ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

Bremen, 15.05.2016

Evaluation of the Test Results 2016 / 1

Tested Cotton: **Brazil**
Cotton Number: **RM 32**

Number of Laboratories: **126**

Argentina	1	Mauritius, Rep of	-
Australia	1	Mozambique	-
Bangladesh	1	The Netherlands	1
Brazil	1	Pakistan	5
China, PR	19	Poland	2
Czech Republic	4	Russia	2
Egypt	4	Serbia	1
France	1	Slovenia	2
Germany	13	South Africa	-
Greece	6	Spain	3
Hungary	1	Sudan	1
India	27	Switzerland	3
Indonesia	2	Taiwan	1
Iran	-	Thailand	2
Israel	1	Tunisia	1
Italy	1	Turkey	3
Japan	2	Uganda	-
Kazakhstan	1	United Kingdom	-
Korea, R	1	United States	6
Latvia	1	Uzbekistan	2
Mali	1	Vietnam, SR	2

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: **Brazil (RM 32)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 with 10 tests from 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	0,079	0,042
Strength, g/tex	0,336	0,606
Length, UHM, inch	0,006	0,013
Length, UHM, mm	0,169	0,334

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		4.3	775	GB/T6498-08
17		4.4		
20	5	4.2	175	manual
22	3	4.1	Fibronaire	
29	4	4.2	Sheffield	ISO 2403
32	6	4.2	WIRA	
32-2	6	4.2	WIRA	
32-3	6	4.3	WIRA	
35	3	4.1	775	
37		4.3		
56	2	4.3	Fibronaire	JIS
67	5	4.1	Fibronaire	
70	6	4.2	MK.1	ASTMD3818-92
77		4.1		
79		4.0	Sheffield	ASTMD1448
100	10	4.2	675	ASTMD1448-97
100-2	8	4.2	WIRA	ASTMD1448-97
100-3	12	4.0	WIRA	ASTMD3813-92
102	6	4.1	Fibronaire	ICCS
112	2	4.4	Fibronaire	ASTMD1448
126	2	4.2	FMT	ASTM
128		4.3	Fibronaire	ASTM
129	4	4.2		BS 3181
131	6	4.2		ASTM
132	3	4.2	WIRA	ASTMD1448
142	3	4.2	80400	ISO
152	3	4.2		
155		4.0	275	DIN 53941
162	6	4.2	WIRA	
167	3	(4.5)	275	USDA
168		4.2		
169	3	4.3	Sheffield	
183	3	4.1	Fibronaire	ASTMD1448
186	6	4.2	FMT	USDA
193	3	4.1	Y145	GB/T6498-08
201	3	4.1	275	
Average		4.18		
Median		4.17		
StdDev		0.09		
CV		2.17		
Min		4.0		
Max		4.4		
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	12	7.3		ISO 3060				
35					6	22.0	5.8	
46	10	7.8	4.4	ISO 3060				
56	5	7.6		JIS				
76	5	6.9						
79		7.8		ASTMD1445				
100	8	7.3		ASTMD41452T				
112					3	20.8	6.9	ASTM 1445
128		6.3	4.3	ASTM		22.8	6.3	ASTM
131	6	7.2	3.6	ASTM	6	20.6	6.7	ASTM
132					6	19.7	7.7	DIN ISO3060
152	6	7.5						
162	6	7.8			6	19.1	5.8	
177	4	6.5		DIN 53942				
193					12	19.1	7.5	GB/T13783-92
206					7	20.5	6.7	ISO3060-74
Average		7.27	4.1			20.58	6.67	
Median		7.3	4.3			20.57	6.68	
StdDev		0.51	0.4			1.31	0.69	
CV		7.07	9.81			6.38	10.36	
Min		6.3	3.6			19.1	5.8	
Max		7.8	4.4			22.8	7.7	
n		11	3			8	8	

Pressley	PI(0)	Av., gf/tex	38.98	StdDev, gf/tex	2.76	CV, %	7.07
	(3.2)	Av., gf/tex	27.90	StdDev, gf/tex	2.74	CV, %	9.81

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	%	%	%	
35	6	27.8	1.10	12.6	0.50	45			7.5
93	4	28.7	1.13	(14.9)	(0.59)	(52)			
100	8	27.7	1.09	12.0	0.47	43		20.6	8.0
102	6	28.2	1.11	12.7	0.50	45			
131	6	28.5	1.12	13.2	0.52	46			
132	10	28.1	1.11	12.5	0.49	45			
143	2	27.5	1.08	12.1	0.48	44			
Average		28.07	1.105	12.52	0.493	44.8			
Median		28.10	1.106	12.55	0.494	44.9			
StdDev		0.44	0.017	0.45	0.018	1.1			
CV		1.57	1.573	3.56	3.557	2.3			
Min		27.5	1.08	12.0	0.47	43			
Max		28.7	1.13	13.2	0.52	46			
n		7	7	6	6	6	0	1	2

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	Keisokki				22.8	40.7	16.8
85-2	1	Keisokki				22.5	37.3	15.0
85-3	1	Keisokki				20.8	45.5	17.0
85-4	1	Keisokki				23.7	35.0	14.0

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	4	18.4	43.3	29.3	21.8	36.2	14.8
112	5	21.17	39.01	19.83	25.23	29.81	7.3
132	5	18.5	40.2	24.1	22.8	31.2	10.3
152	5	22.8	30.7	8.3	24.9	28.6	3.7

Maturity, Fineness *(further information see page "Multiple Devices")*					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		83			
70					1.90
79					1.78
85					1.82
85-2					1.90
85-3					1.77
85-4					1.83
112					1.94
129		62			
131		68			
177					7.978
193					1.89

IIC/SHIRLEY FM-TESTER *(further information see page "Multiple Devices")*				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
32	6	73.5	0.82	189
32-2	6	73.5	0.81	188
32-3	6	73.1	0.81	195
37		96.0	1.1	147
70	6	84.6	0.96	165
93	4	80.1	0.9	178
100	8	64.8	0.7	217
102	5	68.9	0.77	181
128	8	79.0	0.89	181
186	6	74.9	0.84	186
Average		76.84	0.86	182.6
Median		74.2	0.83	183.5
StdDev		8.76	0.111	18.4
CV		11.41	12.902	10.1
Min		64.8	0.70	147
Max		96.0	1.10	217
n		10	10	10

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
7	USTER			10	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	10	1	2	2
9	Premier	ART		6	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	1	1
15	USTER	900 SA		6	1	2	2
16	USTER	Spectrum	SN/T1512-11	12	1	2	2
19	USTER	1000	SN/T1512-11		1	2	2
25	USTER	1000		10	1	2	2
26	USTER	1000		10	1	2	2
27	USTER	900 A	ASTMD5867	6	1	2	2
28	Textechno	CCS-V5-3	ASTMD5867-05		3	6	
31	USTER	900		6	1	2	2
32	USTER	900 A	internal	1	4	10	4
32-2	USTER	900 A	internal	1	4	10	4
32-3	USTER	900 A	internal	1	4	10	4
38	USTER	1000		6	1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
44	USTER	Spectrum	internal	10	1	1	1
48	Premier	HFT	ASTMD5867-12	8	1	2	2
49	USTER	1000	ASTM1776		1	2	2
52	USTER	1000M700	ASTM	6	6	6	6
56	USTER	Spectrum I	HVI Test Method	5	1	2	2
58	USTER	1000	internal	10	1	2	2
60	USTER	1000M700	ASTM	6	1	2	2
60-2	USTER	1000	ASTM	6	1	2	2
61	USTER	900	ASTMD5867-05		1	2	2
62	Premier	ART 2	ASTMD5867	6	1	2	2
71	USTER		GB/T20392-06	6	1	2	2
71-2	USTER		GB/T20392-06	6	1	1	1
72	USTER	1000		10	2	2	2
75	USTER	Spectrum	SN/T1512-11	6	1	2	2
78	USTER	1000		6	1	2	2
79	USTER	900			1	2	2
83	USTER	Spectrum I	SN/T1512-11	6	1	2	2
90	USTER	1000	ASTMD5867	10	1	2	2
91	USTER	1000		6	1	2	2
93	USTER	900 A	ASTMD5867	6	1	2	2
96	Premier	HFT	GB/T20392-06	10	1	2	2
96-2	USTER	1000	GB/T20392-06	10	1	2	2
97	USTER	900 SA		6	1	2	2
98	USTER	1000	USDA. ASTM	12	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
100	Textechno		ASTMD5867-05	12	1	2	2
101	USTER	1000	ASTMD5687-12	6	1	2	2
102	USTER	900 B	USDA	6	6	6	4
102-2	USTER	1000M700	ASTMD5867	6	6	6	6
105	USTER	Spectrum	Manufacturer	6	1	2	2
106	Premier	ART		5	1	2	2
107	Premier	ART 2	ASTMD5867-05	6	1	2	2
108	USTER	1000	ASTMD5867-12	12	1	1	1
109	USTER	1000		10	1	2	2
110	USTER	1000	SN/T1512-11	10	1	2	2
111	USTER	1000	internal	6	1	2	2
112	USTER	1000	ASTMD5867	6	1	2	2
113	Premier	ART		6	1	2	2
114	Premier	ART 2		5	5	5	2
121	USTER	1000	SN/T1512-11		1	2	2
122	USTER	1000		5	1	2	2
123	USTER	1000	ASTMD5867-05	10	1	1	1
125	USTER	1000	ASTM	6	6	6	6
126	Premier	HFT	ASTM	6	1	2	
128	USTER	Spectrum I	ASTMD5687-12		1	2	2
129	USTER	900 SA	ASTMD5867	8	1	1	1
130	Premier	ART 2	USDA	6	1	2	2
131	USTER	Spectrum	USDA	6	1	2	2
132	Textechno	Fibrotest	ASTMD5867	1		10	
134	USTER	1000C	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
137	USTER	1000	ASTM	6	6	6	6
139	Premier	ART 2	ASTMD5867-05	12	1	1	2
140	USTER	1000M700		10	10	10	10
141	USTER	1000	Mode 4	12	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
154	USTER	900 A		10	1	2	2
160	USTER	Spectrum		5	5	5	0
162	USTER	900 A	HVICC	6	1	2	2
170	USTER	1000	Manufacturer	6	1	2	2
172	USTER	900	ASTMD5867-12	6	1	2	2
172-2	USTER	900	ASTMD5867-12	6	1	2	2
176	USTER	1000		10	1	2	2
179	USTER	1000	SN/T1512-11	6	1	2	2
183	USTER	1000	ASTMD5867-05	6	1	2	2
186	USTER	900		10	2	10	0
193	USTER	1000	GB/T20392-06	6	1	2	2
200	USTER	900 A		8	1	2	2
201	USTER	900		6	1	2	2
204	USTER	1000	GB/T20392-06	10	1	1	1
204-2	Premier	HFT	GB/T20392-06	5	1	3	1
206	USTER	900 B	GOST R53031-08	5	1	2	2
207	USTER	1000	ASTMD5867-12	10	1	2	2
207-2	USTER	1000	ASTMD5687-12	10	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
207-3	USTER	1000	ASTMD5687-12	10	1	2	2
208	USTER	1000	ASTMD5687-12	10	1	2	2
209	MAG	HVT Expert 1201	ASTMD5867-05		2	2	2
213	Premier	ART	internal	5	1	2	2
215	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
234	Premier	ART 2		6	1	1	2
242	USTER	Spectrum		6	1	2	2
242-2	USTER	1000		6	1	2	2
272	Premier	ART		5	1	1	2
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	ART 2	Manufacturer	4	4	4	4
295	Premier	HFT		4	1	2	2
300	Premier	ART	ASTM	6	1	2	2
315	Premier	HFT		8	1	1	
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, %
5	4.2		29.1		6.5
5-2	4.1		29.8		6.4
6	4.4		28.5		6.8
7	4.3		26.4		8.9
8	4.3		30.9		10.1
9	4.2		27.4		
10	4.2		29.6		
10-10	4.3		28.8		
10-2	4.3		30.8		
10-3	4.2		29.4		
10-4	4.3		28.5		
10-5	4.2		27.3		
10-6	4.3		28.3		
10-7	4.3		27.8		
10-8	4.4		30.3		
10-9	4.3		27.8		
12	4.2		28.2		7.7
13	4.2		28.0		6.5
15	4.3		29.1		8.5
16	4.2		26.3		6.8
19	4.3		28.1		6.7
25	4.2		28.7		7.8
26	4.3		28.4		8.1
27	4.4	20.5	26.1	(7.8)	8.0
28	4.3		26.3		8.2
31	(3.9)	20.6	28.7	5.6	6.1
32	4.1		27.0		7.0
32-2	4.0		29.4		7.5
32-3	4.1		28.3		7.4
38	4.2		29.9		9.2
41	4.2		28.4		(1.6)
43	4.3		28.5		6.1
44	4.3		27.4		8.4
48	4.3		27.2		5.9
49	4.2		28.3		7.9
52	4.3		28.5		7.4
56	4.1		28.2		5.9
58	4.2		27.6		7.7
60	4.2		29.4		6.6
60-2	4.2		28.3		(11.0)
61	4.1	21.7	28.6	6.4	6.2
62	4.2	19.8	28.3	6.6	6.4
71	4.3		27.9		7.5
71-2	4.1		28.4		7.5
72	4.3		27.4		
75	4.1		27.3		6.8
78	4.4		26.0		
79	4.1		31.1		5.9
83	4.2		26.3		7.2
90			28.6		7.8
91	4.3		27.2		7.7
93	4.2		28.4		7.2

HVI	*(table is divided into 3 pages)*			Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
96	4.2		27.5		6.7
96-2	4.2		28.4		7.7
97	4.1		29.2		7.6
98	4.3		28.9		
100	4.2		(24.0)		6.5
101	4.2		28.7		7.5
102	4.2		28.3		5.3
102-2	4.3		27.4		7.2
105	4.2		27.6		7.8
106	4.2				
107	4.1		26.2		6.5
108	4.2		28.2		5.4
109	4.3		29.3		
110	4.4		27.3		8.1
111	4.3		27.4		7.1
112	4.2		28.9		7.4
113	4.2		28.9		6.6
114	(3.9)		30.6		6.8
121	4.3		28.6		8.5
122	4.4		30.4		6.9
123	4.2	21.6	29.2	6.3	6.1
125	4.2		27.5		7.3
126	4.1		29.7		6.1
128	4.3		28.8		6.3
129	4.2	20.2	27.0	7.0	6.3
130	4.1	21.5	30.4	6.2	6.7
131	4.3		24.8		6.4
132			27.8		7.3
134	4.1		28.7		7.9
135	4.4		25.9		7.2
136	4.2		27.7		7.1
137	4.4		27.9		7.6
139	4.2		28.2		
140	4.1		28.9		7.7
141	4.1		28.5		8.7
143	4.2		27.6		8.2
143-2	4.3		27.9		6.8
144	4.2		29.1		
145	4.1		29.5		
148	4.2		27.6		8.0
154	4.1		29.4		9.4
160	4.3		26.8		8.5
162	4.2		27.9		5.2
170	4.3		28.4		8.5
172	4.1		27.4		6.5
172-2	4.3		30.3		6.4
176	4.3		28.1		6.4
179	4.3		28.4		8.3
183	4.2		27.4		8.1
186	4.2	20.2	28.2	6.3	6.1
193	4.3		28.0		9.0
200	4.2		27.9		
201	4.1		29.4		8.6
204	4.2		28.3		6.9
204-2	4.2		26.9		6.4

HVI	*(table is divided into 3 pages)*			Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
206	4.2		(34.5)		7.0
207	4.2		27.3		7.2
207-2	4.2		27.6		8.0
207-3	4.2		27.7		8.6
208	4.2		27.7		7.3
209	4.3		27.4		6.2
213	4.2	21.1		5.8	
215	4.2		28.4		5.2
234	4.1		29.3		6.7
242	4.2		26.8		6.9
242-2			28.5		8.8
272	4.2		31.2		8.2
287	4.1	20.4	25.6	5.9	6.7
288	4.2	20.4		5.7	
295	4.2	21.4		6.3	
300	4.1		29.1		6.7
315	4.1	20.3		6.2	
320	4.1		28.3		6.9
Average	4.22	20.74	28.24	6.19	7.24
Median	4.22	20.51	28.3	6.25	7.2
StdDev	0.08	0.63	1.17	0.4	0.97
CV	1.97	3.06	4.15	6.41	13.41
Min	4.0	19.8	24.8	5.6	5.2
Max	4.4	21.7	31.2	7.0	10.1
n	120	13	118	12	99

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
5				28.7	1.13	82.2
5-2				28.6	1.13	81.6
6				28.4	1.12	82.5
7				28.5	1.12	82.4
8				28.0	1.10	81.5
9				29.3	1.15	
10				29.5	1.16	82.7
10-10				29.0	1.14	82.1
10-2				(29.8)	(1.17)	(84.4)
10-3				29.3	1.16	82.2
10-4				28.9	1.14	82.1
10-5				28.3	1.11	82.4
10-6				28.8	1.13	82.7
10-7				28.6	1.13	83.2
10-8				29.2	1.15	83.4
10-9				29.3	1.15	82.1
12				28.1	1.10	82.2
13				27.8	1.09	80.8
15				28.4	1.12	81.8
16				28.3	1.12	81.9
19				28.0	1.10	81.0
25				28.2	1.11	81.6
26				28.1	1.11	81.3
27	27.1	1.07	44.7	28.3	1.11	82.1
28	27.9	1.10	46.7	28.4	1.12	81.0
31	27.5	1.08	44.0	(33.5)	(1.32)	(84.3)
32				27.8	1.09	81.4
32-2				27.8	1.09	82.5
32-3				28.3	1.11	82.4
38				28.8	1.13	82.8
41				27.1	1.07	80.1
43				28.4	1.12	81.9
44				27.7	1.09	81.4
48				28.3	1.11	81.6
49				28.3	1.11	81.8
52				28.4	1.12	81.9
56				28.4	1.12	82.2
58				28.5	1.12	81.8
60				28.4	1.12	81.7
60-2				28.5	1.12	81.7
61	29.0	1.14	46.0	(29.9)	(1.18)	(84.0)
62	27.7	1.09	47.0	28.0	1.10	82.0
71				28.4	1.12	81.8
71-2				28.3	1.11	81.7
72				28.2	1.11	81.3
75				27.8	1.09	80.0
78				27.2	1.07	
79				29.2	1.15	83.1
83				27.9	1.10	80.8
90				28.4	1.12	81.8
91				27.7	1.09	80.9
93				28.5	1.12	82.5

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
96				27.0	1.06	81.2
96-2				28.2	1.11	81.7
97				27.9	1.10	80.6
98				28.7	1.13	82.8
100				27.6	1.09	80.9
101				28.4	1.12	81.4
102				28.6	1.12	81.9
102-2				28.6	1.13	81.7
105				28.1	1.11	81.2
106				27.6	1.09	80.4
107				27.8	1.09	81.6
108				28.1	1.11	81.1
109				28.4	1.12	81.8
110				28.2	1.11	81.7
111				28.1	1.11	80.5
112				28.8	1.13	82.2
113				28.1	1.11	82.3
114				28.2	1.11	82.2
121				28.1	1.11	81.3
122				28.5	1.12	81.3
123	28.2	1.11	45.5	28.7	1.13	82.1
125				28.6	1.13	81.7
126				29.2	1.15	81.2
128				28.4	1.12	81.9
129	28.7	1.13	46.0	28.4	1.12	81.0
130	28.8	1.13	46.0	28.2	1.11	80.7
131				28.0	1.10	81.3
132				28.3	1.11	81.3
134				28.2	1.11	80.9
135				28.8	1.13	82.1
136				28.5	1.12	80.9
137				28.4	1.12	81.5
139				28.1	1.11	82.3
140				27.8	1.10	80.7
141				28.4	1.12	82.1
143				28.0	1.10	81.0
143-2				27.8	1.09	81.3
144				28.2	1.11	81.1
145				28.1	1.11	81.1
148				28.3	1.11	81.4
154				29.1	1.15	82.8
162				28.8	1.13	82.5
170				28.2	1.11	81.3
172				27.7	1.09	80.2
172-2				29.2	1.15	83.3
176				28.7	1.13	82.1
179				27.8	1.10	81.2
183				27.9	1.10	82.7
186	28.0	1.10	45.8	27.7	1.09	81.3
193				28.4	1.12	82.1

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
200				28.1	1.10	81.5
201				28.7	1.13	81.1
204				28.0	1.10	81.6
204-2				27.6	1.09	81.1
206				28.7	1.13	83.4
207				27.9	1.10	81.0
207-2				28.1	1.11	81.6
207-3				28.2	1.11	80.9
208				27.8	1.09	80.7
209				27.4	1.08	81.4
213	30.7	1.21	45.3			
215				28.2	1.11	81.9
234				28.1	1.11	81.5
242				27.5	1.08	81.3
242-2				28.2	1.11	81.5
272				28.4	1.12	81.6
287	28.4	1.12	47.1	28.5	1.12	81.9
288	29.5	1.16	47.9			
295	28.9	1.14	48.1			
300				28.4	1.12	81.7
315	28.2	1.11	48.9			
320				28.4	1.12	82.0
Average	28.47	1.121	46.36	28.28	1.113	81.67
Median	28.3	1.114	46.0	28.29	1.114	81.68
StdDev	0.91	0.036	1.35	0.47	0.018	0.69
CV	3.21	3.211	2.92	1.65	1.647	0.85
Min	27.1	1.07	44.0	27.0	1.06	80.0
Max	30.7	1.21	48.9	29.5	1.16	83.4
n	14	14	14	117	117	115

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
5	77	10.9	12-2	3	0.23	22
5-2	77	11.0	12-1	3	0.25	25
6	77	10.6	13	4	(0.52)	(92)
7	76	11.8	13-1		0.23	31
8	76	11.7	13-1	1	0.13	15
9	(64)	(12.8)	44-1			
10	77	11.2	13	2	0.28	27
10-10	76	11.1	13	3	0.38	35
10-2	77	11.3	13	2	0.35	32
10-3	77	11.4	13	2	0.26	27
10-4	77	11.1	13	2	0.34	30
10-5	77	11.1	13	2	0.24	35
10-6	76	11.0	13	2	0.3	27
10-7	76	11.1	13	2	0.34	31
10-8	76	11.2	13	2	0.32	35
10-9	76	11.2	13	2	0.31	31
12	76	10.8	12-2	2	0.24	18
13	76	10.5	22-1		0.1	8
15	77	11.1	12-1	2	0.2	17
16	75	11.5	1	2	0.24	16
19	77	11.0	12-2	2	0.29	23
25	77	10.8	12-2	3	0.29	26
26	78	10.8	12-1	3	0.26	25
27	75	11.3	23-1	1	0.3	22
28					0.38	11
31	75	10.4	22-1	1	0.12	10
32	(82)	11.3	11-3			
32-2	(82)	10.8	11-3			
32-3	74	11.2	23-1			
38	77	10.9	12-2	2	0.25	30
41	76	11.3	12-1		0.13	13
43	76	10.9	22-1		0.28	26
44	77	10.8	12-2		0.16	15
48	76	10.9	12-2			
49	76	10.9	22-1	3	0.35	31
52	77	11.3	12-1	3	0.29	29
56	(74)	11.2	23-2	1	0.13	14
58	77	11.2	12-1	2	0.21	29
60	77	10.5	22-1	2	0.26	25
60-2	77	10.3	22-1	2	0.22	30
61	(66)	11.4	43-3			
62	78	10.5	12-2		0.18	3
71	77	11.2	12-1		0.25	27
71-2	77	10.8	12-2			
72	77	11.1	12-1		0.19	22
75	77	10.9	12-1	10	0.12	1
78	77	11.1	12-1		0.26	29
79	76	10.9	22-1	1	0.11	15
83	78	11.1	12-1		0.28	25
90	78	11.4	12-1	2	0.2	20
91	77	11.1	12-1	2	0.2	21
93	(71)	10.9	23-3	4	(0.50)	38

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
96	(73)	10.6				
96-2	77	10.9				
98	77	10.8			0.22	21
100	(70)	10.1	43-1		(2.93)	25
101	77	10.7	12-2	3	0.34	36
102	77	10.9	12-1	3	0.35	28
102-2	78	11.1	12-1	2	0.24	33
105	78	10.9	12	2	0.26	30
106	76	11.4	13-2			
107	74	11.8	13-2			
108	77	10.9	12-2	2	0.19	26
109	76	11.7	13-1		0.38	36
110	77	11.2	12-1	3	0.3	37
111	77	10.6			0.26	25
112	77	11.1	12-7	3	0.23	35
113	77	10.5	12-2			
114	76	11.1	12-2			
121	77	11.4	12-1		0.23	27
122	74	11.3	23-1	2	0.26	17
123	77	10.9	12-2	1	0.17	16
125	78	11.6	12-1	3	0.35	34
128	77	11.2			0.34	34
129	76	10.7	22-2			
130	77	10.9	12-2			
131	75	11.5				
134	77	10.8	22-1	1	0.09	14
135	76	10.9	12	1	0.24	24
136	75	11.4	13	2	0.27	27
137	77	11.4	12-1	1	0.16	18
139	78	10.7	12-1	2	0.18	21
140	76	11.3	12-2	3	0.21	21
141	76	11.0	12-2		0.24	23
143	77	11.5	12-1	1	0.09	6
143-2	76	10.4	22-1	2	0.18	15
144	77	10.7	12	1	0.1	7
145	75	10.8	22-1			
148	77	11.2	12-1	2	0.25	26
154	76	10.9	12-2			
162	75	11.2				
170	77	11.1	12-1	2	0.23	26
172	77	10.9		1	0.1	9
172-2	78	11.9		1	0.12	8
176	78	10.8	12-1		0.34	30
179	77	11.0	12-1	3	0.31	36
183	77	11.3	12-1	2	0.28	26
193	77	11.1	13	2	0.24	25
200	77	11.1	12-2			
201	76	11.3	12-2	1	0.12	6
204	77	11.0	12-1	2	0.19	24
204-2	75	11.1	1			

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
206	75	10.6	22-1			
207	77	11.0	12-1	2	(25.00)	0
207-2	77	10.8	12-2	1	0.17	20
207-3	77	10.8	12-2	3	0.32	20
208	77	10.7	12-2	2	0.21	19
209	77	10.9	12-1			
213	75	10.7	22-1			
215	77	11.2	12-1	1		
234	(72)	10.9				
242	77	10.4	12-1	1	0.12	12
242-2	78	11.0	12-1	3	0.36	35
272	(81)	11.1	11-3			
287	76	10.8	12-2			
288	75	11.7	13-2			
295	76	10.5	22-1			
300	79	11.1	12-1			
320	(71)	10.8	33-2			
Average	76.5	11.02			0.237	23.0
Median	76.7	11.0			0.24	25.0
StdDev	0.9	0.33			0.078	9.1
CV	1.2	3.0			32.951	39.4
Min	74	10.1			0.09	0
Max	79	11.9			0.38	38
n	107	117			83	86

HVI *(table is divided into 3 pages)*			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
5		9.4		0.87
5-2		9.8		0.86
6		10.7		0.86
7		8.1		
8		(13.5)		0.88
9		8.5		
10		(14.0)	87	
10-10		(18.5)	84	
10-2		(16.7)	87	
10-3		(15.8)	86	
10-4		(21.4)	86	
10-5		(20.2)	85	
10-6		(18.1)	87	
10-7		(20.2)	88	
10-8		(18.1)	88	
10-9		11.6	85	
12		11.2		0.87
13		10.0		0.87
15		6.8		0.84
16		9.8		0.86
19		10.0		0.86
25		11.0		0.85
26		11.3		0.85
27	9.3	9.4		0.85
28		8.1	77	0.84
32		11.1		
32-2		10.6		
32-3		10.1		
38		9.4		
41		9.2		0.87
43		8.9		
44		9.6		0.91
48		8.8		
49		7.8		0.85
52		8.7		0.85
56		11.0		
58		10.0		0.85
60		10.0		0.86
60-2		10.5		0.83
61	8.2	7.1		
62	6.8	7.1		(1.03)
71		8.3		0.84
71-2		(13.9)		0.86
72		9.9		
75		10.2		0.85
78		10.0		0.85
90		9.3		0.85
91		10.4		0.85
93		7.8		
96		11.2		
96-2		8.7		
97		9.5		0.81

HVI *(table is divided into 3 pages)*				Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
100		7.4	(65)	(0.70)
101		10.4		0.85
102-2		8.3		0.85
105		10.3		
106		10.4		0.82
107		9.8		0.85
108		8.8		0.86
109		9.5		0.85
110		9.2		0.85
111		10.8		0.85
112		9.0		0.85
113		8.7		0.82
114		9.1		0.88
121		9.9		0.84
122		10.1		0.86
123	10.5	12.3		0.86
125		9.3		0.85
126		12.3		
128		9.8	77	0.87
129	10.1	10.1		
130	6.4	10.3		0.87
131				0.85
132		10.2		
134		9.9		0.85
135		8.4		
136		9.9		0.85
137		9.7		0.85
139		9.0		
140		9.2		0.85
141		9.3		0.84
143		9.8		0.9
143-2		10.4		0.83
144		10.2		0.87
145		10.0		0.87
148		9.9		0.85
154		7.2		
160		10.9		0.9
162		7.3		
170		11.3		0.85
172		8.5		0.86
172-2		6.0		0.88
176		7.8		0.86
179		9.7		0.85
183		10.2		0.85
186	6.6	7.1		
193		9.7		0.84
200		9.3		
201		9.6		0.81
204		8.8		0.85
204-2		9.9		0.82

HVI *(table is divided into 3 pages)*				Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
207		9.9		0.85
207-2		8.9		0.85
207-3		9.2		0.84
208		10.0		0.85
209		9.5		0.82
213	4.0			
215		9.5		0.81
234		9.6		
242		8.1		0.87
242-2		11.7		0.87
272		8.5		0.83
288	8.0			
295	4.4			0.83
300		9.4		0.87
315	9.2			0.82
320		6.1		0.8
Average	7.59	9.47	84.7	0.851
Median	8.0	9.65	86.0	0.85
StdDev	2.17	1.23	3.9	0.02
CV	28.58	12.97	4.6	2.332
Min	4.0	6.0	77	0.8
Max	10.5	12.3	88	0.91
n	11	102	12	79

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
5	USTER	Neptester		5
7	USTER			10
21	USTER	1190064		6
22	USTER	Autojet		10
27	USTER			
28	Textechno	CCS-V5	ASTMD5866-05	6
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			5
39	USTER			
41	USTER			5
43	USTER	AFIS Pro		5
44	USTER	AFIS Pro	internal	10
51	USTER	AFIS Pro	ISO	5
58	USTER	Autojet	internal	10
62	USTER	908085	ASTMD5866-95	6
75	USTER		ASTMD5866-12	5
90	USTER	4.22	Manufacturer	10
91	USTER	AFIS Pro 2		10
91-2	USTER	MN100		10
96	USTER	AFIS Pro 2	ASTMD5866-12	10
100	Textechno	CCS-V5.2	ASTMD5866-05	8
101	USTER	AFIS Pro		5
102	USTER			3
109	USTER			
111	USTER		internal	10
111-2	USTER		internal	10
112	USTER	AFIS Pro	ASTMD5866	3
122	USTER	506198		2
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	ASTM	4
129	USTER	AFIS Pro	ASTMD5866-12	5
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	AFIS Pro 2		10
148-2	USTER	AFIS Pro		10
148-3	USTER	Neptester 720		
154	USTER			10
170	USTER	AFIS Pro	Manufacturer	5
172	USTER			5
172-2	USTER			5
176	USTER	AFIS Pro		10
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER	AFIS Pro	Manufacturer	10
186-2	USTER	Afis old	Manufacturer	10
193	USTER	AFIS Pro	ASTMD5866-12	6
207	USTER	AFIS Pro	ASTMD5866-12	10
208	USTER	AFIS Pro	ASTMD5866-12	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	%
7	16.5	0.65	61.0	36.1	1.42	33.1	1.30	(39.9)
21	18.8	0.74	45.0	33.9	1.33	32.0	1.26	24.7
22	19.1	0.75	51.0	35.6	1.40	33.5	1.32	28.7
31	21.2	0.83		36.9	1.45	34.6	1.36	24.2
32	20.1	0.79	48.6			34.0	1.34	23.1
32-2	20.0	0.79	49.2			33.9	1.33	23.8
32-3	20.3	0.80	48.3			34.1	1.34	23.0
38	21.4	0.84	48.3	37.8	1.49	35.6	1.40	21.7
39	18.0	0.71	50.2	34.3	1.35	32.1	1.26	29.2
41	19.1	0.75	45.3	35.2	1.39	32.8	1.29	25.2
43	20.3	0.80	48.5			34.5	1.36	24.9
44	18.5	0.73	54.1			33.4	1.31	28.9
51	19.5	0.77	48.9			33.4	1.31	24.1
58	19.1	0.75	50.0	35.8	1.41	33.6	1.32	28.3
62	18.9	0.74				33.7	1.33	27.8
75	16.8	0.66	64.6			33.4	1.31	37.7
90	20.2	0.80	49.2	36.5	1.44	34.3	1.35	24.3
91	18.2	0.72	54.3			33.1	1.30	29.9
96	18.5	0.73				33.3	1.31	30.3
101	19.7	0.78	49.1			33.7	1.33	24.4
102	21.0	0.83	45.6	37.1	1.46	34.7	1.37	21.4
111	18.5	0.73	52.9			33.3	1.31	30.5
112	19.8	0.78	49.0			34.3	1.35	27.0
122	20.3	0.80				34.5	1.36	22.3
123	19.8	0.78	47.7			34.0	1.34	26.0
123-2	18.2	0.72	54.7			33.8	1.33	31.0
123-3	18.0	0.71	52.8			32.6	1.28	30.0
129	19.3	0.76	56.7			35.9	1.41	30.5
134	19.8	0.78				33.8	1.33	25.6
136	19.1	0.75	34.5			33.3	1.31	28.2
139	18.8	0.74				33.8	1.33	30.0
140						34.0	1.34	26.3
142	19.2	0.76	47.5	35.8	1.41	33.4	1.31	25.1
143	17.8	0.70	59.2	35.7	1.41	33.4	1.31	34.6
144	19.4	0.76				33.8	1.33	26.8
145	20.3	0.80	48.0			34.0	1.34	23.7
148	18.7	0.74	52.1			33.2	1.31	27.7
148-2	19.3	0.76	49.7			33.7	1.33	26.0
154	20.9	0.82	47.5	36.4	1.43	34.5	1.36	22.5
170	19.7	0.78				34.2	1.35	24.5
172	20.6	0.81	47.6	37.3	1.47	35.1	1.38	24.4
172-2	22.4	0.88	42.3	36.1	1.42	(38.4)	(1.51)	17.9
176	19.6	0.77	50.0			34.0	1.34	26.6
183	18.3	0.72	56.9			33.8	1.33	32.7
186	19.4	0.76	49.9			34.0	1.34	25.4
186-2	20.2	0.80	49.0	36.9	1.45	34.6	1.36	25.6

AFIS L *(table is divided into 2 pages)*								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
193	20.7	0.81	47.8			33.8	1.33	24.9
207	20.1	0.79	48.2			34.2	1.35	22.5
208	20.4	0.80	45.8			34.4	1.35	21.7
272	19.8	0.78	44.9	35.3	1.39	33.0	1.30	21.9
Average	19.46	0.766	49.9	36.04	1.419	33.82	1.331	26.28
Median	19.5	0.768	49.0	36.07	1.42	33.78	1.33	25.6
StdDev	1.13	0.045	5.13	1.03	0.041	0.75	0.029	3.7
CV	5.82	5.818	10.27	2.86	2.863	2.2	2.205	14.08
Min	16.5	0.65	34.5	33.9	1.33	32.0	1.26	17.9
Max	22.4	0.88	64.6	37.8	1.49	35.9	1.41	37.7
n	49	49	41	17	17	49	49	49

AFIS L	*(table is divided into 2 pages)*					Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
7	22.6	0.89	(41.5)	29.0	1.14	(15.8)
21	22.6	0.89	33.2	27.8	1.09	10.2
22	23.9	0.94	35.2	29.5	1.16	10.3
28	23.3	0.92		28.1	1.11	7.7
31	(33.6)	(1.32)		30.5	1.20	8.6
32	24.9	0.98	32.6	30.1	1.19	7.1
32-2	24.8	0.98	33.1	30.1	1.19	7.4
32-3	25.0	0.98	32.6	30.2	1.19	7.1
39	22.5	0.89	35.1	27.9	1.10	11.3
41	23.1	0.91	34.8	28.5	1.12	10.7
43	24.9	0.98	34.5	30.5	1.20	8.9
44	23.9	0.94	35.1	29.5	1.16	9.2
51	(19.3)	(0.76)	33.4	29.5	1.16	7.9
58	23.8	0.94	35.0	29.6	1.17	10.6
62	24.2	0.95		29.9	1.18	8.9
75	23.8	0.94	39.0	29.7	1.17	11.5
90	25.0	0.98	32.7	30.3	1.19	7.6
91	23.6	0.93	35.9	29.2	1.15	10.0
96	23.9	0.94		29.5	1.16	
100	22.5	0.88		30.3	1.19	(19.5)
101	24.4	0.96	33.9	29.8	1.17	8.0
102	25.4	1.00	32.6	30.6	1.20	7.3
111	23.6	0.93	35.5	29.2	1.15	10.8
112	24.4	0.96	36.0	30.0	1.18	10.1
122	25.0	0.98	34.1	30.3	1.19	7.0
123	24.2	0.95	35.0	29.8	1.17	10.0
123-2	23.6	0.93	37.3	29.7	1.17	11.0
123-3	23.1	0.91	36.7	28.7	1.13	10.9
129	25.4	1.00	36.0	32.0	1.26	
134	24.4	0.96		29.7	1.17	9.2
136	23.9	0.94	(51.0)	29.6	1.17	9.9
139	24.1	0.95		30.0	1.18	10.7
140				30.0	1.18	8.7
142	23.5	0.93	34.3	29.0	1.14	9.6
143	24.0	0.94	36.6	29.8	1.17	11.2
144	24.3	0.96		29.7	1.17	9.3
145	24.9	0.98	31.7	30.2	1.19	7.4
148	23.7	0.93	35.3	29.3	1.15	9.3
148-2	24.1	0.95	35.2	29.6	1.17	9.1
154	25.7	1.01	30.6	30.7	1.21	6.6
170	24.3	0.96		30.0	1.18	8.9
172	25.1	0.99	33.9	31.0	1.22	8.7
172-2	26.4	1.04	31.4	31.8	1.25	6.1
176	24.9	0.98	34.3	30.2	1.19	9.2
183	24.1	0.95	37.2	30.0	1.18	11.1
186	24.3	0.96	34.3	29.9	1.18	8.5

AFIS L *(table is divided into 2 pages)*						Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
186-2	25.1	0.99	33.7	30.5	1.20	8.7
193	24.4	0.96	33.7	30.0	1.18	8.8
207	24.8	0.98	33.2	30.1	1.19	
208	24.7	0.97	33.8	30.2	1.19	
272	23.6	0.93	32.9	29.0	1.14	8.0
Average	24.2	0.953	34.39	29.8	1.173	9.09
Median	24.2	0.953	34.3	29.9	1.177	9.1
StdDev	0.85	0.034	1.73	0.8	0.031	1.42
CV	3.52	3.517	5.02	2.68	2.679	15.58
Min	22.5	0.88	30.6	27.8	1.09	6.1
Max	26.4	1.04	39.0	32.0	1.26	11.5
n	48	48	39	51	51	45

AFIS D / M					Diameter, Maturity
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio
22			159	9.8	0.8
28			(191)		0.84
31			158	8.5	0.83
32			160	10.5	0.81
32-2			158	10.7	0.81
32-3			162	9.9	0.82
38			151	6.5	0.83
41	13.7				
43			163	9.0	0.85
44			163	8.5	0.86
51			153	7.9	0.8
58			162	8.2	0.86
62			158	7.1	0.84
75			165	8.6	0.86
90			159	6.9	0.85
91			158	10.0	0.83
96			156	8.4	0.84
100			(219)		
101			160	8.8	0.85
102			158	11.1	0.81
111			160	8.5	0.85
112			171	7.8	0.89
122			160	7.9	0.84
123			164	8.5	0.86
123-2			162	11.4	0.83
123-3			163	8.5	0.87
134			157	7.9	0.84
136			159	8.4	0.84
139			163	8.2	0.85
140			158	9.1	0.83
143			159	7.6	0.84
144			158	7.6	0.87
145			150	7.3	0.81
148			157	10.0	0.82
148-2			167	7.1	0.88
154			146	14.0	0.77
170			172	7.9	0.88
172			162	7.0	0.85
172-2			159	6.6	0.87
176			147	13.8	0.75
183			163	8.9	0.86
186			153	10.2	0.79
186-2			150	11.0	0.76
193			163	8.2	0.86
207			157	12.1	(0.50)
208			161	9.7	0.83
272	12.2				
Average			159.2	8.97	0.836
Median			159.0	8.5	0.84
StdDev			5.4	1.74	0.031
CV			3.4	19.4	3.724
Min			146	6.5	0.75
Max			172	14.0	0.89
n	2	0	43	43	43

AFIS T				Trash
Lab.	Total Trash		Dust	V. F. M.
	Mean Diameter µm	Cnt/g	Cnt/g	%
21		70	(962)	1.65
22	323	395	329	1.3
31		407	360	0.86
32	311	339	291	1.06
32-2	319	383	324	1.24
32-3	301	334	292	0.94
43	341	389	329	1.35
51	317	334	286	0.91
58	339	376	317	1.31
62	306	345	296	0.97
90	342	369	307	1.36
91	348	276	226	0.97
100		460	210	
101	335	337	287	1.09
111	314	328	279	0.97
112	304	323	311	1.04
129	309	336	285	0.89
134	303	357	305	0.85
136	291	557	493	1.59
140	333	581	248	1.05
142	279	477	420	1.0
143	311	372	321	1.19
148	349	374	309	1.52
148-2	346	315	257	1.13
154	275	488	428	1.19
176	296	471	414	1.12
183	310	62	330	1.15
186	300	442	383	1.24
186-2	307	496	424	1.29
193	318	334	284	1.22
207		290	243	0.89
208		352	296	1.09
272	303	417	361	1.32
Average	315.4	369.3	320.2	1.148
Median	311.0	369.0	308.0	1.125
StdDev	20.1	106.7	63.4	0.209
CV	6.4	28.9	19.8	18.203
Min	275	62	210	0.85
Max	349	581	493	1.65
n	28	33	32	32

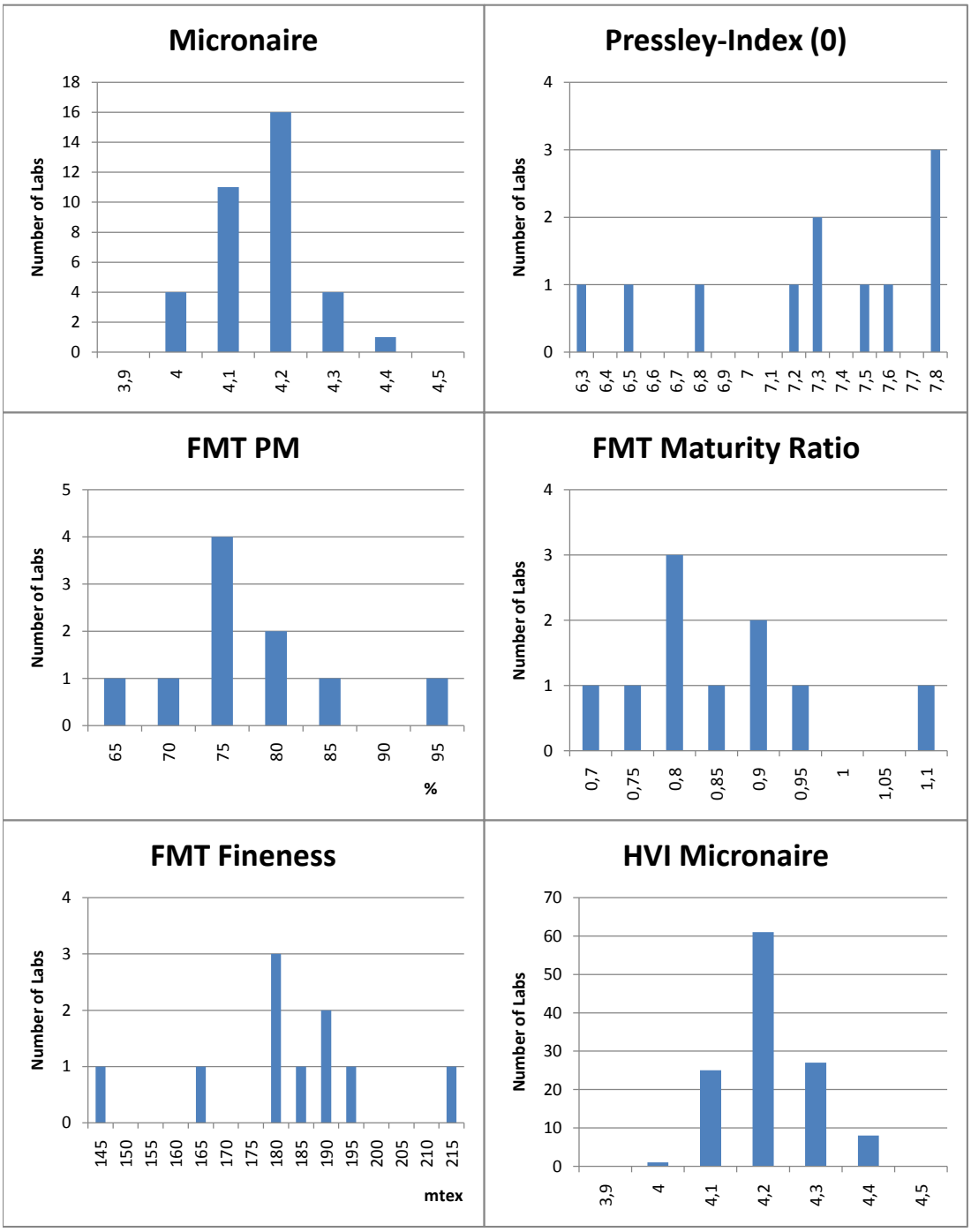
AFIS N *(table is divided into 2 pages)*					Neps
Lab.	Total Neps		SCN		
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g	
5		269			
7	(784)	(177)			
21	(1032)	(726)			
22	726	320	1165	15	
27		261			
31	673	278	1044	9	
32	715	297	1008	18	
32-2	706	282	955	21	
32-3	707	269	1044	18	
38	717	233			
39	654	(198)			
41	670	286			
43	729	269	1152	24	
44	725	328	1190	30	
51	699	325	1250	16	
58	694	290	786	8	
62	691	283	1150	11	
75	697	291	1274	11	
90	(903)	320	1103	18	
91	719	329	1254	33	
91-2	694	292			
96	688	288	1093	16	
100		310		5	
101	707	292	1125	22	
109	673	319			
111	687	283	1063	16	
111-2	678	235			
112	698	278	1046	5	
122	675	258	1358	15	
123	687	335	1037	23	
123-2	699	313	935	26	
123-3	701	333	1105	27	
128		290			
129	733	289	1255	34	
134	687	274	1231	18	
136	685	337	1309	17	
139	696	309	1059	15	
140	847	290	1146	14	
142	664	273			
143	689	292	1152	16	
144	884	304	1188	15	
145	751	323	1366	28	
148	693	322	1068	14	
148-2	709	267	968	16	
148-3		252			
154	747	258	1314	38	
170	683	284	1018	10	
172	703	311	1036	19	
172-2	710	260	1245	13	
176	720	258	1092	21	
183	706	310	1136	14	
186	724	334	1045	31	

AFIS N *(table is divided into 2 pages)*					Neps
Lab.	Total Neps		SCN		
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g	
186-2	716	326	1034	21	
193	696	296	1077	22	
200		290		13	
207	718	272	1191	22	
208	711	283	1203	17	
272	684	296			
Average	707.4	292.1	1125.5	18.5	
Median	699.0	290.0	1115.0	17.0	
StdDev	38.8	25.9	120.8	7.5	
CV	5.5	8.9	10.7	40.3	
Min	654	233	786	5	
Max	884	337	1366	38	
n	49	55	42	44	

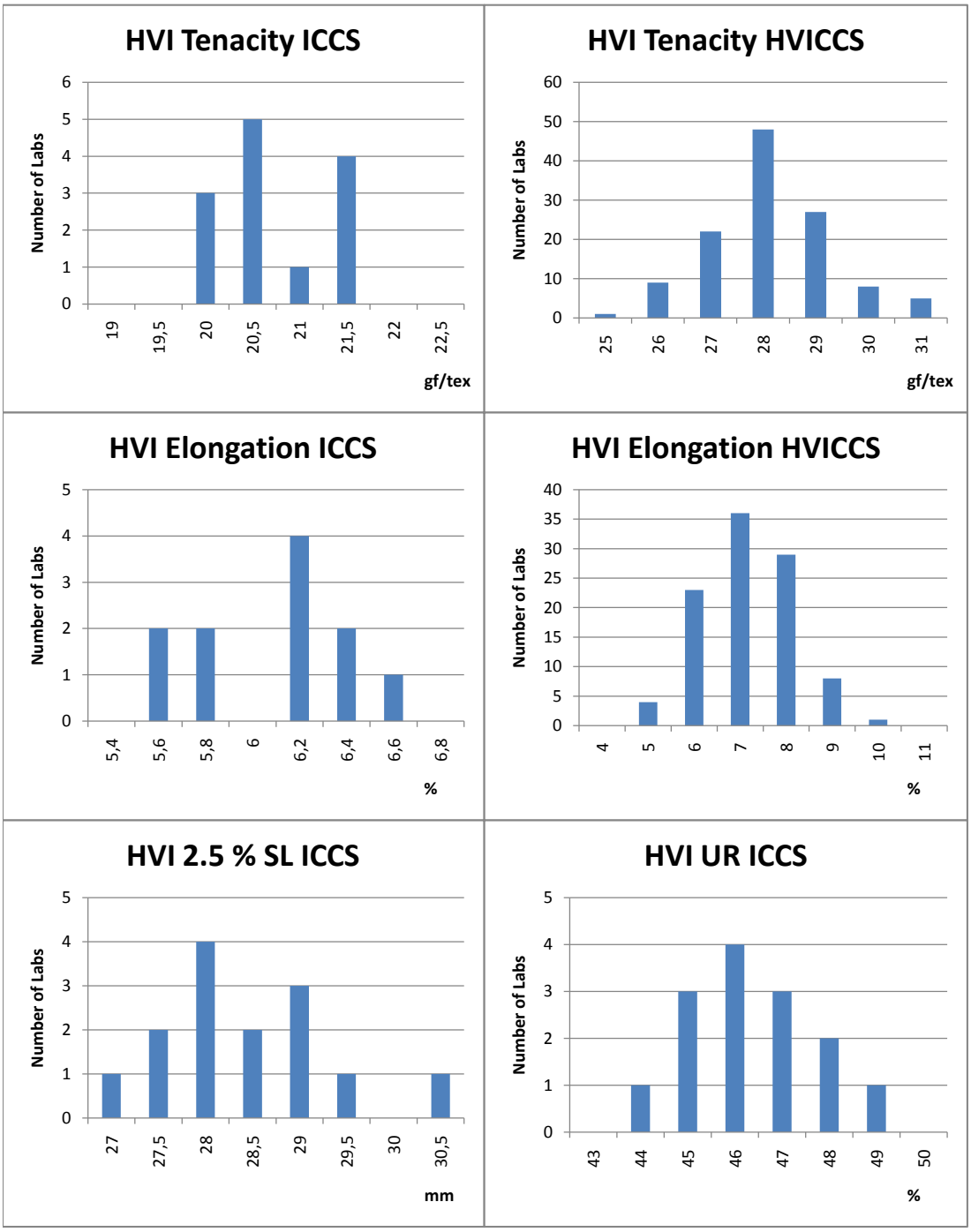
aQura *(further information see page "Multiple Devices")*							Length, Neps
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
114	5	29.9		25.3	12.2	272	28
127	4	29.3	16.5	31.1	15.8	321	28
130	4	30.6		28.0	12.0	299	41
234	4	29.8		22.9	10.5	479	60
300	4	29.1		28.5	13.6	309	60
Average		29.76		27.16	12.82	336.0	43.4
Median		29.8		28.0	12.2	309.0	41.0
StdDev		0.58		3.15	2.0	82.0	16.1
CV		1.96		11.59	15.57	24.4	37.0
Min		29.1		22.9	10.5	272	28
Max		30.6		31.1	15.8	479	60
n		5	1	5	5	5	5

Multiple Devices		*(information not provided in the respective table)*			General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
32	FMT		WIRA		6
32-2	FMT		WIRA		6
32-3	FMT		WIRA		6
35	DigitalFibrograph	USTER	730		6
37	FMT				
56	Causticaire		Micronaire	JIS	2
58	ALMeter		AL 101	internal	4
70	GravFineness			ISO 1973-95	5
70	FMT	SDL		ASTMD3818-92	6
79	GravFineness			RSTUz620-94	
85	CombSorter		Keisokki	UNI10170-94	1
85	GravFineness			UNIENISO1973-88	10
85-2	CombSorter		Keisokki	UNI10170-94	1
85-2	GravFineness			UNIENISO1973-88	10
85-3	CombSorter		Keisokki	UNI10170-94	1
85-3	GravFineness			UNIENISO1973-88	10
85-4	CombSorter		Keisokki	UNI10170-94	1
85-4	GravFineness			UNIENISO1973-88	10
93	FMT		WIRA	ISO	4
93	DigitalFibrograph			ASTMD1447	4
100	FMT		WIRA	ASTMD3813-92	8
100	DigitalFibrograph		Fibrotest	ASTMD1447-07-12	8
102	DigitalFibrograph		530	ICCS	6
102	FMT		Micromat	ICCS	5
112	ALMeter				5
112	GravFineness				3
114	aQura	Premier			5
127	aQura	Premier			4
128	FMT		Micromat	ASTM	8
129	Causticaire		Microscope	IS 236	4
130	aQura	Premier			4
131	DigitalFibrograph		530	ASTM	6
131	Causticaire		Fibroscope	British	
132	DigitalFibrograph		Fibrotest	ASTMD1447	10
132	ALMeter	Uster	AL100	DIN 53806	5
143	DigitalFibrograph	USTER	330	ABNTNBR13154-94	2
152	ALMeter				5
177	GravFineness			ASTMD1577-90	3
186	FMT	SDL		USDA	6
193	GravFineness			GB/T6100-07	2
234	aQura	Premier			4
300	aQura	Premier		ASTM	4

Graphics of selected round test data



Graphics of selected round test data



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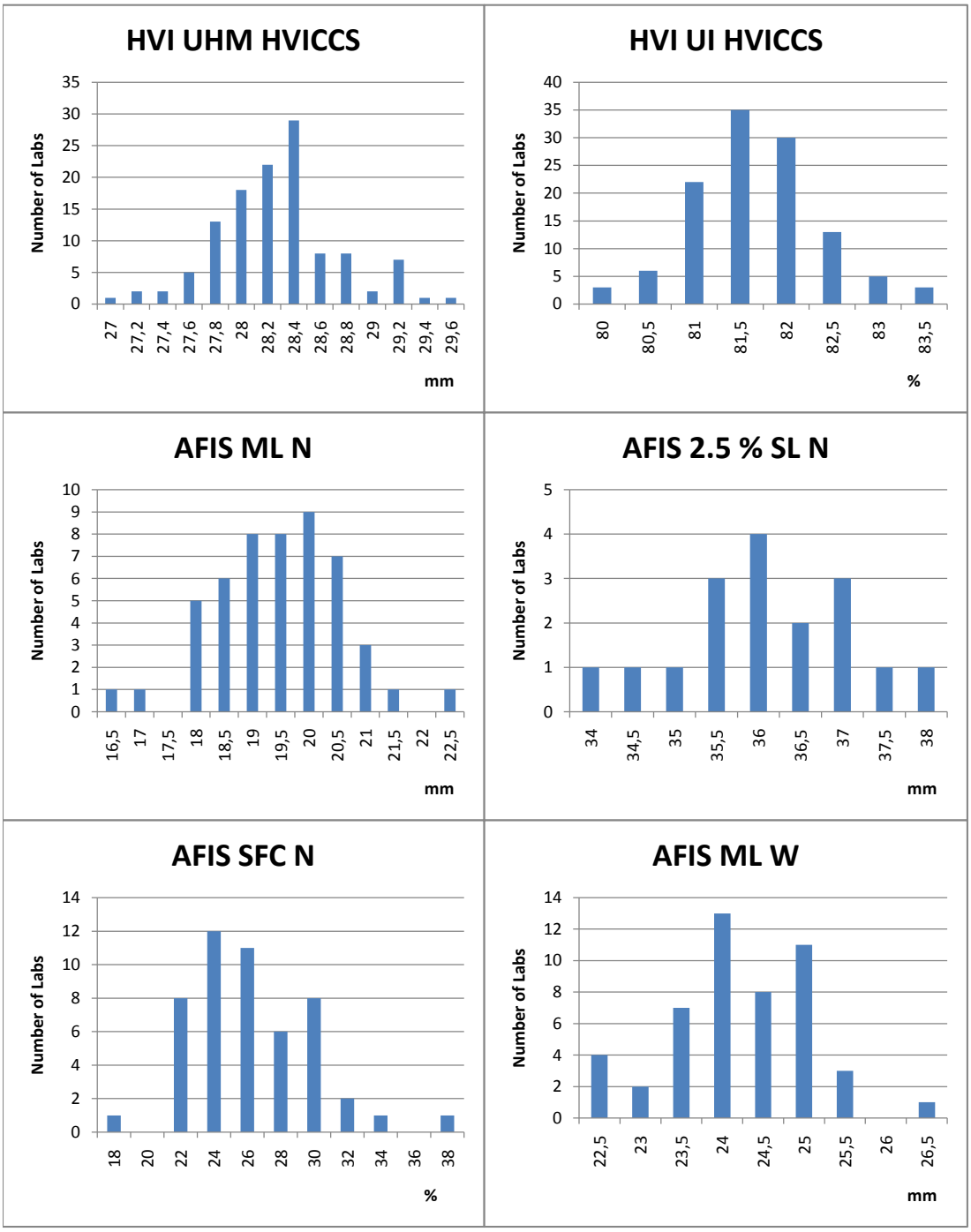
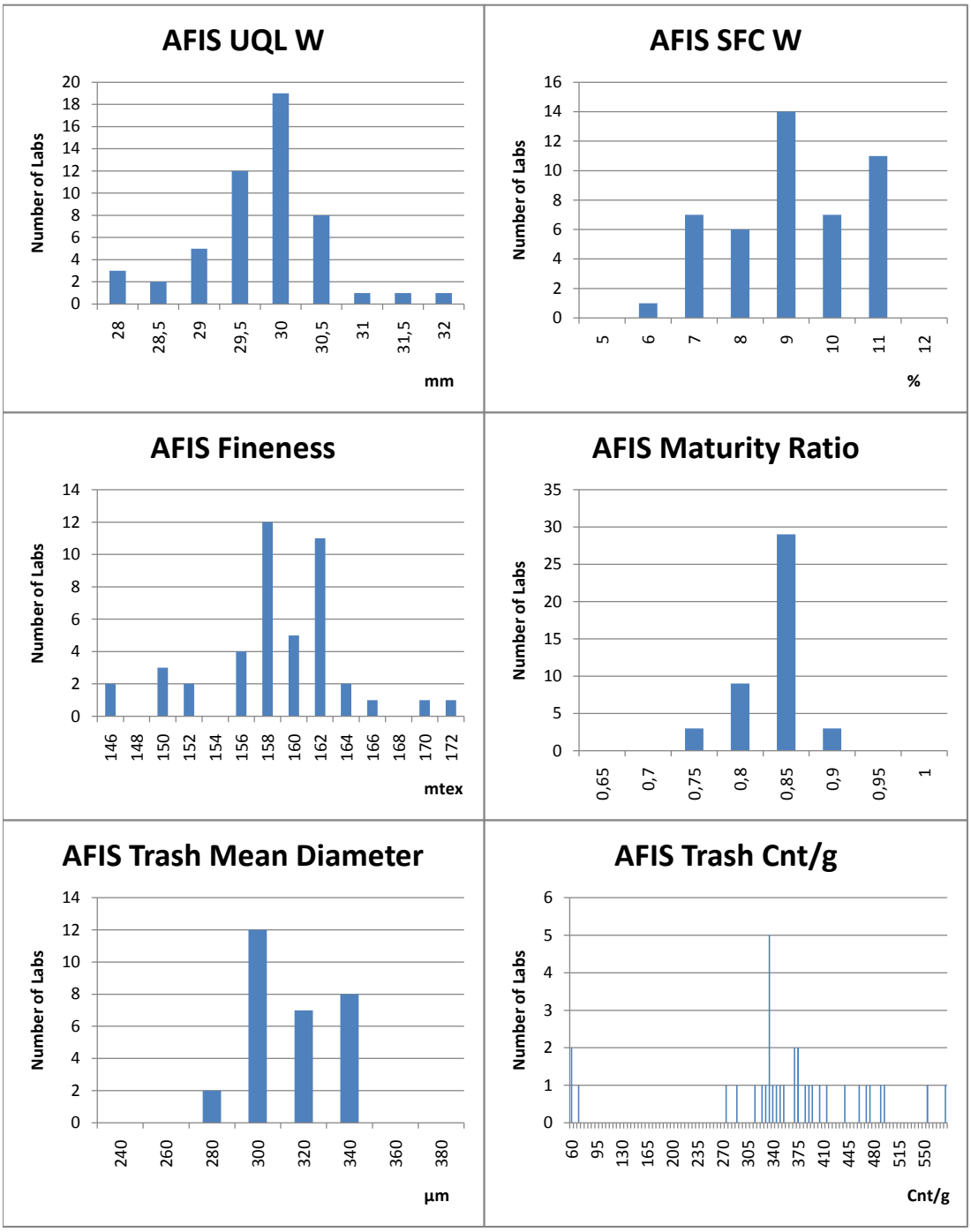


Graphics of selected round test data



Graphics of selected round test data