



ICA Bremen
The Global Centre for Cotton Testing and Research

ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollbörse
carried out by Bremen Fibre Institute (FIBRE)

Bremen, 20.05.2015

Evaluation of the Test Results 2015 / 1

Tested Cotton:
Cotton Number:

Mali
RM 39

Number of Laboratories: **131**

Argentina	1	Mozambique	-
Australia	1	The Netherlands	1
Bangladesh	1	Pakistan	4
Brazil	1	Poland	2
China, PR	17	Russia	2
Czech Republic	4	Serbia	1
Egypt	3	Slovenia	2
France	1	South Africa	-
Germany	12	Spain	3
Greece	7	Sudan	1
Hungary	1	Switzerland	3
India	39	Taiwan	1
Iran	1	Tanzania	-
Israel	1	Thailand	3
Italy	-	Turkey	3
Japan	2	Uganda	-
Kazakhstan	1	United Kingdom	-
Korea, R	1	United States	6
Latvia	1	Uzbekistan	2
Mali	-	Vietnam, SR	2
Mauritius, Rep of	-	Zimbabwe	-

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

A joint venture between



Supported by



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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: **Mali (RM 39)**

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 6 different bags with the following results:

HVI HVICCS	SD between bags (based on 10 tests per bag)	SD between single tests (based on 6 times 10 tests)
Mic	0,032	0,044
Strength, g/tex	0,353	0,974
Length, UHM, inch	0,0048	0,0133
Length, UHM, mm	0,122	0,338

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:

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

- 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		3.7		
20		4.0		
22	3	4.2	Fibronaire	
29	4	4.0	Sheffield	ISO 2403
35	3	4.0	775	
37		3.9		
56	2	4.0	Fibronaire	JIS
67	4	4.1	Fibronaire	
70	6	4.1	MK.1	ASTMD3818-92
76	3	4.0	RM 1070	
77		4.0		
79		4.2	Sheffield	ASTMD1448
100	6	4.3	675	ASTMD3818-92
102	3	4.1	Fibronaire	ICCS
112	2	4.3	Fibronaire	ASTMD1448
115	4	4.2	Kaisokki	ASTM
116	4	(3.6)	STATEX	
128		4.2	Fibronaire	ASTM
129	4	4.2	Sheffield	BS 3181
131	6	4.1		ASTM
132	3	4.2	775	DIN 53941
132-2	3	4.1	WIRA	ASTMD1448
136	4	3.9	675	internal
142	3	4.1	80400	ISO
152	3	4.2		
155		4.4	275	DIN 53941
162	6	4.0	WIRA	
167	2	4.1	275	USDA
168		4.2		
169	3	4.1	Sheffield	
177	3	3.9	DPM 60	DIN 53941
183	3	3.9	Fibronaire	ASTMD1448
186	6	4.1	FMT	USDA
193	2	4.0	Y145	GB/T6498-08
201	3	4.1	275	
Average		4.08		
Median		4.1		
StdDev		0.14		
CV		3.37		
Min		3.7		
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	10	8.2		ISO 3060				
35					6	22.3	5.4	
46	10	9.6	8.3	ISO 3060				
56	5	8.3		JIS				
76	5	8.4						
79		9.1		ASTMD1445				
102					5	23.7	4.8	ICCS
112					3	20.3	5.0	ASTM 1445
116					10	21.5	6.7	
128		6.1	4.1	ASTM		23.2	4.6	ASTM
131	6	9.2	4.3	ASTM	6	23.5	5.8	ASTM
136	4		(88.6)	internal				
152	6	8.8						
162	6	8.5		TPPSI	6	22.4	5.6	
177	4	7.3		DIN 53942				
193					12	20.5	5.0	GB/T13783-92
206					5	22.7	5.6	ISO 3060
Average		8.35	5.59			22.24	5.4	
Median		8.45	4.34			22.4	5.44	
StdDev		1.01	2.38			1.24	0.63	
CV		12.06	42.56			5.56	11.76	
Min		6.1	4.1			20.3	4.6	
Max		9.6	8.3			23.7	6.7	
n		10	3			9	9	

Pressley	PI(0)	Av., gf/tex	44.73	StdDev, gf/tex	5.40	CV, %	12.06
	(3.2)	Av., gf/tex	38.03	StdDev, gf/tex	16.19	CV, %	42.56

DIGITAL - FIBROGRAPH <i>(further information see page "Multiple Devices")</i>								Span Length	
Lab.	Rep.	2.5 % SL		50 % SL		UR	SFC (N)	SFC (W)	SFI
		mm	inch	mm	inch	%	%	%	
8	16	29.3	1.15	14.2	0.56				5.8
35	6	29.4	1.16	13.8	0.54	47			6.4
102	5	29.6	1.17	13.9	0.55	47			
116	5	29.1	1.15	14.4	0.57	49			
131	6	29.3	1.15	13.6	0.54	46			
132	10	29.2	1.15	13.1	0.52	45			
136	10	29.2	1.15	(24.0)	(0.94)	(82)			10.8
Average		29.30	1.153	13.82	0.544	46.9			
Median		29.27	1.152	13.86	0.546	46.9			
StdDev		0.16	0.006	0.44	0.017	1.6			
CV		0.56	0.557	3.20	3.203	3.4			
Min		29.1	1.15	13.1	0.52	45			
Max		29.6	1.17	14.4	0.57	49			
n		7	7	6	6	5	0	0	3

COMB SORTER <i>(further information see page "Multiple Devices")</i>						Staple Length		
Lab.	Rep.	Instrument	N			W		
			ML	CV	< 12.5 mm	ML	CV	<12.5 mm
			mm	%	%	mm	%	%

ALMETER <i>(further information see page "Multiple Devices")</i>					Staple Length		
Lab.	Rep.	N			W		
		ML	CV	< 12.5 mm	ML	CV	<12.5 mm
		mm	%	%	mm	%	%
58	3	20.6	39.0	20.0	23.7	32.6	9.5
132	5	20.4	36.1	17.1	24.3	28.9	6.8
152	5	22.9	30.1	8.6	24.9	26.2	3.9

Maturity, Fineness <i>(further information see page "Multiple Devices")</i>					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		81			
70					1.71
79					1.62
112					1.77
129		37			
131		65			
177		98			1.44
193					1.82

IIC/SHIRLEY FM-TESTER <i>(further information see page "Multiple Devices")</i>				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
37		80.0	0.92	154
70	6	89.6	1.03	156
102	2	77.6	0.87	166
126	4	95.0	0.84	(206)
128	8	84.0	0.95	169
186	6	79.7	0.9	171
Average		84.32	0.918	163.3
Median		82.0	0.91	166.0
StdDev		6.74	0.067	7.6
CV		7.99	7.27	4.7
Min		77.6	0.84	154
Max		95.0	1.03	171
n		6	6	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
5	USTER	1000 Line4		12	1	2	2
5-2	USTER	1000 Line5		12	1	2	2
6	USTER	1000	GB/T 20392	3	1	2	2
7	USTER			10	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	10	1	1	1
9	Premier	ART		4	1	2	2
12	USTER	Spectrum I	SN/T1512-11	12	1	1	1
13	USTER	Spectrum	internal	11	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	ASTMD5867-05	6	1	2	2
28	Textechno	CCS_V5	ASTMD5867-05	5	1	2	2
31	USTER	900		6	1	2	2
32	USTER	900 A	internal	1	4	10	4
33	Premier	HFT	ICC		1	2	2
34	Premier	HFT			1	2	2
38	USTER	1000			1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
49	USTER	1000	ASTM1776		1	2	2
52	USTER	1000M700	ASTM	6	6	6	6
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	USDA		1	2	2
56	USTER	Spectrum I	HVI Test Method	5	1	2	2
58	USTER	1000	internal	10	1	1	1
61	USTER	900	ASTMD5867-05		1	2	2
62	Premier	ART 2		6	1	2	2
68	USTER	1000	USDA	10	1	2	2
71	USTER		SN/T1512-11	6	1	2	2
72	USTER	1000		10	2	2	2
78	USTER	Spectrum I		6	1	1	1
79	USTER	900			1	2	2
83	USTER	Spectrum I	SN/T1512-11	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
95	Premier	ART 2	ASTMD5867-05	6	1	2	2
96	USTER	1000	GB/T20392-06	10	1	2	2
96-2	Premier	HFT	GB/T20392-06	10	1	2	2
98	USTER	1000	USDA. ASTM	12	1	2	4
100	Textechno	CCS_V5	ASTMD5867-05	10	5	2	10
101	USTER	1000	ASTMD5867-12	6	1	2	2
102	USTER	900 B	ASTMD5867	1	3	6	4
102-2	USTER	SW700V3.1.3.18	ASTMD5867	6	1	1	1
103	USTER	1000	SN/T1512-11	6	1	2	2
105	USTER	Spectrum	Manufacturer	6	1	2	2

HVI <i>(table is divided into 3 pages)</i>					General		
Lab.	Manufacturer	Instrument	Std. Test Method	Rep.	Each rep. consisting of		
					Mic. meas.	Combs for length/strength	Color readings
106	Premier	ART		6	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
111	USTER	1000	internal	6	1	2	2
112	USTER	1000		6	1	2	2
113	Premier	ART	ASTMD5867-05	10	1	2	2
114	Premier	ART 2		5	1	2	2
115	Statex	Fibrotex	ASTM	6	1	2	
121	USTER	1000	SN/T1512-11		1	2	
122	USTER	1000		5	1	2	2
123	USTER	Spectrum	ASTMD5867-05	10	1	1	1
123-2	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	1000	ASTMD5867-12	10	1	2	2
129	USTER	900 SA			1	1	1
130	Premier	ART 2	ASTM	6	1	2	2
131	USTER	Spectrum	USDA	6	1	2	2
132	Textechno	Fibrotest	ASTMD5867	10		1	
134	USTER	Classing	ASTMD5867-95	6	1	2	2
135	USTER	Spectrum I	ASTMD5867-95	6	1	2	2
139	Premier	ART 2		12	1	1	2
146	USTER	Spectrum	Manufacturer	4	2	2	2
148	USTER	1000		6	1	2	2
154	USTER	900 A		10	1	2	2
162	USTER	900 A	HVICC	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		10	1	2	2
179	USTER	1000	SN/T1512-11	12	1	2	2
183	USTER	1000	ASTMD5867-05	6	1	2	2
186	USTER	900		10	2	10	
193	USTER	1000	GB/T20392-06	6	1	2	2
200	USTER	900 A		10	1	2	2
201	USTER	900		6	1	2	2
202	Premier	ART 2			1	2	2
203	USTER	900-1			1	2	2
204	Premier	HFT	GB/T20392-06	10	1	1	
204-2	USTER	1000	GB/T20392-06	10	1	2	
204-3	USTER	Spectrum I	GB/T20392-06	20	1	2	
206	USTER	900 B	GOST R53031-08	5	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
209	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
213	Premier	ART	ICC	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
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	ASTMD5867-05	6	1	2	2
219	Premier	HFT		8	1	2	
223	Premier	ART	ICC	6	1	2	2
238	Premier	ART		10	1	2	2
242	USTER	Spectrum		6	1	2	2
251	Premier	ART	ICC	6	1	2	2
267	Premier	ART		6	1	2	2
271	USTER	900	internal	10	1	1	1
271-2	Premier	ART	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	Manufacturer	5	5	5	5
300	Premier	ART 2	ASTM	6	1	2	2
315	Premier	HFT		7	1	1	
318	Premier	HFT			1	1	
320	MAG	HVT Expert 1201	ASTM	10	1	1	1

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
5	4.1		30.8		5.2
5-2	4.1		30.5		5.5
6	4.2		28.9		4.5
7	4.1		30.3		5.1
8	4.1		30.0		8.9
9	4.1		29.2		
12	4.0		31.0		5.9
13	4.1		29.3		5.2
15	4.2		30.6		7.1
16	4.1		31.0		5.5
19	4.1		30.3		6.5
25	4.1		30.0		6.6
26	4.1		30.3		6.4
27	4.3		33.2		5.1
28	4.2		27.6		7.9
31	4.0	21.9	29.0	5.2	5.2
32	4.0		30.6		5.2
33	4.2	18.4			
34	4.2		29.3		
38	4.2		29.4		2.9
41	4.1		31.8		4.9
43	4.2		30.6		3.4
49	4.1		29.7		6.0
52	4.2		30.0		6.7
53	4.2		28.8		6.8
54	4.3		31.4		3.6
56	4.0		32.2		5.0
58	4.2		29.3		7.6
61	4.2	22.6	29.9	4.9	5.2
62	4.0	21.5	31.7	5.4	4.8
68	4.2		29.2		
71	4.1		28.9		6.9
72	4.2		28.8		
78	4.4		28.6		
79	4.0		28.2		5.6
83	4.1		31.7		5.7
84	4.1		28.6		4.5
90	4.2		29.3		6.1
91	(4.8)		(24.0)		5.1
95	4.2		31.3		6.7
96	4.2		30.1		4.3
96-2	4.2		31.1		6.7
98	4.2		29.9		
100	4.1		(34.3)		6.6
101	4.3		29.3		4.9
102	4.1		30.0		4.9
102-2	4.2		27.7		5.4
103	4.2		28.8		4.4
105	4.1		31.8		6.1
106	4.1		31.4		6.6
107	4.1		29.0		6.8
108	4.1		31.0		4.5

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
109	4.3		28.9		
111	4.2		29.6		6.4
112	4.1		28.0		6.7
113	4.1		30.6		6.5
114	4.2		30.0		6.5
115	4.2	20.9		5.3	
121	4.2		29.8		6.5
122	4.2		28.8		6.0
123	4.1	22.3	28.0		
123-2	4.2	22.2	29.5		
125	4.2		29.1		5.5
126	4.3		32.1		5.6
128	4.3		29.5		5.1
129	4.2	22.8	29.4	4.7	5.5
130	4.1	21.1	32.0	6.2	6.6
131	4.1		29.6		6.9
134	4.2		28.8		5.2
135	4.3		28.8		6.6
139	4.1		30.7		6.6
146	4.1		30.0		
148	4.2		28.7		6.3
154	4.0		31.1		7.0
162	4.1		29.0		4.7
163	(4.5)	20.6		5.8	
172	4.1		30.6		5.9
176	4.1		29.7		4.3
179	4.2		29.9		3.9
183	4.2		30.6		5.7
186	4.1	20.4	29.9	5.9	5.7
193	4.1		29.5		4.8
200	4.1		30.2		
201	4.1		30.0		7.2
202	(3.8)		31.0		
203	4.1		(46.0)		
204	4.3		30.0		6.5
204-2	4.2		29.9		5.4
204-3	4.2		29.2		7.5
206	4.1		(35.5)		5.9
207	4.2		29.1		5.8
207-2	4.1		29.9		6.2
207-3	4.2		29.5		6.0
207-4	4.1		29.5		6.9
208	4.1		28.7		5.7
209	4.2		30.6		6.7
213	4.2	21.0		6.1	
215	4.0		31.0		5.4
216	4.2		30.2		6.2
217	4.3		31.6		5.5
219	4.2		30.6		
223	4.2	23.4			
238	4.1	21.2			
242	4.1		31.6		4.9

HVI		<i>(table is divided into 3 pages)</i>				Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation			
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %		
251	4.0	22.5					
267	4.0		30.1		6.7		
271	4.3		32.0		2.4		
271-2	4.0		30.6		2.3		
272	4.4		32.5		6.8		
287	4.1	22.0	32.4	5.5	6.7		
288	(3.8)	23.3		5.8			
300	4.0		33.5		6.7		
315	4.0	19.8		5.8			
318	4.2		31.6				
320	4.0	23.9		6.3			
Average	4.14	21.67	30.09	5.6	5.76		
Median	4.14	21.9	30.0	5.8	5.85		
StdDev	0.09	1.35	1.19	0.49	1.14		
CV	2.06	6.23	3.97	8.75	19.85		
Min	4.0	18.4	27.6	4.7	2.3		
Max	4.4	23.9	33.5	6.3	8.9		
n	111	19	101	13	90		

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
5				30.2	1.19	83.1
5-2				29.7	1.17	83.7
6				29.4	1.16	83.0
7				29.1	1.15	82.7
8				29.4	1.16	83.9
9				29.6	1.16	84.6
12				29.8	1.17	83.4
13				29.0	1.14	82.3
15				(31.2)	(1.23)	83.7
16				29.2	1.15	83.2
19				29.5	1.16	83.0
25				29.7	1.17	83.6
26				29.6	1.17	83.6
27				30.4	1.20	83.3
28	29.7	1.17	46.6	29.4	1.16	82.9
31	29.0	1.14	48.5	29.4	1.16	85.3
32				29.2	1.15	83.3
33	30.7	1.21	47.2			
34				30.6	1.20	83.3
38				29.7	1.17	84.6
41				28.7	1.13	82.4
43				30.0	1.18	83.3
49				30.0	1.18	82.4
52				29.4	1.16	84.2
53				29.1	1.15	83.6
54				30.2	1.19	84.2
56				29.8	1.17	85.3
58				30.1	1.19	83.5
61	31.0	1.22	50.0	29.6	1.17	84.0
62	28.5	1.12	46.5	29.2	1.15	82.9
68				29.7	1.17	83.8
71				29.6	1.17	
72				29.9	1.18	83.3
78				29.2	1.15	83.7
79				30.5	1.20	83.6
83				29.3	1.16	83.4
84				29.7	1.17	84.3
90				29.6	1.17	83.5
91				28.7	1.13	82.1
95				29.9	1.18	83.4
96				29.5	1.16	82.9
96-2				29.5	1.16	83.9
98				29.2	1.15	82.2
100	29.4	1.16	44.8	30.4	1.20	81.1
101				29.8	1.17	83.4
102				29.5	1.16	83.9
102-2				29.9	1.18	83.8
103				(47.8)	(1.88)	83.8
105				29.3	1.15	83.0
106				29.8	1.17	85.3
107				29.5	1.16	83.5
108				29.3	1.15	82.8

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
109				29.7	1.17	83.5
111				29.8	1.18	83.0
112				29.3	1.15	83.2
113				29.8	1.17	83.2
114				29.6	1.16	83.4
115	29.6	1.17	45.0			
121				29.7	1.17	82.3
122				30.3	1.19	83.7
123	30.0	1.18	47.1	29.6	1.17	83.6
123-2	29.6	1.17	46.7	29.6	1.17	82.2
125				29.5	1.16	83.2
126				29.8	1.17	83.5
128				29.6	1.16	84.0
129	30.3	1.19	50.0	29.9	1.18	84.0
130	30.8	1.21	45.8	29.3	1.15	84.1
131				29.3	1.15	84.7
132				29.6	1.17	82.2
134				29.9	1.18	83.5
135				30.2	1.19	84.2
139				29.3	1.16	83.4
146				29.1	1.15	82.4
148				29.5	1.16	83.3
154				29.6	1.17	83.7
162				30.3	1.19	84.6
163	31.1	1.22	50.7			
172				29.5	1.16	83.0
176				29.5	1.16	82.7
179				30.2	1.19	82.8
183				29.5	1.16	83.3
186	28.7	1.13	48.6	29.7	1.17	83.5
193				29.2	1.15	82.7
200				29.4	1.16	82.8
201				29.0	1.14	82.8
202				30.6	1.20	82.9
203				29.2	1.15	
204				30.0	1.18	83.8
204-2				29.7	1.17	83.3
204-3				29.0	1.14	83.7
206				(31.0)	(1.22)	85.5
207				29.8	1.17	82.4
207-2				29.9	1.18	83.1
207-3				30.1	1.19	83.4
207-4				29.9	1.18	83.6
208				29.5	1.16	83.4
209				29.8	1.17	83.2
213	29.3	1.15	42.7			
215				29.8	1.17	82.1
216				30.0	1.18	82.8
217				30.1	1.19	82.6
219				30.7	1.21	84.7
223	29.8	1.17	47.0			
238	29.1	1.14	48.7			

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
242				29.2	1.15	
251	28.4	1.12	43.4			
267				29.9	1.18	84.3
271				30.0	1.18	83.7
271-2				29.5	1.16	82.9
272				(36.5)	(1.44)	84.1
287	29.2	1.15	46.1	29.7	1.17	84.3
288	29.7	1.17	45.7			
300				29.3	1.15	83.9
315	28.8	1.13	48.6			
318				30.6	1.20	85.3
320	30.1	1.19	46.0			
Average	29.64	1.167	46.94	29.66	1.168	83.44
Median	29.62	1.166	46.7	29.63	1.166	83.4
StdDev	0.8	0.032	2.1	0.41	0.016	0.77
CV	2.7	2.701	4.46	1.37	1.371	0.93
Min	28.4	1.12	42.7	28.7	1.13	81.1
Max	31.1	1.22	50.7	30.7	1.21	85.5
n	21	21	21	102	102	103

HVI <i>(table is divided into 3 pages)</i>				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
5	72	13.6	24-1	3	0.23	22
5-2	73	13.6	24-1	3	0.31	25
6	73	13.0	14	2	0.28	25
7	71	13.1	24-2		0.25	27
8	70	12.3	23-4	2	0.16	14
9	(61)	14.0	44-3			
12	71	13.1	24-2	2	0.22	18
13	72	12.6	23-3			
15	73	13.6	24-1	2	0.2	18
16	70	13.5	24-2	2	0.21	17
19	72	13.6	24-1	3	0.32	23
25	74	13.5	13-3	3	0.31	27
26	73	13.2	13-3	3	0.24	22
27	72	13.7	24-1	1	0.3	20
28	75	13.1				
31	71	(15.6)	24-3	1	0.19	23
32	70	13.3	24-2			
33	71	13.6	24-1			
34	71	12.9	23-3			
38	73	13.6	24-1	2	0.19	25
41	72	14.0	24-1		0.15	11
43	73	13.4	13-3		0.38	28
49	73	13.1	13-3	2	0.23	25
52	73	14.4	24-1	3	0.37	27
53	70	13.1	24-2	4	0.44	35
54	70	13.8	24-1	3	0.29	21
56	72	12.5	23-3	1	0.15	12
58	74	13.3	13-3	3	0.32	30
61	(78)	12.4	13-1			
62	73	12.5	13-4			
68	73	13.4	13-3	2	0.23	20
71	73	13.5			0.24	22
72	73	13.6	24-1		0.23	19
78	(67)	13.5	34-1	2	0.26	22
79	71	12.8	23-3	1	0.13	20
83	73	13.5	24-1		0.14	13
84	74	13.9	24-1	2	0.26	28
90	73	13.2	13-3		0.22	19
91	73	13.2	13-3	2	0.2	20
95	72	13.6	24-1			
96	74	13.2				
96-2	70	12.2				
98	73	12.9			0.21	20
100	(64)	11.8				
101	73	13.2	13-3	3	0.33	31
102	72	13.0				
102-2	74	13.4	13-3	3	0.38	39

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
103	73	13.2	13-3	3	0.35	3
105	72	12.9	24-1	2	0.3	24
106	73	13.1	13-4			
107	71	13.4	24-1			
108	73	12.9	13-3	3	0.36	24
109	72	13.1	23-3	523	0.28	26
111	73	13.6			0.37	24
112	73	13.5	13-3	3	0.32	31
113	73	13.4	24-1			
114	74	13.0	13-3			
122	72	13.8	24	1	(0.62)	29
123	71	13.0	23-3	2	0.25	20
123-2	72	13.6	24-1	2	0.23	20
125	73	14.7	24-1	3	0.4	35
128	73	13.2			0.22	25
129	(66)	13.1	34-2			
130	71	13.0	24-2			
131	69	14.1			0.2	19
134	73	13.2	13	3	0.21	18
135	71	13.1	24	1	0.18	19
139	71	12.9	23	2	0.26	27
146	70	12.8	24-2	1	0.1	9
148	72	12.9	23-3	2	0.25	28
154	71	13.5	24-1	1	0.3	15
162	71	13.9	24-1			
163	71	12.5	23-3			
172	70	12.9		1	0.16	18
176	73	13.4	13-3	3	0.29	33
179	72	13.1	13-4	2	0.25	30
183	70	13.2	24-2	5	(0.71)	25
193	72	13.5	24-1	2	0.24	23
200	72	13.6	24-1		0.16	13
201	71	13.0	24-1	2	0.22	15
202	69	13.5	24-2			
203	74	(11.6)	23-2	3	0.35	24
206	70	14.3	24-1			
207	74	13.3	13-3	2	0.26	22
207-2	73	13.1	13-3	2	0.25	25
207-3	70	12.9	24-2	7	(1.19)	34
207-4	73	12.6	13-4	2	0.23	26
208	74	13.2	13-3	3	0.3	26
209	72	13.1	24-1			
213	72	12.0	23-3			
215	72	(10.7)	33-1	2		
216	72	13.9	24-1			
217	72	13.3	24-1			
223	68	13.7	24-2			

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
238	70	12.5	23-4			
242	72	12.7	23-3	2	0.23	18
251	69	(16.4)	25-5			
267	(65)	12.4	44-1			
271	70	13.4	24-2			
271-2	71	13.2	24-1	7	(1.07)	(61)
272	76	13.5	13-3			
287	71	13.3	24-1			
288	72	(10.2)	32-2			
300	72	13.3	24-1			
320	(67)	13.2	34-1			
Average	71.9	13.24			0.255	22.7
Median	72.0	13.2			0.25	23.0
StdDev	1.4	0.49			0.072	6.5
CV	2.0	3.67			28.11	28.9
Min	68	11.8			0.1	3
Max	76	14.7			0.44	39
n	98	100			63	66

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio		
5		7.2		0.87		
5-2		7.7		0.86		
6		(15.1)		0.87		
7		8.1				
8		8.6		0.9		
9		7.7				
12		7.9		0.87		
13		8.8		0.87		
15		7.7		0.85		
16		9.9		0.87		
19		8.6		0.87		
25		8.6		0.85		
26		8.2		0.86		
27		7.1		0.87		
28		7.9	86	(0.98)		
32		8.9				
33				0.81		
34		5.6		0.83		
38				0.87		
41		7.1		0.88		
43		8.0				
49		5.8		0.86		
52		8.0		0.86		
53		6.1		0.83		
54		6.8		0.89		
56		8.7				
58		7.9		0.85		
61	6.8	6.7				
62	6.3	7.6		(1.04)		
68		7.0		0.87		
71				0.85		
72		(11.8)				
78		9.5		0.88		
84		7.6		0.87		
90		8.1		0.86		
91		7.4		0.88		
95		7.6		0.84		
100	5.9	5.9	76	0.86		
101		8.1		0.87		
102-2		7.6		0.86		
103		7.1		0.87		
105		7.7		0.88		
106		(3.8)		0.83		
107		7.8		0.87		
108		7.6		0.87		
109		8.3		0.85		
111		7.4		0.86		

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %		Maturity Ratio	
112		7.5			0.85	
113		5.9			0.82	
114		7.9			0.88	
115	3.8					
121		8.5			0.86	
122		8.2			0.86	
123	9.0	7.6			0.85	
123-2	10.0	9.9			0.86	
125		8.7			0.86	
126		8.5				
128		8.2	77		0.87	
130	3.6	7.6			0.88	
131					0.87	
132		8.9				
134		6.9			0.87	
135		5.5			0.87	
139		8.0				
146		8.5			0.87	
148		8.3			0.86	
154		(4.3)				
162		(4.0)				
163	7.1					
172		5.9			0.87	
176		7.2			0.87	
179		7.8				
183		8.1			0.86	
186	6.1	5.9				
193		6.9			0.87	
200		8.2				
201		8.3			0.85	
202		7.4			0.82	
203		7.5			0.84	
204		7.4			0.83	
204-2		7.3			0.87	
204-3		6.3			0.87	
207		8.2			0.86	
207-2		8.1			0.86	
207-3		7.7			0.86	
207-4		7.6			0.85	
208		8.9			0.86	
209		7.1			0.8	
213	8.0					
215		8.6			0.79	
216		6.7			0.81	
217					0.82	
219		6.8			0.83	
223	4.0					

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %		Maturity Ratio	
238	8.4				0.83	
242		5.6			0.88	
251	9.3				0.83	
267		7.6			0.85	
271-2		8.3				
272		(4.3)			0.84	
288	9.0					
300		7.7			0.88	
315	8.8				0.82	
318		6.9			0.84	
320	5.0				0.79	
Average	6.94	7.65			0.855	
Median	6.95	7.7			0.86	
StdDev	2.1	0.93			0.022	
CV	30.23	12.19			2.603	
Min	3.6	5.5			0.79	
Max	10.0	9.9			0.9	
n	16	85		3	82	

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
5	USTER	Neptester		5
7	USTER			10
21	USTER	1190064		5
22	USTER	Autojet		10
27	USTER			
28	Textechno	CCS_V5	ASTMD5866-05	5
31	USTER			5
32	USTER	AFIS Pro 2		10
38	USTER			
39	USTER			
41	USTER			5
43	USTER			5
51	USTER	AFIS Pro 2		5
58	USTER		internal	10
62	USTER			2
90	USTER	4.22	Manufacturer	10
91	USTER	MN100		10
91-2	USTER	AFIS Pro 2		10
100	Textechno	CCS_V5	ASTMD5866-05	8
101	USTER	AFIS Pro	internal	5
102-2	USTER			
105	USTER		Manufacturer	5
109	USTER			
111	USTER	AFIS Pro	internal	10
112	USTER	AFIS Pro		5
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	ASTM	5
132	USTER			
134	USTER	AFIS Pro	ASTMD5848-95	5
139	USTER	AFIS Pro 2		12
142	USTER			5
148	USTER	AFIS Pro 2		10
148-2	USTER	AFIS Pro		10
154	USTER			10
163	USTER		ASTMD5866-12	5
176	USTER			5
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER	Afis old	Manufacturer	10
186-2	USTER	AFIS Pro	Manufacturer	10
193	USTER	AFIS Pro	ASTMD5866-12	6
200	USTER			
207	USTER	AFIS Pro	ASTMD5866-05	10
208	USTER	AFIS Pro	ASTMD5866-05	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	%
7	(18.3)	(0.72)	(55.2)	37.8	1.49	34.7	1.37	(31.8)
21	21.0	0.83	41.0	36.0	1.42	33.8	1.33	17.8
22	21.1	0.83	46.8	38.4	1.51	35.8	1.41	22.4
31	22.3	0.88	43.3	38.4	1.51	36.0	1.42	18.4
32	20.2	0.80	50.4			34.9	1.37	24.1
38	22.0	0.87	46.8	39.0	1.54	36.1	1.42	19.4
39	19.9	0.78	48.9	37.1	1.46	34.6	1.36	24.4
41	21.0	0.83	42.0	36.6	1.44	34.3	1.35	19.0
43	22.1	0.87	43.1			35.6	1.40	18.5
51	21.1	0.83	44.9			34.9	1.37	18.9
58	21.0	0.83	45.9	37.7	1.48	35.2	1.39	21.8
62	21.2	0.83				34.9	1.37	19.9
90	22.0	0.87	44.7	38.4	1.51	35.8	1.41	18.5
91-2	20.6	0.81	47.0			34.7	1.37	21.2
101	22.1	0.87	42.5			35.3	1.39	16.4
102-2	22.0	0.87	43.4	38.0	1.50	35.3	1.39	18.5
105	22.1	0.87	45.8	38.9	1.53	35.8	1.41	20.9
111	21.1	0.83	47.4			35.3	1.39	22.8
112	21.3	0.84	46.7			35.8	1.41	21.9
123	21.7	0.85	42.7			35.2	1.39	18.5
123-2	20.9	0.82	48.2			35.7	1.41	21.8
123-3	20.2	0.80	49.1			35.1	1.38	23.9
129	23.0	0.91	46.6			(37.9)	(1.49)	19.2
134	22.1	0.87				35.8	1.41	18.7
139	20.8	0.82				35.6	1.40	22.1
142	20.4	0.80	45.7	36.6	1.44	34.4	1.35	21.9
148	20.8	0.82				35.2	1.39	21.0
148-2	21.0	0.83				35.6	1.40	20.9
154	22.6	0.89	42.9	37.8	1.49	35.5	1.40	17.2
163	21.9	0.86	43.2	39.1	1.54	36.4	1.43	19.2
176	20.8	0.82	50.1	39.1	1.54	36.1	1.42	23.6
183	21.6	0.85	45.3			35.8	1.41	20.7
186	22.3	0.88	44.2	38.8	1.53	36.2	1.43	19.0
186-2	21.6	0.85	46.6			36.1	1.42	19.9
193	21.8	0.86	44.4			35.8	1.41	19.4
207	22.0	0.87	44.8			35.8	1.41	18.0
208	22.0	0.87	43.8			36.0	1.42	16.9
271	21.1	0.83	46.8	37.6	1.48	35.1	1.38	22.4
272	20.6	0.81	42.9	36.1	1.42	33.8	1.33	19.4
Average	21.4	0.843	45.39	37.85	1.49	35.37	1.392	20.22
Median	21.27	0.837	45.3	37.9	1.492	35.53	1.399	19.65
StdDev	0.73	0.029	2.39	1.02	0.04	0.65	0.025	2.1
CV	3.42	3.416	5.26	2.69	2.694	1.82	1.824	10.36
Min	19.9	0.78	41.0	36.0	1.42	33.8	1.33	16.4
Max	23.0	0.91	50.4	39.1	1.54	36.4	1.43	24.4
n	38	38	33	18	18	38	38	38

AFIS L						Length
Lab.	W					SFC %
	ML		CV %	UQL		
	mm	inch		mm	inch	
7	23.9	0.94	(39.0)	29.8	1.17	(11.8)
21	24.5	0.96	30.8	29.3	1.15	6.5
22	25.9	1.02	33.2	31.2	1.23	7.4
28	25.0	0.99		32.6	1.28	(2.1)
31	26.5	1.04	31.5	31.6	1.24	6.0
32						7.1
38	26.8	1.06	31.5	31.8	1.25	
39	24.6	0.97	33.8	30.2	1.19	8.3
41	24.8	0.98	31.9	29.8	1.17	7.1
43	26.2	1.03	32.1	31.5	1.24	6.2
51	(21.1)	(0.83)	31.8	30.5	1.20	5.8
58	25.4	1.00	32.8	30.7	1.21	7.4
62	25.4	1.00		30.7	1.21	6.5
90	26.5	1.04	31.9	31.6	1.24	5.7
91-2	25.1	0.99	33.5	30.4	1.20	6.7
100	24.4	0.96		32.2	1.27	8.5
101	26.1	1.03	30.8	30.9	1.22	4.9
102-2	26.2	1.03	31.3	31.0	1.22	5.9
105	26.7	1.05	32.5	31.8	1.25	6.7
111	25.7	1.01	33.1	31.0	1.22	7.4
112	25.9	1.02	34.1	31.2	1.23	7.3
123	25.7	1.01	32.0	30.8	1.21	6.4
123-2	25.7	1.01	33.6	31.3	1.23	6.8
123-3	25.0	0.98	35.2	30.7	1.21	8.1
129	28.0	1.10	31.6	33.6	1.32	5.4
134	26.4	1.04		31.5	1.24	6.1
139	25.4	1.00		30.7	1.21	7.6
142	24.7	0.97	32.5	30.0	1.18	7.6
148	25.5	1.00				
148-2	25.6	1.01				
154	26.8	1.06	29.0	31.4	1.24	4.7
163	25.9	1.02	32.2	31.1	1.22	6.7
176	26.2	1.03	33.4	31.5	1.24	7.0
183	25.9	1.02	33.9	31.2	1.23	7.2
186	26.6	1.05	31.4	31.8	1.25	6.0
186-2	26.3	1.04	32.7	31.7	1.25	
193	26.2	1.03	32.6	31.2	1.23	6.3
207	26.4	1.04	31.8	31.6	1.24	5.3
208	26.3	1.04	31.6	31.4	1.24	5.1
271	25.7	1.01	32.9	30.7	1.21	7.2
272	24.4	0.96	32.7	29.2	1.15	7.2
Average	25.75	1.014	32.37	31.09	1.224	6.63
Median	25.9	1.02	32.35	31.24	1.23	6.7
StdDev	0.83	0.033	1.19	0.85	0.034	0.94
CV	3.24	3.238	3.67	2.74	2.74	14.17
Min	23.9	0.94	29.0	29.2	1.15	4.7
Max	28.0	1.10	35.2	33.6	1.32	8.5
n	39	39	32	38	38	35

AFIS D / M		Diameter, Maturity				
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio	
22	13.5		160	8.0	0.87	
28			164		0.98	
31			165	6.7	0.91	
32			167	6.1	0.93	
38			153	5.1	0.9	
41						
43			168	4.6	0.96	
51			151	6.6	0.84	
58			156	7.5	0.85	
62			148	8.4	0.81	
90			172	5.6	0.95	
91-2			160	6.2	0.9	
100			165		0.86	
101			158	6.4	0.9	
102-2			160	7.6	0.9	
105			163	6.4	0.89	
111			162	6.7	0.91	
112			161	4.3	0.94	
123			164	7.8	0.9	
123-2			159	6.8	0.9	
123-3			165	4.8	0.95	
129			(90)	(91.4)	(0.24)	
134			164	5.3	0.92	
139			160	6.4	0.9	
148			163	6.9	0.9	
148-2			165	5.8	0.93	
154			152	8.8	0.88	
176			157	(13.0)	0.86	
183			154	7.5	0.88	
186			157	7.6	0.85	
186-2			161	5.0	0.92	
193			167	5.5	0.93	
207			164	5.9	0.92	
208	162	7.2	0.9			
271	152	8.8	0.8			
272	11.4					
Average			160.6	6.54	0.898	
Median			161.0	6.5	0.9	
StdDev			5.5	1.22	0.04	
CV			3.4	18.71	4.501	
Min			148	4.3	0.8	
Max			172	8.8	0.98	
n	2	0	33	30	33	

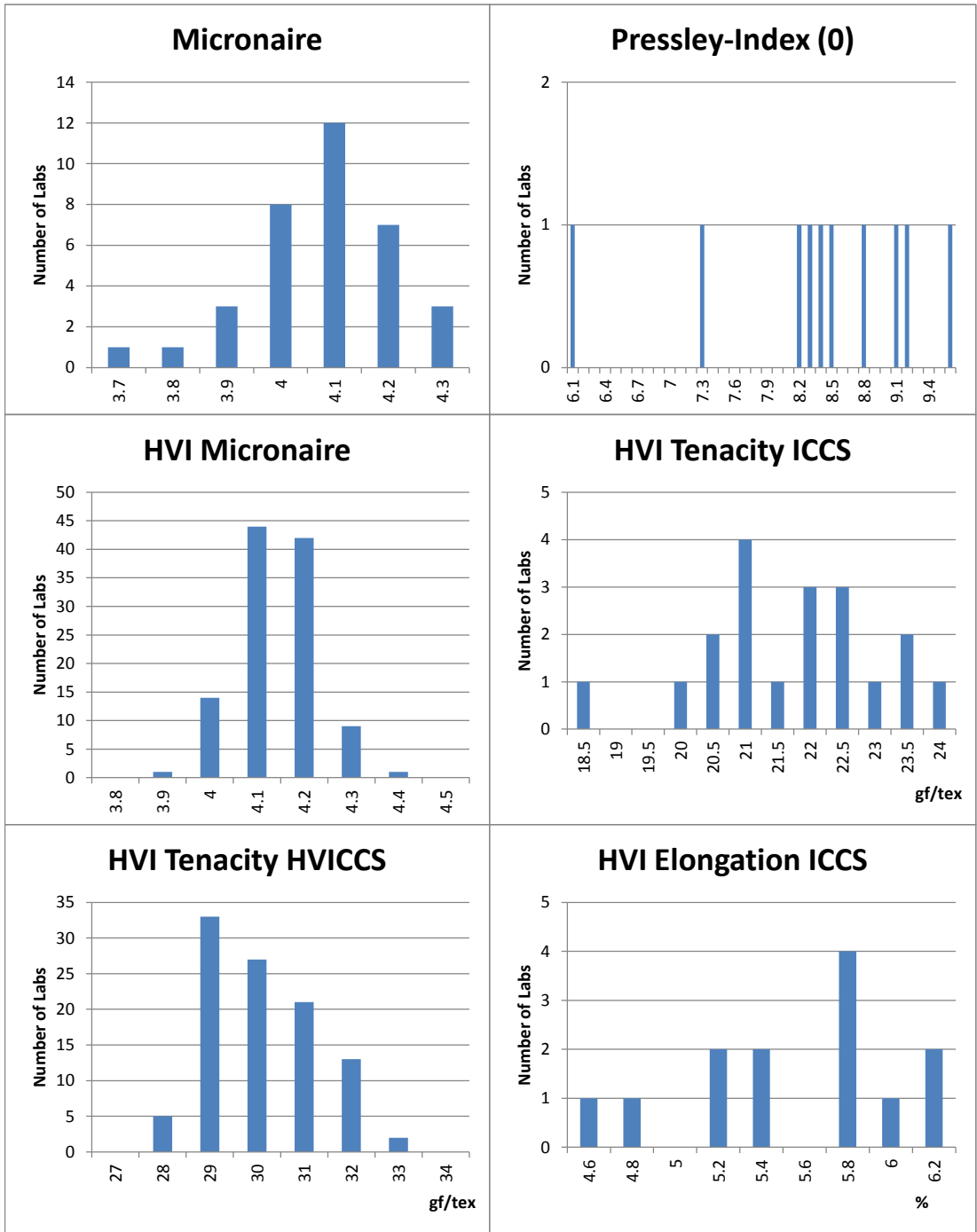
AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
21	(205)	54	(796)	1.47
22	282	80	501	2.22
31	270	66	492	1.83
32	282	64	448	1.6
43	272	54	387	1.54
51	(175)	40	330	0.84
58	(465)	73	392	1.76
62	(998)	47	470	1.25
90	299	50	290	0.99
91-2	292	57	379	1.38
100		53	165	
101	291	(448)	390	1.6
102-2	292	58	367	1.5
111	299	(365)	313	1.13
112	318	56	321	1.37
129	284	59	387	1.56
134	274	60	401	1.09
142	245	69	563	1.45
148	272	59	429	1.42
148-2	316	76	426	1.93
183	301	74	422	1.66
186	280	71	498	1.65
186-2	296	64	409	1.8
193	304	63	352	1.37
207	327	63	327	1.61
208	353	68	271	1.49
272	282	51	369	0.97
Average	292.3	61.2	388.4	1.48
Median	291.5	60.0	388.5	1.495
StdDev	22.7	9.7	83.4	0.313
CV	7.8	15.8	21.5	21.139
Min	245	40	165	0.84
Max	353	80	563	2.22
n	22	25	26	26

AFIS N		Neps		
Lab.	Neps		SCN	
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g
5		203		
7	760	117		
21	710	220		(850)
22	734	167	1385	17
27				(150)
31	716	165	1174	10
32	732	178	1036	27
38	682	136		
39	618	124		
41	645	168		
43	750	(440)	1249	27
51	684	172	1230	13
58	704	190	1081	12
62	651	183	1252	22
90	725	181	1298	18
91	676	200		
91-2	716	184	1141	18
100		116		7
101	777	201	1231	36
102-2	725	179	1070	25
105	702	154	1320	11
109	(268)	173		
111	707	174	977	22
112	704	162	1225	8
123	679	185	1004	18
123-2	688	182	953	16
123-3	723	165	1165	17
128		187		
129	786	188	1299	34
132	640	175		
134	701	143	1097	16
139	722	189	1224	18
142	619	151		
148	664	157	895	19
148-2	707	164	1033	17
154	754	158	1240	25
163	769	161	1204	15
176	757	190	1154	36
183	699	187	1144	15
186	725	185	1116	21
186-2	739	195	1089	34
193	739	199	1452	22
200	723	177	1213	18
207	777	209	1304	34
208	790	214	1303	42
271	702	177	1036	14
272	681	236		
Average	712.0	176.0	1169.5	20.7
Median	713.0	178.0	1174.0	18.0
StdDev	42.3	25.0	128.4	8.7
CV	5.9	14.2	11.0	42.0
Min	618	116	895	7
Max	790	236	1452	42
n	42	45	33	34

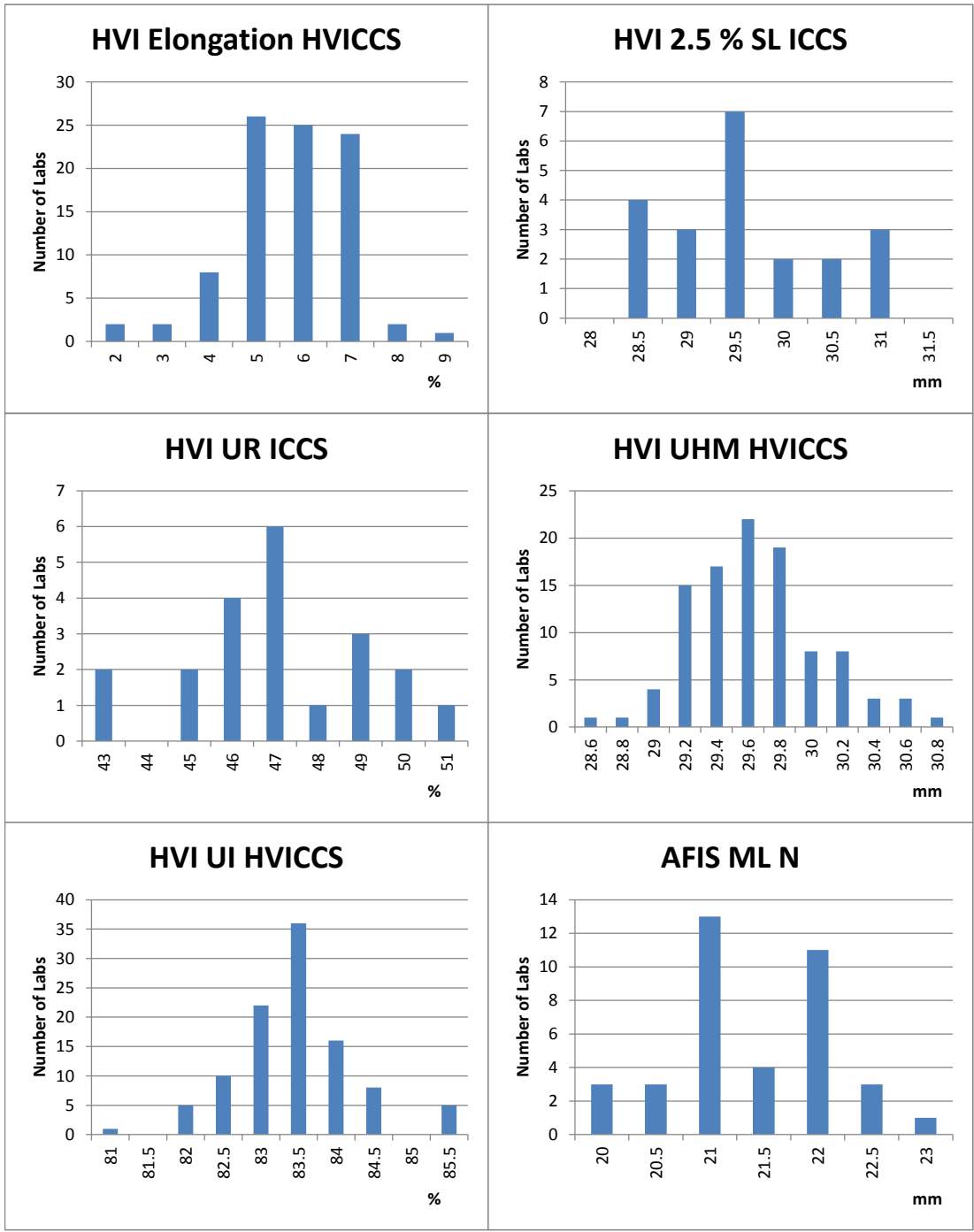
aQura <i>(further information see page "Multiple Devices")</i>						Length, Neps	
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	32.5	17.1	28.9	12.5	80	14
114	4	30.8		29.9	13.9	174	27
116	4	31.3	17.4	28.0	12.3	207	40
127	4	30.1	17.5	29.5	14.7	167	18
130	4	30.1	18.0	23.2	11.2	180	36
146	4	31.6		23.0	12.0	170	23
213	4	31.1	19.0	23.3	10.5	105	13
251	4	29.8		22.6	9.4	208	27
277	4	(34.9)	19.1	26.2	9.3	97	16
300	4	30.8	18.1	23.9	10.6	175	40
Average		30.91	18.03	25.85	11.63	156.3	25.4
Median		30.82	17.98	25.05	11.6	172.0	25.0
StdDev		0.86	0.78	2.97	1.79	45.6	10.4
CV		2.78	4.3	11.51	15.4	29.2	41.0
Min		29.8	17.1	22.6	9.3	80	13
Max		32.5	19.1	29.9	14.7	208	40
n		9	7	10	10	10	10

Multiple Devices <i>(information not provided in the respective table)</i>					General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
8	DigitalFibrograph		F370		16
35	DigitalFibrograph	USTER	730		6
37	FMT				
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	
102	DigitalFibrograph		530	ICCS	5
102	FMT	SDL	FMT 3	ICCS	2
112	GravFineness			ASTMD1577	3
114	aQura	Premier			4
116	aQura	Premier			4
116	DigitalFibrograph		Bitra		5
126	FMT	SDL	FMT	ASTM	4
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
136	DigitalFibrograph		630	internal	10
146	aQura	Premier			4
152	ALMeter				5
177	Causticaire			DIN53943-4	3
177	GravFineness			ASTMD1577-90	4
186	FMT	SDL	FMT	USDA	6
193	GravFineness			GB/T6100-07	2
213	aQura	Premier			4
251	aQura	Premier			4
277	aQura	Premier			4
300	aQura	Premier		ASTM	4

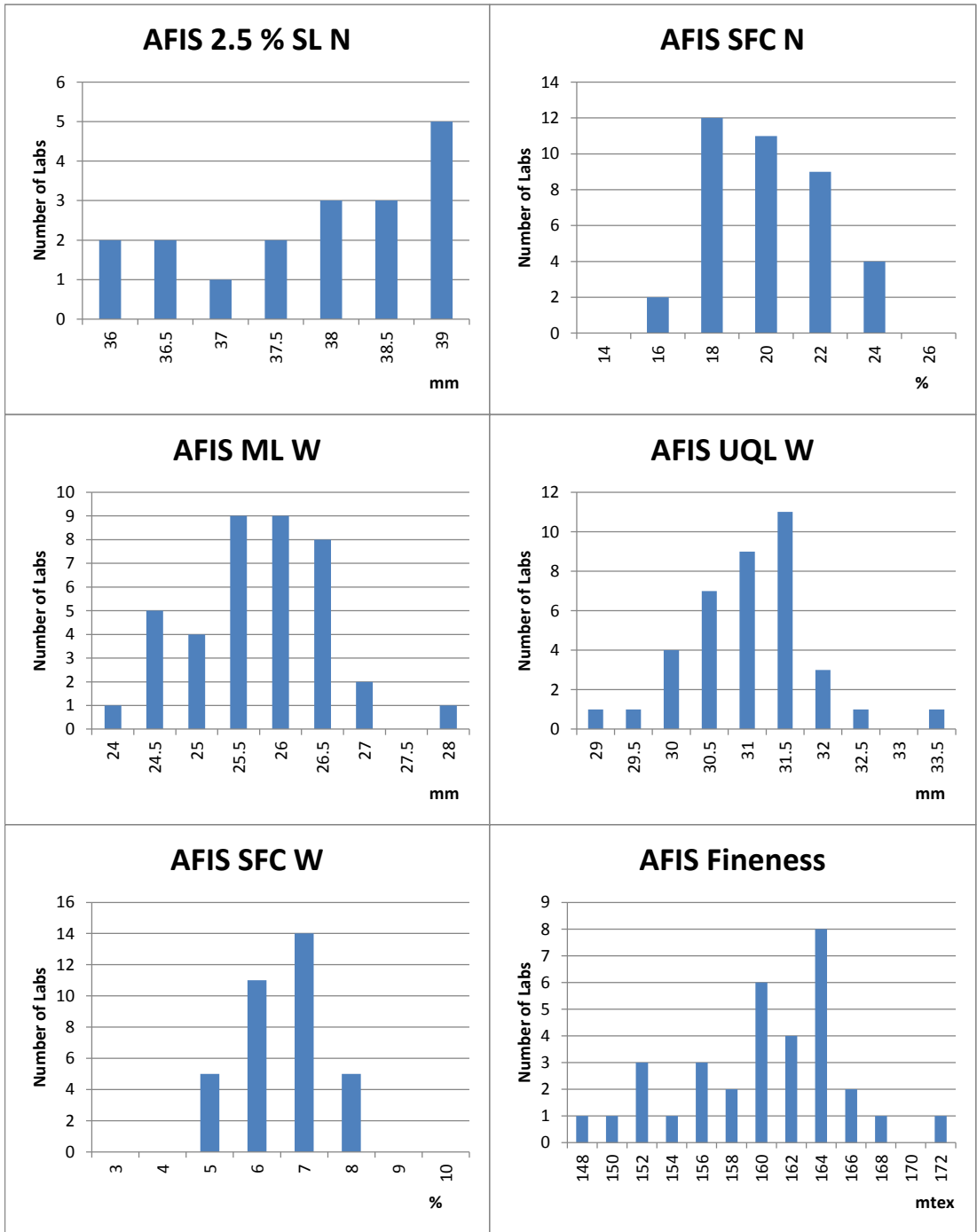
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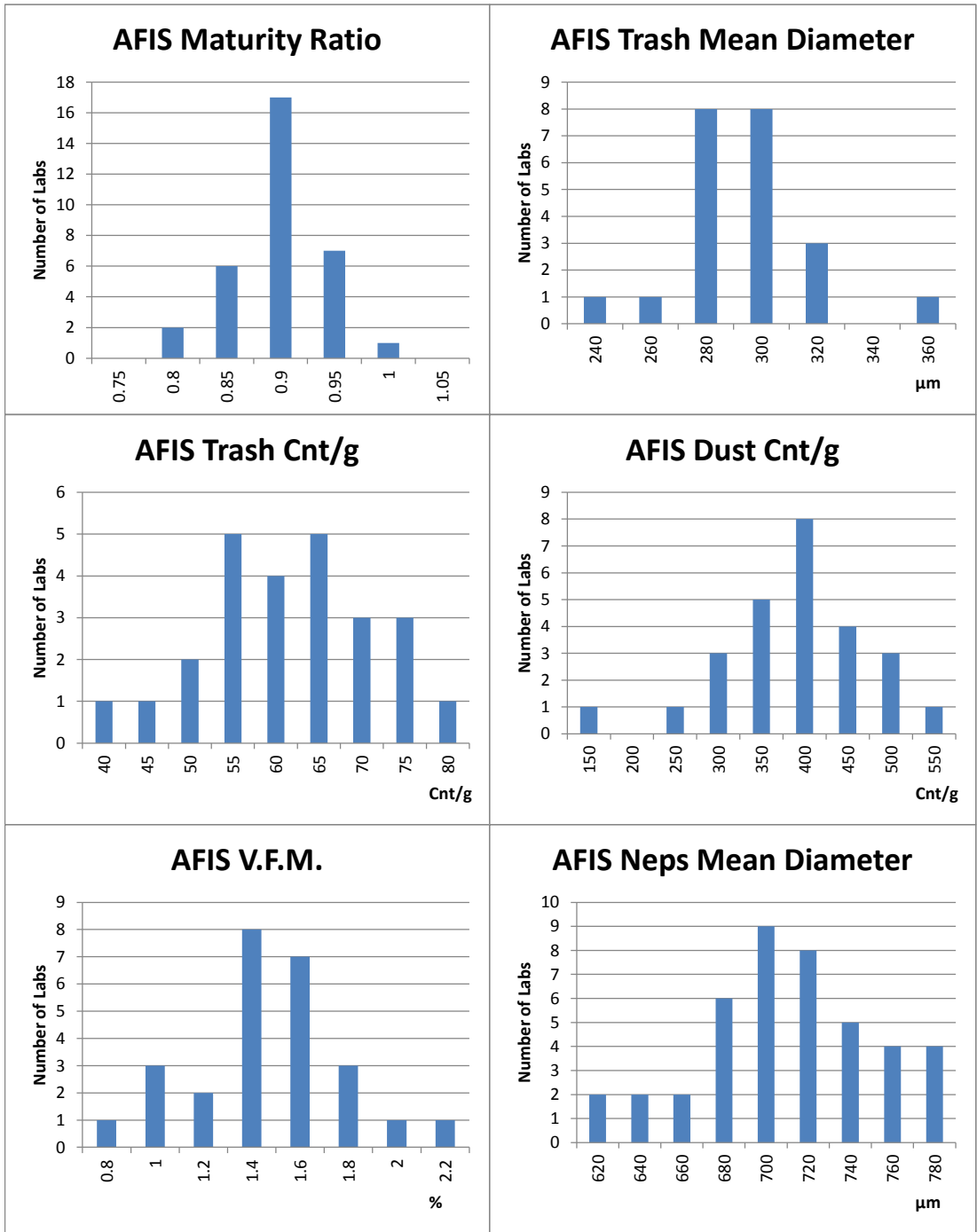
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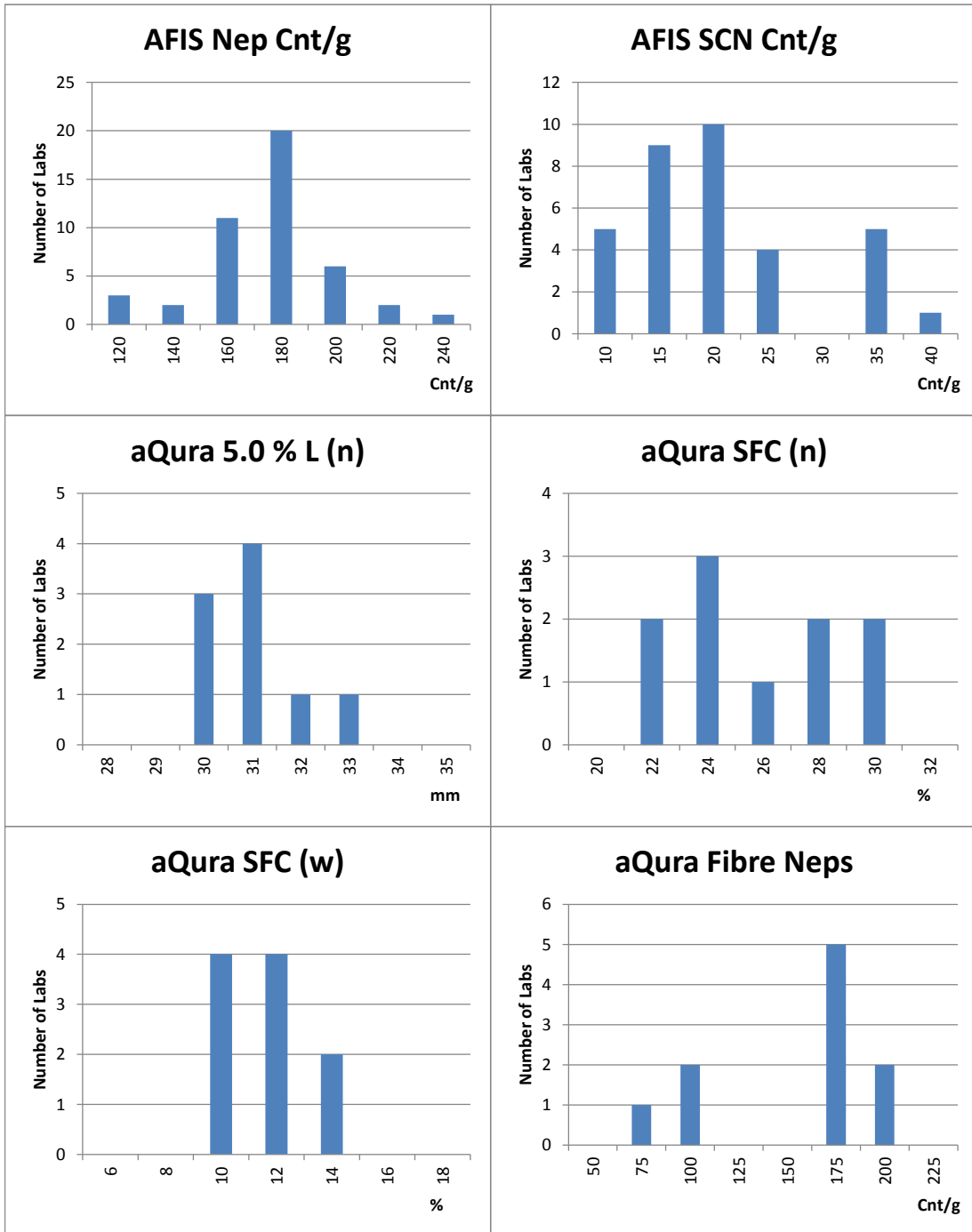
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