ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

Bremen, 20.12.2016

Evaluation of the Test Results 2016 / 3

Tested Cotton: **Greece**
Cotton Number: **RM 34**
Number of Laboratories: 124

Argentina	-	Mali	1
Australia	1	Mauritius, Rep of	-
Bangladesh	1	Mozambique	-
Brazil	3	The Netherlands	1
China, PR	20	Pakistan	5
Czech Republic	4	Poland	1
Egypt	3	Russia	2
France	1	Serbia	1
Germany	9	Slovenia	2
Greece	6	South Africa	-
Hungary	1	Spain	3
India	28	Sudan	1
Indonesia	2	Switzerland	2
Iran	1	Taiwan	1
Israel	-	Thailand	2
Italy	1	Tunisia	1
Japan	2	Turkey	4
Kazakhstan	1	United States	5
Korea, R	1	Uzbekistan	2
Latvia	1	Vietnam, SR	4

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**: Greece (RM 34)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 with 10 tests from samples of 5 different bags with the following results:

HVI HVICCS	SD between samples (based on 10 tests per sample)	SD between single tests (based on 5 times 10 tests)
Mic	0,040	0,026
Strength, g/tex	0,353	0,828
Length, UHM, inch	0,002	0,013
Length, UHM, mm	0,058	0,330

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.

ICA Bremen GmbH
Wachtstrasse 17-24, 28195 Bremen, Germany
t: +49 (0)421 339 7017 f: +49 (0)421 218 58650
e: info@ica-bremen.org **www.ica-bremen.org**

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	3	4.6	775	GB/T6498-08
17		4.4		
20	4	4.4	175	
22	3	4.6	Fibronaire	
29	4	4.4	Sheffield	ISO 2403
32	6	4.5	FFMM	
32-2	5	4.4	FFMM	
32-3	6	4.4	FFMM	
35	3	4.6	775	
37		4.5		
44		4.6		
56	2	4.5	Fibronaire	JIS
67	4	4.3	Fibronaire	
70	6	4.5	MK.1	ASTMD3818-92
76	3	4.5	WIRA	
92	6	4.6	DigiMic XT	ASTMD1448
100	10	4.6	675	ASTMD1448-97
100-2	8	4.6	FMT	ASTMD1448-97
100-3	12	4.5	FMT	ASTMD3813-92
102	6	4.6	Fibronaire	ICCS
112	2	4.6	Fibronaire	ASTMD1448
128	2	4.6	Fibronaire	ASTM
129	4	4.5	Sheffield	BS 3181
131	6	4.5		ASTM
132	3	4.5	WIRA	ASTMD1448
132-2	3	4.5	775	DIN 53941
142	3	4.6	80400	ISO
162	6	4.4	WIRA	
167	3	(4.8)	275	
168		4.5		
169		4.4	Sheffield	
177	4	4.6	DPM 60	DIN 53941
186		4.4	FMT	USDA
193	3	4.5	Y145	GB/T6498-08
201	3	4.4	275	
203		4.5		
Average		4.49		
Median		4.5		
StdDev		0.08		
CV		1.9		
Min		4.3		
Max		4.6		
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	10	9.1		ISO 3060				
35					6	24.8	5.6	
46	10	8.7	4.0	ISO 3060				
56	5	9.3		JIS				
76	5	8.3						
92					6	22.5	5.5	ASTM 1445
100	8	8.7	3.2	ASTMD41452T				
112					3	22.8	6.8	ASTM 1445
128	2	7.4	4.1	ASTM	2	23.9	6.1	ASTM
131	6	9.1	4.1	ASTM	6	23.3	6.2	ASTM
132-2					6	23.1	7.7	DIN ISO3060
162	6	8.7		TPPSI	6	21.6	5.2	
177	4	7.5		DIN 53942				
193					12	22.2	6.4	GB/T13783-92
Average		8.52	3.84			23.02	6.18	
Median		8.7	4.03			22.95	6.13	
StdDev		0.7	0.43			0.99	0.80	
CV		8.2	11.2			4.3	13.0	
Min		7.4	3.2			21.6	5.2	
Max		9.3	4.1			24.8	7.7	
n		9	4			8	8	

Pressley	PI(0)	Av., gf/tex	45.68	StdDev, gf/tex	3.75	CV, %	8.2
	(3.2)	Av., gf/tex	26.12	StdDev, gf/tex	2.91	CV, %	11.2

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	%	%	%	
27		27.0	1.06	11.8	0.47	44			9.5
35	6	28.1	1.11	13.1	0.52	47			6.6
92	6	28.7	1.13	13.5	0.53	47			9.0
100	8	28.1	1.11	12.5	0.49	45		16.0	
102	5	27.3	1.07	12.6	0.50	46			
131	6	29.9	1.18	13.2	0.52	44			
132	10	28.3	1.11	13.1	0.52	47			
143		27.8	1.09	13.7	0.54	49			
Average		28.15	1.108	12.94	0.51	46.0			
Median		28.10	1.106	13.12	0.516	46.4			
StdDev		0.89	0.035	0.60	0.023	1.8			
CV		3.14	3.145	4.60	4.605	4.0			
Min		27.0	1.06	11.8	0.47	44			
Max		29.9	1.18	13.7	0.54	49			
n		8	8	8	8	8	0	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				23.1	36.6	14.5
85-2	1	Keisokki				21.9	38.9	16.5
85-3	1	Keisokki				23.0	37.9	15.0
85-4	1	Keisokki				22.1	30.1	10.5

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		19.0	39.8	24.0	22.1	33.8	12.1
112	3	25.58	24.22	0.56	27.92	21.86	0.1

Maturity, Fineness *(further information see page "Multiple Devices")*					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		84			
70					1.75
85					1.64
85-2					1.78
85-3					1.75
85-4					1.68
112					1.89
129		77			
131		79			
177		92			1.70
193					2.00
Average					1.80
Median					1.765
StdDev					0.12
CV					6.8
Min					1.68
Max					2.00
n					6

IIC/SHIRLEY FM-TESTER *(further information see page "Multiple Devices")*				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
32	6	80.5	0.9	191
32-2	5	80.8	0.9	185
32-3	6	79.9	0.89	186
37		89.1	1.0	167
70		90.7	1.04	169
100	8	80.2	0.89	190
102	2	79.3	0.89	178
128	8	89.4	1.02	175
186	6	83.2	0.94	176
Average		83.69	0.941	179.6
Median		80.84	0.9	178.0
StdDev		4.67	0.06	8.77
CV		5.6	6.6	4.9
Min		79.3	0.89	167
Max		90.7	1.04	191
n		9	9	9

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
5	USTER	1000 Line4		12	1	2	2
5-2	USTER	1000 Line5		12	1	2	2
6	USTER	1000	GB/T20392	3	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	10	1	2	2
9	Premier	ART		4	2	2	2
10	USTER	1000C	GB/T20392-06	3	1	2	2
10-10	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	2	2
14	USTER	1000	GB/T20392-06	6	1	2	2
15	USTER	900		6	1	2	2
16	Premier	ART 2C	SN/T1512-11	12	1	2	2
18	USTER	1000	individual	20	1	2	2
19	USTER	1000	SN/T1512-11		1	2	2
23	USTER	900 A			1	2	2
25	USTER	1000		10	1	2	2
26	USTER	1000		10	1	2	2
27	USTER	900 A	ASTMD5867	6	1	1	
31	USTER	900		6	1	2	2
32	USTER	900 A	internal	1	4	10	4
32-2	USTER	900 A	internal	10	4	10	4
32-3	USTER	900 A	internal	10	4	10	4
36	USTER	1000			1	2	2
38	USTER	1000	ASTM	6	1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000		1	2	2	
44	USTER	Spectrum		10	1	2	2
48	Premier	HFT	ASTMD5867-12	8	1	2	2
49	USTER	1000	ASTM1776	6	1	2	2
52	USTER	1000M700	ASTM	6	6	6	6
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum			1	2	2
56	USTER	Spectrum I		5	1	2	2
58	USTER	1000	internal	10	1	2	2
60	USTER	1000	ASTM	6	1	2	2
60-2	USTER	1000M700	ASTM	6	1	2	2
62	Premier	ART 2	ASTMD5867	6	1	2	2
68	USTER	1000	USDA	6	1	2	2
71	USTER	1000	SN/T1512-11	6	1	2	1
78	USTER	1000		6	1	2	2
84	USTER	1000	USDA	12	1	1	1
90	USTER	1000	ASTMD5867	10	1	2	2
91	USTER	1000		6	1	2	2
92	MAG	HVT Expert1401	ASTMD5867	6	1	1	1
96	USTER	1000	GB/T20392-06	10	1	2	2
96-2	Premier	HFT	GB/T20392-06	10	1	2	
96-3	Premier	HFT	GB/T20392-06	10	1	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
97	USTER	900 SA		6	2	2	
98	USTER	1000	USDA. ASTM	12	1	2	4
99	MAG	HVT Expert1401	ASTMD5867-05	10	1	2	2
100	Textechno	CCS-V5.2	ASTMD5867-05	12	1	2	2
101	USTER	1000	ASTMD5687-12	6	1	2	2
102	USTER	900 B	HVICC	6	1	6	
102-2	USTER	1000M700	HVICC	6	6	6	6
103	USTER	1000	SN/T1512-11	6	1	2	2
105	USTER	Spectrum	Manufacturer	6	1	2	2
107	Premier	ART 2	ASTMD5867-05	6	1	2	2
108	USTER	1000	ASTMD5687-12	12	1	2	2
109	USTER	1000		10	1	2	2
110	USTER	1000	SN/T1512-11	12	1	2	2
111	USTER	1000	internal	6	1	2	2
112	USTER	1000	ASTMD5867	6	1	2	2
113	Premier	ART	ASTMD5867-05	10	1	2	2
118	USTER	1000M900	ASTMD5867	6	1	1	1
119	USTER	1000C	GB/T20392		1	2	2
121	USTER	1000	SN/T1512-11		1	2	2
122	USTER	1000		5	1	2	2
123	USTER	1000	ASTMD5867	10	1	1	1
126	Premier	HFT	ASTM	6	1	2	
128	USTER	1000	ASTMD5867-12	10	1	2	2
129	USTER	900 SA	ASTMD5867	8	1	1	1
131	USTER	Spectrum	USDA	6	1	2	2
132	Textechno	Fibrotest	ASTMD5867	10		10	
133	USTER	1000		6	1	2	2
134	USTER	Classing	ASTMD5867-95	6	1	2	2
135	USTER	Spectrum I	ASTMD5867-95	6	1	2	2
136	USTER	Classing	ASTMD5867-95	6	1	2	2
138	USTER	Spectrum I	ASTMD5867	6	1	2	2
139	Premier	ART 2	ASTMD5867-05	12	1	1	2
140	USTER	1000M700			1	2	2
141	USTER	1000	Mode 4	10	1	1	1
143	USTER	Spectrum		6	1	2	2
143-2	Premier	ART		6	1	2	2
144	USTER	Spectrum	ASTM	6	1	2	2
145	Premier	ART 2			1	2	2
148	USTER	1000		6	1	2	2
160	USTER	Spectrum		5	5	5	
162	USTER	900 A	HVICC	6	1	2	2
163	USTER	900	ASTMD5867-12	6	3	6	2
170	USTER	1000	Manufacturer	6	1	2	2
176	USTER	1000	HVICC	10	1	2	2
178	Premier	ART			1	2	2
178-2	USTER	1000			1	2	2
179	USTER	1000	SN/T1512-11	10	1	2	2
180	USTER	Spectrum	ASTM	6	1	2	2
181	USTER	Spectrum	ASTM	6	1	2	2
186	USTER	910		10	1	2	
193	USTER	1000	GB/T20392-06	12	1	2	2
200	USTER	900 A	ITMF	10	1	2	2
201	USTER	900		6	1	2	2
203	USTER	900			1	2	2
203-2	USTER	900					

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
204	USTER	1000	GB/T20392-06	6	1	1	1
204-2	Premier	HFT	GB/T20392-06	10	1	3	1
206	USTER	900 B	GOST 53030	6	1	2	2
207	USTER	1000	ASTMD5687-12	10	1	2	2
207-2	USTER	1000	ASTMD5687-12	10	1	2	2
209	MAG	HVT Expert1401	ASTMD5867-05	6	1	2	2
214	Premier	ART 2	ASTM	6	1	2	2
215	MAG	HVT Expert1401	ASTMD5867-05	6	1	2	2
216	MAG	HVT Expert1401	ASTMD5867-05	6	1	2	2
218	MAG	HVT Expert1401	ASTMD5867-05	6	1	2	2
242	USTER	Spectrum			1	2	2
242-2	USTER	1000		6	1	2	2
271	USTER	900	internal	10	1	1	1
271-2	USTER	1000	internal	10	1	1	1
272	Premier	ART		5	1	2	2
287	Premier	ART 2	USDA		1	2	2
315	Premier	HFT		8	1	1	
320	MAG	HVT Expert1201	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, %
5	4.5		30.1		6.2
5-2	4.5		31.5		8.2
6	4.6		31.3		5.6
8	4.5		30.4		(11.4)
9	(5.1)		27.8		
10	4.5		30.6		
10-10	4.5		30.9		
10-2	4.5		28.8		
10-3	4.6		29.8		
10-4	4.6		30.4		
10-5	4.6		30.6		
10-6	4.6		31.1		
10-7	4.5		30.1		
10-8	4.7		29.4		
10-9	4.5		31.2		
12	4.5		29.6		7.7
13	4.4		31.4		4.8
14	4.6		30.2		6.7
15	4.5		29.7		8.2
16	4.6		27.8		6.6
18	4.7		32.5		6.5
19	4.5		30.4		6.8
23	4.5		29.4		7.3
25	4.5		30.2		7.7
26	4.5		30.6		8.0
27	4.6	21.5	31.6	5.7	5.7
31	4.5	22.0	28.3	5.3	5.3
32	4.4		32.4		6.9
32-2	4.3		29.7		6.8
32-3	4.3		31.3		6.4
36	4.4		30.5		6.5
38	4.6		31.0		(3.2)
41	4.6		30.9		(2.3)
43	4.6		30.3		5.9
44	4.6		28.8		5.2
48	4.5		29.7		5.9
49	4.5		29.7		6.2
52	4.5		31.2		8.8
53	4.5		29.5		6.6
54	4.6		32.5		8.6
56	4.5		31.8		5.6
58	4.6		30.9		7.8
60	4.5		29.1		(11.3)
60-2	4.6		29.6		6.3
62	4.5	22.3	27.7	6.0	5.7
68	4.5		30.1		
71	4.5		31.0		8.0
78	4.6		29.2		
84	4.5		31.3		6.4
90	4.4		33.1		7.3
91	4.6		29.7		7.4
92	4.6	23.5	29.3	5.7	5.7
96	4.5		29.8		7.5

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
96-2	4.5		29.7		6.8
96-3	4.6		29.0		6.7
97	4.7		30.1		6.7
98	4.6		30.5		
99	4.5		29.2		6.6
100	4.5		27.9		7.4
101	4.5		30.4		6.0
102	(4.2)		32.1		5.1
102-2	4.5		30.9		6.7
103	4.6		30.9		6.0
105	4.5		31.3		7.9
107	4.5		30.2		6.7
108	4.6		30.8		6.1
109	4.5		31.5		
110	4.5		30.0		7.3
111	4.6		30.3		5.8
112	4.5		30.1		8.3
113	4.6		30.2		6.6
118	4.7		30.3		8.1
119	4.6		31.2		6.6
121	4.5		31.1		7.8
122	4.6		33.7		5.9
123	4.6	22.6	31.0	6.6	6.5
126	4.7		31.0		
128	4.6		30.0		5.7
129	4.5	22.6	29.0	6.0	5.9
131	4.3		30.4		7.5
132			31.7		7.4
133	4.5		31.2		
134	4.4		32.4		6.9
135	4.7		30.6		6.0
136	4.6		30.4		6.8
138	4.4		28.6		7.7
139	4.4		31.3		6.7
140	4.6		28.5		7.6
141	4.5		31.3		7.5
143	4.5		31.4		6.1
143-2	4.4		30.6		6.8
144	4.5		29.5		
145	4.4		29.8		
148	4.5		29.0		7.4
160	4.6		30.9		9.0
162	4.4		32.4		4.3
163	4.5	23.0			
170	4.6		30.9		8.1
176	4.6		29.9		7.0
178	4.4		29.6		6.7
178-2	4.6		31.0		8.1
179	4.6		30.6		8.0
180	4.6		31.1		7.1
181	4.5		31.0		8.6
186	4.4	21.0	29.9	6.4	6.5
193	4.3		28.0		9.0

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
200	4.5		29.6		
201	4.4		30.0		8.1
203	4.5				
203-2	4.5				
204	4.5		29.8		6.7
204-2	4.6		(26.5)		6.5
204-3	4.6		30.2		6.7
206	4.5		29.8		6.3
207	4.5		30.3		6.9
207-2	4.5		29.9		7.8
209	4.5		30.1		6.4
214	4.4		29.6		6.7
215	4.4		30.7		5.4
216	4.5		31.0		7.0
218	4.5		30.3		6.7
242	4.5		33.0		6.3
242-2	4.5		30.7		6.1
271	4.5		30.7		(3.5)
271-2	4.5		31.1		4.3
272	(4.8)		29.9		
287	4.5	21.6	31.2	6.1	6.8
315	4.5	19.7		6.0	
320	(4.9)	23.4	27.2	6.8	6.8
Average	4.52	22.11	30.36	6.06	6.81
Median	4.51	22.3	30.38	6.0	6.7
StdDev	0.08	1.12	1.13	0.46	0.97
CV	1.7	5.1	3.7	7.5	14.3
Min	4.3	19.7	27.2	5.3	4.3
Max	4.7	23.5	33.7	6.8	9.0
n	124	11	124	10	99

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
5				28.0	1.10	81.4
5-2				28.3	1.12	82.1
6				28.4	1.12	82.7
8				28.6	1.13	83.5
9				(31.3)	(1.23)	81.7
10				28.0	1.10	82.0
10-10				28.9	1.14	82.6
10-2				28.2	1.11	82.7
10-3				28.5	1.12	82.3
10-4				28.3	1.11	81.6
10-5				28.3	1.11	82.7
10-6				28.2	1.11	82.5
10-7				28.1	1.11	81.3
10-8				28.2	1.11	81.9
10-9				28.5	1.12	83.2
12				27.7	1.09	81.8
13				28.2	1.11	81.5
14				28.3	1.11	82.5
15				28.2	1.11	81.9
16				27.9	1.10	81.8
18				28.4	1.12	81.8
19				28.1	1.11	82.0
23				28.7	1.13	82.6
25				28.0	1.10	82.3
26				28.2	1.11	82.0
27	27.0	1.06	43.8	28.7	1.13	82.8
31	27.6	1.09	48.6	28.4	1.12	82.8
32				28.1	1.11	82.1
32-2				27.6	1.09	82.1
32-3				28.0	1.10	81.6
36				28.0	1.10	81.9
38				28.7	1.13	82.5
41				(26.9)	(1.06)	81.0
43				28.4	1.12	82.3
44				28.2	1.11	82.8
48				28.2	1.11	82.6
49				28.3	1.11	82.5
52				28.4	1.12	82.4
53				28.8	1.13	81.9
54				28.5	1.12	82.8
56				29.0	1.14	83.3
58				28.1	1.11	81.4
60				28.3	1.11	82.3
60-2				28.1	1.11	81.4
62	29.0	1.14	47.4	28.3	1.11	83.0
68				27.9	1.10	81.8
71				28.3	1.11	81.9
78				28.4	1.12	
84				28.2	1.11	82.3
90				28.4	1.12	82.3
91				27.8	1.09	82.4
92	28.5	1.12	47.8	28.1	1.11	82.2

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
96				27.8	1.09	81.9
96-2				(27.0)	(1.06)	83.0
96-3				27.9	1.10	82.7
97				29.0	1.14	82.2
98				28.4	1.12	82.2
99				28.4	1.12	82.3
100				28.2	1.11	82.9
101				28.2	1.11	82.1
102				28.7	1.13	83.5
102-2				28.2	1.11	82.7
103				28.0	1.10	82.4
105				(30.7)	(1.21)	83.1
107				28.0	1.10	81.9
108				28.1	1.11	82.2
109				27.9	1.10	82.0
110				28.2	1.11	82.3
111				28.3	1.12	82.3
112				28.2	1.11	82.4
113				28.3	1.11	82.4
118				28.4	1.12	81.9
119				28.2	1.11	82.2
121				28.3	1.11	81.8
122				28.5	1.12	83.0
123	28.4	1.12	45.8	28.4	1.12	82.0
126				28.2	1.11	82.3
128				28.1	1.11	82.6
129	28.9	1.14	49.0	28.5	1.12	82.0
131				28.9	1.14	83.5
132				28.6	1.13	82.4
133				28.4	1.12	
134				28.3	1.12	82.3
135				28.8	1.13	83.0
136				27.7	1.09	81.6
138				27.7	1.09	81.3
139				28.2	1.11	82.9
140				28.1	1.11	81.7
141				28.7	1.13	83.4
143				28.1	1.11	82.3
143-2				28.4	1.12	81.8
144				28.1	1.11	81.8
145				28.6	1.13	80.7
148				28.3	1.11	81.9
160				27.9	1.10	81.6
162				28.7	1.13	83.1
163	29.0	1.14	48.0			
170				27.3	1.08	(80.4)
176				28.8	1.14	82.4
178				27.7	1.09	81.4
178-2				27.4	1.08	81.9
179				28.0	1.10	82.2
180				28.2	1.11	83.0
181				28.2	1.11	82.2

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
186	27.6	1.09	48.4	28.2	1.11	82.9
193				28.4	1.12	82.1
200				28.2	1.11	82.2
201				27.9	1.10	81.8
203				28.0	1.10	
204				27.8	1.09	81.6
204-2				27.7	1.09	81.7
204-3				28.3	1.11	82.5
206				27.8	1.09	
207				28.1	1.10	82.3
207-2				28.1	1.11	81.7
209				28.2	1.11	82.2
214				28.2	1.11	82.9
215				28.7	1.13	82.5
216				28.6	1.13	82.3
218				28.0	1.10	81.9
242				28.0	1.10	
242-2				27.9	1.10	
271				28.7	1.13	82.6
271-2				28.8	1.13	82.9
272				28.2	1.11	82.2
287	28.7	1.13	46.9	28.7	1.13	83.9
315	28.2	1.11	50.2			
320	28.5	1.12	48.0	28.7	1.13	83.0
Average	28.31	1.115	47.62	28.25	1.112	82.27
Median	28.48	1.121	48.0	28.21	1.110	82.3
StdDev	0.64	0.03	1.70	0.32	0.01	0.56
CV	2.3	2.3	3.6	1.1	1.1	0.7
Min	27.0	1.06	43.8	27.3	1.08	80.7
Max	29.0	1.14	50.2	29.0	1.14	83.9
n	11	11	11	122	122	119

HVI *(table is divided into 3 pages)*						Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
5	74	10.3	32-1	4	0.6	39
5-2	74	10.4	32-1	3	0.51	34
6	75	10.7	13	3	0.39	29
8	74	(13.2)	13-1	1	0.28	19
9	(57)	11.1	63-3			
10	74	10.7	23	3	0.46	41
10-10	75	10.8	13	3	0.39	33
10-2	75	10.8	13	3	0.38	29
10-3	75	10.7	13	3	0.44	39
10-4	75	10.7	13	3	0.58	56
10-5	75	10.9	13	3	0.52	46
10-6	75	10.9	13	3	0.57	51
10-7	75	10.8	13	3	0.49	48
10-8	75	10.8	13	3	0.4	31
10-9	75	10.8	13	3	0.49	50
12	74	10.2	32-1	3	0.36	29
13	73	10.1	32-1		0.25	20
14	74	10.9	22-2		0.43	33
15	74	10.5	22-2	3	0.3	23
16	77	10.6	1	2	0.2	15
18	75	10.3	22-2		0.55	52
19	74	10.4	32-1	3	0.43	29
23	73	10.4	32-1			
25	76	10.4	22-1	4	0.46	45
26	75	10.3	22-2	3	0.35	28
31	73	11.4	23-2	3	0.31	34
32	73	10.6	32-1			
32-2	71	10.1	32-2			
32-3	72	10.6	32-1			
36	74	10.7	23	3	0.52	44
38	75	10.4	22-2	4	0.51	44
41	74	10.7	22-2		0.32	20
43	74	10.7	22-1		(5.10)	38
44	73	10.5	32-2		0.41	32
48	72	10.7	32-1			
49	74	10.2	32-1	3	0.43	41
52	75	10.8	22-1	4	0.57	47
53	72	9.7	32-2	4	0.44	23
54	73	10.9	32-1	3	0.28	17
56	73	10.4	32-1	3	0.35	28
58	76	10.5	22-1	3	0.41	38
60	75	9.9	32-1	4	0.61	45
60-2	75	10.2	22-2	4	0.45	39
62	75	10.1	32-1		0.41	24
68	75	10.3	22-2	3	0.32	29
71	74	10.3	32-1		0.64	45
78	74	10.6	22-2		0.38	38
84	75	10.4	22-2	3	(38.00)	41
90	75	10.7	22-1		0.34	29
91	75	10.6	22-2		0.3	28
92	75	10.6	22-2			
96	74	10.8				
98	75	10.7			0.44	36

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
99	76	10.6	22-1			
100	74	10.7	22-1		0.42	19
101	75	10.7	22-2	4	0.48	42
102-2	75	10.7	22-2	4	0.42	40
103	73	10.9	23-2	4	0.44	36
105	74	10.5	22	4	0.6	50
107	73	10.8	23-2			
108	73	11.0	23-2	4	0.46	41
109	75	10.4	22-2	525	0.45	40
110	75	10.8	22-1	4	0.58	45
111	74	10.9			0.36	37
112	75	10.9	22-2	2	0.22	35
113	76	10.7	22-1			
118	75	10.8	22-2	11	0.44	35
119	74	11.1	13	3	0.42	39
121	75	10.3	22-2		0.4	33
122	73	10.2	32		(1.00)	36
123	75	10.4	22-2	4	0.48	31
128	74	10.8			0.52	41
129	(70)	10.6	33-2			
131	(69)	10.3				
133	75	11.0	22-1	4	0.69	44
134	74	10.1	32-1		0.32	34
135	72	10.2	32-1		0.32	28
136	74	11.1	23-2		0.43	34
138	74	(8.2)	41-1	3	0.3	22
139	74	10.3	22-2	2	0.2	20
140	75	10.6				
141	74	10.8	22-2		0.44	36
143	74	10.9	22-2	2	0.26	22
143-2	75	10.0	22-2	4	0.58	33
144	73	9.8	32-2	2	0.18	14
145	75	10.3	22-1			
148	74	10.5	32-1	4	0.5	45
162	(71)	10.4	32-2			
163	(68)	(15.9)	24-3			
170	75	10.3	22-2	3	0.35	28
176	75	10.2	32-1	4	0.59	59
178	(71)	10.1	42-1			
178-2	73	9.9	32-2	30	0.42	
179	75	10.7	22-1	4	0.52	45
180	74	10.1	32-1	1	0.39	22
181	74	11.0	22-2	4	0.56	11
193	72	(7.4)	51	1	(0.03)	1
200	74	10.3	22-2			
201	74	10.4	32-1	1	0.13	12
203	75	(8.7)	31-1	5	0.54	24
204	74	10.5	32-1	1	0.12	11
204-2	73	10.6	1			
204-3	74	10.9	22-2		0.43	33
206	72	10.7	32-1			
207	74	10.7	22-2	4	0.44	41
207-2	75	11.0	22-1	4	0.48	45

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
209	75	10.2	32-1			
214	74	11.0	23-1			
215	76	10.3	22-1	2		
216	76	10.4	22-1			
218	73	10.8	23-2			
242	75	10.0			0.25	22
242-2	75	10.5	22-2	2	0.49	40
271	72	10.8	32-1			
271-2	76	10.5	22-1	3	0.27	33
272	73	(8.0)	41-3			
287	73	10.3	32-1			
320	73	10.5	32-1			
Average	74.2	10.55			0.419	33.8
Median	74.4	10.60			0.43	34.0
StdDev	0.99	0.31			0.12	11.12
CV	1.3	3.0			28.3	32.9
Min	71	9.7			0.12	1.00
Max	77	11.4			0.69	59
n	112	112			84	87

HVI	*(table is divided into 3 pages)*			Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
5		9.2		
5-2		8.9		
6		(15.2)		0.86
8		10.2		0.85
9		7.2		
10			87	
10-10			87	
10-2			85	
10-3			88	
10-4			85	
10-5			87	
10-6			87	
10-7			87	
10-8			85	
10-9			87	
12		10.4		0.89
13		8.5		0.89
14		8.8		0.87
15		10.5		0.85
16		9.4		0.88
18		9.6		0.87
19		9.4		0.87
23		7.2		
25		10.0		0.86
26		9.6		0.86
27	9.5	8.8		0.87
32		9.3		
32-2		10.6		
32-3		10.6		
38		9.2		
41		8.1		0.9
43		8.6		
44		9.3		0.93
48		7.7		
49		7.6		0.87
52		8.6		0.85
53		8.9		0.83
54		7.6		(0.94)
56		8.6		
58		9.0		0.86
60		9.8		0.83
60-2		9.0		0.87
62	5.7	6.1		
68		9.0		0.86
71		7.2		0.86
78		9.2		0.86
84		8.1	87	
90		8.8		0.86
91		8.8		0.86
92	9.2	9.3		0.86
97		6.5		0.84
98		7.9		
99		9.1		0.84

HVI *(table is divided into 3 pages)*				Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
100		7.3	(80)	0.89
101		9.3		0.87
102-2		7.9		
103		7.9		0.87
105		8.9		
107		9.4		0.89
108		7.9		
109		8.8		0.85
110		8.3		0.86
111		8.9		0.87
112		9.1		0.85
113		8.6		0.84
118		9.3		
119		(16.1)		0.86
121		9.7		0.86
122		9.0		0.87
123	9.6	9.9		0.87
126		8.3		
128		8.6		0.87
129	9.8	10.1		
131				0.89
132		9.6		
133		7.8		
134		7.8		0.86
135		(4.7)		0.9
136		9.0		0.87
138		10.7		0.89
139		8.5		
140		8.6		0.86
141		7.5		0.86
143		9.5		0.89
143-2		9.7		0.84
144		9.1		0.87
145		10.1		0.88
148		9.1		0.87
160		10.8		0.93
162		6.6		
163	9.6			
170		(13.9)		0.86
176		7.3		0.86
178		9.6		0.83
178-2		10.1		0.86
179		8.4		0.86
180		8.0		0.9
181		7.7		0.93
186	7.3	6.5		
193		9.7		0.84
200		8.3		
201		9.4		0.84
203		8.9		
204		7.6		0.86
204-2		9.5		0.83
204-3		8.8		0.87

HVI *(table is divided into 3 pages)*				Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
207		8.8		0.86
207-2		8.8		0.86
209		8.8		0.83
214		8.6		0.87
215		8.8		0.82
216		9.0		0.83
218		9.4		0.83
242		6.8		0.9
242-2		9.4		0.87
272		7.8		0.84
315	8.4			0.83
320	8.6	8.6		0.87
Average	8.63	8.78	86.55	0.86
Median	9.22	8.87	87.0	0.86
StdDev	1.36	0.98	1.04	0.02
CV	15.8	11.2	1.2	2.6
Min	5.7	6.1	85.0	0.8
Max	9.8	10.8	88.0	0.9
n	9	101	11	79

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
5	USTER	Neptester 720		5
14	USTER	1408248	ASTMD5866-05	6
21	USTER	119-064		
22	USTER	Autojet		10
27	USTER	Neptester 740		
31	USTER	4.22		5
32	USTER	AFIS Pro 2		10
32-2	USTER	AFIS Pro 2		10
32-3	USTER	AFIS Pro 2		10
38	USTER		ASTM	5
41	USTER			5
43	USTER	AFIS Pro		5
44	USTER	AFIS Pro	internal	10
51	USTER	AFIS Pro 2	ISO-9001	5
58	USTER		internal	10
62	USTER	908085	ASTMD5866-95	6
90	USTER	4.22	Manufacturer	5
91	USTER	MN100		10
91-2	USTER	AFIS Pro 2		10
96	USTER	AFIS Pro 2	ASTMD5866-12	10
100	Textechno	CCS-V5.2	ASTMD5866-05	4
101	USTER	AFIS Pro		5
102	USTER	SN206V4.22	ICCS	3
111	USTER	AFIS Pro	internal	10
112	USTER	AFIS Pro	ASTMD5866	3
118	USTER			
123	USTER		ASTMD5866-12	10
123-2	USTER	AFIS Pro	ASTMD5866-12	10
123-3	USTER	AFIS Pro 2	ASTMD5866-12	10
128	USTER	Neptester	ASTM	4
129	USTER	AFIS Pro		
132	USTER			
134	USTER	AFIS Pro	ASTMD5848-95	5
136	USTER	AFIS Pro 2	ASTMD5848-95	5
139	USTER	AFIS Pro 2	ASTMD5866-05	12
140	USTER	AFIS Pro		10
142	USTER			5
143	USTER		ASTMD5866	5
144	USTER	AFIS Pro	ASTM	5
145	USTER			
148	USTER			10
148-2	USTER	AFIS Pro		10
148-3	USTER	AFIS Pro 2		10
148-4	USTER	AFIS Pro 2		10
170	USTER	AFIS Pro	Manufacturer	5
176	USTER	AFIS Pro		10
180	USTER	AFIS Pro 2	ASTM	3
181	USTER	AFIS Pro 2	ASTM	3
186	USTER	AFIS Pro		10
186-2	USTER	Afis old		10
193	USTER	AFIS Pro	ASTMD5866-12	6
200	USTER			
207	USTER	AFIS Pro	ASTMD5866-12	10
271	USTER	AFIS 1	internal	10
271-2	USTER	AFIS 2	internal	10
271-3	USTER	AFIS 3 KS1	internal	10
271-4	USTER	AFIS 4 KS2	internal	10
272	USTER			5

AFIS L *(table is divided into 2 pages)*								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
14	20.2	0.80	47.5			34.6	1.36	22.6
21	20.2	0.80	39.9	34.1	1.34	32.2	1.27	18.3
22	20.1	0.79	48.1	36.1	1.42	33.5	1.32	25.0
31	20.4	0.80	46.4	36.6	1.44	34.1	1.34	23.2
32	18.1	0.71	56.2			33.1	1.30	31.1
32-2	20.1	0.79	48.2			33.6	1.32	22.7
32-3	18.2	0.72	56.0			33.2	1.31	30.6
38	21.5	0.85		37.2	1.46	34.7	1.37	19.8
41	20.3	0.80	40.7	34.9	1.37	32.7	1.29	19.1
43	20.6	0.81	45.7			34.3	1.35	22.7
44	20.3	0.80	46.8			33.8	1.33	21.2
51	20.1	0.79	47.7			33.9	1.33	22.1
58	20.0	0.79	46.6	35.9	1.41	33.5	1.32	23.6
62	19.9	0.78	49.6			34.3	1.35	23.9
90	20.4	0.80	47.8	36.5	1.44	34.0	1.34	22.6
91-2	19.5	0.77	47.2			33.2	1.31	23.5
96	20.0	0.79	48.3			34.1	1.34	33.1
101	19.4	0.76	48.8			32.9	1.30	24.5
102	22.1	0.87	42.8	38.4	1.51	35.2	1.39	17.8
111	20.1	0.79	46.2			33.5	1.32	22.8
112	21.1	0.83	44.2	34.0	1.34			21.3
118	20.1	0.79	49.5	37.6	1.48	35.3	1.39	26.5
123	20.0	0.79	47.3			33.8	1.33	23.8
123-2	19.3	0.76	51.1			33.8	1.33	25.8
123-3	20.0	0.79	46.2			33.3	1.31	21.8
129	22.1	0.87	47.6			(37.1)	(1.46)	20.4
134	21.3	0.84	43.7			34.3	1.35	19.8
136	19.6	0.77	49.0			33.0	1.30	25.0
139	19.8	0.78	49.0			33.8	1.33	25.1
140	18.7	0.74		34.3	1.35			
142	20.2	0.80	44.0	35.9	1.41	33.7	1.33	20.3
143				35.9	1.41	33.5	1.32	27.2
144	20.9	0.82				34.3	1.35	18.3
145	20.8	0.82	46.5			34.0	1.34	21.2
148-2	18.8	0.74				33.4	1.31	27.5
148-3	19.6	0.77				33.4	1.31	24.1
148-4	19.6	0.77				33.4	1.31	24.0
170	20.7	0.81	44.8			34.4	1.35	20.1
176	20.6	0.81	46.9			34.3	1.35	22.6
180	20.0	0.79	46.1			33.3	1.31	
181	20.9	0.82	44.3			34.6	1.36	
186	20.4	0.80	47.0			34.2	1.35	21.3
186-2	20.9	0.82	46.0	37.2	1.46	34.5	1.36	21.7
193	20.6	0.81	45.4			33.8	1.33	21.5
204-3	20.2	0.80	47.5			34.6	1.36	22.6
207	20.9	0.82	45.6			34.4	1.35	19.0

AFIS L *(table is divided into 2 pages)*								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
271	18.3	0.72	56.6	35.8	1.41	33.5	1.32	33.3
271-2	19.1	0.75	49.8	36.1	1.42	33.5	1.32	28.0
271-4	19.6	0.77	50.9	36.3	1.43	34.0	1.34	27.1
272	19.1	0.75	46.7	35.3	1.39	33.0	1.30	23.7
Average	20.09	0.791	47.35	36.01	1.418	33.82	1.332	23.47
Median	20.1	0.791	47.0	35.98	1.417	33.8	1.331	22.7
StdDev	0.87	0.03	3.38	1.19	0.05	0.63	0.02	3.63
CV	4.3	4.3	7.1	3.3	3.3	1.9	1.9	15.4
Min	18.1	0.71	39.9	34.0	1.34	32.2	1.27	17.8
Max	22.1	0.87	56.6	38.4	1.51	35.3	1.39	33.3
n	49	49	43	18	18	47	47	47

AFIS L	*(table is divided into 2 pages)*					Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
14	24.8	0.98	34.2	30.2	1.19	7.6
21	23.5	0.93	30.3	28.2	1.11	7.1
22	24.6	0.97	33.4	29.7	1.17	8.6
31	24.8	0.98	33.3	29.9	1.18	8.1
32	23.8	0.94	36.1	29.4	1.16	9.8
32-2	24.7	0.97	32.4	29.7	1.17	6.8
32-3	23.9	0.94	35.7	29.5	1.16	9.5
38				30.7	1.21	5.2
41	23.6	0.93	31.6	28.4	1.12	7.6
43	24.9	0.98	33.6	30.2	1.19	7.9
44	24.7	0.97	32.5	29.7	1.17	(16.2)
51	24.6	0.97	32.1	29.5	1.16	7.1
58	24.4	0.96	33.0	29.5	1.16	
62	24.8	0.98	33.9	30.2	1.19	7.5
90	25.0	0.98	32.8	30.0	1.18	7.1
91-2	23.9	0.94	34.4	29.1	1.15	8.3
96	24.7	0.97	34.0	29.9	1.18	(14.6)
100	23.1	0.91		30.8	1.21	(13.8)
101	24.0	0.94	33.6	29.0	1.14	
102	26.2	1.03	31.5	31.0	1.22	5.7
111	24.4	0.96	32.9	29.5	1.16	7.8
112	24.9	0.98	33.4	29.7	1.17	7.7
118	25.1	0.99	35.6	31.0	1.22	9.7
123	24.4	0.96	33.8	29.5	1.16	8.4
123-2	24.4	0.96	34.8	29.7	1.17	8.2
123-3	24.3	0.96	33.0	29.3	1.15	7.3
129	(27.2)	(1.07)	32.4	(32.8)	(1.29)	5.8
134	25.4	1.00		30.2	1.19	6.6
136	24.4	0.96	33.3			8.1
139	24.4	0.96	34.3	29.7	1.17	8.5
140				30.0	1.18	
142	24.1	0.95	31.9	29.9	1.18	7.1
143	24.4	0.96	34.1	29.5	1.16	8.7
144	24.8	0.98		29.8	1.17	6.4
145	25.4	1.00	31.7	30.5	1.20	6.3
148-2	24.3	0.96		29.5	1.16	8.0
148-3	24.4	0.96		29.4	1.16	7.5
148-4	24.2	0.95		29.4	1.16	8.1
170	24.9	0.98	33.9	30.0	1.18	6.9
176	25.1	0.99	33.1	30.2	1.19	7.5
180	24.2	0.95	32.5	29.3	1.15	7.1
181	25.0	0.98	32.0	30.2	1.19	6.3
186	24.9	0.98	33.2	29.9	1.18	6.6
186-2	25.3	1.00	32.3	30.2	1.19	7.0
193	24.6	0.97	32.9	29.7	1.17	7.3
204-3	24.8	0.98	34.2	30.2	1.19	7.6

AFIS L	*(table is divided into 2 pages)*					Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
207	25.2	0.99	32.4	30.2	1.19	5.7
271	24.1	0.95	36.5	29.5	1.16	11.2
271-2	23.9	0.94	36.6	29.2	1.15	10.6
271-4	24.6	0.97	34.9	30.0	1.18	9.1
272	23.4	0.92	33.9	28.7	1.13	8.7
Average	24.53	0.966	33.44	29.76	1.172	7.68
Median	24.64	0.97	33.3	29.72	1.17	7.6
StdDev	0.58	0.02	1.37	0.57	0.02	1.26
CV	2.4	2.4	4.1	1.9	1.9	16.4
Min	23.1	0.91	30.3	28.2	1.11	5.2
Max	26.2	1.03	36.6	31.0	1.22	11.2
n	48	48	43	49	49	45

AFIS D / M					Diameter, Maturity
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio
14			156	7.3	0.86
22			160	7.7	0.86
31			160	7.3	0.86
32			155	(13.7)	0.79
32-2			157	9.6	0.85
32-3			156	(11.9)	0.82
38			152	5.7	0.86
41	13.5				
43			167	7.1	0.91
44			165	7.4	0.89
51			153	6.4	0.85
58			166	6.2	0.91
62			157	6.1	0.87
90			169	6.1	0.92
91-2			166	5.8	0.91
96			157	7.9	0.87
100			(190)		0.89
101			159	7.8	0.87
102			160	10.3	0.84
111			161	6.8	0.89
112			(189)	3.1	(1.04)
118			165	7.1	0.92
123			165	6.4	0.9
123-2			160	7.5	0.88
123-3			164	5.4	0.93
134			164	5.5	0.9
136			158	7.9	0.88
139			161	6.2	0.9
140			161	7.4	0.88
143			163	6.0	0.91
144			157	8.1	0.89
145			156	5.0	0.9
148-2			167	6.2	0.91
148-3			163	6.6	0.89
148-4			163	6.4	0.88
170			163	6.8	0.9
176			147	(13.5)	(0.75)
180			161	6.5	0.9
181			163	5.9	0.91
186			153	8.2	0.83
186-2			149	9.1	0.8
193			168	6.3	0.91
204-3			156	7.3	0.86
207			159	8.9	0.86
271			163	7.4	0.89
271-2			164	7.5	0.9
271-4			144	9.3	0.93
272	11.9				
Average			159.8	6.99	0.881
Median			160.5	6.95	0.89
StdDev			5.57	1.33	0.03
CV			3.5	19.1	3.7
Min			144	3.1	0.79
Max			169	10.3	0.93
n	2	0	44	42	44

AFIS T				Trash
Lab.	Total Trash		Dust	V. F. M.
	Mean Diameter µm	Cnt/g	Cnt/g	%
21	(239)	1070	(960)	1.79
22	356	620	483	2.31
31		746	615	2.29
32	331	629	513	1.92
32-2	343	569	457	1.92
32-3	337	495	404	1.65
43	364	521	417	1.85
51	331	610	500	2.17
58	329	696	570	2.27
62	346	579	466	2.0
90	353	524	417	1.8
91-2	358	542	433	2.02
100		218		
101	332	522	437	1.65
102	(229)	1200	(1108)	1.97
111	330	726	599	2.15
112	332	619	520	1.79
129	330	694	563	2.0
134	334	188	(151)	(0.59)
136	286	766	661	1.77
140	344	499	399	1.59
142	322	728	603	2.16
143	304	656	552	1.58
148-2	364	644	506	2.35
148-3	334	763	630	2.56
148-4	334	618	506	1.99
176	342	604	482	1.81
186	335	630	515	1.94
186-2	328	666	545	1.94
193	345	602	483	2.54
207		993	(839)	2.63
271-2		601	484	1.9
272	288	559	478	1.21
Average	334.5	639.3	508.5	1.985
Median	334.0	619.0	503.0	1.94
StdDev	18.93	192.37	70.76	0.31
CV	5.7	30.1	13.9	15.8
Min	286	188	399	1.21
Max	364	1200	661	2.63
n	27	33	28	31

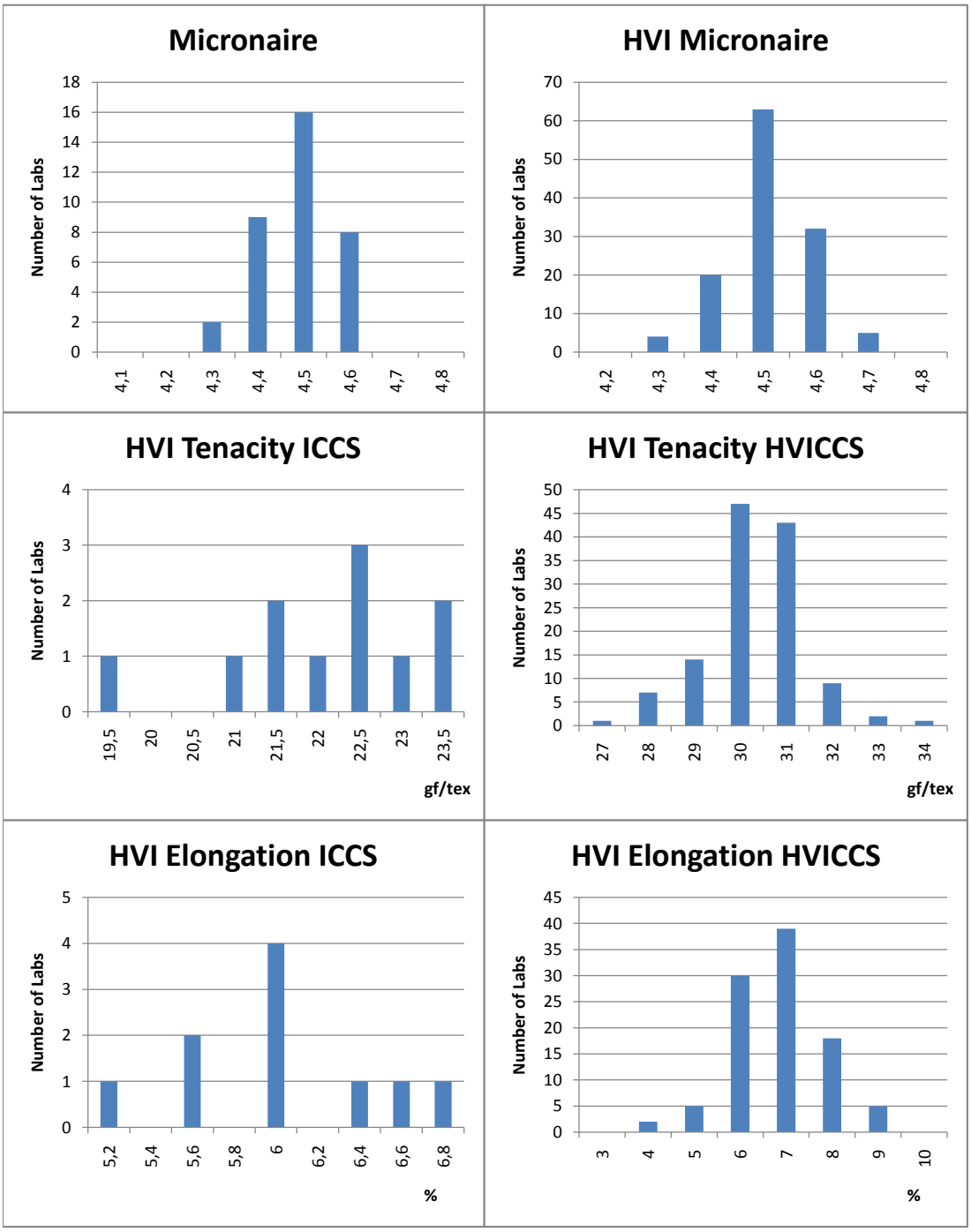
AFIS N *(table is divided into 2 pages)*					Neps
Lab.	Total Neps		SCN		
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g	
5		212			
14	670	245	1072	14	
21	677	192			
22	692	191	1147	12	
27		209			
31	689	207	1117	14	
32	696	254	1025	24	
32-2	674	278	919	23	
32-3	701	250	1090	18	
38	(378)	175			
41	640	239			
43	716	205	1418	17	
44	725	221	1435	20	
51	710	220	1274	23	
58	661	271	1449	15	
62	734	279	1382	23	
90	(918)	234	1138	21	
91	678	190			
91-2	705	225	1119	19	
96	678	238	997	21	
100		214		26	
101	705	216	1122	22	
102	689	176	1042	20	
111	708	219	1175	20	
112	710	243	1204	13	
118	696	197	956	27	
123	680	253	1075	27	
123-2	692	224	1093	14	
123-3	679	220	1082	19	
128		222			
129	731	213	1292	32	
132	616	226			
134	701	200	1055	25	
136	689	239	1176	17	
139	692	231	1067	16	
140	675	306	1179	13	
142	630	188			
143	684	238	1102	19	
144	685	235	1365	15	
145	733	191	1418	18	
148		206			
148-2	676	209	1082	15	
148-3	692	221	1216	17	
148-4	686	252	1143	21	
170	664	246	1170	14	
176	699	222	1033	19	
180	699	189	1319	15	
181	667	265	1111	15	
186	707	262	1012	29	
186-2	695	232	1029	22	
193	711	244	1214	25	
200	683	225	1206	12	

AFIS N *(table is divided into 2 pages)*					Neps
Lab.	Total Neps		SCN		
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g	
204-3	670	245	1072	14	
207	716	217	1165	24	
271	687	307	1129	21	
271-2	765	273	1188	18	
271-3	(786)	284	1344	31	
271-4	693	(370)	1012	14	
272	663	262			
Average	690.5	230.1	1158.1	19.4	
Median	692.0	225.0	1129.0	19.0	
StdDev	25.74	30.07	131.62	5.07	
CV	3.7	13.1	11.4	26.1	
Min	616	175	919	12	
Max	765	307	1449	32	
n	51	58	47	48	

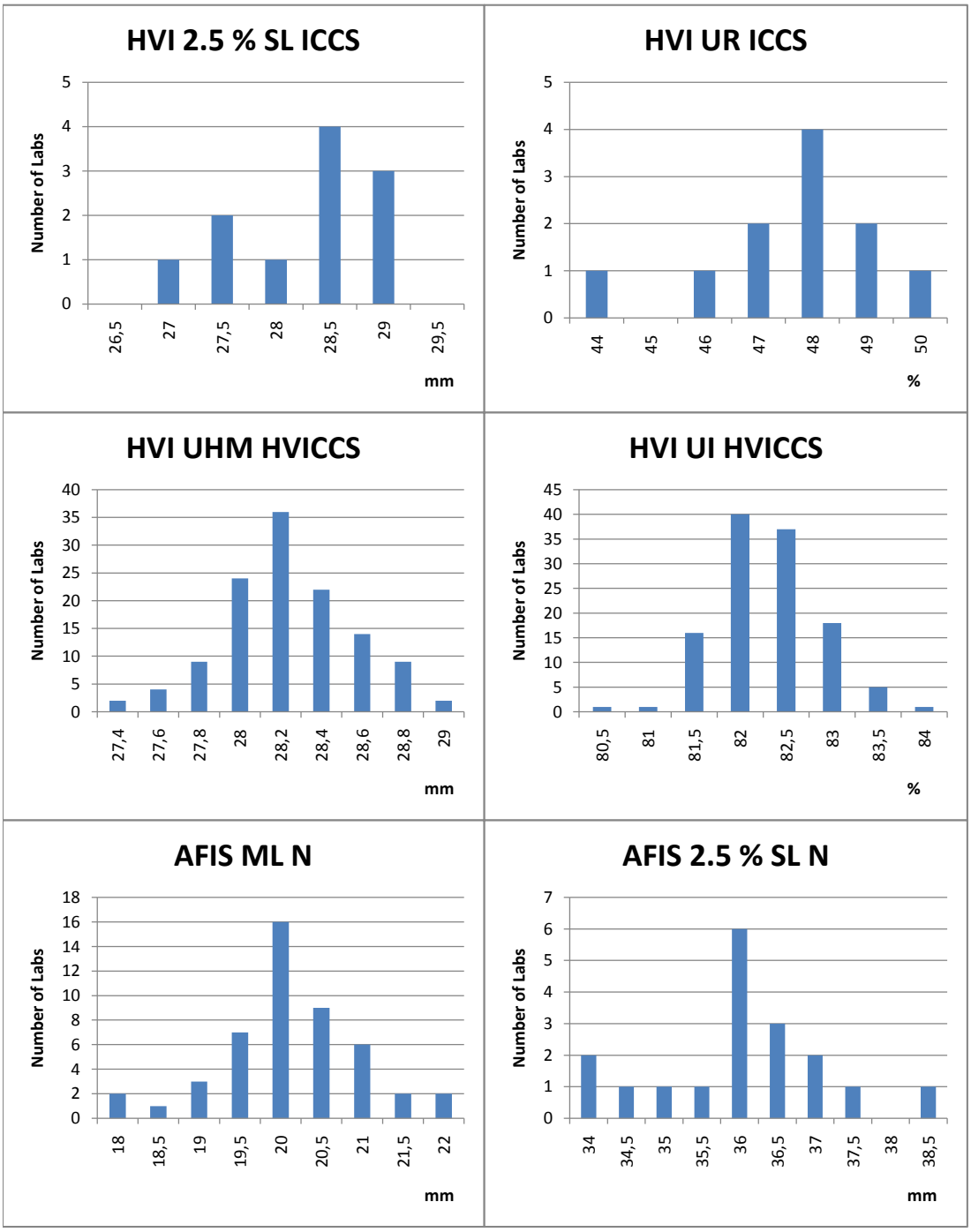
aQura *(further information see page "Multiple Devices")*							Length, Neps
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	16.8		25.4	11.4	93	107
96	4			28.6	12.8	229	27
178	4	27.9		34.5	17.1	364	36
178-2	4	30.3		26.6	12.1	267	28
Average							
Median							
StdDev							
CV							
Min							
Max							
n		3	0	4	4	4	4

Multiple Devices		*(information not provided in the respective table)*			General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
32	FMT	Wira	FFMM		6
32-2	FMT	Wira	FFMM		5
32-3	FMT	Wira	FFMM		6
35	DigitalFibrograph	USTER	730		6
37	FMT				
53	aQura	Premier			4
56	Causticaire		Micronaire	JIS	2
58	ALMeter	Peyer	AL 101	internal	
70	FMT	SDL	MK.1	ASTMD3818-92	
70	GravFineness			ISO 1973-95	
85	CombSorter		Joh.-Zweigle	UNI10170-94	1
85	GravFineness			UNIENISO1973-98	10
85-2	GravFineness			UNIENISO1973-98	10
85-2	CombSorter		Keisokki	UNI10170-94	1
85-3	CombSorter		Keisokki	UNI10170-94	1
85-3	GravFineness			UNIENISO1973-98	10
85-4	GravFineness			UNIENISO1973-98	10
85-4	CombSorter		Keisokki	UNI10170-94	1
92	DigitalFibrograph		DigiLen	ASTMD5332	6
96	aQura	Premier		ASTMD5866-12	4
100	FMT		WIRA	ASTMD3818-92	8
100	DigitalFibrograph		Fibrotest	ASTMD1447-07-12	8
102	DigitalFibrograph		530	ICCS	5
102	FMT		Micromat	ICCS	2
112	ALMeter				3
112	GravFineness				3
128	FMT		Micromat	ASTM	8
129	Causticaire		Microscope	IS 236	4
131	DigitalFibrograph		530	ASTM	6
131	Causticaire		Fibroscope	British	
132	DigitalFibrograph		Fibrotest	ASTMD1447	10
143	DigitalFibrograph	USTER	330	ABNTNBR13154-94	
177	GravFineness			ASTMD1577-90	
177	Causticaire			DIN53943-4	
178	aQura	Premier			4
178-2	aQura	Premier			4
186	FMT	SDL	FMT	USDA	6
193	GravFineness			GB/T6100-07	2

Graphics of selected round test data



Graphics of selected round test data



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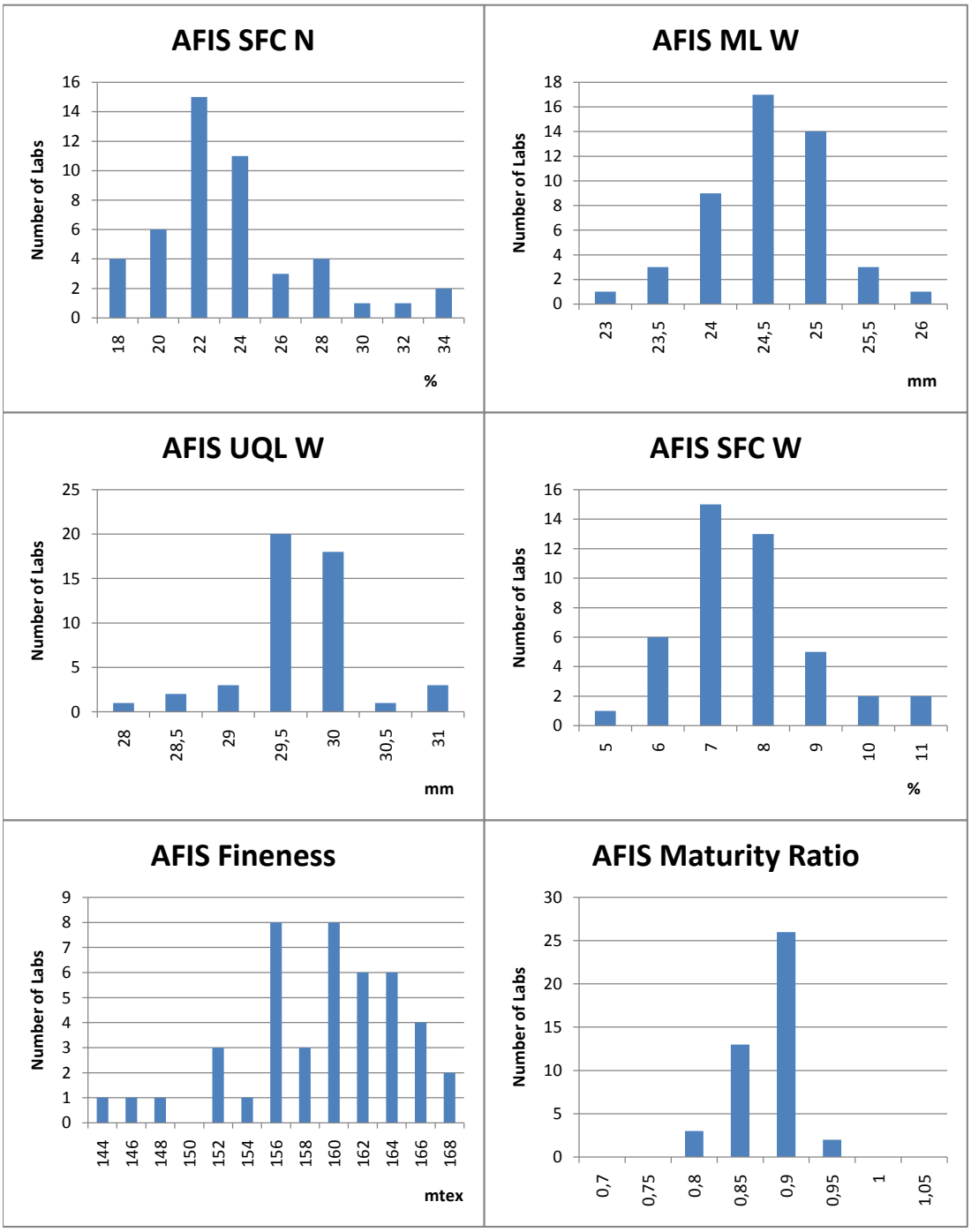
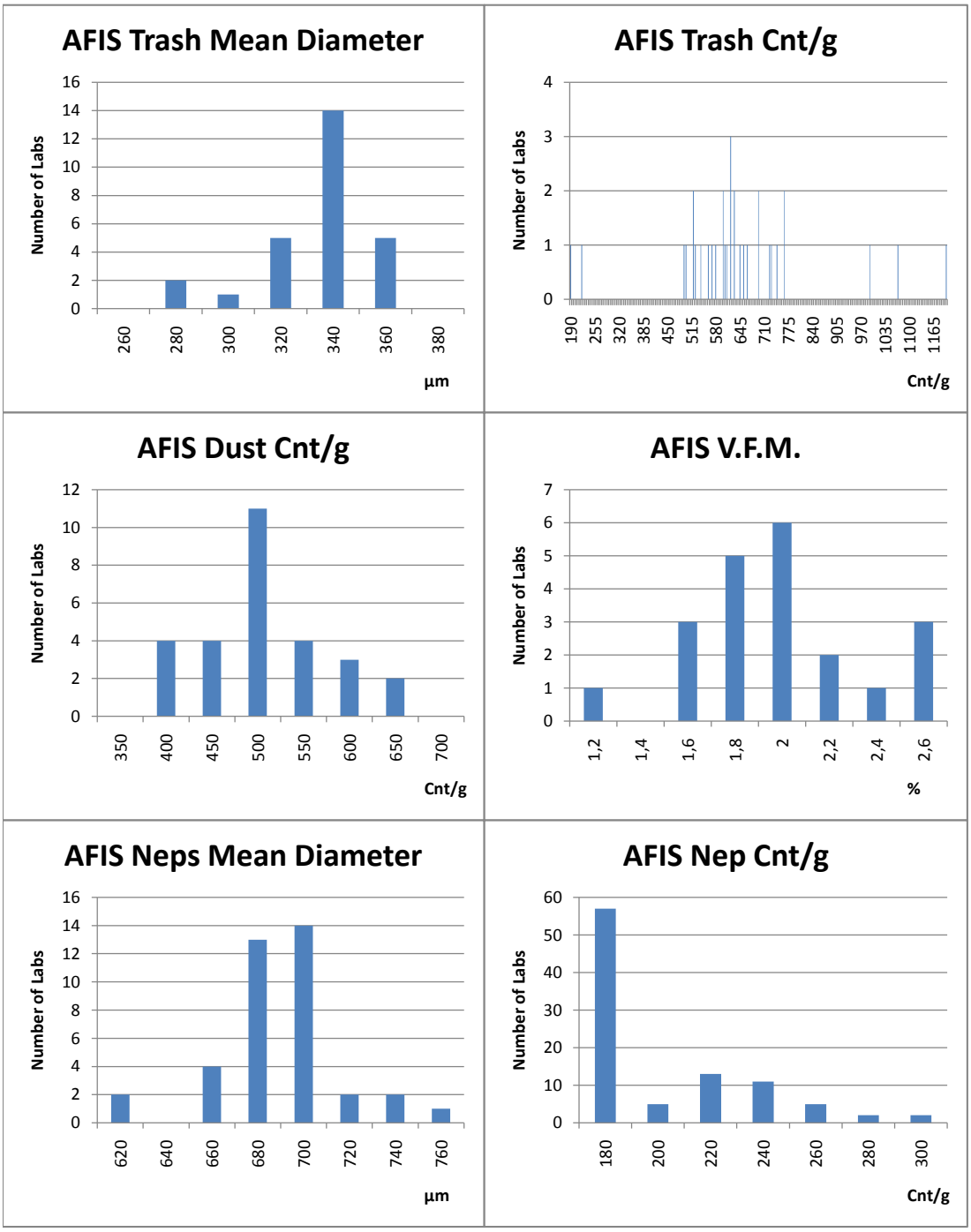


Graphics of selected round test data



Graphics of selected round test data