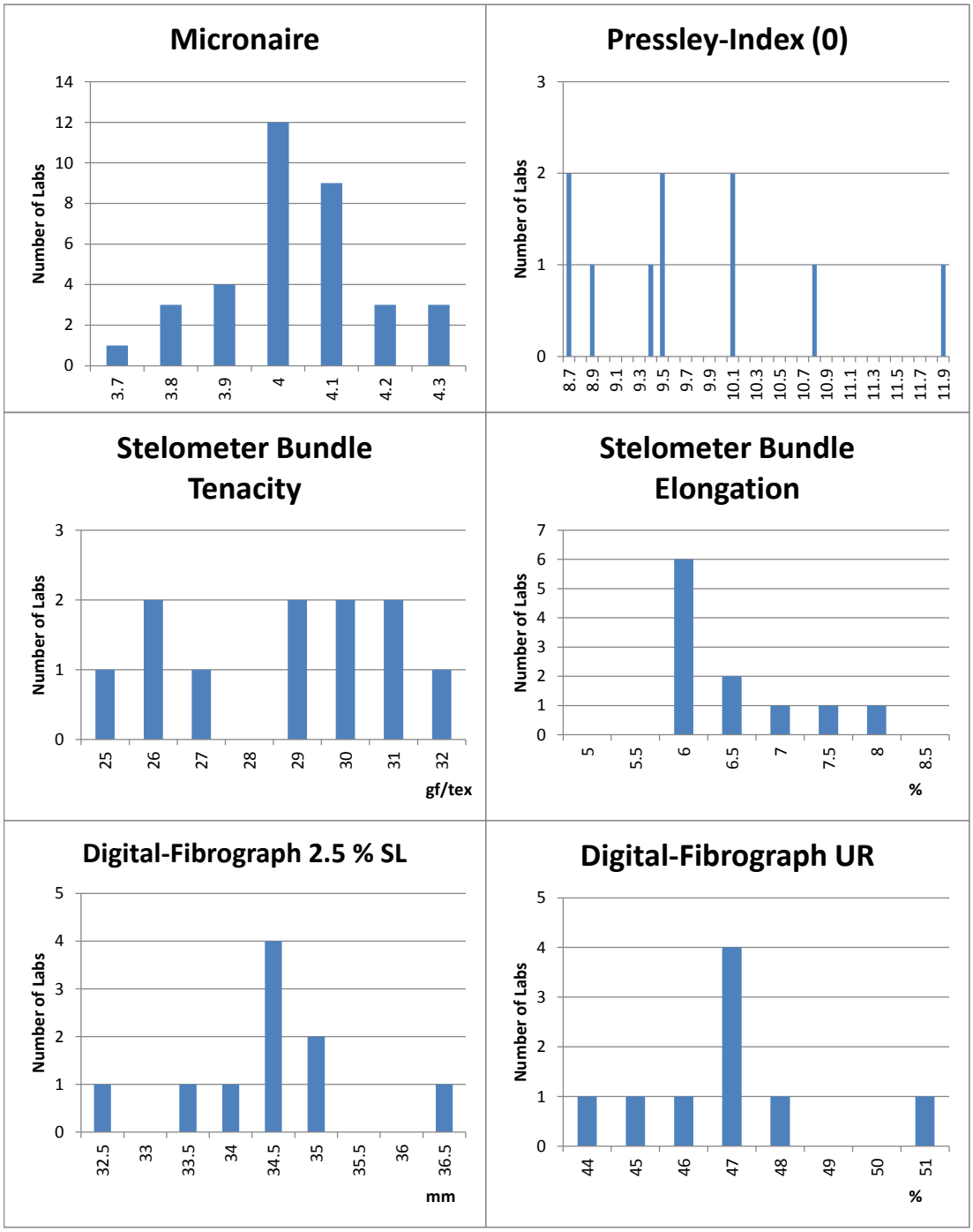
AFIS N	*(table is divided into 2 pages)*				Neps
Lab.	Neps		SCN		
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g	
4	611	168			
5-2		155			
7	722	87			
21	657	(235)		(1075)	
22	668	96	1125	6	
24	670	107	1353	5	
27		99			
31	698	166	1283	8	
38	696	116	1094	10	
39	592	122			
41	618	138			
43	668	115	1002	5	
44	687	138	1302	5	
51	678	133	(1)	10	
58	689	107	1164	5	
59	713	111	1397	2	
59-3	713	111	1397	2	
75	664	105	1308	4	
90	694	137	1275	8	
91	658	138	1073	3	
91-2	624	138			
101	755	154			
102	699	112	1063	8	
105	697	132	1174	9	
109	688	132	1082	9	
111	723	107	1284	14	
112	671	64	1144	6	
123	701	193	1259	14	
123-2	657	146	937	11	
123-3	696	179	1011	8	
128		(212)			
132	593	118			
134	697	136	1157	15	
142	603	129			
143	661	109	1327	5	
148	663	125	1001	11	
148-2	663	132	945	6	
148-3		113			
158	660	116	1063	5	
163	709	(294)	1049	(31)	
172	688	124	1021	8	
176	683	116	1140	7	
183	668	130	1059	7	
186	676	127	1189	7	
186-2	694	129	1248	10	
193	681	128	1202	7	

AFIS N	*(table is divided into 2 pages)*			Neps
Lab.	Neps		SCN	
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g
207	708	146	1239	13
208	701	125	1304	10
238		146		11
271	661	166	1199	6
272	654	157		
Average	675.4	128.7	1167.7	7.8
Median	679.5	128.5	1164.0	7.5
StdDev	34.4	23.9	128.2	3.3
CV	5.1	18.6	11.0	42.2
Min	592	64	937	2
Max	755	193	1397	15
n	46	48	35	36

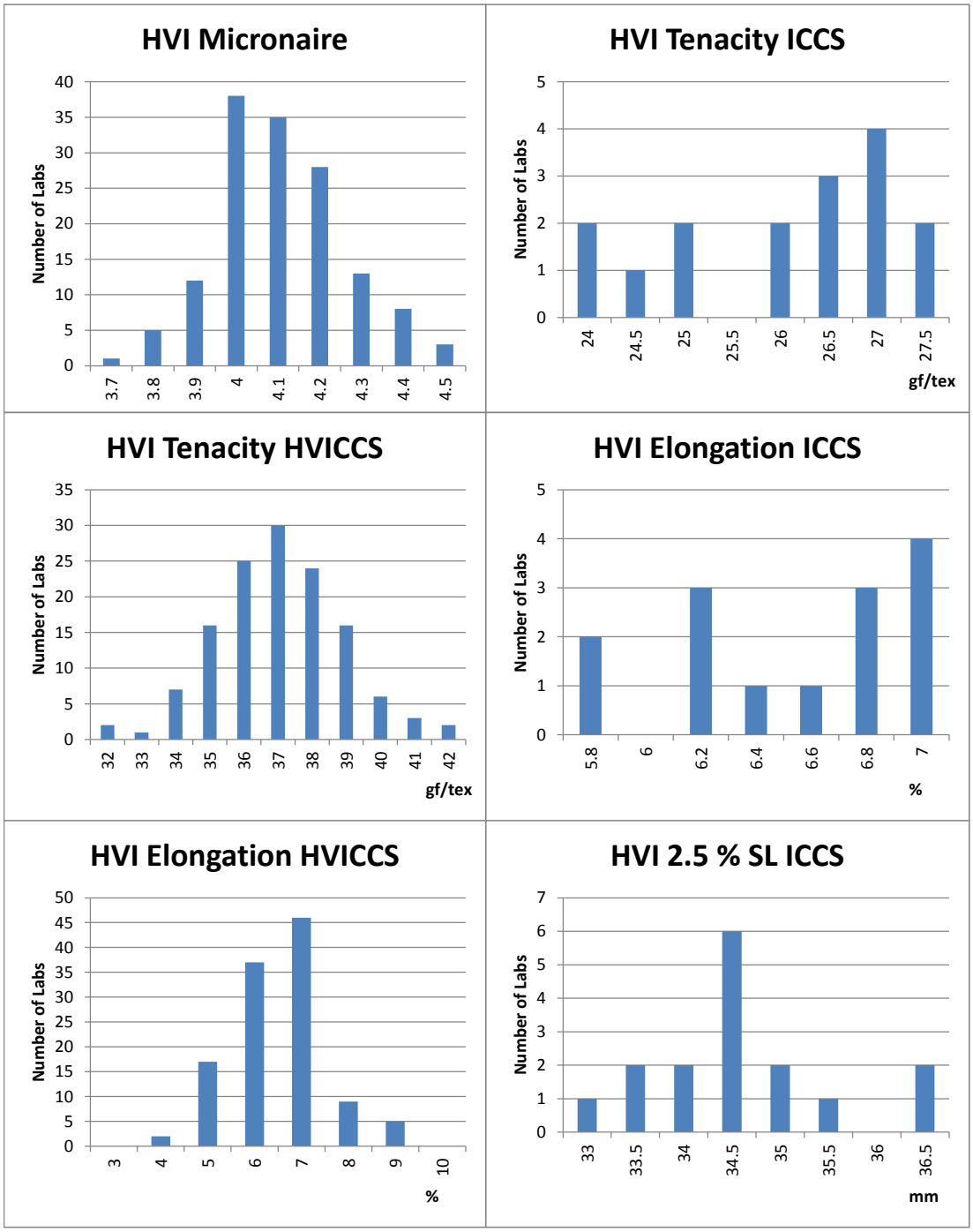
aQura *(further information see page "Multiple Devices")*							Length, Neps
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	38.2	18.4	28.1	11.0	61	9
116	4	38.5	19.9	20.3	7.3	118	25
127	4	38.1	20.7	15.4	5.8	120	19
130	4	37.4	17.9	25.7	10.2	113	18
146	5	36.0		27.8	11.6	161	18
213	5	37.1	19.2	23.2	9.5	64	8
234	2	35.0	16.6	30.2	13.4	163	23
251	6	35.3		17.4	7.0	169	25
277	4	(31.5)	21.0	20.4	7.6	132	21
300	4	37.0	20.5	19.8	7.6	112	24
Average		36.94	19.26	22.83	9.1	121.3	19.0
Median		37.09	19.55	21.79	8.56	119.0	20.0
StdDev		1.26	1.56	4.96	2.42	37.7	6.1
CV		3.41	8.09	21.71	26.59	31.1	32.3
Min		35.0	16.6	15.4	5.8	61	8
Max		38.5	21.0	30.2	13.4	169	25
n		9	8	10	10	10	10

Multiple Devices		*(information not provided in the respective table)*			General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
28	DigitalFibrograph		Fibrotest		7
35	DigitalFibrograph	USTER	730		6
53	aQura	Premier			4
56	Causticaire		Micronaire	JIS	2
58	ALMeter			internal	3
70	GravFineness			ISO 1973-95	5
70	FMT	SDL	MK.1	ASTMD3818-92	6
79	GravFineness			RSTUz620-94	4
85	CombSorter		Joh.-Zweigle	UNI10170-94	1
85	GravFineness			UNIENISO1973-98	5
85-2	GravFineness			UNIENISO1973-98	5
85-2	CombSorter		Keisokki	UNI10170-94	1
85-3	CombSorter		Keisokki	UNI10170-94	1
85-3	GravFineness			UNIENISO1973-98	5
92	DigitalFibrograph		DigiLen	ASTMD 5332	5
93	FMT		WIRA	ISO	4
93	DigitalFibrograph			ASTM1447	4
102	DigitalFibrograph		530	ICCS	5
102	FMT		FMT 3	ICCS	2
112	GravFineness			ASTM	3
116	DigitalFibrograph		Bitra		5
116	aQura	Premier			4
127	aQura	Premier			4
128	FMT		Micromat	ASTM	8
129	Causticaire		Microscope	IS 236	
130	aQura	Premier			4
131	Causticaire		Fibroscope	British	
131	DigitalFibrograph		530	ASTM	6
132	ALMeter		AL100	DIN 53806	5
136	DigitalFibrograph		630	internal	10
143	DigitalFibrograph	USTER	330	ABNTNBR13154-94	
146	aQura	Premier			5
177	Causticaire			DIN53943-4	3
177	GravFineness			ASTMD1577-90	4
186	FMT	SDL		USDA	6
193	GravFineness			GB/T6100-07	12
213	aQura	Premier			5
234	aQura	Premier			2
238	DigitalFibrograph				10
251	aQura	Premier			6
277	aQura	Premier			4
300	aQura	Premier		ASTM	4

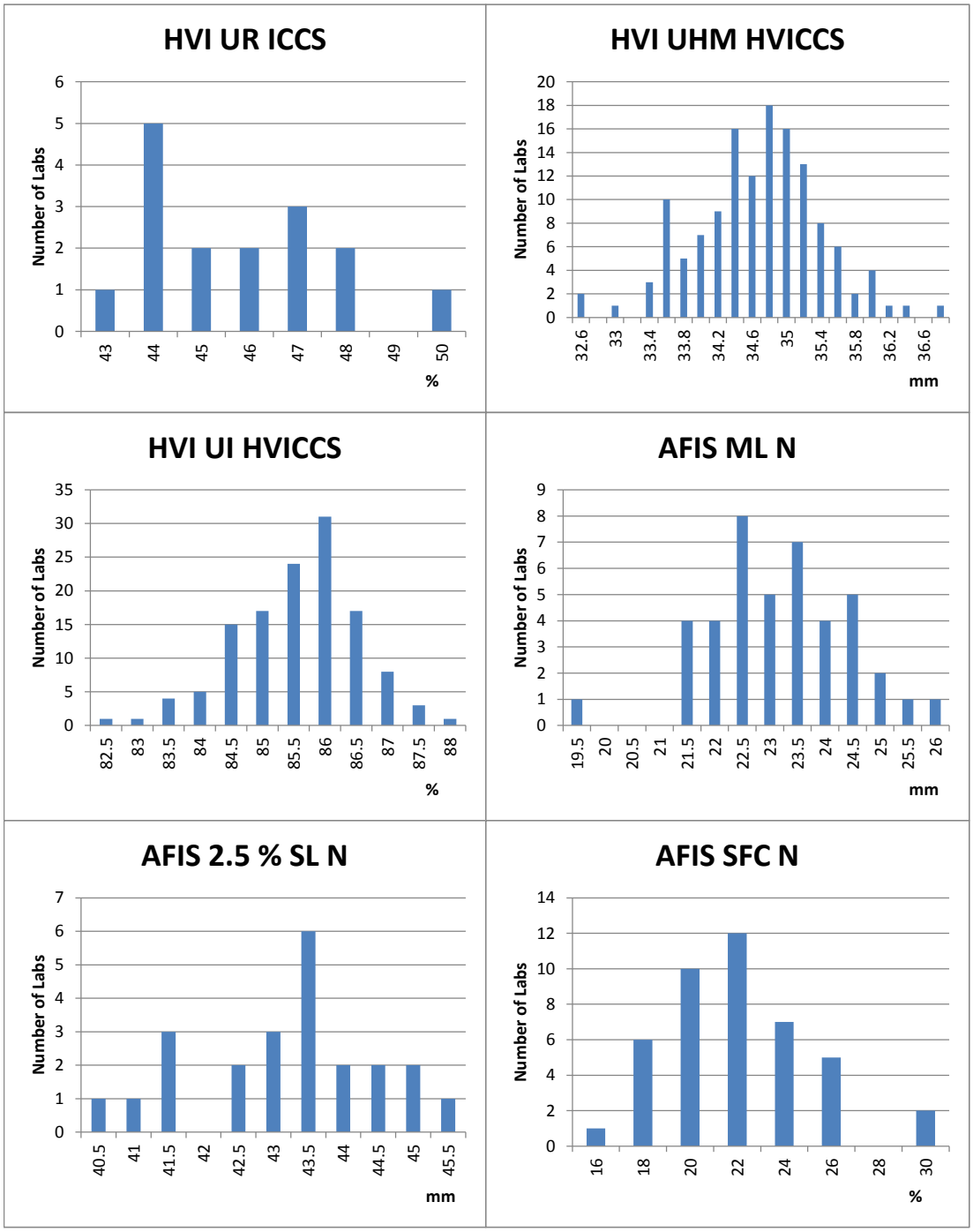
Graphics of selected round test data



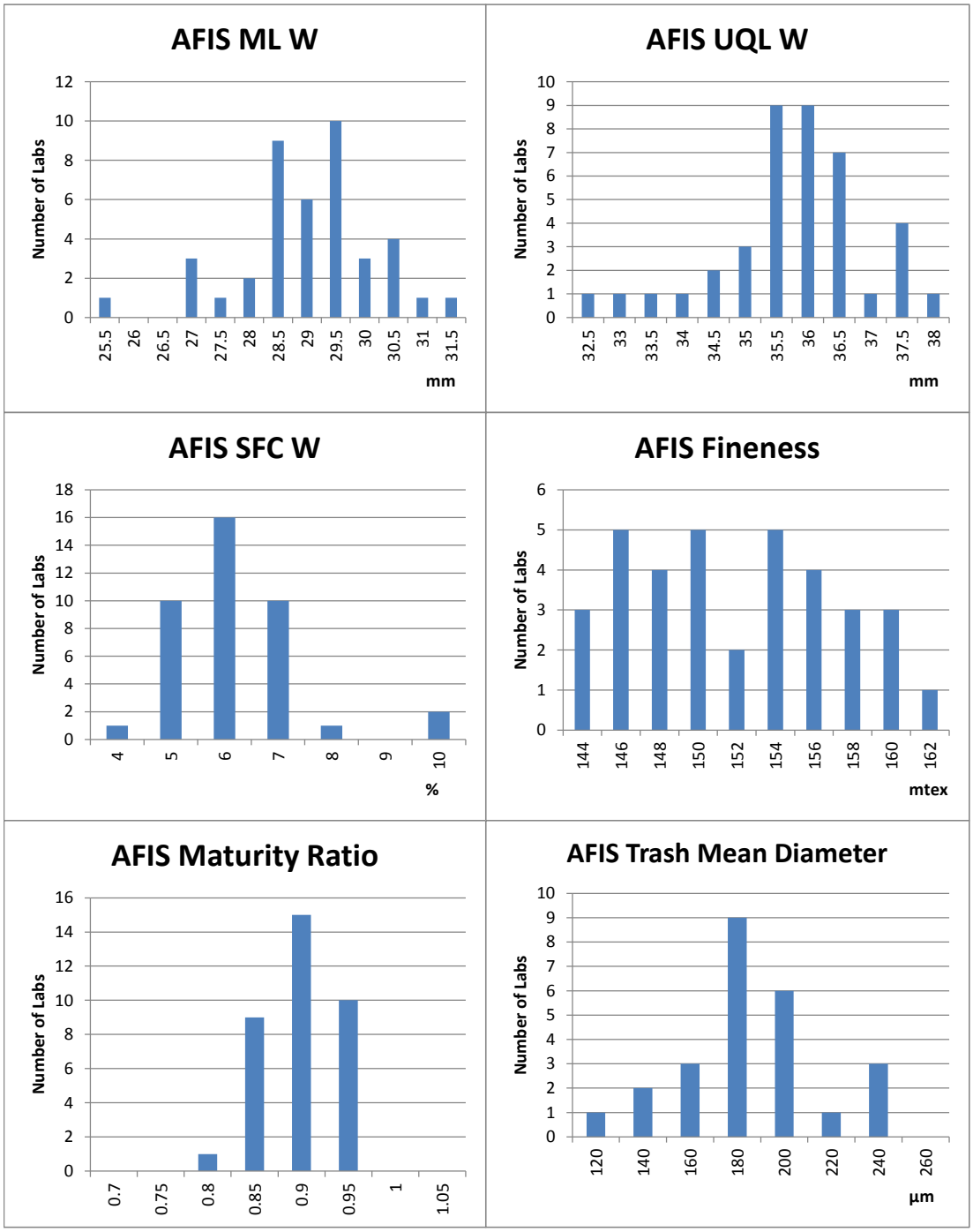
Graphics of selected round test data



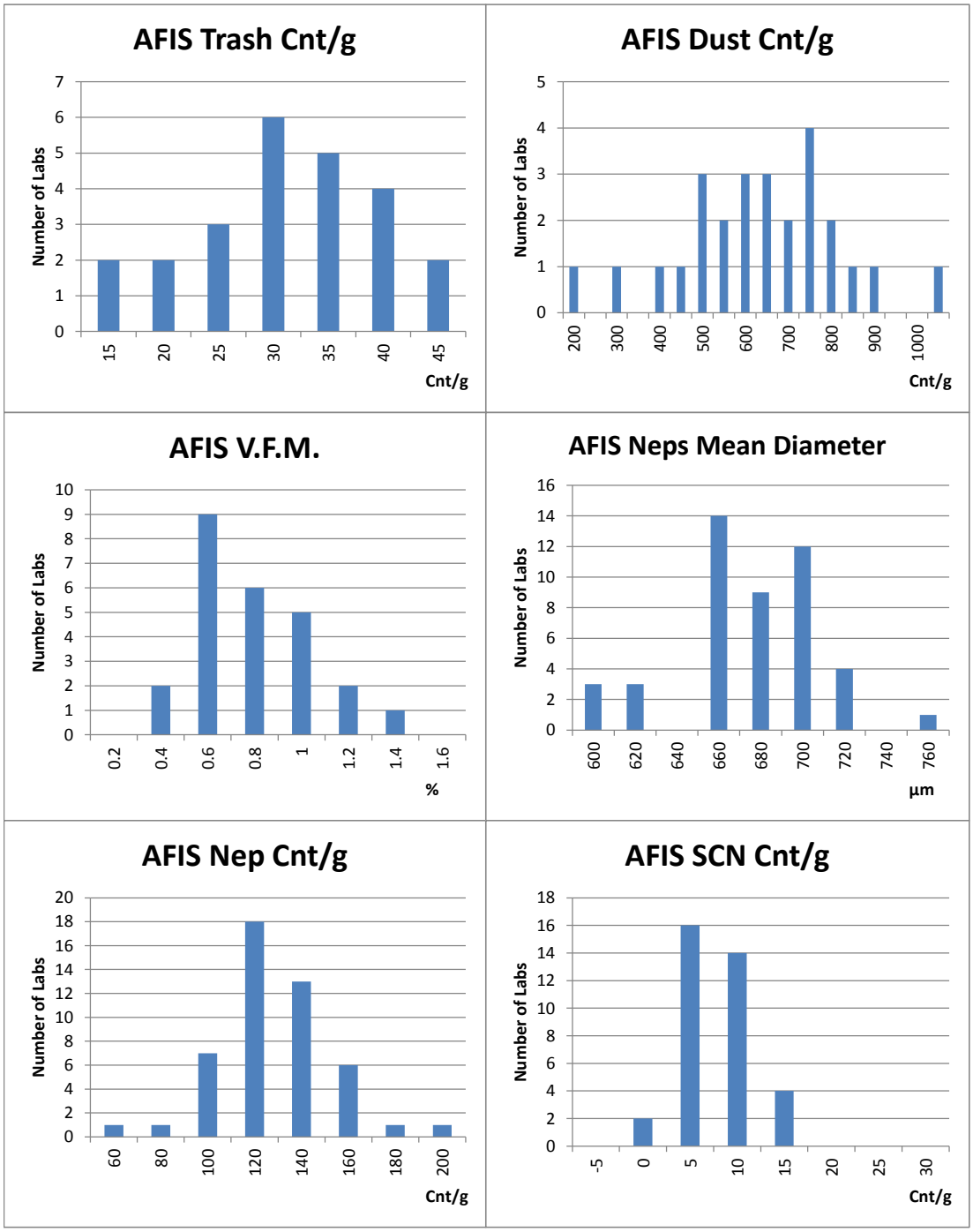
Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data