

ICA Bremen Cotton Round Test

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

Bremen, 30.8.2013

Evaluation of the Test Results 2013 / 2

Tested Cotton: **US-MOT** Number of Laboratories: **127**
Cotton Number: **RM 36**

Argentina	2	Mozambique	-
Australia	1	The Netherlands	1
Bangladesh	1	Pakistan	1
Brazil	5	Poland	1
China, PR	21	Portugal	1
Czech Republic	4	Russia	1
Egypt	3	Serbia	1
France	1	Slovenia	1
Germany	12	South Africa	-
Greece	6	Spain	3
Hungary	1	Sudan	-
India	34	Switzerland	3
Iran	1	Tanzania	1
Israel	1	Thailand	4
Italy	1	Turkey	1
Japan	1	Uganda	1
Kazakhstan	1	United Kingdom	1
Korea, R	1	United States	5
Latvia	1	Uzbekistan	1
Mali	-	Vietnam, SR	1
Mauritius, Rep of	1	Zimbabwe	-

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

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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: US-MOT (**RM 36**)

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

HVI HVICCS	SD between bale layers (based on 10 tests per layer)	SD between single tests (based on 10 times 10 tests)
Mic	0,053	0,040
Strength, g/tex	0,462	0,683
Length, UHM, inch	0,0049	0,0126
Length, UHM, mm	0,125	0,320

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	
17		4.0		
20		4.2		
29	5	(4.7)	Sheffield	ISO 2403
35	3	4.2	775	
37		4.0		
67	5	4.1	Fibronaire	
70	6	4.1	MK.1	ASTMD3818-92
77		4.1	Sheffield	
79	5	4.3	Sheffield	ASTMD1448
93	4	4.2		ASTMD1448
102	3	4.2	Fibronaire	ICCS
112	2	4.3	Fibronaire	ASTM
116	4	(3.7)	STATEX	
128	8	4.3	Fibronaire	ASTM
129	4	4.2		BS 3181
131	6	4.1		ASTM
132	3	4.1	775	DIN 53941
133	2	4.1	Port-AR	
142	3	4.0	80400	ISO
152	3	4.3		
155		4.2		DIN 53941
162	5	4.2	WIRA	
167		4.4	275	
168		4.2		
169	3	4.2	Sheffield	
177	3	4.1	DPM 60	DIN 53941
183	3	4.2	Fibronaire	ASTMD1448
186	6	4.2	FMT	
193	3	4.2		GB/T6498-08
201	2	4.2	275	
203		4.1	900-1	
Average		4.16		
Median		4.17		
StdDev		0.09		
CV		2.25		
Min		4.0		
Max		4.4		
n		30		

PRESSLEY, STELOMETER								
Lab.	Pressley Tester				Stelometer			
	Rep.	PI (0)	PI (3.2)	Standard Test Method	Rep.	Bundle Tenacity gf/tex	Elongation %	Standard Test Method
29	5	8.8		ISO 3060				
35					6	22.8	5.7	
46	10	9.7	3.7	ISO 3060				
79	6	8.2		ASTMD1445				
93	6	8.8	3.4	ASTMD1445	6	19.1	6.9	ASTM 1445
102					5	19.5	5.7	ICCS
112					3	19.8	(8.9)	ASTM
116					10	22.3	5.9	
128	8	7.5	3.2	ASTM	8	21.5	7.3	ASTM
131	6	8.7	3.9	ASTM	6	19.0	5.6	ASTM
132					6	19.3	5.9	DIN ISO3060
152	5	8.2						
162	5	8.6			5	18.4	5.7	
177	4	6.7		DIN 53942				
193					12	20.3	5.8	GB/T13783-92
Average		8.35	3.54			20.19	6.06	
Median		8.61	3.53			19.63	5.8	
StdDev		0.85	0.3			1.5	0.61	
CV		10.17	8.52			7.45	10.0	
Min		6.7	3.2			18.4	5.6	
Max		9.7	3.9			22.8	7.3	
n		9	4			10	9	

Pressley	PI(0)	Av., gf/tex	44.75	StdDev, gf/tex	4.55	CV, %	10.17
	(3.2)	Av., gf/tex	24.10	StdDev, gf/tex	2.05	CV, %	8.52

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	6	27.6	1.08	12.2	0.48	44	18.4		6.0
28	10	27.9	1.10	13.1	0.52	47			7.1
35	3	26.8	1.05	12.4	0.49	46			8.1
93	4	28.2	1.11	13.7	0.54	49			
102	5	27.9	1.10	12.1	0.48	43			
116	5	26.4	1.04	12.8	0.50	48			
128	8	28.0	1.10	14.3	0.56	51			10.0
131	6	27.1	1.07	12.9	0.51	48			
143		27.3	1.07	13.8	0.54	51			
Average		27.46	1.081	13.03	0.513	47.5			
Median		27.55	1.085	12.89	0.507	47.6			
StdDev		0.59	0.023	0.77	0.03	2.6			
CV		2.16	2.159	5.90	5.904	5.4			
Min		26.4	1.04	12.1	0.48	43			
Max		28.2	1.11	14.3	0.56	51			
n		9	9	9	9	9	1	0	4

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	%	%
85	1	Keisokki				22.8	38.1	15.8
85-2	1	Keisokki				23.2	38.6	14.5
85-3	1	Keisokki				21.4	40.9	17.5

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	18.0	42.3	30.0	21.2	36.1	15.8
132	5	16.8	45.0	31.4	21.7	33.7	14.3
152	5	21.5	33.7	14.0	23.9	29.2	6.7

Maturity, Fineness <i>(further information see page "Multiple Devices")</i>					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
70					1.72
79					1.69
85					1.70
85-2					1.68
112					2.00
129		67			
131		70			
163		80			
177		73			
193					1.77

IIC/SHIRLEY FM-TESTER (further information see page "Multiple Devices")				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
37		76.8	0.88	171
70	6	87.3	1.0	154
93	4	86.7	0.96	165
102	2	78.9	0.89	195
128	8	80.0	0.9	179
186	6	78.6	0.88	176
Average		81.38	0.918	173.3
Median		79.46	0.895	173.5
StdDev		4.48	0.05	13.8
CV		5.5	5.441	8.0
Min		76.8	0.88	154
Max		87.3	1.00	195
n		6	6	6

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
4	USTER	900		10	1	2	2
5	USTER	1000 Line4		12	1	2	2
5-2	USTER	1000 Line5		12	1	2	
6	USTER	1000			1	2	2
7	USTER			10	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	6	1	2	2
9	Premier	ART	ICC	4	1	2	2
12	USTER	Spectrum I	SN/T1512-11	12	1	2	2
13	USTER	Spectrum	internal	10	1	1	1
16	USTER	Spectrum	SN/T1512-05	12	1	1	1
19	USTER	1000	SN/T1512-11		1	2	2
24	USTER	Spectrum	USDA	10	1	2	2
27	USTER	900 A	ASTMD5867-05	6	1	2	2
28	Textechno	Fibrotest		10			
30	USTER	Spectrum	internal		2	2	2
33	Premier	HFT	ICC		1	1	1
34	Premier	HFT	ICC	5	1	1	1
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
44	USTER	Spectrum	Manufacturer	10	1	1	
47	USTER	900 A	ASTMD5867	10	1	2	2
48	Premier	HFT	ASTMD5867-05	8	1	2	2
49	USTER	1000		6	1	2	2
50	USTER	1000		6	1	2	2
50-2	USTER	1000		6	1	2	2
50-3	USTER	1000		6	1	2	2
52	USTER	1000	ASTM	10	10	10	10
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	USDA		1	2	2
58	USTER	Spectrum	internal	10	1	2	2
59	USTER	1000	USDA	10	1	2	2
59-2	USTER	Classing	USDA	10	1	2	2
59-3	USTER	900 A	USDA	10	1	2	2
68	USTER	1000	USDA	10	1	2	2
71	USTER		SN/T1512-11	6	1	2	2
71-2	USTER		SN/T1512-11	6	1	1	1
72	USTER	1000		10	2	2	2
75	USTER	Spectrum	SN/T1512-11	6	1	2	2
78	USTER	Spectrum 1		6	1	2	2
79	USTER	900			1	2	2
80	USTER	1000		10	1	1	1
84	USTER	1000	USDA	12	1	2	2
87	USTER	1000	ASTMD5867-05	8	1	2	2
87-2	USTER	Spectrum	ASTMD5867-05	8	1	2	2
88	USTER	Spectrum	Manufacturer	6	1	2	2
90	USTER	1000	ASTMD5867	10	1	2	2
91	USTER	1000	ISO	6	1	2	2
93	USTER	900 A	ASTMD5867	6	1	2	2
96	USTER	1000	GB/T20392-06	10			
101	USTER	1000	ASTMD5867-05	6	1	2	2
101-2	Premier	ART 2	ASTMD5867-05	6	1	2	2
102	USTER	900 B	USDA	6	3	6	4
102-2	USTER	SW700V3.1.3.18	USDA	6	6	6	6
104	USTER	1000			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
105-2	USTER	Spectrum	Manufacturer	10	1	2	2
108	USTER	1000	ASTMD5867-12	12	1	1	1
109	USTER	900		10	1	2	2
111	USTER	1000	internal	10	1	2	2
112	USTER	1000	USDA	6	1	2	2
117	USTER	Spectrum	SN/T1512-11	12	1	1	1
118	USTER	1000M700	ASTMD5867-05	5	1	2	2
121	USTER	1000	SN/T1512-11		1	2	2
123	USTER	Spectrum	ASTMD5867-05	10	1	1	1
128	USTER	Spectrum II	ASTMD5867-12	10	1	2	2
129	Premier	ART	ASTM5867	6	1	2	2
130	Premier	ART 2		6	1	2	2
131	USTER	Spectrum	USDA	6			
132	USTER	900	DIN 53944	10		10	5
143	Premier	ART		6	1	2	2
143-2	USTER	Spectrum		6	1	2	2
146	Premier	ART	ICC		1	2	
148	USTER	1000		6	1	2	2
156	USTER	Spectrum 1	USDA. ASTM	6	1	2	2
158	USTER	900 A		6	1	2	2
158-2	USTER	900 A		6	1	2	2
162	USTER	900 A		6	1	2	2
163	USTER	900	ASTMD5867-12	6	3	6	2
172	USTER	900		6	1	2	2
176	USTER	1000			1	2	2
179	USTER	1000	SN/T1512-11	7	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		8	1	2	2
201	USTER	900		6			
202	Premier	ART	HVI Mode		1	2	2
203	USTER	900			1	2	2
204	USTER	Spectrum I	GB/T20392-06	30	1	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
207-5	USTER	1000	ASTMD5867-12	10	1	2	2
208	USTER	1000	ASTMD5867-12	10	1	2	2
208-2	USTER	1000	ASTMD5867-12	10	1	2	2
209	Premier	ART 2	ASTMD5867-05	6	1	2	2
209-2	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
213	Premier	ART	ICC	6	1	2	2
219	Premier	HFT		8	1	2	2
223	Premier	HFT	ICC	4	1	1	1
234	Premier	ART 2		4	1	1	2
237	USTER	Spectrum II	ASTM	6	1	2	2
238	Premier	ART			1	2	2
242	USTER	Spectrum		10	1	2	2
242-2	USTER	1000		3	1	2	2
251	Premier	ART	ICC	5	1	2	1
267	Premier	HFT	ICC		1	2	2
271	USTER	900	internal	10	1	1	1
271-2	Premier	ART	internal	10	1	1	1

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
272	Premier	ART		5	1	2	2
275	USTER	Spectrum II		30	1	2	2
277	Premier	ART		10	1	2	2
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	HFT			1	2	2
289	Premier	ART	ICC	15	1	1	1
295	Premier	HFT		4	1	2	
299	Premier	HFT	ICC	15	1	1	
300	Premier	ART	ISO	6	1	2	2
315	Premier	HFT			1	2	
318	Premier	HFT			1	1	
320	MAG	HVT Expert 1201	ASTM	10	1	2	2

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
4	4.5		25.9		5.4
5	4.2		27.2		6.5
5-2	4.2		27.4		5.7
6	4.3		27.0		4.2
7	4.3		27.7		6.9
8	(3.8)		26.5		(9.2)
9	4.0	20.1			
12	4.1		26.8		6.0
13	4.2		26.7		5.6
16	4.2		27.4		6.1
19	4.3		27.3		5.1
24	4.3		28.3		5.9
27	4.3		25.8		7.0
28			27.5		
30	4.3		24.7		6.1
33	4.3	20.9		5.4	
34	4.3	20.6		7.0	
41	4.2		25.3		5.5
43	4.3		26.6		4.4
44	4.2	19.6		6.7	
47	4.3		25.3		5.7
48	4.2	21.9	29.6	5.8	6.1
49	4.3		27.9		5.3
50	4.4		26.7		5.7
50-2	4.2		26.6		7.8
50-3	4.2		27.0		7.1
52	4.2		27.6		6.7
53	4.2		25.8		6.7
54	4.2		28.9		3.5
58	4.2		26.3		4.6
59	4.4		27.7		
59-2	4.3		27.3		
59-3	4.3		27.2		
68	4.3		26.8		
71	4.2		27.2		6.0
71-2	4.2		27.5		5.8
72	4.3		26.3		
75	4.1		27.2		(2.1)
78	4.4		26.7		
79	4.2		25.1		5.8
80	4.3		26.5		6.6
84	4.3		27.4		5.7
87	4.2		26.3		8.8
87-2	4.2		27.9		7.6
88	4.3		28.3		6.3
90	4.2		26.7		6.2
91	4.3		25.5		4.6
93	4.2		26.9		6.6
96	4.3		27.2		5.3
101	4.3		26.7		5.3
101-2	4.4		27.5		6.4
102	4.2		26.3		4.6
102-2	4.2		26.5		6.3

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
104	4.1		27.2		
105	4.1		27.4		7.8
105-2	4.2		26.3		6.5
108	4.2		27.1		5.1
109	4.2		28.2		
111	4.5		25.2		5.4
112	4.3		26.8		5.7
117	4.1		27.1		6.1
118	4.4		24.7		5.4
121	4.3		27.8		6.3
123	4.2	20.2	26.3	7.1	6.7
128	4.3		27.7		5.6
129	4.2	20.3	27.5	5.5	5.5
130	4.3	19.8	27.5	5.6	6.5
131	4.3		27.2		7.3
132			25.8		6.8
143	4.3		26.7		6.8
143-2	4.2		27.5		7.0
146	4.3	20.1			
148	4.2		27.1		4.6
156	4.3		28.2		6.9
158	4.2		29.1		6.2
158-2	4.3		29.3		5.8
162	4.1		28.1		4.3
163	4.2	21.5		5.9	
172	4.2		28.5		5.6
176	4.2		26.4		4.8
179	4.4		27.3		5.2
183	4.3		26.1		6.6
186	4.2	18.7	25.5	5.7	5.7
193	4.3		26.4		(12.0)
200	4.3		25.5		
201	4.2		27.2		8.1
202	(3.9)		27.6		5.7
203	4.1		29.0		
204	4.1		27.1		7.1
207	4.3		27.2		7.0
207-2	4.3		27.2		6.0
207-3	4.3		26.9		6.5
207-4	4.3		26.6		5.5
207-5	4.3		27.0		6.0
208	4.2		26.6		
208-2	4.2		26.9		5.4
209	4.1		29.0		6.2
209-2	4.2		28.6		6.2
213	4.1	19.7		6.3	
219	4.3		28.3		
223	4.4	17.9		5.6	
234	4.3		29.0		6.5
237	4.4		26.6		6.1
238	4.1	20.0			
242	4.3		27.1		6.2
242-2	4.2		27.7		6.5

HVI		<i>(table is divided into 3 pages)</i>				Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation			
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %		
251	(4.0)	21.4		6.2			
267	4.2	19.5		6.8			
271	4.4		28.0		5.0		
271-2	4.2		27.4		6.7		
272	(4.6)		27.5		(1.1)		
275	4.2		27.0				
277	4.4		26.7				
287	4.3	19.1	28.0	6.1	6.4		
288	4.4	19.5		5.6			
289	4.2	18.3					
295	4.2	20.2		7.1			
299	4.2	19.0					
300	(5.0)		27.5		6.8		
315	4.2	19.7					
318	4.0		29.7				
320	4.0	21.6		6.3			
Average	4.24	19.98	27.12	6.16	6.04		
Median	4.24	20.0	27.2	6.1	6.1		
StdDev	0.09	1.03	1.01	0.59	0.91		
CV	2.07	5.18	3.71	9.56	15.05		
Min	4.0	17.9	24.7	5.4	3.5		
Max	4.5	21.9	29.7	7.1	8.8		
n	115	23	105	17	85		

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
4				28.3	1.11	82.3
5				28.2	1.11	81.3
5-2				28.0	1.10	81.0
6				27.7	1.09	81.0
7				28.0	1.10	81.0
8				27.7	1.09	80.1
9	28.4	1.12	43.8			
12				27.3	1.07	80.5
13				27.9	1.10	80.5
16				28.1	1.11	81.3
19				27.9	1.10	80.7
24				27.8	1.10	80.9
27				28.2	1.11	81.7
28				28.1	1.10	83.1
30				28.3	1.11	82.3
33	27.5	1.08	45.4			
34	27.6	1.09	44.6			
41				27.3	1.08	81.5
43				27.9	1.10	80.7
44	27.9	1.10	46.1			
47				27.5	1.08	80.1
48	29.1	1.15	47.2	28.8	1.13	82.5
49				28.3	1.11	81.0
50				27.8	1.10	80.3
50-2				28.0	1.10	81.7
50-3				28.1	1.11	80.9
52				28.4	1.12	82.3
53				27.7	1.09	(22.3)
54				27.9	1.10	82.3
58				27.3	1.08	79.8
59				27.8	1.09	80.4
59-2				28.2	1.11	81.1
59-3				28.1	1.11	80.3
68				27.6	1.09	80.6
71				27.6	1.09	
71-2				27.6	1.09	
72				28.0	1.10	81.0
75				27.3	1.07	79.8
78				27.4	1.08	80.1
79				29.0	1.14	81.4
80				27.6	1.09	80.5
84				27.9	1.10	81.0
87				27.6	1.09	81.0
87-2				27.8	1.09	81.5
88				27.8	1.09	80.6
90				28.0	1.10	80.4
91				27.5	1.08	80.4
93				28.6	1.13	80.2
96				27.9	1.10	80.9
101				27.8	1.09	80.7
101-2				28.0	1.10	81.2
102				27.8	1.09	80.3

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
102-2				27.7	1.09	80.3
104				27.8	1.09	80.5
105				28.0	1.10	81.1
105-2				27.9	1.10	81.1
108				27.4	1.08	79.4
109				28.2	1.11	81.9
111				27.3	1.08	81.1
112				27.4	1.08	80.2
117				27.7	1.09	80.0
118				27.8	1.10	80.8
121				27.9	1.10	80.1
123	28.2	1.11	46.1	27.8	1.09	81.1
128				27.8	1.10	80.9
129	28.9	1.14	46.0	28.5	1.12	80.0
130	28.3	1.11	45.8	27.6	1.08	80.6
131				27.8	1.09	80.2
132				28.0	1.10	80.7
143				27.5	1.08	81.5
143-2				27.8	1.09	81.1
146	28.7	1.13	45.3			
148				27.7	1.09	81.9
156				27.1	1.07	79.1
158				28.7	1.13	82.2
158-2				29.0	1.14	81.6
162				28.2	1.11	81.2
163	29.2	1.15	44.7			
172				27.7	1.09	80.2
176				28.0	1.10	81.3
179				27.8	1.09	80.5
183				27.3	1.07	80.4
186	27.4	1.08	44.7	27.4	1.08	81.5
193				27.6	1.09	80.5
200				27.5	1.08	80.6
201				27.9	1.10	81.2
202				28.2	1.11	81.9
203				27.2	1.07	
204				27.2	1.07	81.6
207				28.1	1.11	80.8
207-2				28.1	1.11	80.9
207-3				27.9	1.10	80.9
207-4				28.0	1.10	80.4
207-5				27.9	1.10	81.1
208				27.8	1.09	80.7
208-2				27.9	1.10	81.5
209				27.7	1.09	81.8
209-2				27.8	1.09	82.2
213	27.9	1.10	45.0			
219				28.0	1.10	81.2
223	27.2	1.07	44.3			
234				27.8	1.10	81.3
237				27.8	1.09	80.4
238	27.0	1.06	43.0			

HVI	<i>(table is divided into 3 pages)</i>					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
242				27.3	1.07	
242-2				28.3	1.11	
251	28.0	1.10	(40.4)			
267	28.9	1.14	45.4			
271				28.4	1.12	80.6
271-2				27.6	1.09	82.4
272				27.8	1.09	82.8
275				27.4	1.08	81.2
277				27.4	1.08	81.3
287	28.3	1.11	45.9	28.1	1.11	81.1
288	27.6	1.09	45.0			
289	27.7	1.09	42.7			
295	27.7	1.09	44.2			
299	27.2	1.07	45.4			
300				28.1	1.11	81.2
315	27.1	1.06	46.1			
318				28.8	1.13	81.2
320	28.7	1.13	43.0			
Average	28.02	1.103	44.98	27.86	1.097	80.98
Median	27.92	1.099	45.15	27.82	1.095	81.0
StdDev	0.67	0.026	1.15	0.38	0.015	0.73
CV	2.4	2.398	2.55	1.36	1.359	0.9
Min	27.0	1.06	42.7	27.1	1.07	79.1
Max	29.2	1.15	47.2	29.0	1.14	83.1
n	23	23	22	105	105	99

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
4	67	10.9	43-1	3	0.19	13
5	67	11.3	43-3	4	0.75	52
5-2	67	11.2	43-3	4	1.1	48
6	70	11.8	23	4	0.9	59
7	65	10.9			0.66	21
8	(77)	11.0			0.53	34
9	(57)	(13.5)	54-3			
12	67	10.7	43-2	4	0.61	40
13	69	10.2	42-1		0.25	26
16	67	11.6	43-3	5	0.67	47
19	67	10.7	43-2	5	0.67	53
24	67	10.7	43-1			
27	66	11.2	43-3	4	0.8	57
30	66	10.6	43-2		0.33	21
33	(60)	(8.9)	62-1			
34	66	10.5	43-2			
41	(64)	11.0	53-3		0.44	40
43	68	10.8	43-1	4	0.64	65
47	66	10.5	43-2	6	1.09	50
48	66	10.4	43-2			
49	67	10.5	43-2	5	0.81	62
50	68	10.7	43-1	4	0.57	65
50-2	69	10.4	43-1	4	0.46	51
50-3	68	10.6	43-1	5	0.83	60
52	67	11.2	43-3	5	0.85	70
53				8	(1.79)	(174)
54	66	10.7	43-2	5	0.79	35
58	68	10.3	43-1	1	0.16	22
59	68	10.2	43-1	6	0.96	68
59-2	66	10.9	43-1	5	0.8	64
59-3	65	11.0	41-1	4	0.6	54
68	69	10.5	43-1	3	0.36	33
71	68	10.8			0.51	55
71-2	67	10.9			0.45	32
72	68	10.7	43-1		0.63	49
75	67	10.1	43-2		0.38	33
78	67	10.8	43-1		0.44	43
79	67	10.0	43-2	5	0.6	39
80	68	10.0	43-2	5	0.84	75
84	69	(0.9)	33-2	4	0.47	57
87	68	10.8	43-1	4	0.56	56
88	67	10.6	43-1	3	0.37	34
90	69	10.1	43-1		0.44	46
91	69	10.7	43-1	4	0.5	48
93	65	12.0	44-1	1	0.1	19
96	70	10.9				
101	67	10.4	43-2	4	0.6	64
101-2	68	11.2	43-3	2	0.14	18
102	68	10.6				
102-2	69	10.7			0.53	60
104	68	10.6	43-1		0.68	62
105	67	10.4	43-2	4	0.53	52
105-2	68	9.9	42-2	4	(1.50)	44

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
108	68	10.8	43-3	4	0.58	59
109	67	10.7	43-2			
111	69	10.5			0.37	42
112	70	10.5	33-2	1		
117	67	11.0	43-3	1	0.1	11
118	68	10.8	43-1	4	0.51	60
121	68	10.5	43-1		0.75	62
123	67	10.9	43-1	5	0.71	43
128	68	10.6			0.65	51
129	65	11.5	43-3			
130	66	10.6	43-2			
131	66	11.6			0.64	51
132	67	10.6	43-2			
143	67	11.2	43-3	3	0.4	24
143-2	68	10.7	43-1	2	0.26	21
148	68	10.5	43-1	4	0.61	59
156	68	10.4	43-2			
158	68	10.2	43-2	4	0.4	18
158-2	68	10.1	43-2	4	0.5	36
162	65	11.6	43-4			
163	67	9.2	52-1			
172	67	10.0		3	0.39	34
176	68	10.4	43-1	4	0.6	66
179	68	10.2	43-1	5	0.64	52
183	67	10.5	43-2	4	0.49	45
193	69	10.4	43-1	4	0.92	65
200	67	11.0	43-1		0.15	10
201	66	10.7	43-2	5	0.49	33
202	65	11.2	43-4			
203	69	9.6	42-2	8	(1.89)	(112)
207	68	10.6	43-1	4	0.53	49
207-2	69	10.7	43-1	4	0.58	51
207-3	69	10.7	43-1	5	0.69	51
207-4	68	10.6	43-1	5	0.66	51
207-5	68	10.5	43-1	5	0.75	58
208	69	11.1	33-2	4	0.57	55
208-2	69	10.5	43-1	4	0.58	55
209	66	9.8	53-1			
209-2	66	9.9	52-1			
213	68	10.2	43-1			
219	66	10.8	43-2			
223	(74)	(13.5)	24-1			
234	66	11.4	43-3			
237	67	11.6	43-3	2	0.24	28
238	(62)	11.5	53-3			
242	67	10.1	43-2	4	0.48	33
242-2	68	11.0	43-1	5	0.68	63
251	66	9.8	43-2			
267	68	9.9	43-2			
271	66	10.6	43-2			
271-2	68	10.4	43-1	8	(1.40)	71
272	68	11.1	43-3			
275	68	10.6	43-1	2	0.22	18

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
277	71	11.8	33-3			
287	68	10.7	43-1			
288	70	9.6	42-1			
289	67	10.2	43-2			
300	68	11.4	33-4			
320	(62)	11.4	53-3			
Average	67.4	10.68			0.556	45.7
Median	67.5	10.7			0.57	50.0
StdDev	1.2	0.51			0.219	16.2
CV	1.7	4.74			39.421	35.5
Min	65	9.2			0.1	10
Max	71	12.0			1.1	75
n	104	107			75	77

HVI		Short Fibre Index, Maturity		
<i>(table is divided into 3 pages)</i>				
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
4		6.1		
5		11.2		0.87
5-2		11.4		0.87
6		(21.0)		0.88
7		9.6		
8		9.6		0.86
9	12.7			
12		9.9		0.85
13		9.2		0.86
16		10.8		0.86
19		11.5		0.87
24		10.5		0.87
27		9.3		0.86
28		7.1		
30		8.9		0.85
33	9.0			0.83
34	9.4			0.83
41		9.4		0.85
43		10.4		
44	8.3			0.83
47		8.9	84	(47.00)
48	7.8	7.4		
49		9.6		0.87
50		10.3		0.87
50-2		9.9		0.85
50-3		10.2		0.85
52		10.2		0.85
53		10.5		0.81
54		8.9		0.87
58		14.3		0.86
59		10.9		0.86
59-2		10.2	87	
59-3		10.3	87	
68		10.7		0.87
71				0.85
71-2				0.86
72		10.3		
75		11.3		0.86
78		13.4		0.87
80		10.9		0.86
84		9.9	86	
87		11.3		0.84
87-2		9.6		0.87
88		11.7		0.87
90		10.7		0.86
91		10.7		0.87
93		9.5		
101		11.3		0.87
101-2		9.9		(1.11)
102-2		9.6		0.86
104		10.7	87	
105		12.0		
105-2		9.5		

HVI		Short Fibre Index, Maturity		
<i>(table is divided into 3 pages)</i>				
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
108		9.9		0.88
109		10.3	83	
111		11.4		0.87
112		13.2		0.86
117		10.8		0.86
118		11.0		0.87
121		11.2		0.86
123	13.6	13.7		0.83
128		9.7	(77)	0.87
130	7.3	10.7		0.87
131				0.87
132		11.8		0.82
143		10.7		0.82
143-2		10.9		0.86
146	7.1			0.82
148		11.1		0.87
156		12.7		0.87
158		8.7		0.85
158-2		8.7		0.86
162		9.3		
163	8.7			
172		9.8		0.87
176		9.8		0.87
179		12.0		0.87
183		12.1		0.86
186	8.1	8.0		
193		12.1		0.82
200		(16.2)		
201		9.8		0.86
202		9.0		0.81
203		14.4		0.82
204		9.9		0.86
207		10.8		0.85
207-2		10.7		0.86
207-3		10.3		0.86
207-4		10.5		0.87
207-5		10.8		0.86
208		12.4		0.88
208-2		11.1		0.87
209		9.2		0.82
209-2		9.7		0.81
213	8.4			
219				0.83
223	10.2			
234		10.4		
237		8.3		0.86
238				0.82
242		12.0		0.87
242-2		12.6		0.86
251	12.5			0.82
267	10.7			0.82
271-2		10.2		
272		7.4		0.83

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio		
275		11.6		0.87		
277				0.82		
288	9.1					
289	10.9					
295	9.6			0.82		
299	9.4					
300		9.3		0.83		
315	12.5			0.82		
318		9.5		0.83		
320	7.3			0.79		
Average	9.63	10.42	85.6	0.852		
Median	9.23	10.35	86.3	0.86		
StdDev	1.96	1.45	1.7	0.021		
CV	20.32	13.89	2.0	2.471		
Min	7.1	6.1	83	0.79		
Max	13.6	14.4	87	0.88		
n	20	92	6	88		

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
4	USTER			10
5	USTER	720		5
7	USTER			5
21	USTER	1190064		
24	USTER	AFIS Pro	USDA	10
27	USTER	720		5
39	USTER			
41	USTER			5
43	USTER			5
44	USTER	AFIS Pro	internal	10
51	USTER	AFIS Pro 2	ISO-9001	5
58	USTER		internal	10
59	USTER		USDA	5
75	USTER		ASTMD5866-12	5
80	USTER			10
88	USTER	AFIS Pro	Manufacturer	5
90	USTER		Manufacturer	10
91	USTER	Neptester MN100	ISO	10
91-2	USTER	AFIS Pro 2	ISO	10
101	USTER	296350	PAF02-11-05	5
102	USTER		ICCS	3
105	USTER		Manufacturer	5
105-2	USTER		Manufacturer	10
109	USTER			
110	USTER	206080		5
111	USTER	AFIS Pro 2	ASTM	10
111-2	USTER	Neptester MN100	ASTM	10
112	USTER	AFIS Pro		3
118	USTER		ASTMD5866-05	5
123	USTER			
123-2	USTER	AFIS Pro	ASTMD5866-05	10
123-3	USTER	AFIS Pro 2	ASTMD5866-05	10
128	USTER	Neptester 720	ASTM	5
129	USTER	AFIS Pro	ASTM5866	6
132	USTER			
143	USTER		ASTMD5866	5
148	USTER	AFIS Pro		10
148-2	USTER	AFIS Pro 2		10
148-3	USTER	Neptester		6
158	USTER			5
163	USTER		ASTMD5866-12	5
176	USTER			
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER		Manufacturer	10
186-2	USTER	AFIS Pro	Manufacturer	10
193	USTER	AFIS Pro		5
207	USTER	AFIS Pro	ASTMD5866-05	10
208	USTER	AFIS Pro	ASTMD5866-05	10
238	USTER	AFIS Pro		
271	USTER		internal	10
272	USTER			5
288	USTER	AFIS Pro		

AFIS L								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
4	17.6	0.69	53.1	35.8	1.41	33.1	1.30	35.1
7	16.6	0.65	58.8	35.5	1.40	32.8	1.29	39.3
21	17.5	0.69	51.0	34.3	1.35	32.0	1.26	33.0
24	17.0	0.67	54.8			31.8	1.25	34.5
39	17.3	0.68	53.9	34.6	1.36	32.2	1.27	33.4
41	18.5	0.73	46.6	34.1	1.34	32.2	1.27	28.1
43	18.3	0.72	53.5			33.3	1.31	32.1
44	18.6	0.73	50.8			33.2	1.31	29.1
51	17.9	0.70				32.3	1.27	31.2
58	18.0	0.71	51.9	35.1	1.38	32.8	1.29	32.0
75	19.1	0.75				34.4	1.35	28.9
80	16.5	0.65	(64.5)			32.5	1.28	39.3
88	19.3	0.76				34.2	1.34	25.7
90	18.4	0.72	54.0	35.8	1.41	33.4	1.31	31.0
91-2	18.3	0.72	52.3			33.1	1.30	28.8
101	18.4	0.72	54.2	36.9	1.45	34.3	1.35	33.4
102	18.2	0.72	54.2	35.5	1.40	33.3	1.31	32.6
105	18.3	0.72	53.7	35.6	1.40	33.0	1.30	32.1
105-2	18.5	0.73	50.6	36.3	1.43	33.8	1.33	31.2
109	18.7	0.74	52.4	35.6	1.40	33.2	1.31	30.3
110	16.7	0.66	58.4			32.3	1.27	36.9
111	18.0	0.71	53.3			33.0	1.30	32.7
112	18.5	0.73	53.0			33.8	1.33	32.2
118	19.5	0.77	47.6	36.0	1.42	33.6	1.32	26.3
123	18.8	0.74	51.3			33.6	1.32	30.4
123-2	17.8	0.70	56.8			33.0	1.30	31.9
123-3	17.7	0.70	55.4			32.9	1.30	31.8
129	18.8	0.74	50.9			33.5	1.32	27.1
143	18.2	0.72	55.9	35.8	1.41	33.5	1.32	32.6
148	17.9	0.70	53.0			32.6	1.28	31.1
148-2	18.0	0.71	52.2			32.5	1.28	30.0
158	(27.0)	(1.06)	60.7	35.1	1.38	32.9	1.30	37.1
163	19.0	0.75	52.1	37.0	1.46	34.7	1.37	30.8
176	18.8	0.74	52.6	36.1	1.42	33.8	1.33	29.0
183	19.6	0.77	49.3			33.8	1.33	27.5
186	19.2	0.76	51.7	36.4	1.43	34.0	1.34	29.5
186-2	18.8	0.74	53.8			34.2	1.35	29.0
193	18.5	0.73	52.3			33.0	1.30	31.1
207	18.7	0.74	51.1			33.2	1.31	27.1
208	19.1	0.75	51.0			33.5	1.32	26.4
271	17.8	0.70	55.9	35.6	1.40	33.3	1.31	34.5
272	18.6	0.73	48.7	35.1	1.38	33.0	1.30	27.7
288	17.9	0.71				33.1	1.30	31.5
Average	18.26	0.719	52.97	35.6	1.402	33.2	1.307	31.29
Median	18.35	0.722	52.8	35.58	1.401	33.2	1.307	31.2
StdDev	0.74	0.029	2.88	0.76	0.03	0.67	0.026	3.22
CV	4.04	4.044	5.43	2.14	2.143	2.0	2.003	10.3
Min	16.5	0.65	46.6	34.1	1.34	31.8	1.25	25.7
Max	19.6	0.77	60.7	37.0	1.46	34.7	1.37	39.3
n	42	42	38	20	20	43	43	43

AFIS L						Length
Lab.	W					SFC %
	ML		CV %	UQL		
	mm	inch		mm	inch	
4	22.6	0.89	40.1	28.8	1.13	15.5
7	22.3	0.88	(41.8)	28.8	1.13	16.5
21	22.1	0.87	37.2	28.0	1.10	14.2
24	22.1	0.87	38.9	27.8	1.09	13.7
39	22.3	0.88	37.6	28.1	1.11	13.3
41	22.4	0.88	35.2	28.0	1.10	12.2
43	23.4	0.92	37.6	29.2	1.15	12.3
44	23.4	0.92	36.9	29.2	1.15	11.1
51	(17.5)	(0.69)		29.2	1.15	11.2
58	22.9	0.90	37.7	28.7	1.13	13.0
75	24.8	0.98		30.5	1.20	9.1
80	23.4	0.92	38.1	29.2	1.15	12.5
88	24.2	0.95		29.8	1.17	9.0
90	23.7	0.93	36.2	29.5	1.16	11.1
91-2	23.3	0.92	37.1	29.0	1.14	10.4
101	23.9	0.94	39.1			13.3
102	23.5	0.93	37.1	29.4	1.16	12.2
105	23.9	0.94	36.9	29.5	1.16	11.8
105-2	23.4	0.92	38.9	29.5	1.16	13.4
109	23.9	0.94	36.0	29.4	1.16	11.0
110	22.4	0.88	39.9	28.6	1.13	14.2
111	23.1	0.91	37.4	29.0	1.14	12.8
112	23.6	0.93	37.7	29.7	1.17	12.4
118	23.9	0.94	35.1	29.5	1.16	10.3
123	23.8	0.94	37.0	29.6	1.17	11.8
123-2	23.5	0.93	36.7	29.1	1.15	10.5
123-3	23.1	0.91	37.4	29.0	1.14	11.3
129	23.7	0.93	35.9	29.6	1.17	9.7
143	23.9	0.94	36.5	29.7	1.17	11.3
148	22.9	0.90	38.0	28.7	1.13	11.9
148-2	22.9	0.90	36.8	28.6	1.13	11.2
158	23.3	0.92	37.8	29.2	1.15	12.8
163	24.2	0.95	37.3	30.4	1.20	12.0
176	24.1	0.95	36.3	29.7	1.17	10.3
183	24.1	0.95	36.3	30.0	1.18	10.6
186	24.3	0.96	36.0	30.0	1.18	10.7
186-2	24.2	0.95	36.7	30.1	1.19	9.8
193	23.6	0.93	36.6	29.2	1.15	11.7
207	23.6	0.93	35.9	29.2	1.15	9.5
208	24.0	0.94	34.9	29.5	1.16	8.8
238				29.4	1.16	
271	23.4	0.92	37.8	29.2	1.15	12.8
272	23.1	0.91	35.4	28.7	1.13	11.1
288	23.1	0.91		29.0	1.14	11.8
Average	23.41	0.922	37.11	29.22	1.15	11.77
Median	23.45	0.923	37.05	29.21	1.15	11.8
StdDev	0.65	0.026	1.22	0.6	0.024	1.66
CV	2.77	2.775	3.3	2.06	2.056	14.11
Min	22.1	0.87	34.9	27.8	1.09	8.8
Max	24.8	0.98	40.1	30.5	1.20	16.5
n	42	42	38	43	43	43

AFIS D / M			Diameter, Maturity				
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio		
4	13.7		167	6.4	0.9		
24			155	11.5	0.81		
41							
43					165	7.3	0.88
44					158	8.2	0.84
51					157	7.2	0.83
58					154	9.9	0.8
75					173	5.0	0.93
80					167	9.9	0.88
88					161	7.8	0.86
90					159	6.2	0.85
91-2					159	7.3	0.87
102					150	10.9	0.79
105					154	8.2	0.83
105-2					156	8.6	0.84
109					168	6.9	0.87
110					158	7.8	0.85
111					156	8.6	0.83
112					155	8.1	0.85
118					155	7.9	0.84
123					164	7.2	0.89
123-2					152	9.6	0.84
123-3					158	7.2	0.86
129					(135)		
143					155	7.1	0.84
148					160	8.0	0.87
148-2					161	7.1	0.86
158					152	8.8	0.83
176					154	9.6	0.82
183					160	6.8	0.88
186					154	9.5	0.8
186-2					153	9.8	0.83
193					160	8.1	0.86
207			162	8.9	0.85		
208			152	12.2	0.8		
238			157	8.0	0.85		
271			148	12.8	(0.73)		
272	11.9						
288			158	8.9	0.85		
Average				158.0	8.42	0.848	
Median			157.5	8.1	0.85		
StdDev			5.4	1.67	0.03		
CV			3.4	19.86	3.547		
Min			148	5.0	0.79		
Max			173	12.8	0.93		
n	2	0	36	36	35		

AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
4	285	109	743	2.34
21	220	88	(1134)	1.94
43	307	(628)	541	1.87
51	224	119	626	2.32
58	303	97	715	2.59
88	282	83	623	1.64
90	324	79	416	1.58
91-2	323	(575)	491	1.91
102	295	74	503	1.47
105-2	293	115	775	2.42
110	300	118	740	2.25
111	287	(584)	516	1.34
112	319	110	619	2.19
129	293	110	733	2.21
143	275	94	782	1.9
148	321	101	586	2.5
148-2	289	91	631	1.9
158	264	83	774	2.32
183	300	95	632	2.03
186	301	122	790	2.84
186-2	296	118	756	2.43
193	331	98	485	1.77
207	317	99	520	1.88
208	307	102	612	2.06
272	304	85	529	2.0
Average	294.4	99.5	630.8	2.068
Median	300.0	98.5	624.5	2.03
StdDev	27.1	14.2	113.6	0.363
CV	9.2	14.2	18.0	17.534
Min	220	74	416	1.34
Max	331	122	790	2.84
n	25	22	24	25

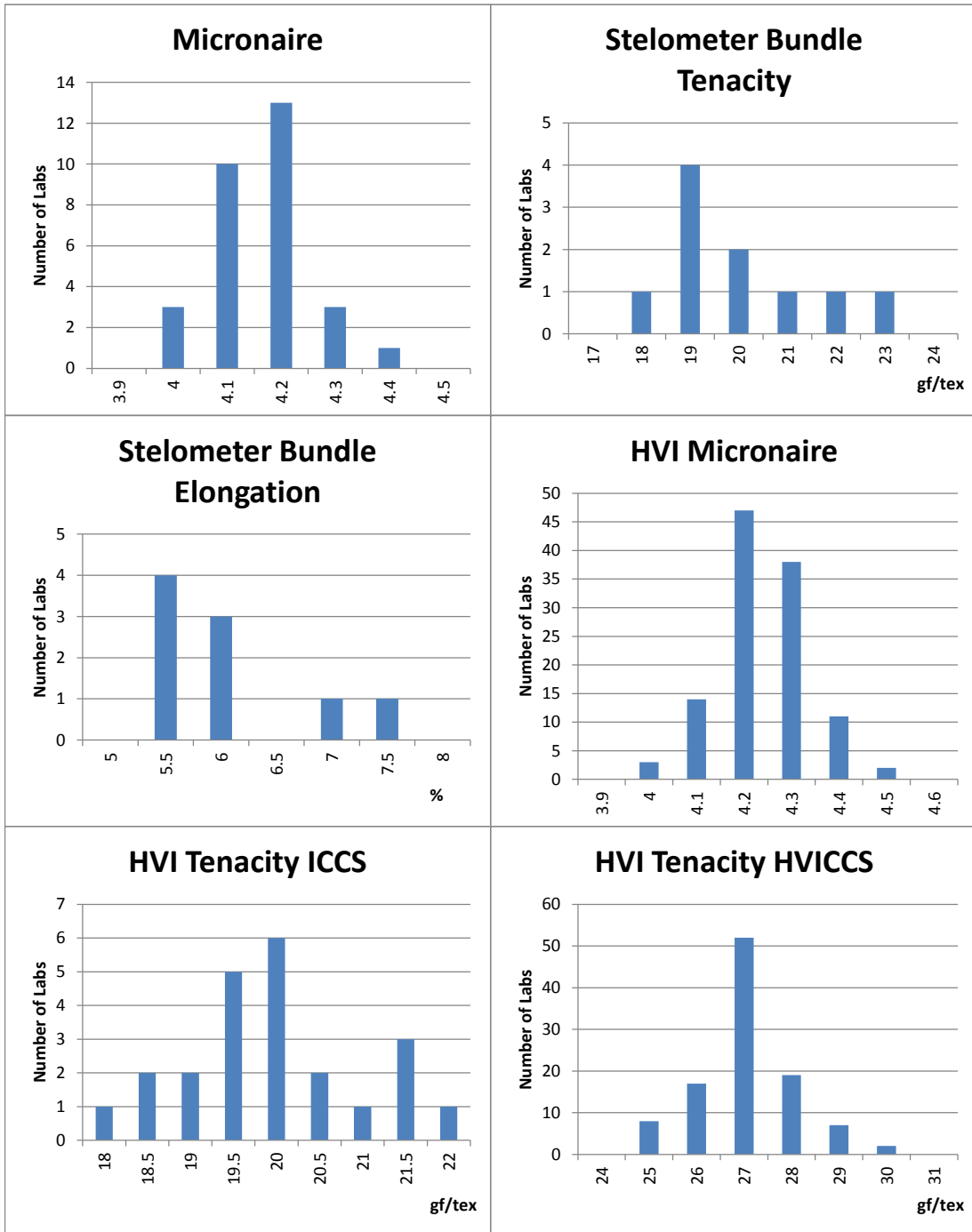
AFIS N		<i>(table is divided into 2 pages)</i>			Neps	
Lab.	Neps		SCN		Cnt/g	Cnt/g
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g		
4	642	289				
5		291				
7	764	189				
21	676	188	1223			
24	728	292	1231			20
27		241				
39	631	202				
41	655	300				
43	702	289	1222			16
44	731	246	1325			21
51	702	293	1250			16
58	696	267	882			6
59	692	270	1006			11
75	694	277	1079			15
80	693	257	1079			12
88	713	361	1164			15
90	710	298	1339			16
91	661	301				
91-2	688	286	1250			17
101	778	228				
102	721	311	1089			(47)
105	710	264	1472			18
105-2	704	312	1106			31
109	711	242	1061			18
110	748	357	1287			34
111	700	295	1317			18
111-2	663	274				
112	711	257	1149			23
118	695	261	1323			10
123	701	266	1136			21
123-2	696	274	1056			16
123-3	710	286	1096			11
128		316				
129	701	307	1154			29
132	651	262				
143	688	274	1055			18
148	695	270	1038			15
148-2	696	347	1011			23
148-3		282				
158	726	320	1096			26
163	711	301	994			27
176	711	305	974			23
183	674	294	1062			9
186	702	269	1144			17
186-2	725	278	1060			22
193	721	336	1271			19

AFIS N				(table is divided into 2 pages)		Neps	
Lab.	Neps		SCN				
	Mean Diameter μm	Cnt/g	Mean Diameter μm	Cnt/g			
207	725	321	1223	26			
208	696	294	1199	18			
238	725	278	1284	17			
271	668	295	1189	13			
272	672	283					
288	692	302	1081	16			
Average	700.1	282.7	1153.3	18.5			
Median	701.0	286.0	1144.0	18.0			
StdDev	28.3	35.4	122.8	6.1			
CV	4.0	12.5	10.7	33.3			
Min	631	188	882	6			
Max	778	361	1472	34			
n	48	52	39	37			

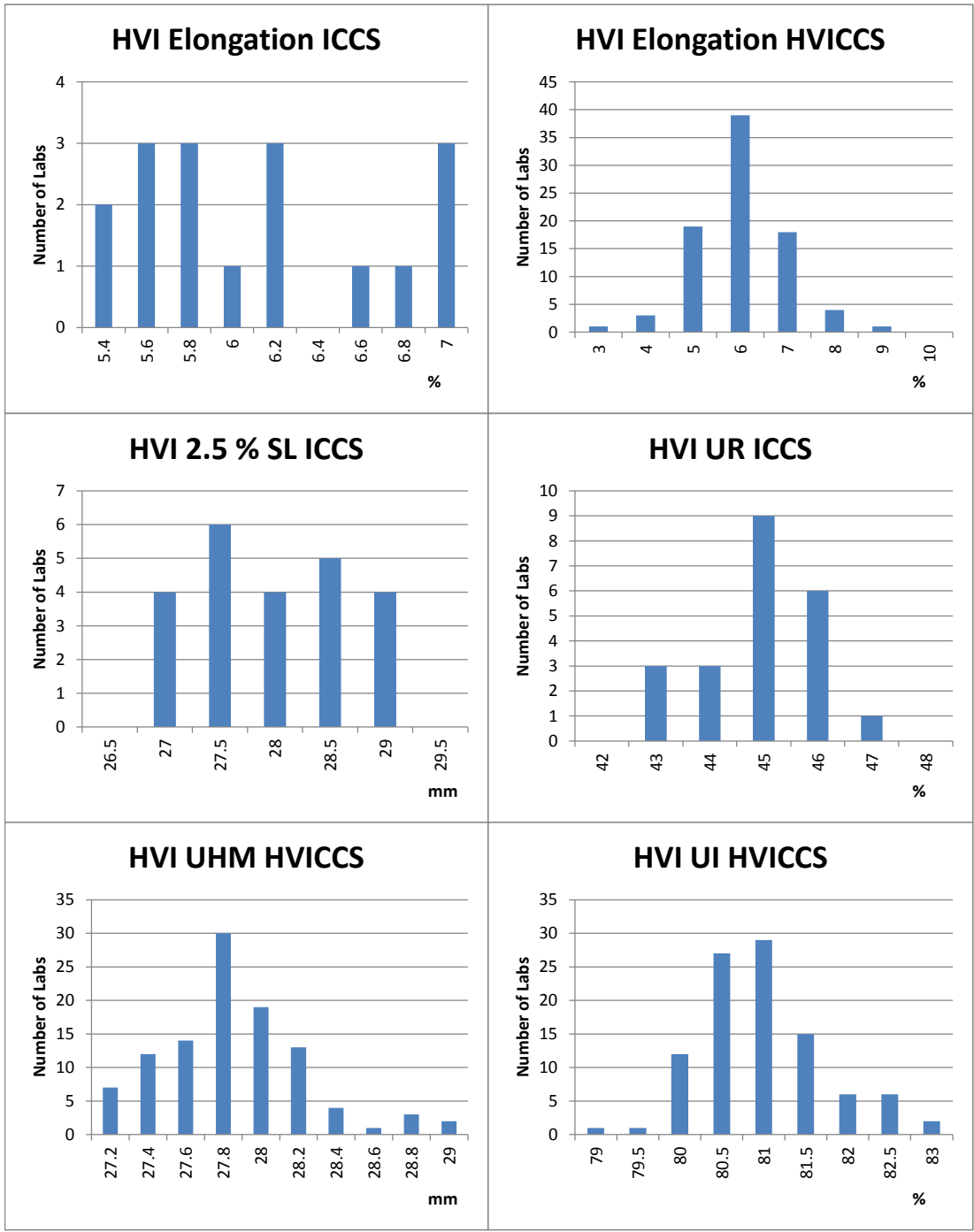
aQura <i>(further information see page "Multiple Devices")</i>						Length, Neps	
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	30.5	15.3	31.8	16.7	157	22
82	4	28.9	17.4	24.0	10.9	172	31
101	4	32.0		25.4	11.4	235	44
116	4	29.6	16.1	32.3	15.3	320	58
127	4	32.9	16.0	24.0	10.6	179	34
130	4	31.0	18.7	22.4	10.9	249	34
146	4	30.7	16.8	29.3	13.0	259	40
213	4	30.3	16.8	30.5	15.0	66	9
234	4			27.9	12.8	293	52
251	5	30.1	(31.43)	17.8	7.8	264	28
277	4	27.2	15.1	38.2	19.4	462	66
300	4	30.9	19.0	21.2	9.4	189	34
Average		30.37	16.78	27.07	12.77	237.1	37.7
Median		30.49	16.75	26.65	12.1	242.0	34.0
StdDev		1.49	1.37	5.68	3.31	98.9	15.7
CV		4.92	8.17	20.98	25.9	41.7	41.7
Min		27.2	15.1	17.8	7.8	66	9
Max		32.9	19.0	38.2	19.4	462	66
n		11	9	12	12	12	12

Multiple Devices <i>(information not provided in the respective table)</i>					General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
8	DigitalFibrograph		730	ASTM1447	6
28	DigitalFibrograph	Textechno	Fibrotest		10
35	DigitalFibrograph	USTER	730		3
37	FMT				
53	aQura	Premier			4
58	ALMeter	Peyer		internal	3
70	FMT	SDL	MK.1	ASTMD3818-92	6
70	GravFineness			ISO 1973-95	5
79	GravFineness			RSTUz620-94	4
82	aQura	Premier			4
85	GravFineness			UNIENISO1973-98	10
85	CombSorter		Keisokki	UNI10170-94	1
85-2	GravFineness			UNIENISO1973-98	10
85-2	CombSorter		Keisokki	UNI10170-94	1
85-3	CombSorter		Keisokki	UNI10170-94	1
93	DigitalFibrograph			ASTM1447	4
93	FMT		WIRA	ISO	4
101	aQura	Premier			4
102	FMT		FMT 3	ICCS	2
102	DigitalFibrograph		530	ICCS	5
112	GravFineness			ASTM	3
116	DigitalFibrograph		Auto Span AS101		5
116	aQura	Premier			4
127	aQura	Premier			4
128	DigitalFibrograph			ASTM	8
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	ALMeter	Peyer	AL100	DIN 53806	5
143	DigitalFibrograph	USTER	330	ABNTNBR13154-94	
146	aQura	Premier			4
152	ALMeter				5
163	Causticaire		Microscope	ASTMD1442-06-12	5
177	Causticaire			DIN53943-4	3
186	FMT	SDL	FMT	USDA	6
193	GravFineness			GB/T6100-07	2
213	aQura	Premier			4
234	aQura	Premier			4
251	aQura	Premier			5
277	aQura	Premier			4
300	aQura	Premier		ISO	4

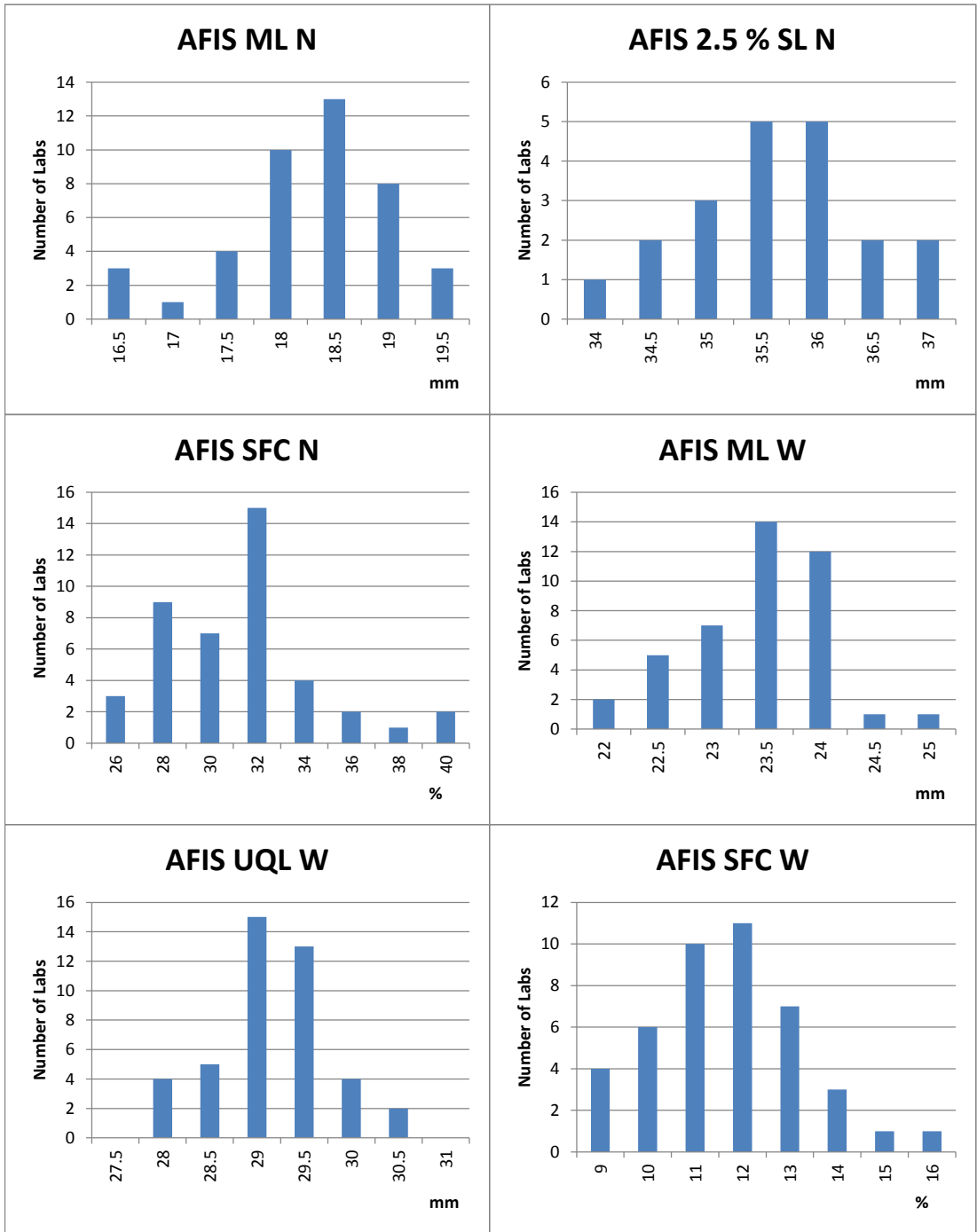
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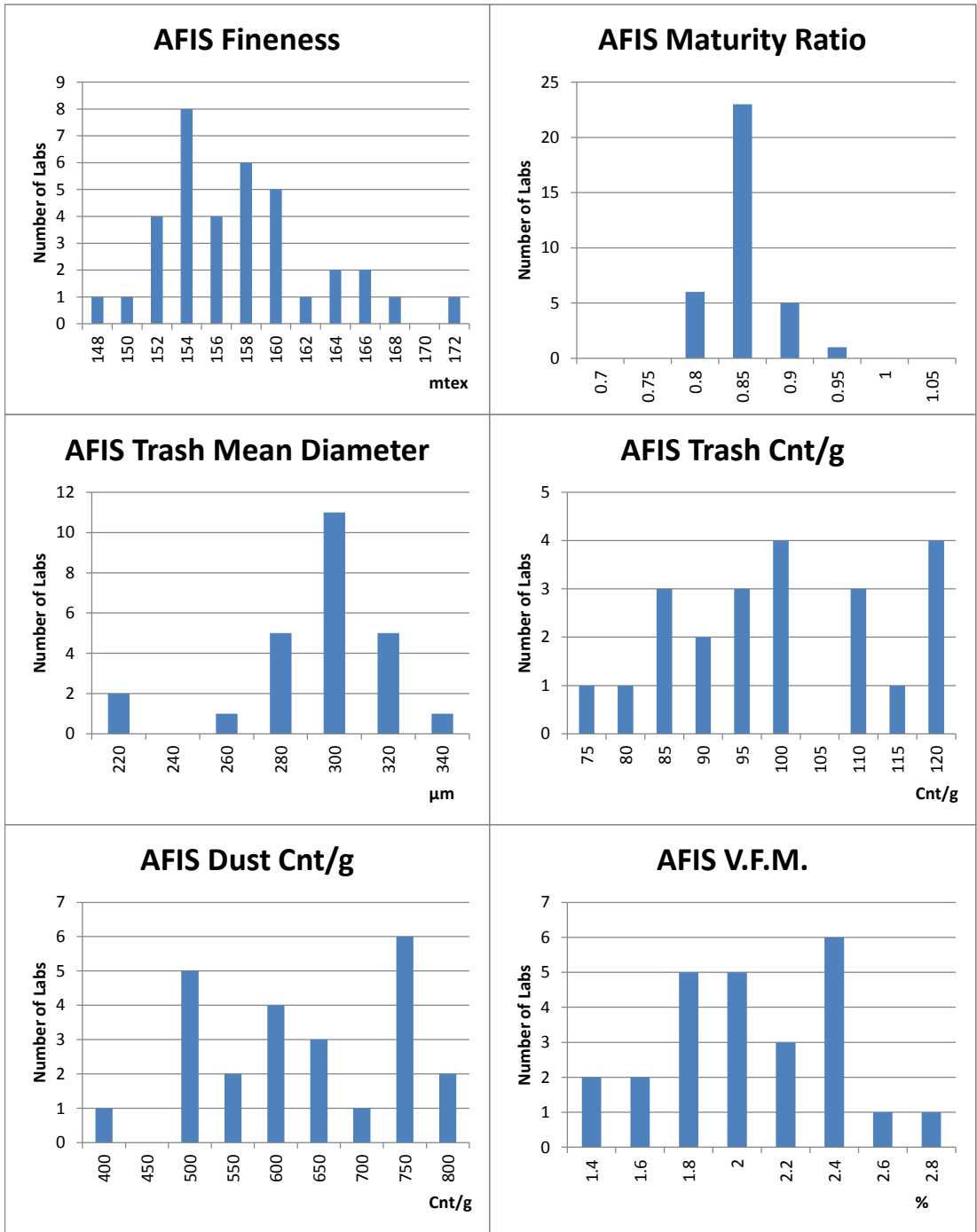
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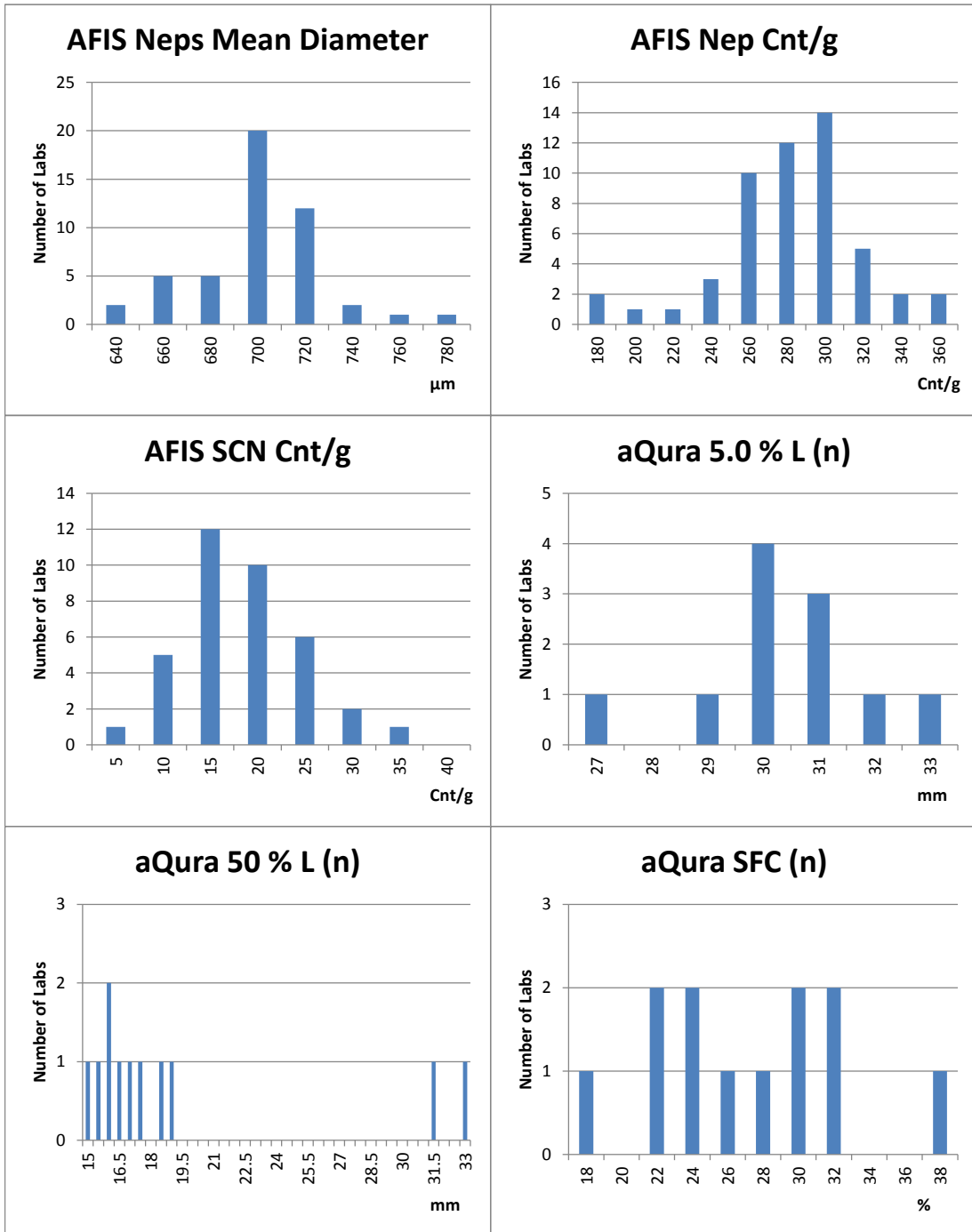
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