



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, 01.10.2012

Evaluation of the Test Results 2012 / 2

Tested Cotton: **US-Upland** Number of Laboratories: **120**
Cotton Number: **RM 48**

Argentina	1	The Netherlands	1
Australia	-	Pakistan	2
Bangladesh	1	Poland	1
Brazil	5	Portugal	1
China, PR	19	Russia	-
Czech Republic	6	Serbia	1
Egypt	3	Slovenia	2
France	1	South Africa	1
Germany	11	Spain	2
Greece	7	Sudan	2
Hungary	1	Switzerland	2
India	25	Syria	-
Iran	1	Tanzania	1
Israel	1	Thailand	4
Italy	1	Turkey	1
Japan	2	Uganda	-
Kazakhstan	1	United Kingdom	1
Korea, R	1	United States	5
Latvia	1	Uzbekistan	1
Mali	1	Vietnam, SR	1
Mauritius, Rep of	1	Zimbabwe	1
Mozambique	-		

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

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Explanations:

introduction / 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.

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 Upland (**RM 48**)

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 M1000 with 15 tests on samples from 3 different boxes with the following results:

HVI HVICCS	SD between boxes (based on 15 tests per box)	SD between single tests (based on 3 times 15 tests)
Mic	0,004	0,027
Strength, g/tex	0,217	0,612
Length, UHM, inch	0,0022	0,0082
Length, UHM, mm	0,057	0,208

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.

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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.

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.

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registration and participation

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.

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.

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.

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
6	12	4.8	MC09040	GB/T 6498
10	12	4.8	MC09040	GB/T6498
12	6	4.9	775	GB/T6498-05
17		4.8		
20	3	5.0		manual
22	3	5.0		
29	6	5.1	Sheffield	ISO 2403
35	3	5.0	775	
37		4.5		
56	2	4.8	Fibronaire	JIS
67	4	4.9	Fibronaire	
70	3	4.8	MK.1	
76	3	4.7	RM 1070	
77		4.9		
79	5	5.0		ASTMD1448
93	2	4.7		ASTMD1448
102	6	4.9	Fibronaire	ICCS
116	4	(4.0)	STATEX	
126		4.9		ASTM
128	8	4.9	Fibronaire	ASTM
129	4	5.0		BS 3181
132	3	5.0	775	DIN 53941
133		4.9	275	
142	3	4.9	80400	ISO
152	3	4.9		
155		5.1	275	DIN 53941
162	3	4.8	WIRA	
167	2	5.2	275	
169	3	5.0	Sheffield	
177	3	4.8	DPM 60	DIN 53941
183	3	4.8	Fibronaire	ASTMD1448
186	6	4.8	FMT Ser.2	
188	10	4.6		ASTM
193	3	4.8		GB/T6498-08
201	2	5.0	275	
203		(5.5)	900-1	
Average		4.88		
Median		4.9		
StdDev		0.15		
CV		3.0		
Min		4.5		
Max		5.2		
n		34		

PRESSLEY, STELOMETER								
Lab.	Pressley Tester				Stelometer			
	Rep.	PI (0)	PI (3.2)	Standard Test Method	Rep.	Bundle Tenacity gf/tex	Elongation %	Standard Test Method
8					10	21.3	6.1	ASTMD1445-95
29	6	7.9		ISO 3060				
35					6	26.4	5.7	
56	5	9.4		JIS				
76	5	9.2						
79	6	8.9		ASTMD1445				
93	6	8.3	3.8	ASTM1445	6	21.7	7.0	
102					5	24.4	5.7	
116					10	25.4	(9.8)	
128	8	9.2	4.9	ASTM	8	24.0	7.2	
131	6	9.8	4.1	ASTM	6	24.1	6.3	
132					6	25.1	5.9	
152	6	8.6						
162	6	9.0			6	23.3	6.6	
177	5	7.9		DIN 53942				
188	10	8.7		ASTM				
193					6	23.4	5.8	
Average		8.8	4.28			23.91	6.25	
Median		8.87	4.12			24.03	6.12	
StdDev		0.61	0.57			1.59	0.57	
CV		6.9	13.36			6.64	9.09	
Min		7.9	3.8			21.3	5.7	
Max		9.8	4.9			26.4	7.2	
n		11	3			10	9	GB/T13783-92

Pressley	PI(0)	Av., gf/tex	47.19	StdDev, gf/tex	3.26	CV, %	6.90
	(3.2)	Av., gf/tex	29.08	StdDev, gf/tex	3.89	CV, %	13.36

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	10	27.2	1.07	12.7	0.50	47			6.3
93	4	28.2	1.11	14.6	0.57	52			
102	5	27.2	1.07	12.4	0.49	45			
116	5	(25.3)	(1.00)	14.0	0.55	51			
123	5	28.0	1.10	13.6	0.54	49			
126	5	27.2	1.07	13.1	0.52	48			
128	8	28.2	1.11	14.3	0.56	51			
131	6	28.3	1.11	12.0	0.47	42			
143		27.5	1.08	13.8	0.54	50			
Average		27.73	1.092	13.39	0.527	48.4			
Median		27.75	1.093	13.60	0.535	48.6			
StdDev		0.49	0.019	0.89	0.035	3.1			
CV		1.77	1.774	6.63	6.634	6.4			
Min		27.2	1.07	12.0	0.47	42			
Max		28.3	1.11	14.6	0.57	52			
n		8	8	9	9	9	0	0	2

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				22.1	39.3	17.0
129	2	Bear Sorter	25.4		9.1			

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	4	19.6	40.0	23.5	22.7	33.5	11.6
132	5	19.2	37.9	22.2	22.0	31.2	10.9
152	5	22.4	28.7	8.8	24.2	25.0	4.2
186	4	20.4			22.7		

Maturity, Fineness <i>(further information see page "Multiple Devices")</i>					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		82			
70					2.10
79					1.95
85					1.76
129		81			
131		75			
177		77			1.90
193					1.94

IIC/SHIRLEY FM-TESTER (further information see page "Multiple Devices")				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
8	10	90.6	1.03	180
37		83.2	0.97	166
70	3	97.9	(1.18)	164
93	2	87.2	0.98	220
102	2	90.3	1.04	175
128	8	83.0	0.94	208
131	6	75.0	0.92	185
186	6	84.5	0.96	198
Average		86.46	0.977	187.1
Median		85.85	0.97	182.8
StdDev		6.77	0.044	20.0
CV		7.83	4.547	10.7
Min		75.0	0.92	164
Max		97.9	1.04	220
n		8	7	8

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			1	2	2
7	USTER	1000		5	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	10	1	1	1
12	USTER	Spectrum I	SN/T1512-11	12	1	2	2
13	USTER	Spectrum	internal	10	1	1	1
19	USTER	1000	SN/T1512-11		1	2	2
27	USTER	900 A	ASTMD5867-05	6	1	2	2
30	USTER	Spectrum	internal		2	2	2
32	USTER	900 A	internal	10	4	10	4
36	USTER	900			1	2	2
38	USTER	1000			1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
47	USTER	900 A	ASTMD5867	10	1	2	2
48	Premier	HFT	ASTMD5867-05	10	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	
52	USTER	1000	ASTM	6	1	2	2
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	USDA		1	2	2
56	USTER	Spectrum I	HVI Mode	5	1	2	2
58	USTER	Spectrum	internal	10	1	2	2
59	USTER	Classing	USDA	10	1	2	2
59-2	USTER	900 A	USDA	10	1	2	2
59-3	USTER	1000	USDA	10	1	2	2
59-4	USTER	1000	USDA	10	1	2	2
60	USTER	1000		6	1	2	2
64	USTER	Spectrum			1	2	2
71	USTER	1000		6	1	2	2
71-2	USTER	Spectrum		6	1	2	2
72	USTER	1000		10	2	2	2
75	USTER	Spectrum	GB/T20392-06	6	1	2	2
78	USTER	Spectrum I		5	1	2	2
79	USTER	900			1	2	2
80	USTER	1000		10	1	1	1
84	USTER	1000	USDA	12	1	1	1
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	Premier	HFT	GB/T20392-06	10	1	2	2
98	USTER	1000	USDA. ASTM	12	1	2	4
101	Premier	ART 2	ASTMD5867-05	6	1	2	2
101-2	USTER	1000	ASTMD5867-05	6	1	2	2
102	USTER	900 B	USDA	6	3	6	4
102-2	USTER	Spectrum	USDA	6	2	6	6
102-3	USTER	SW700V3.1.3.18	USDA	6	6	6	6
105	USTER	Spectrum	Manufacturer	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
105-2	USTER	Spectrum	Manufacturer	6	1	2	2
106	USTER	1000	ICC	6	6	6	6
107	Premier	ART 2	ASTM	6	1	2	2
117	USTER	Spectrum	SN/T1512-11	15	1	1	1
118	USTER	1000M700	ASTMD5867-05	2	1	2	2
120	USTER	900 SA	ASTM	10	1	2	2
121	USTER	1000	SN/T1512-11		1	2	2
123	USTER	Spectrum	ASTMD5867-05	10	1	1	1
126	USTER	900			1	2	2
128	USTER	Classing	ASTM 5866	8	1	2	2
129	Premier	ART	ASTM5867	6	1	2	2
131	USTER	900	USDA	6	1	2	2
132	USTER	900	DIN 53944	1		10	5
143	Premier	ART	ABNT/NBR13379a82	6	1	2	2
143-2	USTER	Spectrum	ABNT/NBR13379a82	6	1	2	2
148	USTER	1000		6	1	2	2
153	USTER	Spectrum	Manufacturer	6	1	2	2
153-2	USTER	Spectrum	Manufacturer	6	1	2	2
153-3	USTER	Spectrum	Manufacturer	6	1	2	2
156	USTER	Spectrum I	USDA. ASTM	6	1	2	2
158	USTER	900 A		6	1	2	2
159	USTER	Classing	USDA	6	1	2	2
161	Premier	ART 2	USDA	5	1	2	2
162	USTER	900 A		6	1	2	2
163	USTER	900	ASTMD5867-05	6	1	2	2
170	Premier	ART		4	1	2	2
176	USTER	1000		10	1	2	2
179	USTER	Spectrum	SN/T1512-11	6	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	ITMF	8	1	2	2
201	USTER	900		6	1	2	2
203	USTER	900-1			1	2	2
204	USTER	Spectrum I	GB/T20392-06	30	1	2	
207	USTER	1000	ASTMD5867-05	10	1	2	2
207-2	USTER	1000	ASTMD5867-05	10	1	2	2
207-3	USTER	1000	ASTMD5867-05	10	1	2	2
207-4	USTER	1000	ASTMD5867-05	10	1	2	2
208	USTER	1000	ASTMD5867-05	10	1	2	2
208-2	USTER	1000	ASTMD5867-05	10	1	2	2
213	Premier	ART	ICC	6	1	2	2
219	Premier	HFT		8	1	2	2
234	Premier	ART		4	1	1	2
237	USTER	Spectrum 2	ASTM	6	1	2	2
239	Premier	ART	ASTM	5		2	2
242	USTER	Spectrum	HVI Mode	10	1	2	2
242-2	USTER	1000	HVI Mode	4	1	2	2
271	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
271-2	USTER	900	internal	10	1	1	1
272	Premier	ART		5	1	1	2
275	USTER	Spectrum II		50	1	2	2
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	HFT					
289	Premier	ART	ICC	15	1	1	1
295	Premier	HFT			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	HVI Mode		1	2	2
319	Premier	ART	ASTMD5867-95				
320	MAG	HVT Expert 1201	ASTM	10	1	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	5.1		28.7		6.3
7	5.0		29.3		7.4
8	4.9		31.4		8.4
12	4.8		30.6		6.6
13	4.9		29.0		6.1
19	4.9		29.7		4.4
27	5.0		29.0		6.8
30	5.1		29.9		5.6
32	4.9		32.3		5.9
36	5.2		(38.5)		4.6
38	5.0		29.6		5.6
41	4.9		28.9		4.4
43	5.0		29.6		5.3
47	5.0		29.4		5.6
48	4.8	22.4	30.1	6.2	6.6
50	5.0		31.2		6.7
50-2	5.0		31.5		7.4
50-3	4.9		31.6		7.0
52	4.9		28.9		6.3
53	4.9		28.0		6.8
54	5.0		30.3		7.7
56	5.0		29.6		5.3
58	4.9		29.3		5.8
59	4.8		30.1		
59-2	4.8		29.8		
59-3	4.8		30.7		
59-4	4.8		29.3		
60	5.0		29.9		8.2
64	4.9		28.9		
71	5.0		31.7		5.4
71-2	4.9		31.8		5.7
72	5.0		29.6		
75	5.2		29.6		6.2
78	4.9		28.2		
79	4.9		30.7		6.5
80	4.9		31.2		6.9
84	4.9		30.6		4.6
88	4.8		30.3		6.0
90	5.0		30.1		6.2
91	5.0		30.2		4.9
93	4.8		30.1		6.8
96	4.9		28.6		6.6
98	5.0		31.0		
101	4.9		31.2		6.7
101-2	5.0		31.0		5.9
102	4.9		29.2		5.0
102-2	4.9		29.7		5.5
102-3	5.0		29.2		6.3
105	4.9		29.8		8.1
105-2	4.9		28.4		4.8
106	5.2	22.5	32.0		
107	4.9		30.5		
117	4.9		29.1		6.8

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
118	5.0		32.5		5.1
120	5.0		32.9		5.4
121	5.0		29.8		7.2
123	4.9	21.7	27.5	7.1	7.0
126	4.8		30.2		5.9
128	5.0		30.3		6.0
129	5.0	20.1	27.2	6.5	6.4
131	4.8		29.5		6.3
132			29.9		5.1
143	4.9		29.3		6.8
143-2	4.9		30.6		7.2
148	5.0		29.4		5.9
153	4.8		32.0		7.7
153-2	4.8		29.1		8.1
153-3	4.8		29.9		(10.2)
156	5.0		29.8		7.1
158	4.9		32.3		7.2
159	4.9		29.5		7.3
161	4.9	(31.6)	(36.2)	(2.5)	
162	4.7		29.5		4.5
163	4.9	22.5		6.2	
170	4.9		30.6		6.6
176	5.0		30.4		5.4
179	5.0		33.6		6.3
183	4.9		30.6		6.9
186	4.8		31.0		5.8
193	5.0		31.8		5.6
200	5.0		28.8		
201	5.0		29.5		8.2
203	5.0		(26.0)		
204	4.9		30.1		6.5
207	4.9		30.2		7.6
207-2	5.0		29.9		6.9
207-3	4.9		30.0		6.9
207-4	4.9		29.6		6.2
208	4.9		29.7		3.8
208-2	5.0		29.7		6.6
213	5.1	20.7		6.6	
219	(3.8)		30.0		
234	5.1		30.6		6.9
237	5.1		30.9		5.0
239			28.0		6.6
242	5.0		29.7		5.4
242-2	5.1		30.5		6.8
271	5.0		30.8		6.8
271-2	5.0		28.2		4.2
272	4.9		32.2		(1.2)
275	4.9		30.1		
287	5.0	20.5	28.3	6.1	6.6
288	5.0	20.0		6.6	
289	4.9	20.3		6.5	
295	5.0	21.6		6.2	
299	5.1	20.1		6.6	

HVI		<i>(table is divided into 3 pages)</i>				Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation			
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %		
300	5.0		29.8		6.8		
315	5.0	21.2					
318	4.9		31.6				
319	4.9	19.6	(37.8)	5.6	6.8		
320	4.7	23.6		5.4			
Average	4.94	21.2	30.08	6.3	6.27		
Median	4.94	20.95	29.9	6.35	6.4		
StdDev	0.09	1.21	1.17	0.46	1.0		
CV	1.8	5.7	3.9	7.35	15.88		
Min	4.7	19.6	27.2	5.4	3.8		
Max	5.2	23.6	33.6	7.1	8.4		
n	108	14	99	12	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				28.0	1.10	83.0
7				27.5	1.08	81.7
8				27.4	1.08	83.0
12				27.5	1.08	81.4
13				27.6	1.09	82.1
19				27.6	1.09	82.4
27				27.3	1.07	81.9
30				27.7	1.09	82.5
32				28.2	1.11	82.3
36				27.8	1.09	83.1
38				27.7	1.09	83.3
41				26.9	1.06	82.1
43				27.4	1.08	81.6
47				26.7	1.05	81.8
48	27.8	1.09	47.3	27.9	1.10	82.8
50				27.5	1.08	82.0
50-2				27.8	1.10	82.0
50-3				27.9	1.10	82.7
52				27.8	1.09	82.7
53				27.8	1.10	(22.8)
54				27.4	1.08	81.8
56				27.8	1.09	82.6
58				27.8	1.09	82.5
59				27.6	1.09	81.8
59-2				27.7	1.09	81.1
59-3				28.0	1.10	81.7
59-4				27.5	1.08	81.5
60				27.7	1.09	82.3
64				27.4	1.08	82.4
71				27.9	1.10	
71-2				28.7	1.13	
72				27.6	1.09	82.6
75				27.2	1.07	82.0
78				27.8	1.09	81.5
79				27.7	1.09	82.9
80				27.6	1.09	81.6
84				27.6	1.09	82.6
88				27.5	1.08	82.2
90				27.7	1.09	82.4
91				27.3	1.07	81.6
93				28.9	1.14	82.4
96				28.1	1.11	82.0
98				27.6	1.09	82.1
101				28.0	1.10	82.5
101-2				28.1	1.11	82.5
102				27.7	1.09	82.2
102-2				27.2	1.07	81.9
102-3				27.8	1.10	81.9
105				27.8	1.09	82.2
105-2				27.4	1.08	82.3
106	27.5	1.08	47.5			
107				27.9	1.10	81.7

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
117				27.4	1.08	81.7
118				28.1	1.10	82.8
120				28.8	1.13	82.9
121				27.5	1.08	82.3
123	28.5	1.12	47.2	28.2	1.11	83.4
126				27.1	1.07	82.2
128				27.4	1.08	82.9
129	28.1	1.11	47.0	28.0	1.10	83.0
131				28.2	1.11	82.5
132				27.8	1.09	81.8
143				27.9	1.10	82.7
143-2				27.5	1.08	82.7
148				27.4	1.08	82.4
153				28.6	1.13	83.4
153-2				29.0	1.14	82.7
153-3				28.8	1.13	83.5
156				28.1	1.10	82.3
158				27.9	1.10	82.8
159				27.8	1.09	82.7
161				(31.2)	(1.23)	
162				28.1	1.11	83.9
163	29.5	1.16	48.8			
170				28.0	1.10	80.9
176				28.1	1.11	83.0
179				28.0	1.10	82.3
183				27.4	1.08	82.2
186				27.2	1.07	82.6
193				28.2	1.11	82.9
200				27.1	1.07	81.4
201				27.7	1.09	82.2
203				27.4	1.08	
204				27.8	1.09	82.9
207				27.4	1.08	81.7
207-2				27.5	1.08	81.9
207-3				27.5	1.08	82.6
207-4				27.8	1.10	82.3
208				27.5	1.08	81.9
208-2				27.8	1.10	82.0
213	27.6	1.09	44.9			
219				29.1	1.14	83.0
234				29.0	1.14	84.0
237				27.7	1.09	81.9
239				28.0	1.10	81.5
242				27.4	1.08	82.3
242-2				28.1	1.11	82.6
271				27.8	1.10	83.4
271-2				28.2	1.11	83.0
272				28.0	1.10	83.4
275				27.7	1.09	82.8
287	27.2	1.07	46.2	27.7	1.09	81.7
288	26.6	1.05	44.8			
289	27.9	1.10	47.5			

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
295	26.9	1.06	49.1			
299	26.9	1.06	47.7			
300				28.1	1.11	83.4
315	27.6	1.09	48.0			
318				28.3	1.11	82.9
319	27.1	1.07	44.0	(31.5)	(1.24)	84.3
320	29.8	1.17	47.0			
Average	27.78	1.094	46.93	27.78	1.094	82.4
Median	27.59	1.086	47.26	27.78	1.094	82.4
StdDev	0.95	0.037	1.48	0.44	0.017	0.63
CV	3.4	3.404	3.16	1.59	1.588	0.77
Min	26.6	1.05	44.0	26.7	1.05	80.9
Max	29.8	1.17	49.1	29.1	1.14	84.3
n	14	14	14	100	100	97

HVI	<i>(table is divided into 3 pages)</i>			Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
4	78	8.5	31-1			
7	78	8.6				
8	80	9.4	11-2	1	0.07	5
12	80	9.1	21-1	1	0.06	5
13	78	8.8	21-2		0.05	3
19	80	9.4	21-3	1	0.09	11
27	79	9.3	21-3	1	0.1	10
30	77	(7.5)	31-2		0.06	3
32	79	8.6	21-2			
36	78	8.9	31	2	0.06	13
38	81	9.1	11-2	1	0.12	16
41	(76)	9.4	31-3		0.05	2
43	80	9.1	21-1	2	0.21	21
47	79	8.8	21-3	3	(0.40)	7
48	80	9.2	21-1			
50		8.4	21-2		0.09	13
50-2		8.5	21-1		0.12	17
52	80	9.4	11-2	1	0.1	12
53	79	9.6	11-4	1	0.04	2
54	80	8.9	21-1			
56	81	8.7	21-1	1	0.07	5
58	79	8.7	21-2	1	0.05	6
59	78	8.9	31-1	2	0.2	18
59-2	79	9.4	21-1	1	0.2	12
59-3	80	9.1	21-1	1	0.1	16
59-4	80	9.1	21-1	2	0.19	(28)
60	80	9.2	21-1	1	0.08	11
64	80	8.8	21-1	1	0.06	7
71	79	8.9				
71-2	80	8.5				
72	80	9.2	21-1		0.11	16
75	79	8.1	31-1	5	0.06	1
78	79	(7.5)	31-1		(1.00)	
79	79	8.8	21-2	1	0.1	12
80	80	9.4	11-2	1	0.12	15
84	80	9.1	21-1	1	0.08	12
88	78	9.3	21-4	1	0.06	5
90	81	9.4	11-2		0.08	8
91	80	8.9	21-1	1	0.1	12
93	78	9.5	21-3	1	0.1	10
96	76	10.0	22-2			
98	80	9.1			0.08	10
101	81	9.0	11-2	1	0.06	7
101-2	79	8.5	21-2	1	0.12	14
102	78	9.1				
102-2	79	8.6	21-2		0.07	4
102-3	80	8.9			0.1	13

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
105	80	8.6	21	1	0.07	7
105-2	78	9.0	21		(1.20)	9
106	78	(12.4)	13-1		0.08	11
107	80	9.4	11-3			
117	82	9.0	11-2	1	0.05	3
118	80	9.0	21-1		0.09	10
120	79	8.6	21-2			
121	80	9.2	21-1	1	0.13	17
123	81	(10.9)	11-3	1	0.09	10
126	78	8.8				
128	80	8.8			0.13	21
129	77	(11.4)	13-1			
131	78	9.5				
132	(87)	8.5	11-1			
143	81	9.1	11-1	1	0.03	3
143-2	80	8.7	21-2	1	0.05	3
148	80	9.0	21-1	1	0.09	12
153	79	8.7	21		0.06	4
153-2	79	8.6	21		0.05	5
153-3	78	8.9	21		0.06	4
156	81	8.7	21-1	1	0.06	5
158	80	8.8	21-1	1	0.0	2
159	80	8.6	21-1	2	0.2	4
161	79	(12.4)	13-1		0.18	12
162	77	10.0	21-3			
163	78	9.5	21-3			
170	79	9.6	11-4	1	0.05	5
176	80	9.0		1	0.12	15
179	80	8.6	21-1	1	0.13	14
183	80	9.2	21-1	18	0.14	0
193	79	9.0	21-1	1	0.09	8
200	79	9.6			0.04	1
201	79	8.8	21-2	1	0.08	4
203	79	9.4	11-4	1	0.06	4
207	80	9.0	21-1	1	0.08	9
207-2	79	9.0	21-1	1	0.08	10
207-3	80	8.9	21-1	1	0.09	10
207-4	79	8.5	21-2	1	0.09	13
208	80	9.3	11-2	1	0.1	14
208-2	80	8.9	21-1	1	0.07	11
213	80	8.6	21-1			
219	79	9.2	21-3			
234	78	8.4	21-2	1	0.05	3
237	79	9.6	21-3	1	0.07	5
239	(75)	8.0	41-1			
242	80	8.4	21-2	1	0.07	7
242-2	81	8.7	21-1	1	0.09	11

HVI				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
271	(83)	7.9	11-2	2	0.16	5
271-2	77	9.3	21-4			
272	79	9.4	11-4			
275	79	8.7	21-2	1	0.05	3
287	77	9.4	21-4			
288	79	8.1	21-2			
289	79	9.4	11-4			
300	82	8.9	11-1	1	0.08	3
318	78	9.4	21-3			
319	78	(14.9)	24-1			
Average	79.2	8.97			0.089	8.7
Median	79.4	8.96			0.08	9.0
StdDev	1.1	0.4			0.042	5.1
CV	1.4	4.51			47.421	58.2
Min	76	7.9			0.0	0
Max	82	10.0			0.21	21
n	98	97			74	75

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio		
4		6.4				
7		8.7				
8		10.2			0.94	
12		9.1			0.91	
13		8.4			0.9	
19		9.1			0.89	
27		8.9	88			
30		8.6			0.92	
32		9.7				
36		(19.5)				
38					0.88	
41		9.0			0.9	
43		8.6				
47		8.1	86			
48	6.2	7.4				
50		8.5			0.88	
50-2		8.9			0.87	
50-3		8.1			0.87	
52		8.8			0.88	
53		8.4			0.84	
54		12.3			0.91	
56		11.4				
58		10.1			0.9	
59		9.8	86			
59-2		10.5	88			
59-3		9.1			0.87	
59-4		9.7			0.87	
60		9.1			0.86	
64		9.2			0.9	
71					0.89	
71-2					0.92	
72		8.9				
75		7.9			0.92	
78		10.4			0.9	
80		10.8			0.87	
84		8.2	89			
88		9.9			0.9	
90		9.0			0.88	
91		8.7			0.89	
93		7.9				
101		8.8			(1.21)	
101-2		9.2			0.88	
102-2		7.1			0.9	
102-3		8.4			0.88	
105		10.0				
105-2		8.2				
106	9.7	6.6	88		0.87	

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %		Maturity Ratio	
107		9.4			0.9	
117		9.9			0.9	
118		8.1			0.89	
120		5.4	89			
121		8.1			0.87	
123	11.3	12.1			0.87	
126		8.8				
128		9.6	(78)		0.88	
132		10.3			0.86	
143		9.8			0.85	
143-2		9.3			0.91	
148		8.0			0.88	
153		(13.8)			0.93	
153-2		11.5			0.89	
153-3		10.7			0.89	
156		10.1			0.91	
158		7.9	86		(1.00)	
159		8.8	86			
161	9.1				0.91	
162		7.2				
163	8.0					
170		9.7			0.85	
176		8.0			0.88	
179		9.1			0.92	
183		8.6			0.87	
186		7.5				
193		9.0			0.88	
200		8.5				
201		9.1			0.87	
203		8.8			0.83	
204		9.4			0.91	
207		9.4			0.87	
207-2		8.9			0.87	
207-3		8.4			0.87	
207-4		8.7			0.88	
208		10.7			0.89	
208-2		8.8			0.88	
213	9.1					
219					0.85	
234		8.4			0.85	
237		9.9			0.92	
239		8.0			0.84	
242		11.8			0.91	
242-2		9.4			0.88	
271		9.7				
272		6.5			0.85	
275		10.0			0.93	

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio		
288	10.7					
289	6.4					
295	6.4			0.85		
299	7.7					
300		6.2		0.85		
315	10.4			0.85		
318		9.3		0.85		
319	13.9	6.3		0.86		
Average	9.08	8.97	87.3	0.883		
Median	9.1	8.9	87.7	0.88		
StdDev	2.31	1.27	1.2	0.025		
CV	25.46	14.22	1.4	2.775		
Min	6.2	5.4	86	0.83		
Max	13.9	12.3	89	0.94		
n	12	88	9	72		

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
4	USTER			10
7	USTER			5
21		1190064		5
22	USTER	Autojet		10
27	USTER	Neptester 720		5
32	USTER	AFIS Pro 2		10
38	USTER			
39	USTER			
41	USTER			5
43	USTER			5
51	USTER	AFIS Pro 2	ISO-9001	5
58	USTER		internal	10
59	USTER		USDA	5
75	USTER	AFIS Pro	ASTMD5866-05	5
80	USTER			10
88	USTER	AFIS Pro	Manufacturer	5
90	USTER	4.22	Manufacturer	10
91	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	5
118	USTER		ASTMD5866-05	5
120	USTER	AFIS Pro 2	ASTM	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		ASTM	5
129	USTER	AFIS Pro		
132	USTER			
143	USTER		ASTMD5866	5
148	USTER	AFIS Pro		10
148-2	USTER	AFIS Pro 2		10
158	USTER			5
161	USTER			5
163	USTER		ASTMD5866-05	5
176	USTER			10
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER	AFIS-Pro.old	Manufacturer	10
193	USTER	AFIS Pro	ASTMD5866-05	6
200	USTER			
207	USTER	AFIS Pro	ASTMD5866-05	10
208	USTER	AFIS Pro	ASTMD5866-05	10
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	20.4	0.80	45.9	36.1	1.42	33.8	1.33	23.8
7	18.0	0.71	52.1	34.7	1.37	32.3	1.27	(31.0)
21	20.0	0.79	42.2	34.4	1.35	32.4	1.28	21.4
22	20.3	0.80	45.4	34.8	1.37	33.0	1.30	22.6
32	20.2	0.80	46.7			33.3	1.31	22.1
38	21.7	0.85	43.9	36.6	1.44	34.3	1.35	18.5
39	18.7	0.74	48.1	33.8	1.33	31.8	1.25	25.9
41	20.2	0.80	41.3	34.6	1.36	32.4	1.28	20.0
43	20.6	0.81	46.4	35.6	1.40	33.5	1.32	21.6
51	19.6	0.77	46.8			32.8	1.29	22.4
58	22.5	0.89	39.0	36.1	1.42	34.0	1.34	15.0
59	(16.7)	(0.66)	(66.5)	37.7	1.48	35.3	1.39	(44.1)
75	20.7	0.81	47.7			34.0	1.34	22.0
80	(17.3)	(0.68)	(55.3)			31.5	1.24	(32.6)
88	20.7	0.81				33.7	1.32	19.9
90	20.1	0.79		35.0	1.38	32.9	1.30	22.3
91	20.3	0.80	44.2			33.1	1.30	20.7
101	21.4	0.84	44.3	37.3	1.47	34.7	1.37	20.4
102	21.1	0.83	43.2	35.7	1.41	33.5	1.32	19.7
105	20.8	0.82	45.6	35.6	1.40	33.5	1.32	22.1
105-2	20.6	0.81	43.5	35.8	1.41	33.8	1.33	21.5
118	20.8	0.82	42.7	35.5	1.40	33.5	1.32	20.1
120	19.9	0.78	45.3			32.4	1.28	21.8
123	20.5	0.81	44.2			33.1	1.30	21.9
123-2	19.5	0.77	47.8			32.4	1.28	23.3
123-3	18.7	0.74	51.6			32.7	1.29	27.9
129	21.3	0.84	42.3			34.1	1.34	17.4
143	19.7	0.78	48.7	35.1	1.38	33.1	1.30	24.6
148	20.4	0.80	43.9			32.9	1.30	20.3
148-2	19.8	0.78	46.0			32.5	1.28	22.1
158	20.0	0.79	49.0	35.3	1.39	33.2	1.31	24.6
161	21.3	0.84	45.8	36.6	1.44	34.3	1.35	21.4
163	20.8	0.82	45.1	36.0	1.42	33.9	1.33	22.7
176	20.3	0.80		35.6	1.40	33.3	1.31	22.9
183	20.8	0.82	42.1			33.3	1.31	19.9
186	22.0	0.87	41.4	36.2	1.43	34.1	1.34	17.5
193	21.1	0.83	43.0			33.3	1.31	19.6
207	20.6	0.81	43.4			33.1	1.30	18.8
208	21.3	0.84	43.1			33.7	1.33	17.6
271	19.8	0.78	48.5	35.1	1.38	33.0	1.30	25.7
272	19.3	0.76	46.1	34.0	1.34	32.3	1.27	23.7
288	20.3	0.80	44.5			32.9	1.29	20.3
Average	20.4	0.803	45.16	35.54	1.399	33.25	1.309	21.44
Median	20.4	0.803	45.1	35.56	1.40	33.24	1.308	21.6
StdDev	0.88	0.035	2.81	0.95	0.037	0.77	0.03	2.54
CV	4.32	4.322	6.22	2.68	2.678	2.32	2.318	11.86
Min	18.0	0.71	39.0	33.8	1.33	31.5	1.24	15.0
Max	22.5	0.89	52.1	37.7	1.48	35.3	1.39	27.9
n	40	40	37	24	24	42	42	39

AFIS L						Length
Lab.	W					SFC %
	ML		CV %	UQL		
	mm	inch		mm	inch	
4	24.7	0.97	32.9			8.7
7	22.9	0.90	(36.9)	28.3	1.11	(11.9)
21	23.6	0.93	31.4	28.5	1.12	8.4
22	24.6	0.97	31.3	29.2	1.15	7.6
32	24.6	0.97	31.9	29.6	1.17	7.0
38	25.8	1.02	29.0	30.4	1.20	
39	23.0	0.91	32.4	27.9	1.10	9.1
41	23.6	0.93	31.3	28.3	1.11	7.7
43	25.1	0.99	30.4	29.7	1.17	6.3
51	24.1	0.95	32.0	29.2	1.15	7.1
58	25.9	1.02	28.0	30.2	1.19	4.6
59	24.6	0.97	(40.2)	(31.8)	(1.25)	(14.4)
75	25.4	1.00	31.8	30.2	1.19	6.3
80	22.6	0.89	(36.4)	27.9	1.10	(11.2)
88	24.8	0.98		29.7	1.17	6.7
90	24.4	0.96		29.2	1.15	7.0
91	24.3	0.96	32.5	29.2	1.15	7.2
101	25.6	1.01	32.3	30.6	1.20	7.0
102	25.0	0.98	30.3	29.5	1.16	6.4
105	25.1	0.99	31.1	30.0	1.18	7.0
105-2	24.6	0.97	32.5	29.7	1.17	8.1
118	24.6	0.97	31.1	29.4	1.16	7.1
120	24.0	0.94	31.9	28.7	1.13	7.2
123	24.4	0.96	32.0	29.2	1.15	7.8
123-2	23.9	0.94	32.1	28.7	1.13	7.3
123-3	23.7	0.93	34.8	28.9	1.14	9.3
129	25.1	0.99	30.4	30.1	1.19	5.5
143	24.4	0.96	32.1	29.2	1.15	7.8
148	24.3	0.96	31.4	29.1	1.15	6.8
148-2	23.9	0.94	32.2	28.7	1.13	7.3
158	24.7	0.97	31.7	29.6	1.17	7.5
161	25.7	1.01	31.4	30.5	1.20	6.5
163	25.0	0.98	32.3	30.1	1.19	8.1
176	24.6	0.97		29.7	1.17	7.3
183	24.6	0.97	31.7	29.5	1.16	7.2
186	25.7	1.01	29.1	(32.2)	(1.27)	5.4
193	24.9	0.98	30.9	29.5	1.16	6.4
207	24.4	0.96	31.1	29.1	1.15	6.1
208	25.3	1.00	30.0	29.8	1.17	5.1
271	24.4	0.96	32.1	29.2	1.15	8.3
272	23.4	0.92	32.3	28.2	1.11	8.5
288	24.3	0.96	31.2	28.9	1.14	6.4
Average	24.52	0.965	31.47	29.32	1.154	7.13
Median	24.6	0.969	31.7	29.21	1.15	7.15
StdDev	0.77	0.03	1.21	0.69	0.027	1.05
CV	3.15	3.148	3.85	2.36	2.357	14.66
Min	22.6	0.89	28.0	27.9	1.10	4.6
Max	25.9	1.02	34.8	30.6	1.20	9.3
n	42	42	36	39	39	38

AFIS D / M			Diameter, Maturity				
Lab.	D (N) μm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio		
4	14.4		171	7.3	0.89		
22			176	5.5	0.91		
32			166	(11.4)	0.81		
38			164	4.7	0.89		
41							
43					185	7.1	0.93
51					166	6.9	
58					174	4.5	0.93
59					179	7.9	0.88
75					186	5.9	0.93
80					173	6.6	0.88
88					181	5.6	0.93
90					175	4.4	0.93
91					172	5.3	0.93
102					167	7.1	0.88
105					176	6.6	0.89
105-2					167	8.2	0.85
118					173	4.4	0.92
120					183	5.1	0.93
123					174	5.8	0.89
123-2					178	6.3	0.91
123-3					176	6.1	0.9
129					155		
143					171	5.0	0.91
148					180	5.4	0.94
148-2					183	5.2	0.94
158					179	5.2	0.94
161					173	7.0	0.87
176					176	4.5	0.92
183					174	6.1	0.91
186					169	5.7	0.88
193					181	4.9	0.93
207			177	6.8	0.9		
208			164	(10.6)	0.85		
271			168	7.2	0.83		
272	13.1						
288			174	6.5	0.89		
Average			173.9	5.96	0.901		
Median			174.0	5.85	0.91		
StdDev			6.7	1.05	0.033		
CV			3.9	17.68	3.629		
Min			155	4.4	0.81		
Max			186	8.2	0.94		
n	2	0	35	32	33		

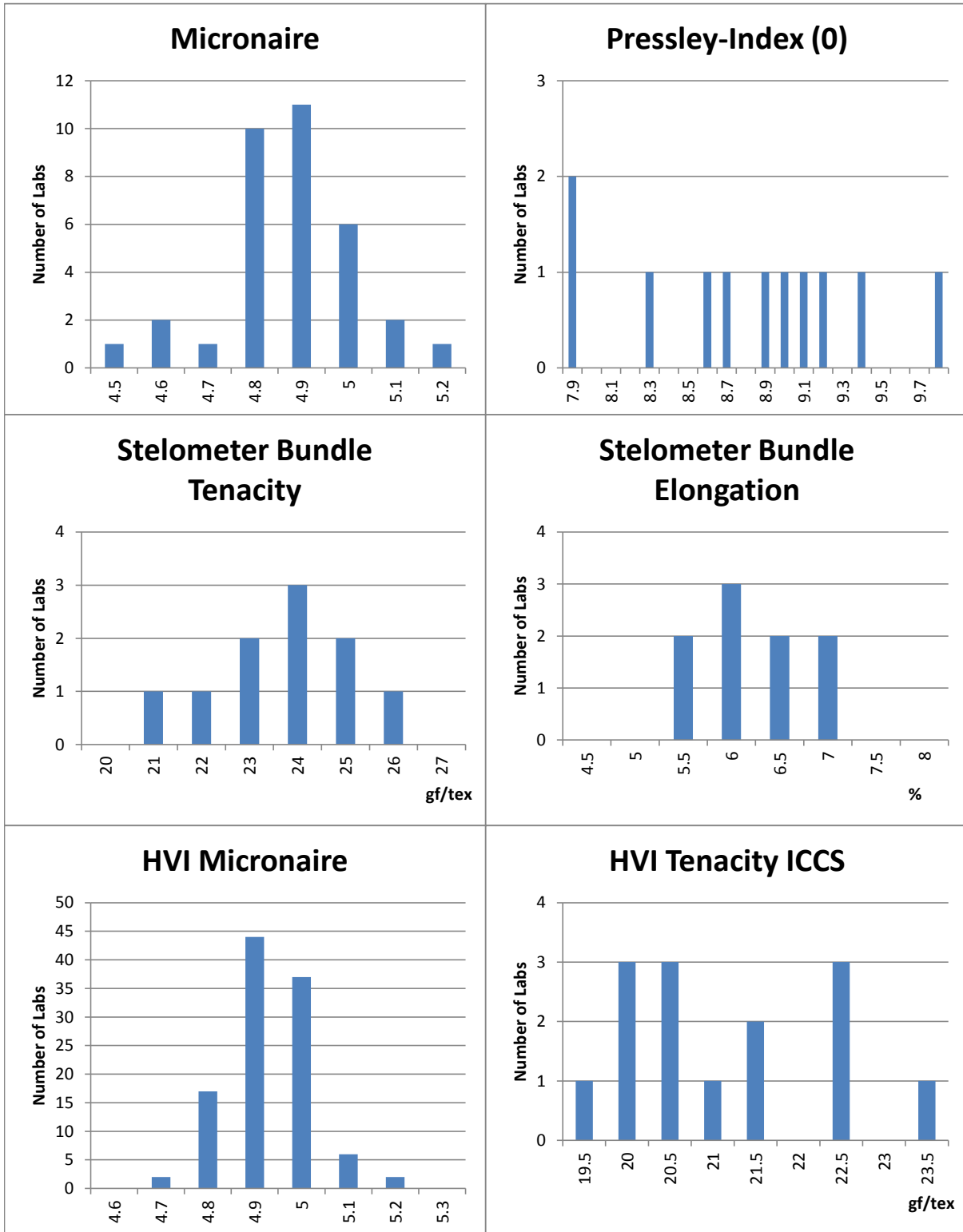
AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
4	309	28	171	0.73
21	(187)	23	(484)	0.67
22	402	32	110	0.85
32	342	25	122	0.67
38	349	30	144	0.74
43	358	29	(295)	0.79
51	343	(132)	108	0.55
58	381	33	138	0.83
88	306	21	120	0.45
90	371	25	105	0.6
91	368	22	108	0.64
102	302	23	126	0.4
105-2		27	135	0.6
129	307	17	102	0.45
143	319	27	152	0.61
148	401	26	87	0.61
148-2	365	28	107	0.62
158	286	(188)	27	0.78
183	327	34	186	1.04
186	371	28	105	0.62
193	367	17	73	0.36
207	360	20	87	0.48
208	334	19	84	0.36
272	286	26	220	0.8
Average	343.4	25.5	119.0	0.635
Median	346.0	26.0	109.0	0.62
StdDev	34.5	4.8	40.7	0.169
CV	10.0	19.0	34.2	26.526
Min	286	17	27	0.36
Max	402	34	220	1.04
n	22	22	22	24

AFIS N		<i>(table is divided into 2 pages)</i>			Neps	
Lab.	Neps		SCN		Mean Diameter µm	Cnt/g
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g		
4	618	192				
7	749	147				
21	704	(84)				
22	686	196	1170		19	
27		202				
32	694	184	1002		21	
38	703	218	1119		16	
39	617	150				
41	640	214				
43	692	186	1179		18	
51	749	212	1290		34	
58	669	198	900		14	
59	687	249	1181		12	
75	676	202	1154		14	
80	674	202	1228		15	
88	723	284	1256		27	
90	682	193	1270		17	
91	726	201	1413		19	
101	758	184				
102	703	208	1037		31	
105	714	235	1382		22	
105-2	703	233	1092		38	
118	680	210	1154		13	
120	690	236	1292		18	
123	708	187	1136		27	
123-2	686	236	995		24	
123-3	716	194	1177		19	
128		181				
129	728	173	1309		23	
132	615	186				
143	695	203	1252		17	
148	682	205	1073		16	
148-2	700	238	1009		28	
158	718	241	1122		32	
161	705	199	1397		18	
163	675	209	866		23	
176	695	209	1021		16	
183	662	247	1170		15	
186	704	211	1126		22	
193	723	196	1395		20	
200	709	208	1375		17	
207	709	225	1234		20	
208	716	199	1358		22	
271	702	248	1282		20	
272	642	250				
288	682	233	1042		20	
Average	693.4	209.2	1179.4		20.8	
Median	697.5	205.0	1173.5		19.5	
StdDev	32.1	26.7	141.8		6.1	
CV	4.6	12.7	12.0		29.4	
Min	615	147	866		12	
Max	758	284	1413		38	
n	44	45	36		36	

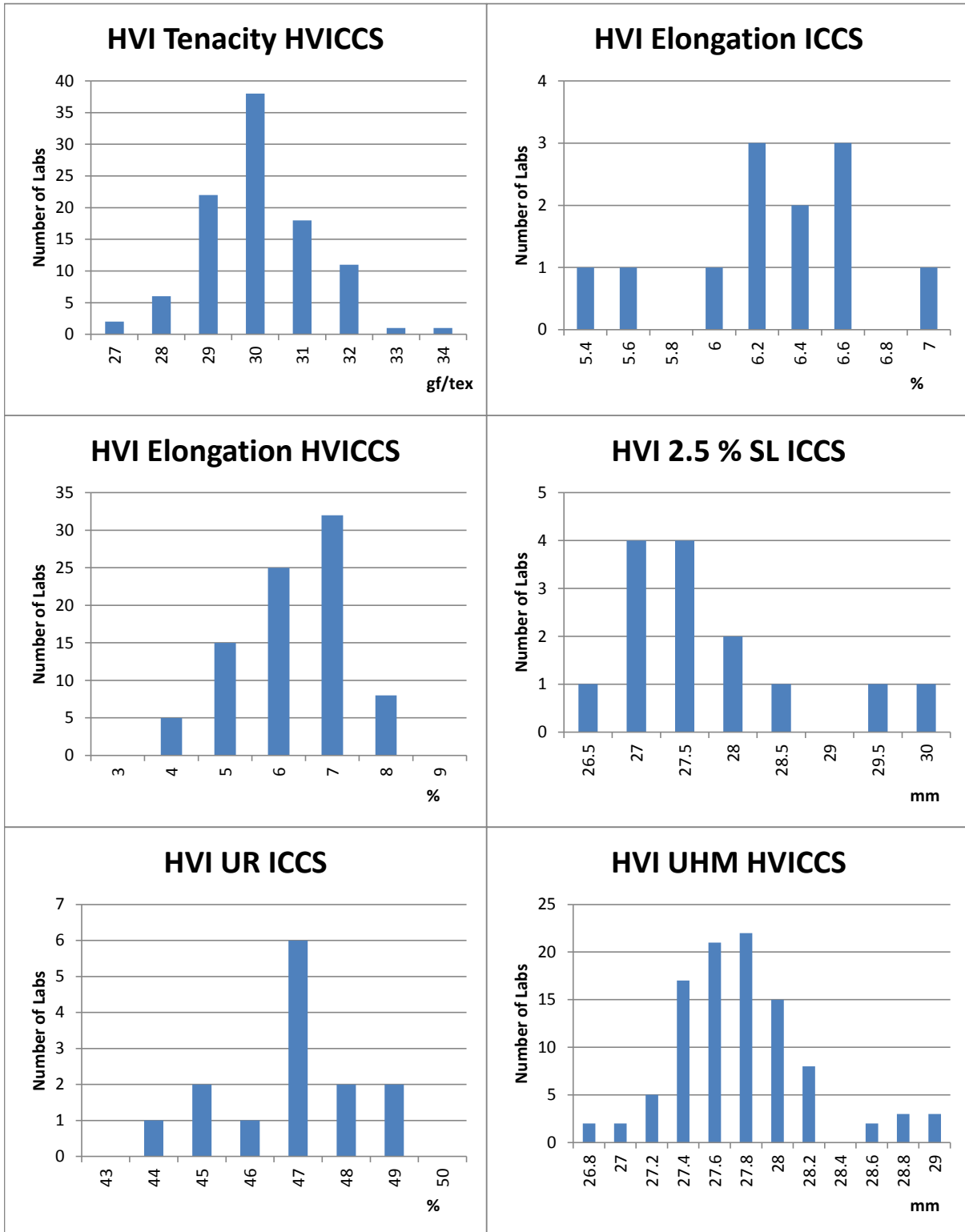
aQura <i>(further information see page "Multiple Devices")</i>						Length, Neps	
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	30.8	17.2	27.0	12.8	123	22
101	4	31.3		23.2	10.1	178	34
116	4					256	47
127	4	30.2	19.2	20.3	8.9	219	26
170	4	28.8	18.5	22.3	10.5	223	38
213	4	29.0	17.8	26.4	12.8	86	11
234	4	29.7		11.0	25.1	216	36
239	4	29.5		32.1	16.9	240	39
300	4	30.3	20.4	17.9	7.4	180	50
Average		29.95	18.6	22.52	13.06	191.2	33.7
Median		29.96	18.45	22.73	11.62	216.0	36.0
StdDev		0.85	1.24	6.4	5.67	55.9	12.3
CV		2.85	6.67	28.41	43.39	29.2	36.5
Min		28.8	17.2	11.0	7.4	86	11
Max		31.3	20.4	32.1	25.1	256	50
n		8	5	8	8	9	9

Multiple Devices <i>(information not provided in the respective table)</i>					General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
8	DigitalFibrograph		730	ASTMD 1440	10
8	FMT		Micromat	ASTMD3818-94	10
37	FMT				
53	aQura	Premier			4
56	Causticaire		Micronaire	JIS	2
58	ALMeter			internal	4
70	FMT	SDL	MK.1	ASTMD3818-92	3
70	GravFineness			ISO 1973	5
79	GravFineness			RSTUz620-94	4
85	CombSorter		Keisokki	VNI10170-94	1
85	GravFineness			UNIENISO1973-98	10
93	DigitalFibrograph			ASTM1447	4
93	FMT		WIRA	ISO 10306	2
101	aQura	Premier			4
102	DigitalFibrograph		530	ICCS	5
102	FMT		FMT 3	ICCS	2
116	DigitalFibrograph		Auto Span AS101		5
116	aQura	Premier			4
123	DigitalFibrograph			ASTMD1447-07	5
126	DigitalFibrograph		530	ASTM	
127	aQura	Premier			4
128	DigitalFibrograph			ASTM	8
128	FMT		Micromat	ASTM	8
129	CombSorter		Bear Sorter	BS-4044	2
129	Causticaire		Microscope	IS 236	4
131	DigitalFibrograph		530	ASTM	6
131	Causticaire		Fibroscope	British	
131	FMT		Micromat	ASTM	6
132	ALMeter	Peyer	AL100	DIN 53806	5
143	DigitalFibrograph	USTER	330	ABNTNBR13154-94	
152	ALMeter	Peyer			5
170	aQura	Premier			4
177	Causticaire			DIN53943-4	5
177	GravFineness			ASTMD1577-90	5
186	ALMeter	Peyer	AL 101	Manufacturer	4
186	FMT	SDL		USDA	6
193	GravFineness			GB/T6100-07	2
213	aQura	Premier			4
234	aQura	Premier			4
239	aQura	Premier			4
300	aQura	Premier		ISO	4

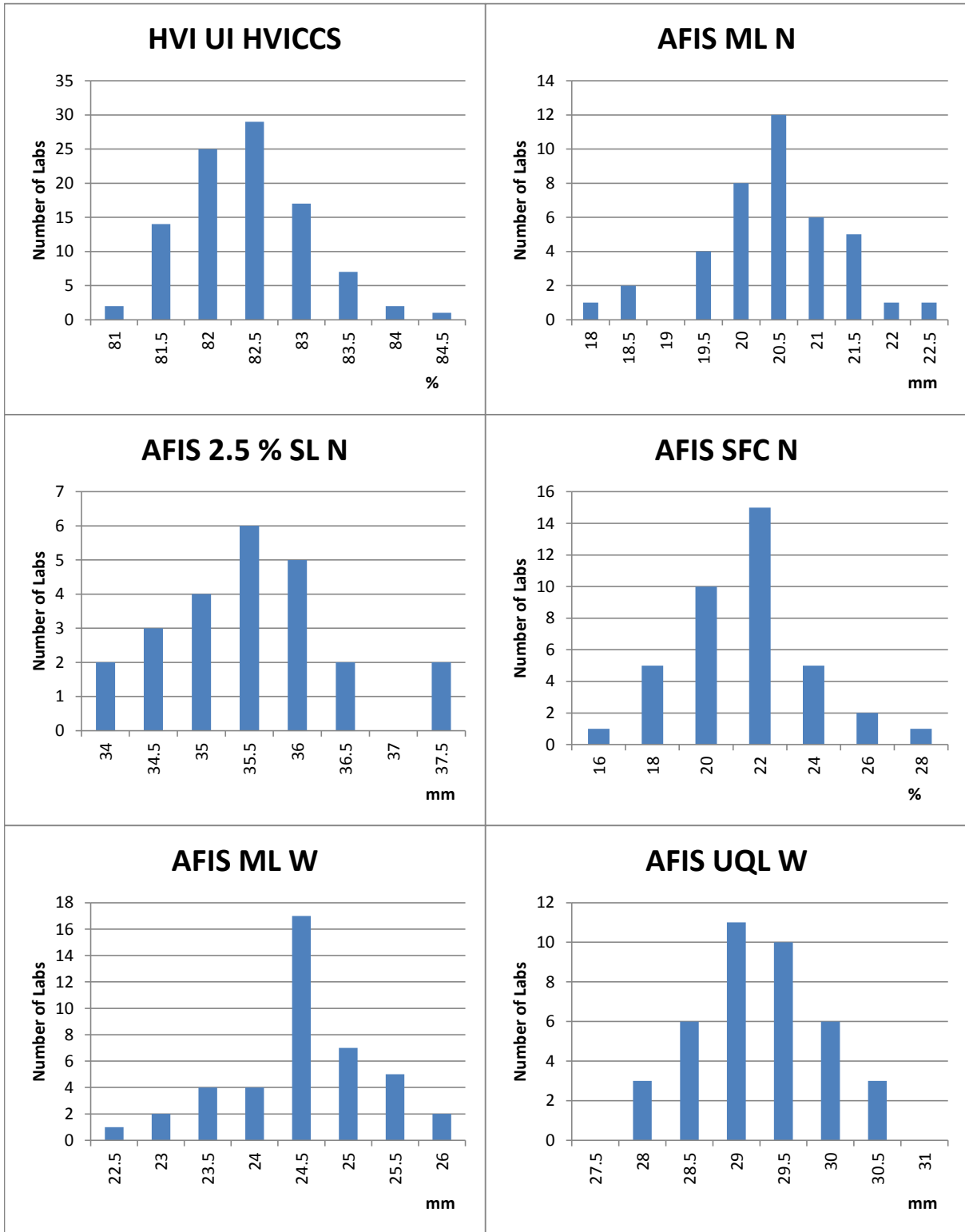
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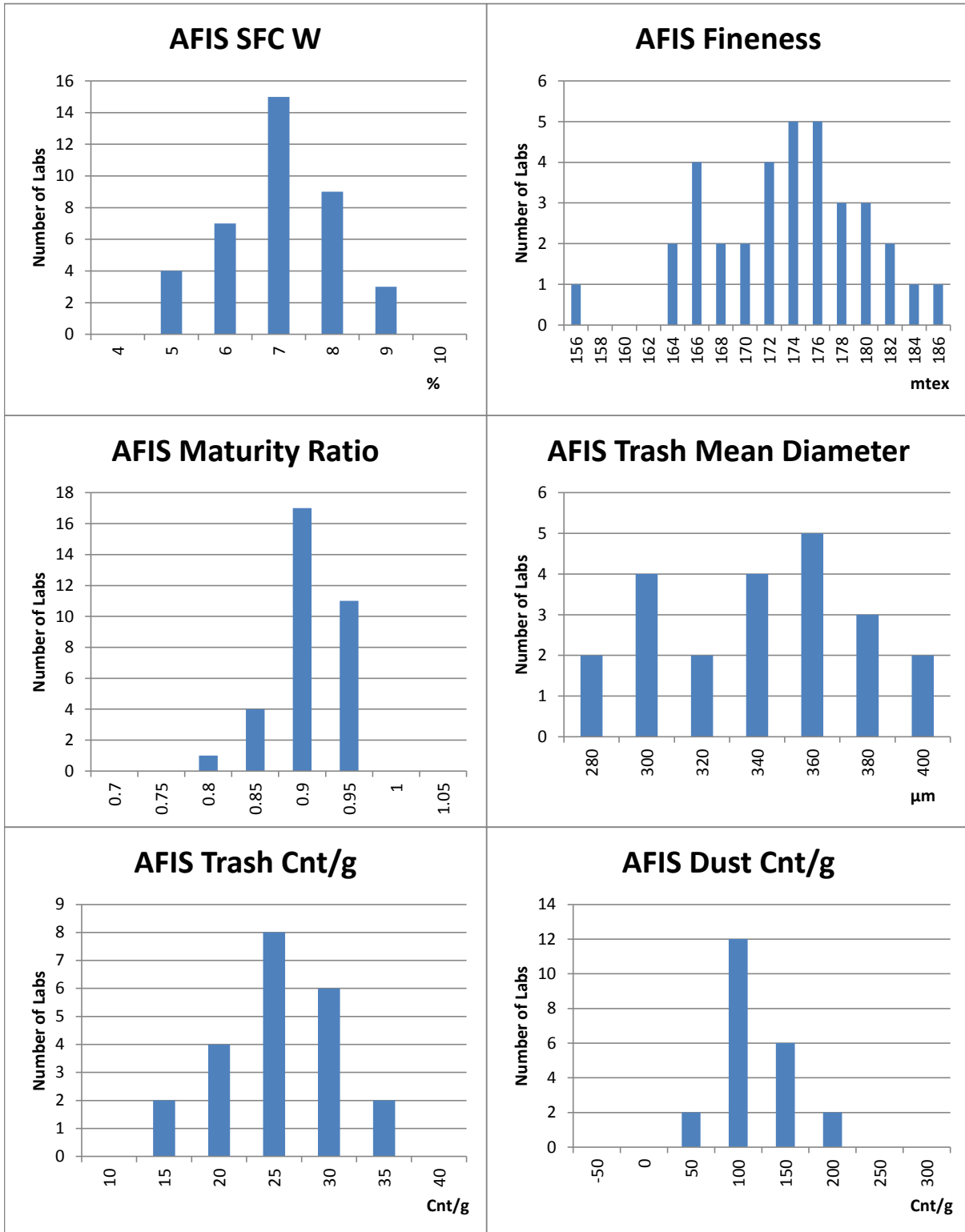
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