



ICA Bremen
The Global Centre for Cotton Testing and Research

ICA Bremen Cotton Round Test

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

Bremen, 15.06.2012

Evaluation of the Test Results 2012 / 1

Tested Cotton: **Benin** Number of Laboratories: **135**
Cotton Number: **RM 46**

Argentina	2	The Netherlands	-
Australia	1	Pakistan	2
Bangladesh	-	Poland	2
Brazil	6	Portugal	1
China, PR	15	Russia	2
Czech Republic	4	Serbia	1
Egypt	3	Slovenia	2
France	1	South Africa	1
Germany	12	Spain	3
Greece	8	Sudan	-
Hungary	1	Switzerland	2
India	42	Syria	-
Iran	1	Tanzania	1
Israel	1	Thailand	3
Italy	1	Turkey	1
Japan	2	Uganda	1
Kazakhstan	1	United Kingdom	1
Korea, R	1	United States	4
Latvia	1	Uzbekistan	2
Mali	1	Vietnam, SR	1
Mauritius, Rep of	-	Zimbabwe	1
Mozambique	-		

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

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Supported by



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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: **Benin (RM 46)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 M1000 with 10 tests on samples from 10 different layers of the bale 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	0,023	0,029
Strength, g/tex	0,234	0,622
Length, UHM, inch	0,0054	0,0113
Length, UHM, mm	0,136	0,287

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
8	6	4.6	Micromat	ASTMD3818-94
12	6	4.5	775	GB/T6498-05
17		4.4		
20	3	4.5		manual
22	3	4.6		
29	6	(4.9)		ISO 2403
35	3	4.5	775	
56	2	4.5	Fibronaire	JIS
67	4	4.6	Fibronaire	
70	3	4.5	MK.1	ASTMD3818-92
76	3	4.4	RM 1070	
77		(3.9)		
79	5	4.6		ASTMD1448
92	6	4.4	FibroMic XT	ASTMD1448
93	2	4.5		ASTMD1448
102	6	4.5	Fibronaire	ICCS
128	8	4.6	Fibronaire	ASTM
129	4	4.5		BS 3181
132	3	4.5	775	DIN 53941
133	2	4.4	275	
142	3	4.5	80400	ISO
162	3	4.5	WIRA	
167	2	4.5	275	
168		4.5		
169	3	4.4		
177	3	4.5	DPM 60	DIN 53941
183	3	4.3		ASTMD1448
186	6	4.5	FMT Ser.2	
188	8	4.4		ASTM
193	3	4.5		GB/T6498-08
201	2	4.6	275	
203		(5.5)	900-1	
229		(4.2)		
Average		4.49		
Median		4.5		
StdDev		0.07		
CV		1.61		
Min		4.3		
Max		4.6		
n		29		

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					6	19.2	5.5	ASTMD1445-95	
29	6	8.8		ISO 3060					
35					6	22.4	5.9		
46	10	7.2	1.7	DIN ISO3060					
56	5	7.4		JIS					
76	5	7.1							
79	6	7.2		ASTM1445					
92					5	22.3	7.0		ASTM 1445
93	6	7.2	3.0	ASTM1445	6	18.7	6.7		ASTM 1445
102					5	20.0	6.3		ICCS
128	8	7.3	4.5	ASTM	8	22.8	7.0		ASTM
131	6	8.0	4.4	ASTM	6	21.4	6.2		ASTM
132					6	21.1	6.3		DIN ISO3060
162	3	7.6			4	20.7	5.9		
177	4	6.7		DIN 53942					
188	10	8.2		ASTM					
193					12	19.9	6.0	GB/T13783-92	
206					10	16.6		ISO3060-74	
229						20.5			
Average		7.52	3.41			20.47	6.28		
Median		7.3	3.7			20.6	6.25		
StdDev		0.6	1.32			1.76	0.49		
CV		7.96	38.59			8.58	7.8		
Min		6.7	1.7			16.6	5.5		
Max		8.8	4.5			22.8	7.0		
n		11	4			12	10		

Pressley	PI(0)	Av., gf/tex	40.30	StdDev, gf/tex	3.21	CV, %	7.96
	(3.2)	Av., gf/tex	23.21	StdDev, gf/tex	8.95	CV, %	38.59

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	28.8	1.13	13.9	0.55	48	14.9		5.9
28	10	28.4	1.12	13.0	0.51	46			6.7
35	3	28.5	1.12	14.4	0.57	50			7.0
92	5	28.5	1.12	13.5	0.53	47			6.0
93	4	28.2	1.11	14.7	0.58	52			
102	5	28.0	1.10	12.8	0.50	46			
123	5	27.4	1.08	13.5	0.53	49			
128	8	28.6	1.13	14.4	0.57	50			10.3
131	6	27.5	1.08	13.2	0.52	48			
143		28.4	1.12	15.5	0.61	55			
Average		28.23	1.111	13.88	0.546	49.1			7.18
Median		28.40	1.118	13.68	0.538	48.7			6.70
StdDev		0.46	0.018	0.85	0.034	2.8			1.80
CV		1.62	1.624	6.14	6.138	5.6			25.07
Min		27.4	1.08	12.8	0.50	46			5.9
Max		28.8	1.13	15.5	0.61	55			10.3
n		10	10	10	10	10	1	0	5

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	Joh.-Zweigle				23.7	39.1	15.5
129	2	Bear Sorter	25.4		8.0			

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	19.9	39.3	21.9	23.0	32.6	10.5	
132	5	20.0	37.9	20.4	22.9	31.3	9.8	
186	5	21.1	34.6	15.3	23.7	28.7		

Maturity, Fineness <i>(further information see page "Multiple Devices")</i>					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		85			
70					1.79
79					1.73
85					1.67
129		86			
131		68			
177		95			1.61
193					1.82
229		74	77		

IIC/SHIRLEY FM-TESTER (further information see page "Multiple Devices")				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
8	4	87.1	1.0	178
70	3	96.0	1.13	157
93	2	85.2	0.95	175
102	2	85.5	0.97	177
128	8	85.0	0.97	185
131	6	79.8	0.88	148
186	6	82.0	0.93	185
Average		85.8	0.975	172.1
Median		85.2	0.97	177.0
StdDev		5.12	0.078	14.2
CV		5.96	7.968	8.3
Min		79.8	0.88	148
Max		96.0	1.13	185
n		7	7	7

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
2	Premier	HFT	HVI Mode	6	1	1	1
4	USTER	900			1	2	2
5	USTER	1000 Line4	CCAA BMP	12	1	2	2
5-	USTER	1000 Line5	CCAA BMP	12	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	6	1	2	2
9	Premier	ART	ICC	4			
11	USTER	1000	ASTM	6	1	2	2
12	USTER	Spectrum I	SN/T1512-11	12	1	2	2
13	USTER	Spectrum	internal	10	1	1	1
15	USTER	900 SA			1	2	2
16	USTER	Spectrum			1	2	2
19	USTER	1000	SN/T1512-11		1	2	2
27	USTER	900 A	ASTM5867-05	6	1	2	2
28	Textechno	Fibrotest		10			
30	USTER	Spectrum	internal		2	2	2
31	USTER	900		6	1	2	2
32	USTER	900 A	internal	1	4	10	4
33	Premier	HFT	ICC	6	1	1	1
34	Premier	HFT	HVI Mode	5	1	2	2
38	USTER	1000			1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
44	USTER	Spectrum	Manufacturer	10	1	1	1
48	Premier	HFT	ASTMD5867-05	10	1	2	2
49	USTER	900			1	3	
52	USTER	1000	ASTM	6	6	6	6
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	HVI Mode	4	1	2	2
56	USTER	Spectrum I	HVI Test Method	5	1	2	2
58	USTER	Spectrum	internal	10	1	2	2
59	USTER	1000	USDA	10	1	2	2
59-	USTER	1000	USDA	10	1	2	2
59-	USTER	Classing	USDA	10	1	2	2
59-	USTER	900 A		10	1	2	2
60	USTER	1000		6	1	2	2
64	USTER	Spectrum	HVI Mode		1	2	2
65	Premier	HFT	HVI Mode	6	1	2	2
68	Premier	ART	USDA	10	1	2	2
71	USTER			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		6	1	2	2
79	USTER	900			1	2	2
80	USTER	1000		10	1	1	1
83	USTER	Spectrum I	SN/T1512-05	6	1	2	2
84	USTER	1000	USDA	12	1	1	1
90	USTER	1000	ASTMD5867	10	1	2	2
91	USTER	1000	ISO	6	1	2	2
92	MAG	HVT Expert 1201	ASTMD5867	6	1	2	2
93	USTER	900 A	ASTM 5867	6	1	2	2
96	Premier	HFT	GB/T20392-06	10	1	2	2
98	USTER	1000	USDA. ASTM	12	1	2	4
101	USTER	1000	ASTMD5867-05	6	1	2	2
101-	Premier	ART 2	ASTMD5867-05	6	1	2	2
102	USTER	900 B	USDA	6	3	6	4

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
102-2	USTER	Spectrum	USDA	6	6	6	6
102-3	USTER	SW700V3.1.3.18	USDA	6	6	6	6
103	USTER	1000	SN/T1512-11	6	1	2	2
104	USTER	900			1	2	2
105	USTER	Spectrum	Manufacturer	6	1	2	2
105-2	USTER	900 A	Manufacturer	10	1	2	2
106	USTER	1000	ICC	6	6	6	6
107	Premier	ART 2	ASTM	6	1	2	2
109	USTER	900		10	1	2	2
113	Premier	ART	ASTMD5867-05	10	1	2	2
114	USTER	900	ICC	6	2	4	2
118	USTER	1000M700	ASTMD5867-05	2	1	2	1
123	USTER	Spectrum	ASTMD5867-05	10	1	1	1
128	USTER	Classing	ASTM 5866	8	1	2	2
129	USTER	900 SA	ASTMD5867	6	1	2	2
130	Premier	ART 2	HVI Mode	6	1	1	1
131	USTER	900 A	USDA	6	1	2	2
132	USTER	900	DIN 53944	1		10	5
143	Premier	ART	ABNT/NBR13379a82	10	1	2	2
143-2	USTER	Spectrum	ABNT/NBR13379a82	10	1	2	2
146	Premier	ART	Manufacturer		1	2	2
148	USTER	1000		6	1	2	2
153	USTER	Spectrum		6	1	2	2
154	USTER	900 A		10	1	2	2
156	USTER	Spectrum 1	USDA. ASTM	6	1	2	2
158	USTER	900 A		6			
159	USTER	900 Classing	USDA	6	1	2	2
161	Premier	ART 2		6	1	2	2
162	USTER	900 A	HVI Mode	6	1	2	2
163	USTER	900	ASTMD5867-05	6	1	2	2
172	USTER	Spectrum	ASTMD5867-05		1	2	2
176	USTER	1000		10	1	2	2
179	USTER	Spectrum II	SN/T1512-05	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	ITMF	8	1	2	2
201	USTER	900		6	1	2	2
202	Premier	ART 2	HVI Mode	6	1	1	1
203	USTER	900			1	2	2
206	USTER	900 B	GOST R53031-08	5	1	2	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
209	Premier	ART 2	ASTM	6	1	2	2
209-2	MAG	1401	ASTM	6	1	2	2
213	Premier	ART	ICC	6	1	2	2
223	Premier	ART	HVI Mode	4	1	2	2
229	Premier	HFT		6			
234	Premier	ART		4	1	1	2
237	USTER	Spectrum 2	ASTM	6	1	2	2
238	Premier	ART 2	HVI Mode	6	1	2	2
242	USTER	Spectrum	HVI Mode		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
242-4	USTER	1000	HVI Mode		1	2	2
251	Premier	ART	HVI Mode	6	1	2	2
267	Premier	HFT	HVI Mode	5	1	2	2
271	Premier	ART	internal	10	1	1	1
271-4	USTER	900	internal	10	1	1	1
272	Premier	ART		5	1	1	2
275	USTER	Spectrum II		50	1	2	2
277	Premier	ART		10			
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	HFT	HVI Mode	6	1	1	1
289	Premier	ART	ICC	15	1	1	
295	Premier	HFT		4	1	2	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	1	2
319	Premier	ART	ASTMD5867-95	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, %		
2	4.6	20.3		6.7			
4	4.5		28.9		6.6		
5	4.4		30.1		6.5		
5-2	4.5		28.5		6.7		
8	4.6		28.3		8.2		
9	(4.8)	22.1		6.2			
11	4.5		29.4		6.5		
12	4.5		29.8		6.8		
13	4.4		30.4		6.1		
15	4.5		28.5		8.3		
16	4.5		27.9		6.7		
19	4.5		29.1		4.8		
27	4.6		28.5		8.0		
28			28.4		(9.6)		
30	4.6		29.5		6.1		
31	4.3	20.3	27.0	5.3	5.3		
32	4.5		29.8		6.5		
33	4.6	21.1		7.6			
34	4.5		31.3		6.9		
38	4.6		27.4		5.7		
41	4.4		29.7		(2.4)		
43	4.5		28.5		5.7		
44	4.5	22.3		6.8			
48	(5.2)	22.6	29.4	5.9	6.7		
49	4.5		29.1		5.5		
52	4.5		30.1		6.7		
53	4.5		29.3		6.9		
54	4.6		29.1		8.6		
56	4.5		29.4		5.2		
58	4.5		27.5		6.7		
59	4.3		29.7				
59-2	4.4		30.0				
59-3	4.4		(8.0)				
59-4	4.4						
60	(4.9)		28.7		9.0		
64	4.5		29.8				
65	4.5		31.5		6.4		
68	4.5		29.5				
71	4.6		28.6		5.8		
72	4.5		29.7				
75	4.4		30.6		6.4		
78	4.7		29.2				
79	4.4		28.6		6.2		
80	4.7		28.4		5.9		
83	4.4		29.7		6.3		
84	4.5		28.3		4.5		
90	4.5		26.8		6.5		
91	4.6		27.8		4.6		
92	4.4	22.6	29.1	6.3	6.8		
93			28.7		6.8		
96	4.6		28.8		6.6		
98	4.6		29.5				
101	4.5		28.5		5.7		

HVI		<i>(table is divided into 3 pages)</i>				Micronaire, Tenacity, Elongation	
Lab.	Micronaire	Tenacity		Elongation			
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %		
101-2	4.6		28.6		6.6		
102	4.5		28.5		5.2		
102-2	4.4		31.1		5.3		
102-3	4.6		27.1		6.8		
103	4.3		28.9		5.6		
104	4.4		29.9				
105	4.5		28.1		8.4		
105-2	4.4		27.8		5.7		
106	4.4	20.2	32.0				
107	4.5		29.4				
109	4.4		31.0				
113	4.6		32.0		6.9		
114	4.5	21.9		5.5			
118	4.6		28.5		6.8		
123	4.5	20.2	25.4	6.9	6.9		
128	4.5		29.7		6.4		
129	4.5	19.8	26.1	6.7	6.8		
130	4.6	19.0	29.7	6.0	6.7		
131	(3.8)		27.7		6.1		
132			27.9		6.1		
143	4.5		28.3		6.8		
143-2	4.6		29.3		7.3		
146	4.7	19.6					
148	4.5		28.0		5.5		
153	4.5		30.3		7.3		
154	4.5		29.7		7.2		
156	4.6		28.7		7.5		
158	4.6		28.1		6.7		
159	4.6		28.4		7.4		
161	4.4		31.5		(3.4)		
162			28.2		5.1		
163	4.4	22.6		5.7			
172	4.4		28.3		6.8		
176	4.6		27.5		6.4		
179	4.5		30.3		6.1		
183	4.6		30.3		5.3		
186	4.4		29.1		5.7		
193	4.6		27.2		7.1		
200	4.5		29.8				
201	4.6		30.7		(9.9)		
202	4.6		29.3		7.1		
203	4.5		(25.0)				
206	4.5		32.2		6.0		
207	4.6		28.3		6.4		
207-2	4.6		28.2		5.6		
207-3	4.6		27.9		5.9		
207-4	4.6		28.5		6.5		
208	4.5		28.3		4.5		
209	4.5		30.1		6.4		
209-2	4.7	23.2	30.4	5.8	6.2		
213	4.6	20.0		6.4			
223	4.7	22.1		6.8			
229	4.5	17.1					

HVI		<i>(table is divided into 3 pages)</i> Micronaire, Tenacity, Elongation			
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
234	4.5		29.0		6.7
237	4.6		30.6		6.3
238	4.6	16.1			
242	4.5		29.6		6.2
242-2	4.6		30.1		6.7
251	(5.1)	20.4		6.5	
267	4.4	20.6		6.1	
271	4.6		31.8		6.8
271-2	4.7		29.3		5.3
272	(4.8)		28.9		6.1
275	4.6		29.6		
277	4.7		29.2		
287	4.5	21.3	27.4	6.2	6.8
288	4.5	21.0		6.5	
289	4.6	20.1			
295	4.5	23.1		6.5	
299	4.4	20.5			
300	4.6		28.9		6.8
315	4.6	21.5			
318	4.5		31.9		
319	4.6	20.3	29.6	6.0	6.7
Average	4.52	20.78	29.14	6.3	6.42
Median	4.52	20.55	29.1	6.25	6.5
StdDev	0.09	1.65	1.26	0.53	0.86
CV	1.89	7.92	4.33	8.44	13.39
Min	4.3	16.1	25.4	5.3	4.5
Max	4.7	23.2	32.2	7.6	9.0
n	117	28	106	21	87

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
2	28.4	1.12	44.2			
4				28.9	1.14	83.1
5				28.9	1.14	82.8
5-2				28.6	1.13	82.7
8				28.6	1.12	81.3
9	29.8	1.17	46.9			
11				28.8	1.13	82.9
12				28.5	1.12	83.4
13				27.6	1.09	83.0
15				28.4	1.12	83.0
16				28.3	1.11	83.4
19				28.7	1.13	82.8
27				28.6	1.13	82.5
28				28.6	1.12	82.7
30				27.8	1.09	82.2
31	28.2	1.11	47.0	28.3	1.11	84.3
32				28.7	1.13	83.4
33	28.6	1.13	47.9			
34				29.6	1.16	83.7
38				28.9	1.14	83.3
41				28.0	1.10	82.9
43				28.7	1.13	82.5
44	27.5	1.08	46.9			
48	29.8	1.17	47.1	(29.8)	(1.17)	82.5
49				28.7	1.13	82.9
52				28.7	1.13	82.9
53				28.8	1.13	83.9
54				28.4	1.12	83.0
56				28.5	1.12	82.7
58				28.3	1.11	82.3
59				28.5	1.12	82.6
59-2				28.5	1.12	83.1
59-3				28.6	1.13	83.0
59-4				29.0	1.14	82.5
60				28.4	1.12	82.0
64				28.4	1.12	82.3
65				28.4	1.12	83.6
68				28.5	1.12	83.2
71				28.8	1.14	
72				28.8	1.13	83.7
75				28.2	1.11	82.7
78				28.5	1.12	82.5
79				29.2	1.15	83.2
80				29.2	1.15	83.6
83				28.4	1.12	83.2
84				28.8	1.13	83.0
90				28.3	1.11	82.6
91				28.3	1.11	81.6
92	28.6	1.13	47.9	28.8	1.13	82.3
93				28.5	1.12	82.3
96				28.4	1.12	84.5
98				28.7	1.13	82.3

HVI <i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
101				28.8	1.13	82.8
101-2				28.9	1.14	83.0
102				28.6	1.13	82.6
102-2				28.2	1.11	82.2
102-3				28.7	1.13	82.7
103				(26.3)	(1.04)	(79.0)
104				28.3	1.11	83.0
105				28.3	1.11	82.7
105-2				28.7	1.13	82.5
106	28.4	1.12	46.8			
107				28.9	1.14	82.5
109				28.6	1.13	83.4
113				29.2	1.15	84.3
114	28.9	1.14	49.3			
118				28.1	1.10	82.5
123	27.2	1.07	47.3	28.5	1.12	84.4
128				28.4	1.12	82.9
129	28.2	1.11	48.0	28.9	1.14	84.0
130	28.2	1.11	45.7	28.3	1.11	83.2
131				28.4	1.12	83.7
132				(24.5)	(0.96)	84.0
143				28.3	1.11	82.8
143-2				28.0	1.10	83.7
146	28.4	1.12	46.6			
148				28.1	1.11	82.3
153				28.1	1.11	
154				29.1	1.15	83.0
156				28.4	1.12	81.7
158				29.0	1.14	83.0
159				28.2	1.11	81.5
161				28.6	1.13	83.8
162				28.9	1.14	(85.3)
163	29.4	1.16	49.6			
172				28.7	1.13	83.0
176				28.7	1.13	83.2
179				28.5	1.12	82.7
183				29.1	1.15	83.5
186	28.8	1.13	48.1	28.7	1.13	83.1
193				28.5	1.12	82.9
200				28.8	1.13	83.6
201				28.7	1.13	82.7
202				29.3	1.15	84.7
203				28.9	1.14	
206				28.6	1.13	84.0
207				28.7	1.13	82.3
207-2				28.4	1.12	82.1
207-3				28.6	1.13	82.5
207-4				28.8	1.13	82.9
208				28.7	1.13	82.4
209				28.6	1.13	83.7
209-2	28.8	1.13	47.6	28.6	1.13	82.4
213	27.7	1.09	44.9			

HVI	<i>(table is divided into 3 pages)</i>						Length
Lab.	ICCS			HVICCS			
	2.5 % SL		UR	UHM		UI	
	mm	inch	%	mm	inch	%	
223	28.7	1.13	44.8				
229	27.5	1.08	45.9				
234				29.0	1.14	84.0	
237				28.7	1.13	82.6	
238	27.8	1.09	45.5				
242				28.1	1.11		
242-2				28.3	1.12	82.2	
251	28.2	1.11	47.2				
267	29.9	1.18	47.5				
271				28.7	1.13	82.4	
271-2				29.2	1.15	82.3	
272				29.3	1.15	84.1	
275				28.5	1.12	83.0	
277				27.9	1.10	81.0	
287	28.4	1.12	45.5	28.5	1.12	83.3	
288	28.2	1.11	44.1				
289	28.6	1.13	46.1				
295	29.6	1.17	51.0				
299	28.1	1.10	47.7				
300				28.3	1.11	82.5	
315	28.0	1.10	47.0				
318				28.3	1.12	83.4	
319	28.6	1.13	46.0	28.6	1.13	84.0	
Average	28.5	1.122	46.9	28.59	1.126	82.95	
Median	28.41	1.119	47.0	28.6	1.126	82.9	
StdDev	0.69	0.027	1.55	0.33	0.013	0.69	
CV	2.43	2.433	3.31	1.17	1.170	0.83	
Min	27.2	1.07	44.1	27.6	1.09	81.0	
Max	29.9	1.18	51.0	29.6	1.16	84.7	
n	29	29	29	105	105	102	

HVI <i>(table is divided into 3 pages)</i>				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
2	(56)	(2.9)	81-1			
4	72	8.5	41-3			
5	73	8.5	41-3	2	0.15	16
5-2	73	8.9	41-3	2	0.17	20
8	73	9.9	32-1	1	0.12	10
9	(70)	8.7	41-4			
11	75	8.5	41-1	1	0.19	24
12	73	8.4	41-3	1	0.14	12
13	73	8.9	41-3		0.07	8
15	74	8.7	41-3	2	0.2	12
16	73	8.9	41-3	2	0.17	15
19	73	8.7	41-3	2	0.23	23
27	73	9.0	41-3	1	0.2	17
30	72	7.8	41-2		0.08	4
31	73	9.1	41-3		0.32	21
32	74	8.3	41-3			
33	72	7.4	41-2			
34	73	8.6	41-3			
38	75	8.1	41-1	2	0.21	29
41	71	8.5	41-4		0.1	11
43	74	8.5	41-3	2	0.15	23
44	74	8.2	41-3		0.1	9
48	73	9.1	41-3			
52	74	8.5	41-3	3	0.32	28
53	73	8.4	41-3	3	0.22	10
54	74	8.4				
56	74	8.3	41-3	1	0.1	8
58	73	8.1	41-3	1	0.11	12
59	75	8.5	41-1	2	0.21	23
59-2	75	8.6	31-4	2	0.25	26
59-3	73	8.8	31-4	2	0.2	40
59-4	73	8.8	31-4	2	0.2	21
60	75	8.7	41-3	2	0.2	26
64	73	9.7	32-2	1	0.11	14
68	75	8.3	41-3	2	0.17	10
71	74	8.4				
72	75	8.6	31-4		0.25	29
75	74	7.9	41-1	12	0.13	1
78	72	7.8	41-4			
79	74	8.4		1	(21.00)	17
80	74	8.4	41-3	3	0.36	40
83	75	7.9		1	0.12	11
84	75	8.4	41-1	2	0.19	26
90	75	8.5	41-1		0.14	19
91	75	8.7	31-4	1	0.16	21
92	74	8.0	41-1			
93	72	10.0	32-2	1	0.1	17
96	(70)	8.9	42-2			
98	74	8.4			0.17	18
101	73	8.2	41-1	2	0.24	33
101-2	74	8.9	31-4	1	0.12	13
102	73	8.7				
102-2	74	8.6	41-3		0.11	11

HVI <i>(table is divided into 3 pages)</i>				Color, Trash		
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
102-3	75	8.2			0.21	27
103	(78)	9.0	21-2	2	0.22	31
104	74	7.9	41-1	1	0.0	3
105	75	8.2	41	1	0.13	15
105-2	73	8.3	41	4	(1.40)	33
106	74	9.7	32-1		0.16	19
107	73	9.6	32-2			
109	72	9.1	41-3			
113	73	9.3	32-2			
118	75	8.3	41-1		0.16	24
123	74	9.2	31-4	2	0.21	16
128	74	8.4			0.28	33
129	(71)	7.3	51-1			
130	75	9.8	32-1			
131	76	8.9				
132	74	8.6	31-4			
143	75	8.2	31-4	2	0.16	15
143-2	74	8.4	41-3	1	0.11	13
146	(85)	(11.9)	11-3			
148	74	8.3	41-1	2	0.23	23
153	73	8.0	41-2		0.17	12
154	74	8.4	41-3	1	0.2	16
156	74	8.2	41-3			
158	75	8.1	41-1	1	0.2	16
159	74	7.8	41-1	2	0.1	17
161	73	8.5	41-3			12
162	73	8.5				
163	74	8.0	41-1			
172	74	8.1	41-1	2	0.17	15
176	74	8.0	41-1	3	0.33	36
179	74	7.8	41-1	2	0.19	21
183	74	8.9	41-3	1	0.13	20
193	74	8.4	41	2	0.26	28
200	74	8.4	41-3		0.11	8
201	74	8.3	41-3	1	0.1	10
202	73	8.8	41-3			
203	74	8.0	41-1	4	0.39	26
206	71	8.8	41-3	1	(0.80)	20
207	75	8.4	41-1	2	0.19	21
207-2	75	9.0	31-4	2	0.19	25
207-3	75	8.7	31-4	2	0.18	20
207-4	75	8.7	31-4	2	0.2	23
208	74	8.7	41-3	2	0.22	20
209	73	9.2	31-4			
209-2	73	7.9	41-2			
213	73	7.6	41-2			
223	(77)	8.8	31-3			
229	(70)	8.1	21-4			
234	72	8.9	4-3	1	(0.46)	10
237	73	9.1	41-3	1	0.15	17
238	(68)	9.1	42-2			
242	74	8.2	41-1	1	0.05	8
242-2	75	8.8	31-4	2	0.19	33

HVI				Color, Trash		
<i>(table is divided into 3 pages)</i>						
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
251	(67)	(6.7)	51-2			
267	74	8.6	31-4			
271	74	7.4	41-2	4	0.36	12
271-2	73	8.6	41-3			
272	73	8.1	41-3			
275	74	8.0	41-1	1	0.09	6
277	(77)	9.6	21-4			
287	72	9.2	41-3			
288	72	(6.0)	51-1			
289	73	8.7	41-3			
300	73	9.1	31-4	1	0.11	4
318	(70)	(14.6)	24-2			
319	(13)	(6.7)	24-3			
Average	73.7	8.54			0.177	18.4
Median	73.8	8.5			0.17	17.0
StdDev	0.9	0.52			0.074	8.7
CV	1.3	6.05			41.589	47.0
Min	71	7.3			0.0	1
Max	76	10.0			0.39	40
n	106	113			73	78

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio		
2	8.5					
4			5.2			
5			8.6		0.87	
5-2			8.9		0.86	
8			9.0		0.88	
9	8.7					
11			6.5		0.87	
12			8.7		0.88	
13			7.8		0.89	
15			3.8	79		
16		8.8		0.9		
19		9.3		0.88		
27		8.1	86			
28		6.7				
30		9.0		0.89		
32		8.8				
33	5.0				0.84	
34			5.3		0.84	
38					0.87	
41			7.8		0.88	
43			8.4			
44	10.4				0.86	
48		6.2	6.8			
52		7.8		0.86		
53		6.5		0.83		
54		13.0				
56		11.8				
58		10.9		0.88		
59		8.4		0.87		
59-2		8.2		0.87		
59-3		7.8	87 86			
59-4		8.2				
60		8.7		0.85		
64		11.1		0.89		
65		6.1		0.84		
68		9.1		0.84		
71				0.87		
72		7.7		0.86		
75		8.6		0.89		
78		10.1		0.89		
80		9.6		0.87		
84		7.7	88			
90		8.8			0.86	
91		8.6		0.88		
92	5.0				0.85	
93			7.7			
96			8.7			
101			9.3		0.87	
101-2			8.2		(1.16)	
102-2		6.6		0.89		
102-3		7.8		0.86		
103		(13.6)		0.87		
104		7.1	86			

HVI		Short Fibre Index, Maturity		
<i>(table is divided into 3 pages)</i>				
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
105		9.1		
105-2		7.4		
106	9.6		(65)	0.85
107		8.5		0.89
109		9.4	83	
113		4.8		0.85
114	3.7			
118		7.6		0.84
123	11.3	10.9		0.85
128		8.9	77	0.87
130	7.5	8.2		0.87
132		7.7		0.84
143		8.5		0.83
143-2		9.7		0.89
146	6.4			0.83
148		8.3		0.86
153		5.5		0.89
154		4.3		
156		10.0		0.89
158		6.9	88	
159		7.7	85	
161		7.9		0.89
162		5.0		
163	8.6			
172		7.7	88	(1.00)
176		8.3		0.87
179		9.7		0.89
183		7.2		0.88
186	6.2	6.2		
193		(18.4)		0.86
200		5.7		
201		8.4		0.84
202		7.0		0.84
203		7.8		0.84
207		9.1		0.87
207-2		9.3		0.87
207-3		8.9		0.87
207-4		9.1		0.87
208		10.1		0.88
209		8.2		0.85
209-2	7.8	4.2		0.87
213	8.9			
223	7.6			
229	9.4			0.83
234		8.3		0.86
237		7.4		0.9
238				0.81
242		9.5		0.89
242-2		9.8		0.87
251	6.1			0.85
267	8.3			0.83
271		9.2		0.84
272		5.1		0.84

HVI		<i>(table is divided into 3 pages)</i>			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %		Maturity Ratio	
275		8.4			0.92	
277					0.84	
288	9.1					
289	6.5					
295	3.5				0.85	
299	5.9					
300		7.7			0.84	
315	10.6				0.84	
318		9.3			0.84	
319	10.5	8.8			0.84	
Average	7.66	8.11	84.8		0.863	
Median	7.8	8.3	86.0		0.87	
StdDev	2.15	1.62	3.7		0.021	
CV	28.05	20.01	4.4		2.484	
Min	3.5	3.8	77		0.81	
Max	11.3	13.0	88		0.92	
n	25	92	11		81	

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
4	USTER			10
5	USTER	720		5
21	USTER	1190064		5
22	USTER	Autojet		10
27	USTER			
31	USTER			5
32	USTER	AFIS Pro 2		10
38	USTER			
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	AFIS Pro	ASTMD5866-05	5
80	USTER			10
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			5
105-2	USTER		Manufacturer	10
109	USTER			
118	USTER			
123	USTER		ASTMD5866-05	10
123-2	USTER	AFIS Pro	ASTMD5866-05	10
128	USTER	Neptester 720	ASTM	5
129	USTER	AFIS Pro		
132	USTER			
143	USTER		ASTM D5866	10
148	USTER	AFIS Pro		10
148-2	USTER	AFIS Pro 2		10
154	USTER			10
158	USTER			10
161	USTER			
163	USTER		ASTMD5866-05	5
172	USTER		ASTMD5866-05	5
176	USTER			10
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER	AFIS Pro	Manufacturer	10
186-2	USTER	Afis old	Manufacturer	10
193	USTER	AFIS Pro	ASTMD5866-05	6
200	USTER			
207	USTER	AFIS Pro		
208	USTER	AFIS Pro		
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	20.6	0.81	46.2	37.0	1.46	34.6	1.36	23.2
21	19.1	0.75	48.1	35.0	1.38	32.8	1.29	26.0
22	20.6	0.81	46.8	36.3	1.43	34.0	1.34	23.1
31	22.1	0.87	41.9	37.3	1.47	34.9	1.37	17.5
32	20.9	0.82				34.4	1.35	20.8
38	21.0	0.83	49.9	37.6	1.48	35.1	1.38	23.0
39	18.4	0.72	52.0	34.8	1.37	32.7	1.29	29.1
41	20.2	0.80	45.3	36.1	1.42	33.7	1.33	21.9
43	20.6	0.81	50.1	37.3	1.47	34.5	1.36	23.8
44	20.0	0.79	47.6			33.8	1.33	24.1
51	19.6	0.77	50.1			34.0	1.34	25.9
58	21.1	0.83	43.9	36.6	1.44	34.3	1.35	20.1
59	17.1	0.67	(69.0)	39.5	1.56	(36.7)	(1.44)	(44.5)
75	20.7	0.81	49.9			35.2	1.39	23.2
80	17.8	0.70	57.2			33.1	1.30	32.9
90	19.9	0.78		36.4	1.43	34.0	1.34	24.8
91	20.1	0.79	47.2			34.2	1.35	23.0
101	20.2	0.80	51.3	37.9	1.49	35.3	1.39	27.6
102	21.1	0.83	46.7	37.1	1.46	34.5	1.36	22.4
105	20.8	0.82	47.8	36.8	1.45	34.5	1.36	23.0
105-2	20.6	0.81	50.1	38.1	1.50	35.3	1.39	25.0
109	20.1	0.79	49.8	36.3	1.43	33.9	1.33	25.1
118	20.2	0.80	48.4	37.4	1.47	34.9	1.37	25.4
123	20.4	0.80	46.5			33.9	1.33	23.0
123-2	19.9	0.78	49.2			33.7	1.33	23.4
129	20.3	0.80	48.2			34.6	1.36	22.6
143	19.3	0.76	52.9	36.4	1.43	34.1	1.34	27.9
148	20.1	0.79	47.1			33.9	1.33	22.6
148-2	19.3	0.76	49.4			33.2	1.31	24.9
154	22.4	0.88	42.5	36.8	1.45	34.6	1.36	17.0
158	20.1	0.79	49.8	36.2	1.43	34.0	1.34	24.8
161	20.6	0.81		36.8	1.45	34.3	1.35	24.0
163	22.2	0.87	(30.7)	37.5	1.48	35.3	1.39	17.5
172	19.6	0.77	51.4	36.6	1.44	34.5	1.36	
176	19.3	0.76	55.1	36.6	1.44	34.3	1.35	29.1
183	21.8	0.86	41.1			34.5	1.36	17.7
186	21.1	0.83	47.3			35.0	1.38	21.1
186-2	21.5	0.85	45.6	37.3	1.47	35.0	1.38	21.2
193	21.6	0.85	44.0			34.8	1.37	19.4
207	20.0	0.79	47.9			33.8	1.33	22.2
208	20.7	0.81	47.0			34.3	1.35	20.7
229	22.5	0.89				35.7	1.41	16.8
271	19.6	0.77	51.4	35.8	1.41	33.8	1.33	27.9
272	19.1	0.75	47.5	35.1	1.38	32.8	1.29	25.3
288	20.1	0.79	48.9			34.2	1.35	23.7
Average	20.31	0.80	48.28	36.76	1.447	34.28	1.349	23.34
Median	20.2	0.795	48.1	36.8	1.449	34.3	1.35	23.2
StdDev	1.1	0.043	3.29	0.99	0.039	0.7	0.028	3.42
CV	5.44	5.435	6.8	2.7	2.701	2.04	2.038	14.65
Min	17.1	0.67	41.1	34.8	1.37	32.7	1.29	16.8
Max	22.5	0.89	57.2	39.5	1.56	35.7	1.41	32.9
n	45	45	39	27	27	44	44	43

AFIS L <i>(table is divided into 2 pages)</i>						Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
4	25.0	0.98	33.5	30.4	1.20	8.4
21	23.5	0.93	33.7	28.8	1.13	9.5
22	25.1	0.99	31.9	30.2	1.19	7.5
31	26.0	1.02	30.2	30.9	1.22	5.5
32	25.4	1.00		30.4	1.20	6.3
38	26.5	1.04	30.7	31.2	1.23	
39	23.4	0.92	34.2	28.7	1.13	10.1
41	24.3	0.96	32.6	29.6	1.17	7.9
43	25.7	1.01	32.6	30.5	1.20	6.8
44	24.5	0.96	34.0	29.7	1.17	8.3
51	24.6	0.97	(49.7)	29.7	1.17	(25.0)
58	25.1	0.99	31.6	30.2	1.19	6.8
59	25.2	0.99	(42.3)	(32.7)	(1.29)	(15.4)
75	25.9	1.02	32.9	31.1	1.22	6.5
80	23.7	0.93	36.9	29.4	1.16	10.8
90	24.9	0.98		30.0	1.18	7.7
91	24.5	0.96	34.4	30.0	1.18	8.0
101	25.5	1.00	35.3	31.4	1.24	
102	25.7	1.01	32.1	30.8	1.21	7.1
105	25.7	1.01	32.7	30.5	1.20	7.1
105-2	25.7	1.01	34.3	31.2	1.23	8.1
109	25.1	0.99	32.5	30.1	1.19	7.6
118	24.9	0.98	34.6	30.5	1.20	9.1
123	24.8	0.98	33.0	29.8	1.17	7.8
123-2	24.7	0.97	32.8	29.7	1.17	7.0
129	25.0	0.98	33.2	30.5	1.20	7.1
143	24.7	0.97	34.4			8.8
148	24.6	0.97	33.5	29.8	1.17	7.5
148-2	24.0	0.94	33.9	29.2	1.15	8.1
154	26.4	1.04	(28.0)	30.8	1.21	4.4
158	25.1	0.99	32.2	31.1	1.22	7.5
161	25.4	1.00		30.5	1.20	7.4
163	25.9	1.02	(41.3)	31.1	1.22	6.1
172	24.6	0.97	35.2	30.5	1.20	9.9
176	25.2	0.99	34.3	30.5	1.20	8.5
183	25.4	1.00	31.7	30.2	1.19	6.3
186	25.8	1.02	31.9	31.0	1.22	6.1
186-2	26.0	1.02	31.4	31.0	1.22	6.6
193	25.7	1.01	31.9	30.5	1.20	6.3
207	24.6	0.97	33.0	29.7	1.17	6.8
208	25.3	1.00	32.0	30.2	1.19	6.0
229	26.7	1.05		31.4	1.24	4.7
238				30.3	1.19	
271	24.6	0.97	33.7	30.0	1.18	9.0
272	23.4	0.92	33.7	28.5	1.12	9.3
288	24.9	0.98	33.6	30.1	1.19	7.4
Average	25.08	0.987	33.14	30.26	1.192	7.5
Median	25.1	0.988	33.0	30.35	1.195	7.5
StdDev	0.77	0.031	1.36	0.7	0.028	1.39
CV	3.09	3.09	4.09	2.32	2.318	18.47
Min	23.4	0.92	30.2	28.5	1.12	4.4
Max	26.7	1.05	36.9	31.4	1.24	10.8
n	45	45	37	44	44	41

AFIS D / M		Diameter, Maturity					
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio		
4	13.6		162	8.2	0.88		
22			168	6.4	0.89		
31			165	6.2	0.9		
32			181	4.4	0.99		
38			157	6.0	0.87		
41							
43					177	8.0	0.92
44					169	5.9	0.91
51					159	6.3	0.87
58					173	4.7	0.94
59					172	7.3	0.88
75					174	5.6	0.92
80					167	6.6	0.88
90					162	5.4	0.89
91					162	6.6	0.9
102					154	10.7	0.83
105					167	6.7	0.89
105-2					166	5.4	0.92
109					170	6.6	0.89
118					168	4.9	0.92
123					167	5.9	0.88
123-2					163	6.6	0.89
129					(142)	(11.9)	
143					163	5.9	0.89
148					166	6.6	0.9
148-2					171	6.0	0.91
154					152	8.8	0.87
158					168	5.8	0.82
161					160	7.3	0.86
172					167	5.3	0.9
176					162	5.2	0.89
183					169	6.1	0.92
186					161	6.8	0.89
186-2			156	8.6	0.82		
193			170	5.6	0.92		
207			164	8.4	0.86		
208			166	6.0	0.92		
229			(139)	6.3	(0.70)		
238			171	5.3	0.92		
271			155	10.3	0.79		
272	12.1						
288			167	6.8	0.89		
Average			165.6	6.55	0.89		
Median			166.5	6.3	0.89		
StdDev			6.2	1.39	0.036		
CV			3.8	21.22	4.033		
Min			152	4.4	0.79		
Max			181	10.7	0.99		
n	2	0	38	39	38		

AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
4	305	46	273	1.2
21	(180)	36	(698)	0.77
22	326	39	196	1.03
31	323	37	196	0.8
32	301	41	241	0.85
38	341	35	306	0.73
43	309	44	243	0.94
51	306	(271)	228	0.77
58	330	51	246	1.14
90	370	43	147	0.82
91	318	37	204	0.77
102	343	45	210	0.92
105-2	309	41	229	0.86
129	297	38	193	0.58
143	284	31	214	0.57
148	383	48	179	1.21
148-2	308	42	219	0.88
154	266	43	287	0.79
158	288	40	271	0.94
183	325	39	190	0.8
186	320	46	224	0.96
186-2	320	43	224	0.92
193	315	37	192	0.72
207	320	37	165	0.63
208	323	38	175	0.68
272	322	30	159	0.6
Average	318.1	40.3	216.4	0.842
Median	320.0	40.0	214.0	0.81
StdDev	24.6	5.0	40.1	0.174
CV	7.7	12.4	18.5	20.677
Min	266	30	147	0.57
Max	383	51	306	1.21
n	25	25	25	26

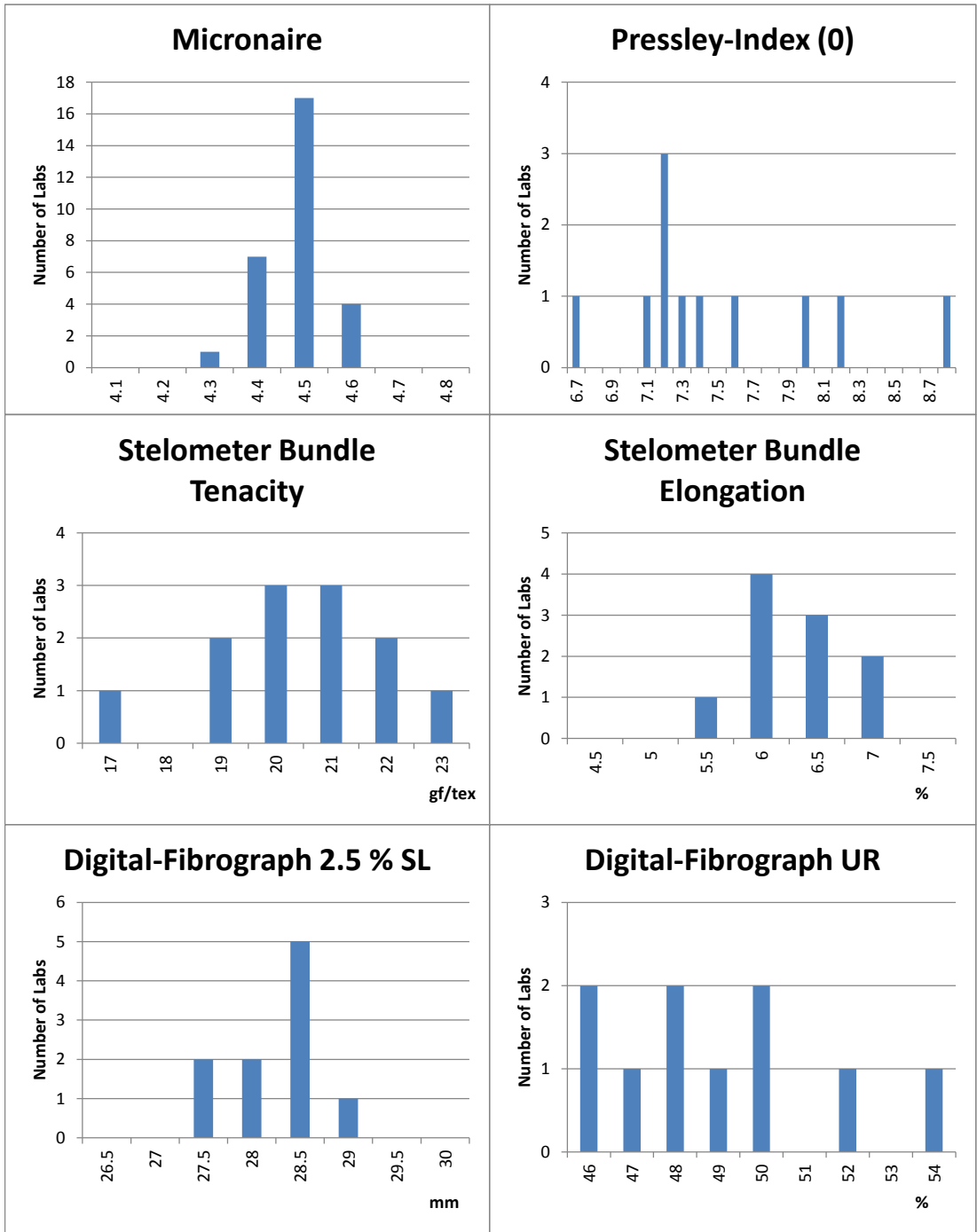
AFIS N		<i>(table is divided into 2 pages)</i>			Neps	
Lab.	Neps		SCN		Mean Diameter μm	Cnt/g
	Mean Diameter μm	Cnt/g	Mean Diameter μm	Cnt/g		
4	641	177				
5		190				
21	670	120				
22	720	172	1196			20
27		171				
31	710	191	1212			20
32	716	173	1011			31
38	719	156	995			22
39	643	152				
41	654	198				
43	736	190	1190			31
44	750	179	1093			27
51	752	177	1163			33
58	687	235	1049			17
59	716	189	1196			18
75	753	166	1222			27
80	725	166	1219			21
90	738	187	1309			28
91	738	222	1335			32
101	785	168				
102	722	196	1069			36
105	723	160	1331			22
105-2	741	188	1133			42
118	723	161	1169			21
123	721	191	1108			25
123-2	686	202	966			21
128		130				
129	755	212	1169			48
132	626	157				
143	719	230	1155			33
148	694	186	1046			23
148-2	710	222	1000			41
154	732	176	1214			30
158	734	211	1106			38
161	769	177	1353			24
163	753	215	1010			33
172	727	176	1120			22
176	703	171	951			19
183	703	206	1135			21
186	770	190	1084			47
186-2	724	189	1079			29
193	749	191	1300			25
200	728	176	1264			24
207	735	206	1210			27
208	745	209	1323			29
229	702	172	933			29

AFIS N		<i>(table is divided into 2 pages)</i>			Neps	
Lab.	Neps		SCN			
	Mean Diameter μm	Cnt/g	Mean Diameter μm	Cnt/g		
238	736	183	1262	21		
271	719	208	1288	22		
272	651	232				
288	685	206	977	25		
Average	717.8	186.2	1148.6	27.6		
Median	723.0	187.5	1159.0	26.0		
StdDev	34.9	24.1	117.7	7.7		
CV	4.9	12.9	10.2	27.9		
Min	626	120	933	17		
Max	785	235	1353	48		
n	47	50	40	40		

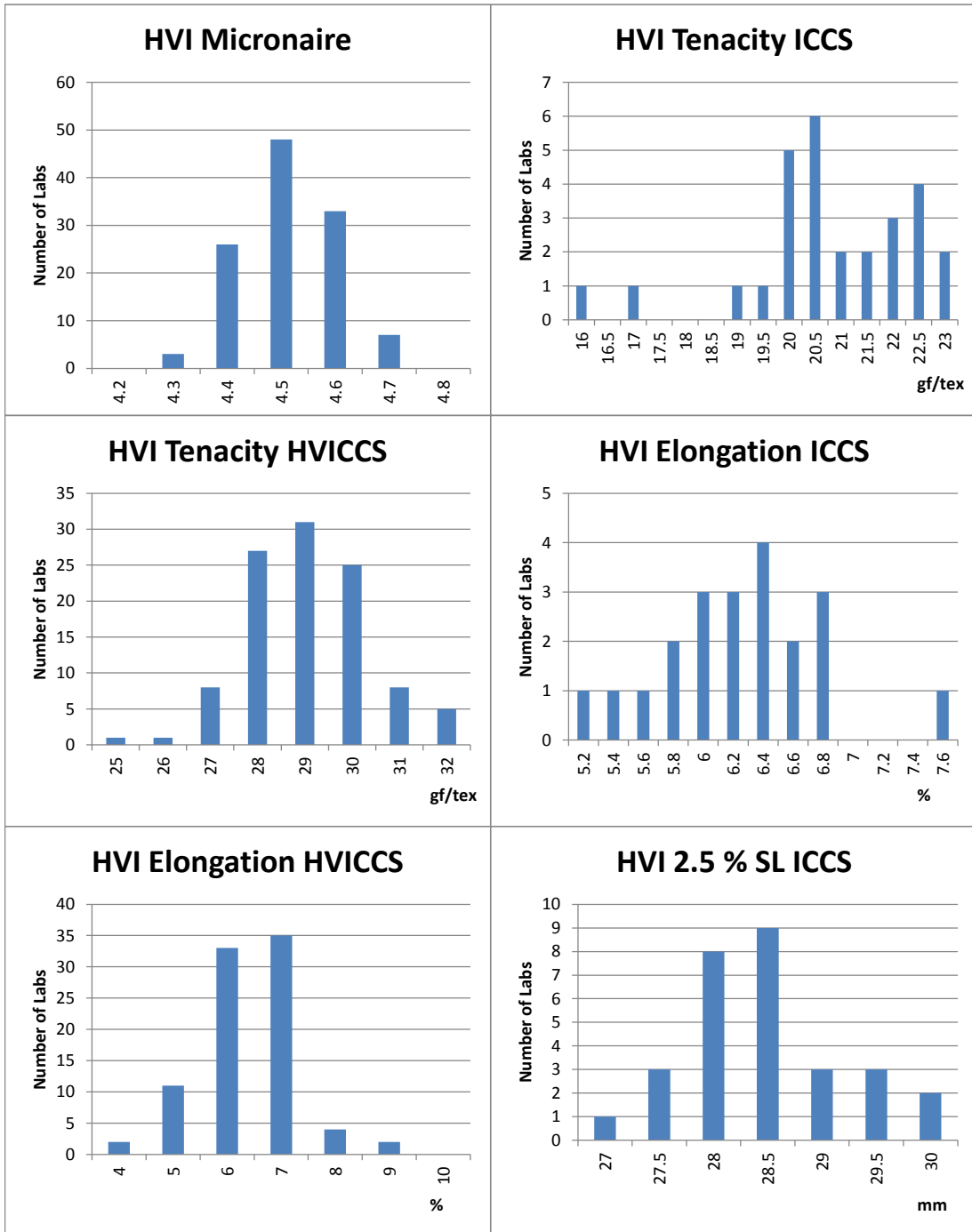
aQura <i>(further information see page "Multiple Devices")</i>						Length, Neps	
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
33	4	32.3		18.4	7.3	202	34
53	4	31.9	17.4	25.9	11.5	114	16
82	4	(26.3)	18.1	26.3	12.2	158	32
101	4	33.6	19.3	21.3	9.0	172	29
127	4	31.0	20.6	18.2	7.9	187	20
130	4	32.3	19.5	18.4	7.3	202	34
146	4					209	41
176	4	32.3	20.3	17.3	7.1		
202	4	29.4		32.2	14.8	185	19
213	4	30.4	18.5	24.1	11.1	122	12
229	4	30.1	(13.3)	37.5	(21.0)	205	25
234	4	30.0		26.2	11.7	226	41
277	4	30.4	17.8	28.4	12.6	(321)	52
300	4	30.6	20.1	18.8	7.8	170	44
Average		31.18	19.06	24.08	10.02	179.3	30.7
Median		30.81	19.26	24.14	10.05	186.0	32.0
StdDev		1.25	1.14	6.18	2.6	34.4	12.0
CV		4.0	6.01	25.66	25.95	19.2	39.0
Min		29.4	17.4	17.3	7.1	114	12
Max		33.6	20.6	37.5	14.8	226	52
n		12	9	13	12	12	13

Multiple Devices <i>(information not provided in the respective table)</i>					General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
8	DigitalFibrograph		730	ASTMD1447	6
8	FMT		Micromat	ASTMD3818-94	4
28	DigitalFibrograph		Fibrotest		10
33	aQura	Premier			4
35	DigitalFibrograph	USTER	730		3
53	aQura	Premier			4
56	Causticaire		Micronaire	JIS	2
58	ALMeter			internal	3
70	GravFineness			ISO 1973	5
70	FMT	SDL	MK.1	ASTMD3818-92	3
79	GravFineness			RSTUz620-94	4
82	aQura	Premier		Manufacturer	4
85	CombSorter		Joh.-Zweigle	UNI10170-94	1
85	GravFineness			UNIENISO1973-98	10
92	DigitalFibrograph		DigiLen	ASTMD 1440	5
93	DigitalFibrograph			ASTM 1447	4
93	FMT		WIRA	ISO 10306	2
101	aQura	Premier			4
102	DigitalFibrograph		530	ICCS	5
102	FMT		FMT 3	ICCS	2
123	DigitalFibrograph			ASTMD 1447-07	5
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
130	aQura	Premier			4
131	DigitalFibrograph		530	ASTM	6
131	FMT		Micromat	ASTM	6
131	Causticaire		Fibroscope	British	
132	ALMeter	Peyer	AL100	DIN 53806	5
143	DigitalFibrograph	USTER	330	ABNT NBR13154-94	
146	aQura	Premier		Manufacturer	4
176	aQura	Premier			4
177	Causticaire			DIN53943-4	5
177	GravFineness			ASTMD1577-90	5
186	ALMeter	Peyer	AL 101	Manufacturer	5
186	FMT	SDL	FMT	USDA	6
193	GravFineness			GB/T6100-07	2
202	aQura	Premier			4
213	aQura	Premier			4
229	aQura	Premier			
229	Causticaire				
229	MikrTest				
234	aQura	Premier			4
277	aQura	Premier			
300	aQura	Premier			4

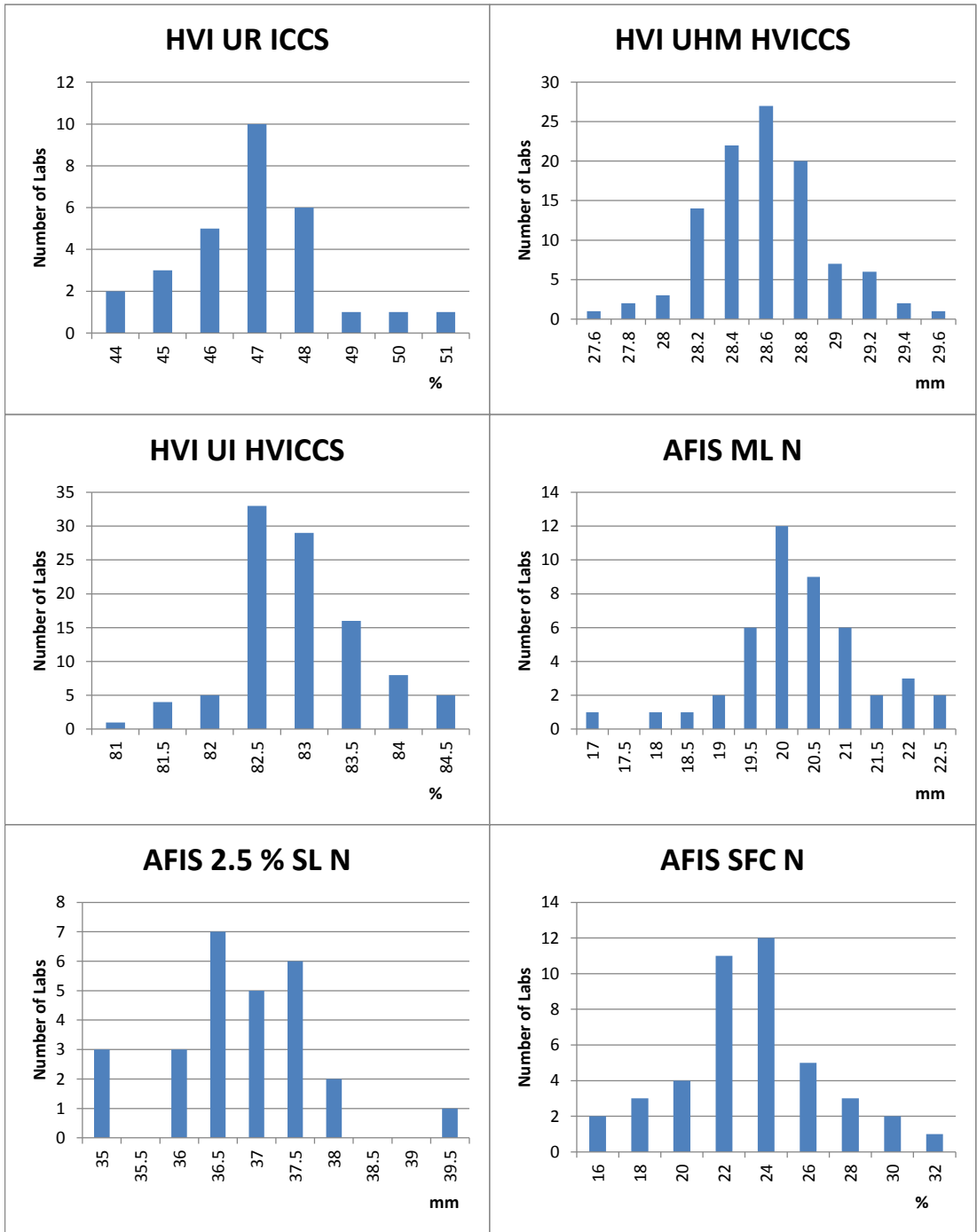
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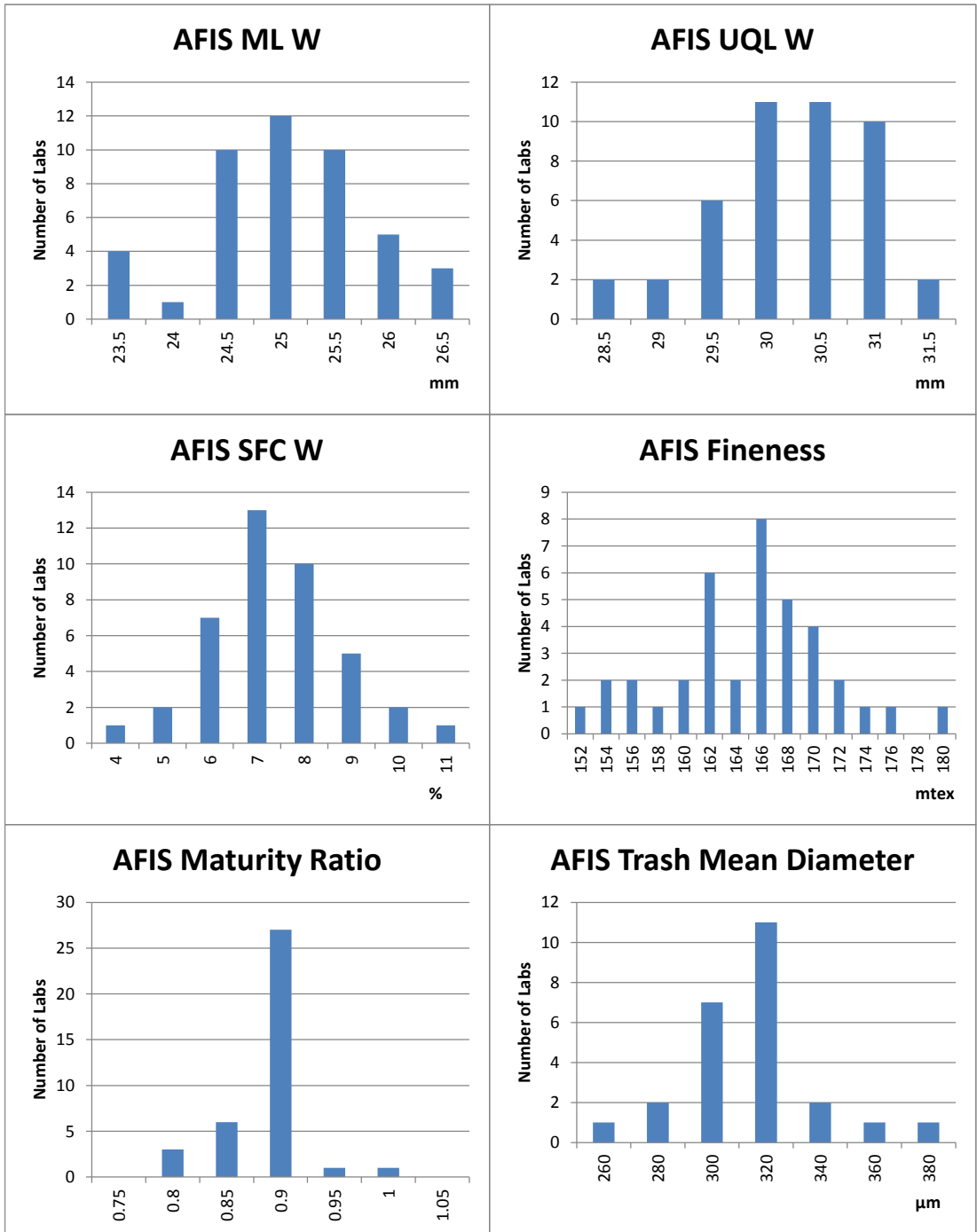
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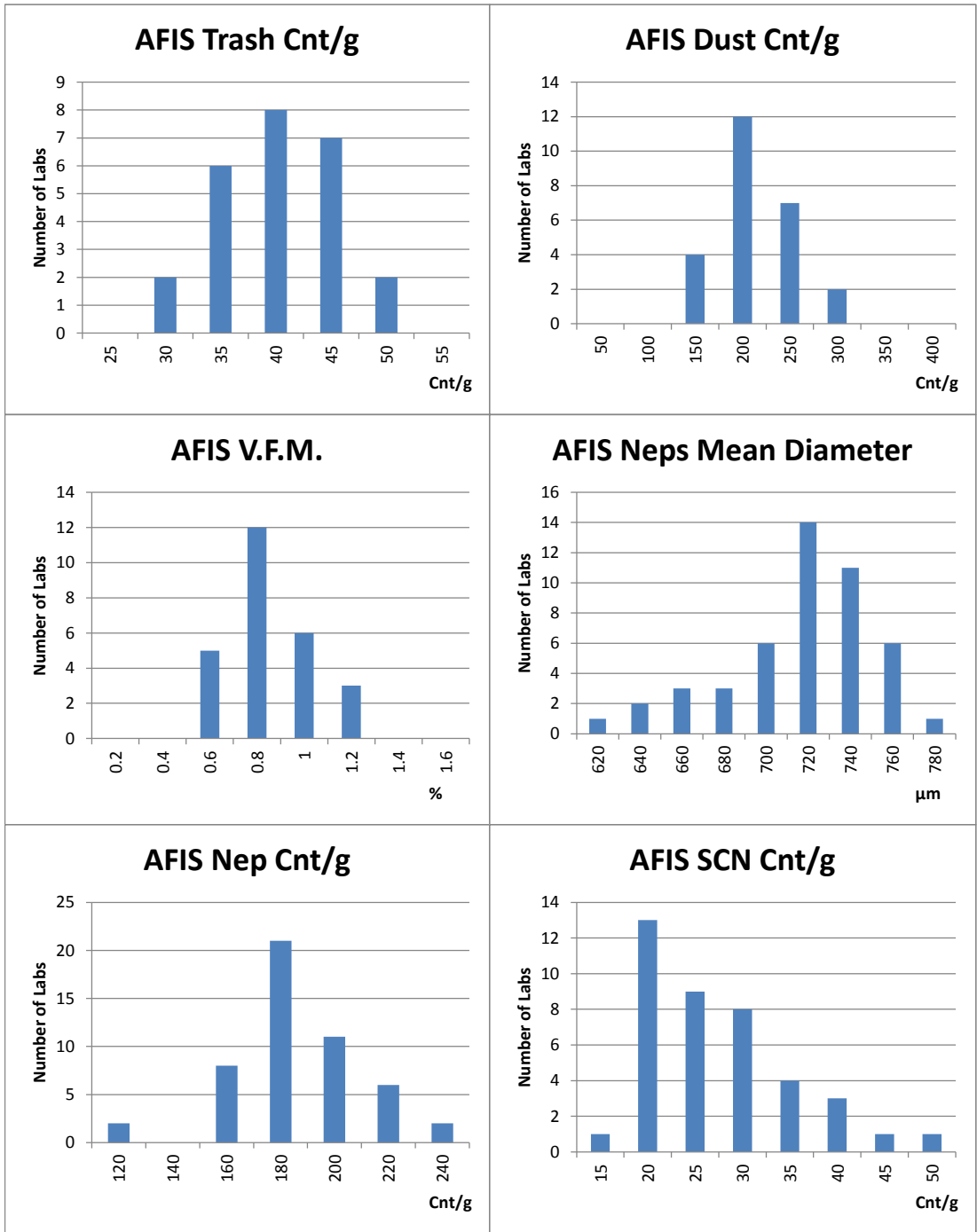
Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data

