ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

Bremen, 15.5.2013

Evaluation of the Test Results 2013 / 1

Tested Cotton: **Israel Acala**
Cotton Number: **RM 41**
Number of Laboratories: **139**

Argentina	2	Mozambique	-
Australia	1	The Netherlands	1
Bangladesh	1	Pakistan	1
Brazil	5	Poland	2
China, PR	24	Portugal	1
Czech Republic	4	Russia	2
Egypt	3	Serbia	1
France	1	Slovenia	2
Germany	13	South Africa	1
Greece	6	Spain	3
Hungary	1	Sudan	-
India	37	Switzerland	2
Iran	1	Tanzania	1
Israel	1	Thailand	4
Italy	1	Turkey	1
Japan	2	Uganda	1
Kazakhstan	-	United Kingdom	1
Korea, R	1	United States	5
Latvia	1	Uzbekistan	2
Mali	1	Vietnam, SR	1
Mauritius, Rep of	1	Zimbabwe	-

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

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Explanations:

test material

The sample material is generally unprocessed cotton lint without additional homogenisation from varying origins with a wide spectrum of properties. The Bremen Fibre Institute (FIBRE) usually avoids origins with high result variations.

In this Round Test the cotton is: **Israel Acala (RM 41)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 900 with 6 tests on samples from 10 different layers with the following results:

HVI HVICCS	SD between bale layers (based on 6 tests per layer)	SD between single tests (based on 10 times 6 tests)
Mic	0,027	0,026
Strength, g/tex	0,292	0,602
Length, UHM, inch	0,004	0,009
Length, UHM, mm	0,105	0,236

The test material is not suitable as a reference for calibration.

result evaluation

The results of the participating laboratories for one test method and one parameter are grouped in one table implying that the used instruments yield comparable results despite different instrument types or different national standard test methods. The results are partitioned in different tables as soon as significant differences appear.
Based on the compilation of the results, an identification of outliers is carried out, which is according to Grubbs' Test for Outliers described in ISO 5725 with one slight modification: the algorithm is applied repeatedly to ensure that all outliers are excluded. All outliers are marked by putting the result in brackets. The statistical parameters for all tables and characteristics are calculated after the exclusion of outliers. For the usage of the statistical data, the different numbers of repetitions in each lab have to be considered.

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assessment of the laboratory performance

From the results, the bias of each laboratory can be calculated. Stability and repeatability cannot be assessed.

The ICA Bremen Cotton Round Test does not include any benchmarking or rating of the laboratories and their results. Rather the results can be used by each laboratory to evaluate its own performance.

- For estimating a bias to results of other laboratories, please calculate the difference between your result and either the average or the median of all laboratories (after exclusion of outliers).
- For evaluating the bias, the z-score calculation may be applied:

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

- If the z-score is between -1 and 1 your lab belongs to the better 68% of all labs and no measures are necessary. In the z-score range of -2 to 2 are 95 % of all values. The closer your z-score is to 2 (-2) the more urgently it is to take measures to improve performance. If your z-score is above 2 (below -2) a basic revision of all conditions will be necessary.
- For assessing permanent deviations, please monitor all deviations in subsequent ICA Bremen Round Tests or in comparison to other round trial programmes like the CSITC Round Trials or the USDA HVI Checktest.

laboratory numbers

The laboratory numbers for each laboratory are confident. The numbers are usually kept constant for subsequent Round Tests. In case that any laboratory has doubts in the anonymity of its number, a new laboratory number should be requested.

In case of more than one instruments of the same type, an adjunct number or character is given (e.g. 123-1 and 123-2). In order to distinguish between your instruments, please provide specific adjunct characters for each of your instruments with your data sheet.

registration and participation

To register a new laboratory to the ICA Bremen Round Test, please send the laboratory's contact details to Mrs Hannelore Gerardi – contact details provided below
In the case that a laboratory does not send any results back for a whole year's period, we have to exclude it from the participants.

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choice of test methods included in the round test

The ICA Bremen Round Test strives to include every commonly used test method.

- Test methods will remain included as long as sufficient participant numbers are given, although the Bremen Fibre Institute (FIBRE) maintains the right to exclude methods.
- Proposals for the inclusion of new methods/instruments/parameters are appreciated. For this, an adequate number of long term participants should be given.
- Test methods for stickiness are excluded due to difficulties in sample provision.

improvement of the ica bremen cotton round test

Any proposals for improving the Round Test are highly appreciated. For this, please contact Mr Axel Drieling – contact details provided below.

important notes

Please take care to fill in all the necessary information on the test forms (e.g. the test methods, the instrument types and the number of repetitions for each test). Please provide one or two reliable e-mail addresses to Mrs Gerardi - contact details are provided in the last section.

Contact

For any questions regarding the ICA Bremen Cotton Round Test, please contact:

- Mr Axel Drieling for general questions relating to the Round Test and cotton testing,
  Tel. +49 421 218 58650, e-mail: axel@ica-bremen.org
- Mrs Hannelore Gerardi for questions relating to the realization of the current tests,
  Tel. +49 421 218 58671, e-mail: gerardi@faserinstitut.de

With kind regards,

Axel Drieling
Hannelore Gerardi

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MICRONAIRE				
Lab.	Rep.	Mic.	Instrument	Standard Test Method
17		4.2		
20		4.3		
22	3	4.3	Fibronaire	
29	5	4.2	Sheffield	ISO 2403
35	3	4.1	775	
56	2	4.5	Fibronaire	JIS
67	4	4.4	Fibronaire	
70	6	4.3	MK.1	ASTMD3818-92
76	3	4.3	RM 1070	
77		4.3		
79	5	4.5		ASTMD1448
92	10	4.3	DigiMic XT	ASTMD1448
93	4	4.3		ASTMD1448
102	3	4.4	Fibronaire	ICCS
116	4	(3.9)	STATEX	
128	8	4.4	Fibronaire	ASTM
129	4	4.3	Sheffield	BS 3181
131	6	4.3		ASTM
132	3	4.4	775	DIN 53941
133	2	4.2	275	
142	3	4.4	804000	ISO
152	3	4.4		
155		4.5	275	DIN 53941
162	3	4.4	WIRA	
168		4.4		
169	3	4.4	Sheffield	
177	3	4.2	DPM 60	DIN 53941
183	3	4.3	Fibronaire	ASTMD1448
186	6	4.3	FMT	
193	3	4.4	MCI	GB/T6498-08
201	2	4.4	275	
Average		4.33		
Median		4.3		
StdDev		0.1		
CV		2.22		
Min		4.1		
Max		4.5		
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
8					6	20.2	5.4	ASTMD1445-95
29	5	8.3		ISO 3060				
35					6	21.6	5.9	
56	5	9.1		JIS				
76	5	7.9						
79	6	8.3		ASTMD1445				
92					5	21.0	5.0	ASTM 1445
93	6	7.7	3.6	ASTMD1445		20.5	6.7	ASTM 1445
102					5	22.9	5.4	ICCS
116					10	21.2	4.3	
128	8	8.2	4.4	ASTM	8	23.5	6.4	ASTM
131	6	8.5	3.8	ASTM	6	20.3	6.4	ASTM
132					6	21.7	5.9	DIN ISO3060
152	6	8.3						
162	3	8.5			4	20.4	6.1	
177	4	7.5		DIN 53942				
193					6	21.4	6.1	GB/T13783-92
206					14	21.6	6.2	DIN ISO3060
Average		8.22	3.94			21.36	5.81	
Median		8.3	3.8			21.3	6.0	
StdDev		0.46	0.41			1.02	0.68	
CV		5.6	10.27			4.77	11.75	
Min		7.5	3.6			20.2	4.3	
Max		9.1	4.4			23.5	6.7	
n		10	3			12	12	

Pressley	PI(0)	Av., gf/tex	44.03	StdDev, gf/tex	2.46	CV, %	5.60
	(3.2)	Av., gf/tex	26.81	StdDev, gf/tex	2.75	CV, %	10.27

DIGITAL - FIBROGRAPH *(further information see page "Multiple Devices")*									Span Length
Lab.	Rep.	2.5 % SL		50 % SL		UR	SFC (N)	SFC (W)	SFI
		mm	inch	mm	inch	%	%	%	
8	6	29.0	1.14	13.2	0.52	46			5.5
23	5	28.9	1.14	12.8	0.50	44	11.7		
28	10	27.5	1.08	11.8	0.47	43	21.7		8.2
35	3	28.2	1.11	13.4	0.53	48			7.1
92	5	28.5	1.12	13.4	0.53	47			6.5
93	4	29.8	1.17	15.9	0.63	53			
102	5	28.6	1.12	12.6	0.50	44			
116	5	29.1	1.14	14.5	0.57	50			
128	8	29.5	1.16	14.0	0.55	47			13.4
131	6	27.1	1.07	12.6	0.50	47			
143		29.2	1.15	14.8	0.58	51			
Average		28.67	1.129	13.55	0.534	47.2			8.14
Median		28.9	1.14	13.4	0.53	47			7.1
StdDev		0.81	0.032	1.16	0.046	3.0			3.11
CV		2.82	2.819	8.59	8.588	6.3			38.19
Min		27.1	1.07	11.8	0.47	43			5.5
Max		29.8	1.17	15.9	0.63	53			13.4
n		11	11	11	11	11	2	0	5

COMB SORTER *(further information see page "Multiple Devices")*								Staple Length
Lab.	Rep.	Instrument	N			W		
			ML	CV	< 12.5 mm	ML	CV	<12.5 mm
			mm	%	%	mm	%	%
85	1					22.5	37.8	15.0
85-2	1					23.7	38.4	15.0

ALMETER *(further information see page "Multiple Devices")*							Staple Length
Lab.	Rep.	N			W		
		ML	CV	< 12.5 mm	ML	CV	<12.5 mm
		mm	%	%	mm	%	%
132	5	19.5	40.4	22.6	24.0	31.4	9.3
152	5	22.5	30.1	9.6	24.5	26.1	4.5

Maturity, Fineness *(further information see page "Multiple Devices")*					
Lab	Fibrograph	Causticaire (18 % NaOH)	Microscopic Test		Gravimetric Fineness
	%	%	ASTM, %	BS, %	dtex
56		86			
70					1.78
79					1.70
85					1.77
129		76			
131		79			
163		78			
177		71			2.25
193					1.79

IIC/SHIRLEY FM-TESTER *(further information see page "Multiple Devices")*				Maturity, Fineness
Lab.	Rep.	PM, %	MAT	FIN, mtex
37		85.1	1.0	157
70	6	93.0	1.08	153
93	4	87.6	0.98	165
102	2	78.0	0.88	201
128	8	87.0	1.0	175
186	6	81.0	0.91	177
Average		85.29	0.975	171.3
Median		86.1	0.99	170
StdDev		5.27	0.071	17.4
CV		6.18	7.332	10.1
Min		78.0	0.88	153
Max		93.0	1.08	201
n		6	6	6

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
4	USTER	900		10	1	2	2
5	USTER	1000 Line4		12	1	2	2
5-2	USTER	1000 Line5		12	1	2	2
6	USTER	1000	GB/T20392-06	3	1	2	2
6-2	USTER	1000	GB/T20392-06	3	1	2	2
6-3	USTER	1000	GB/T20392-06	3	1	2	2
7	USTER			10	1	2	2
8	USTER	Spectrum I	ASTMD5867-05	6	1	2	2
9	Premier	ART	HVICC	4	1	2	2
10	USTER	1000	GB/T20392-06	3	1	2	2
10-10	USTER	1000	GB/T20392-06	3	1	2	2
10-11	USTER	1000	GB/T20392-06	3	1	2	2
10-2	USTER	1000	GB/T20392-06	3	1	2	2
10-3	USTER	1000	GB/T20392-06	3	1	2	2
10-4	USTER	1000	GB/T20392-06	3	1	2	2
10-5	USTER	1000	GB/T20392-06	3	1	2	2
10-6	USTER	1000	GB/T20392-06	3	1	2	2
10-7	USTER	1000	GB/T20392-06	3	1	2	2
10-8	USTER	1000	GB/T20392-06	3	1	2	2
10-9	USTER	1000	GB/T20392-06	3	1	2	2
11	USTER	1000	ASTM	6	1	2	2
13	USTER	Spectrum	internal	10	1	1	1
15	USTER	900 SA	O'z RH73-01	6	1	2	2
16	USTER	Spectrum	SN/T1512-05	10	1	2	2
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
31	USTER	900		6	1	2	2
33	Premier	HFT			1	2	2
34	Premier	HFT		6	1	2	2
38	USTER	1000			1	2	2
41	USTER	Spectrum		5	5	5	5
43	USTER	1000			1	2	2
48	Premier	HFT	ASTM	10	1	2	2
49	USTER	1000			1	2	2
50	USTER	1000		6	1	2	2
50-2	USTER	1000		6	1	2	2
52	USTER	1000M700	ASTM	6	6	6	6
53	Premier	ART	GB/T20392-06	5	1	2	2
54	USTER	Spectrum	USDA		1	2	2
56	USTER	Spectrum I	HVI Test Method	5	1	2	2
59	USTER	1000	USDA	10	1	2	2
59-2	USTER	1000	USDA	10	1	2	2
59-3	USTER	Classing	USDA	10	1	2	2
59-4	USTER	900 A	USDA	10	1	2	2
60	USTER	1000M700		6	1	2	2
64	USTER	Spectrum	HVI User's Guide		1	2	2
65	Premier	HFT		5	1	2	2
68	Premier	ART	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	GB/T20392-06	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
78	USTER	Spectrum I		6	1	2	2
79	USTER	900			1	2	2
80	USTER	1000		10	1	1	1
83	USTER	Spectrum	SN/T1512-11	6	1	2	2
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
92	MAG	HVT Expert 1201	ASTMD5867&D2812	6	1	2	2
93	USTER	900 A	ASTMD5867	6	1	2	2
96	USTER	1000	GB/T20392-06	5	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
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	Spectrum	Manufacturer	6	1	2	2
109	USTER	900		10	1	2	2
114	USTER	900 SA			3	4	
117	USTER	Spectrum	SN/T1512-11	12	1	1	1
118	USTER	1000M700	ASTMD5867-05	2	1	2	2
119	USTER	1000			1	1	1
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
128	USTER	Spectrum I	ASTM 5866	10	1	2	2
129	Premier	ART	ASTMD5867	6	1	1	1
130	Premier	ART		6	1	2	2
131	USTER	900 A	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
146	Premier	ART		6	1	2	
148	USTER	1000		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	1	2	2
158-2	USTER	900 A		6	1	2	2
161	Premier	ART 2	USDA	5	1	2	2
162	USTER	900 A		6	1	2	2
163	USTER	900	ASTM5867-05	6	3	6	2
165	USTER	1000	GB/T20392-06	6	1	2	2
170	Premier	ART		4	1	2	2
172	USTER	Spectrum I					
179	USTER	1000	SN/T1512-11	6	1	2	2
183	USTER	1000	ASTMD5867-05	6	1	2	2
186	USTER	900		10	2	10	
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		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
203	USTER	900			1	2	2
204	USTER	Spectrum I	GB/T20392-06	20	1	2	
206	USTER	900 B	GOST R53031-08	6	1	2	2
207	USTER	1000	ASTMD5867-12	10	1	2	2
207-2	USTER	1000	ASTMD5867-12	10	1	2	2
207-3	USTER	1000	ASTMD5867-12	10	1	2	2
207-4	USTER	1000	ASTMD5867-12	10	1	2	2
208	USTER	1000	ASTMD5867-12	10	1	2	2
208-2	USTER	1000	ASTMD5867-12	10	1	2	2
209	MAG	HVT Expert 1201	ASTMD5867-05	6	1	2	2
209-2	Premier	ART 2	ASTMD5867-05	6	1	2	2
213	Premier	ART	ICC	6	1	2	2
219	Premier	HFT		8	1	2	2
223	Premier	ART		4	1	2	2
234	Premier	ART		4	1	1	2
237	USTER	Spectrum	ASTM	6	1	2	2
238	Premier	ART		6	1	2	2
242	USTER	Spectrum	HVI Mode	10	1	2	2
242-2	USTER	1000	HVI Mode	3	1	2	2
251	Premier	ART	HVICC	6	1	2	2
267	Premier	HFT		6	1	2	2
271	Premier	ART	internal	10	1	1	1
271-2	USTER	900	internal	10	1	1	1
272	Premier	ART		5	1	1	1
277	Premier	ART	HVI Mode	10	1	2	2
287	Premier	ART 2	USDA	10	1	2	2
288	Premier	HFT			1	2	2
289	Premier	ART	HVICC	15	1	1	1
295	Premier	HFT		4	1	2	
299	Premier	HFT	HVICC	15	1	1	
300	Premier	ART	ISO	6	1	2	2
315	Premier	HFT			1	2	2
318	Premier	HFT	HVI Mode		2	1	
319	Premier	ART	ASTMD5867-95	10	1	2	1
320	MAG	HVT Expert 1201	ASTM	8	1	2	2

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
4	(4.7)		28.2		6.3
5	4.4		29.6		6.0
5-2	4.4		29.5		6.7
6	4.4		28.6		
6-2	4.4		28.3		
6-3	4.3		29.3		
7	4.4		29.2		7.0
8	4.4		26.4		6.6
9	4.4	21.5		5.6	
10	4.4		28.3		
10-10	4.4		29.6		
10-11	4.3		27.7		
10-2	4.4		28.1		
10-3	4.4		29.0		
10-4	4.4		28.8		
10-5	4.4		28.5		
10-6	4.4		28.5		
10-7	4.4		29.1		
10-8	4.4		27.9		
10-9	4.4		28.0		
11	4.3		29.1		6.3
13	4.3		28.3		5.5
15	4.4		29.8		7.9
16	4.4		30.0		6.0
19	4.4		29.2		6.1
24	4.4		28.6		6.4
27	4.4		29.2		6.1
28			(26.0)		
30	4.5		27.6		5.8
31	(4.1)	22.0	28.2	5.3	5.2
33	4.5	21.2			
34	4.5	21.5		7.0	
38	4.5		27.3		6.5
41	4.4		28.9		(2.4)
43	4.5		29.4		4.4
48	4.4	22.1	28.9	5.8	6.4
49	4.5		29.9		5.7
50	4.3		28.2		5.6
50-2	4.4		30.6		6.7
52	4.4		29.5		4.4
53	4.3		31.3		6.9
54	4.3		29.0		3.8
56	4.4		28.7		4.9
59	4.4		28.8		
59-2	4.4		29.0		
59-3	4.4		29.4		
59-4	4.3		29.2		
60	4.5		30.3		5.3
64	4.4		29.4		
65	4.5		26.7		6.6
68	4.5		28.8		
71	4.5		28.8		7.9
71-2	4.4		30.0		6.1

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
72	4.4		29.4		
75	4.4		29.9		5.1
78	4.4		28.5		
79	4.4		28.5		5.9
80	4.5		29.2		6.3
83	4.3		28.1		6.0
84	4.5		27.3		5.8
88	4.5		(25.8)		6.4
90	4.4		29.4		6.0
91	4.4		28.3		4.3
92	4.4	21.2	29.8	5.0	5.0
93	4.3		30.2		6.4
96	4.5		29.3		3.9
98	4.4		28.3		
101	4.4		29.2		6.6
101-2	4.5		28.3		5.5
102	4.4		29.2		4.8
102-2	4.3		27.8		5.4
102-3	4.5		28.3		6.1
103	4.4		29.3		5.7
104	4.3		29.0		
105	4.4		28.8		7.7
105-2	4.3		28.4		6.1
109	4.3		28.8		
114	(4.1)	21.3		6.2	
117	4.4		28.3		6.3
118	4.5		29.7		(10.3)
119	4.5		28.6		6.0
120	4.4		29.7		5.9
121	4.3		29.5		6.1
123	4.4	21.0	28.7	6.8	6.7
128	4.4		30.1		6.0
129	4.3	20.1		5.4	
130	4.3	20.5	30.3	6.2	6.6
131	4.3		26.2		5.0
132			28.4		6.2
143	4.4		29.0		6.8
143-2	4.4		29.4		6.6
146	4.5	20.4			
148	4.4		27.4		4.8
154	4.3		27.6		7.2
156	4.3		28.9		6.9
158	4.4		30.3		6.2
158-2	4.4		29.4		6.6
161	4.2		(32.6)		
162	4.3		26.8		5.3
163	4.2	21.4		6.0	
165	4.4		28.6		8.0
170	4.4		27.8		6.4
172	4.2		30.4		6.3
179	4.3		30.0		5.2
183	4.4		30.0		7.5
186	4.3	(29.3)	29.3	6.0	6.0

HVI *(table is divided into 3 pages)*					Micronaire, Tenacity, Elongation
Lab.	Micronaire	Tenacity		Elongation	
		ICCS, gf/tex	HVICCS, gf/tex	ICCS, %	HVICCS, %
193	4.4		28.1		7.3
200	4.4		29.4		
201	4.4		30.4		7.6
202	(4.9)		27.9		5.7
203	4.3		28.0		
204	4.2		29.0		6.6
206	4.5		(32.3)		5.9
207	4.4		28.5		7.4
207-2	4.4		28.9		6.2
207-3	4.5		28.9		6.6
207-4	4.4		28.6		6.0
208	4.4		28.0		
208-2	4.3		28.4		5.5
209	4.2		29.8		5.9
209-2	4.2		30.1		5.8
213	4.6	17.4		6.1	
219	4.4		28.9		
223	4.5	21.1		6.5	
234	4.5		29.1		6.5
237	4.5		(25.2)		4.3
238	4.5	18.4			
242	4.4		30.0		6.0
242-2	4.4		29.1		6.7
251	4.3	20.5		6.2	
267	4.4	19.5		6.9	
271	4.2		(33.5)		6.8
271-2	4.5		30.5		4.9
272	(4.8)		29.0		6.7
277	4.5		29.6		
287	4.5	18.5	29.5	6.1	6.1
288	4.3	19.5		6.4	
289	4.5	20.3			
295	4.4	20.7		6.8	
299	4.5	21.4			
300	4.4		29.1		6.9
315	4.2	19.7			
318	4.4		30.9		
319	4.5	19.4	29.3	5.4	5.8
320	4.2	22.7		6.4	
Average	4.39	20.53	28.94	6.11	6.09
Median	4.4	20.7	29.0	6.15	6.1
StdDev	0.08	1.25	0.91	0.56	0.86
CV	1.79	6.08	3.13	9.16	14.13
Min	4.2	17.4	26.2	5.0	3.8
Max	4.6	22.7	31.3	7.0	8.0
n	138	25	121	20	92

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
4				29.0	1.14	82.5
5				29.4	1.16	82.6
5-2				29.2	1.15	82.8
6				29.2	1.15	82.7
6-2				29.0	1.14	83.1
6-3				28.9	1.14	83.7
7				28.9	1.14	82.1
8				29.1	1.14	82.7
9	30.6	1.20	46.4			
10				29.4	1.16	83.3
10-10				28.9	1.14	83.3
10-11				29.0	1.14	81.9
10-2				29.4	1.16	82.5
10-3				28.9	1.14	82.9
10-4				29.0	1.14	82.3
10-5				29.2	1.15	83.0
10-6				29.2	1.15	82.8
10-7				29.0	1.14	82.9
10-8				29.4	1.16	82.8
10-9				29.3	1.15	82.6
11				29.0	1.14	82.2
13				29.2	1.15	82.7
15				28.7	1.13	82.6
16				28.9	1.14	82.2
19				29.1	1.15	82.3
24				29.4	1.16	82.3
27				28.7	1.13	82.0
28				(27.8)	(1.09)	(80.2)
30				29.2	1.15	
31	28.2	1.11	46.9	29.0	1.14	(85.2)
33	28.9	1.14	44.8			
34	28.5	1.12	46.0			
38				28.7	1.13	82.1
41				28.4	1.12	82.4
43				29.2	1.15	81.8
48	28.8	1.13	47.3	28.8	1.13	82.7
49				29.1	1.15	82.2
50				29.8	1.17	(84.8)
50-2				29.3	1.15	82.8
52				29.1	1.15	82.6
53				28.8	1.13	(23.5)
54				28.8	1.13	82.3
56				29.2	1.15	83.2
59				29.2	1.15	82.1
59-2				28.9	1.14	82.1
59-3				28.8	1.13	82.0
59-4				28.8	1.14	82.1
60				29.0	1.14	82.3
64				29.2	1.15	82.2
65				29.1	1.14	82.6
68				28.9	1.14	82.3
71				29.1	1.14	

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
71-2				28.9	1.14	
72				29.2	1.15	82.1
75				28.4	1.12	81.5
78				28.2	1.11	80.8
79				29.5	1.16	82.4
80				29.1	1.15	83.3
83				29.2	1.15	82.1
84				28.9	1.14	82.1
88				28.1	1.11	81.0
90				29.0	1.14	82.7
91				28.5	1.12	81.6
92	28.8	1.14	47.1	28.9	1.14	82.3
93				29.7	1.17	82.6
96				29.2	1.15	82.1
98				28.9	1.14	81.4
101				29.1	1.15	82.2
101-2				29.0	1.14	82.1
102				29.3	1.15	82.2
102-2				28.5	1.12	81.5
102-3				28.8	1.13	82.2
103				28.9	1.14	83.0
104				29.1	1.15	82.0
105				28.9	1.14	82.4
105-2				29.0	1.14	82.5
109				28.8	1.13	82.4
114	28.4	1.12	46.5			
117				29.1	1.14	82.5
118				29.4	1.16	83.4
119				29.0	1.14	82.0
120				29.3	1.15	82.4
121				29.4	1.16	82.7
123	30.0	1.18	45.8	29.2	1.15	82.8
128				29.2	1.15	82.2
129	29.4	1.16	48.0			
130	28.9	1.14	46.3	28.5	1.12	82.5
131				28.9	1.14	81.5
132				28.7	1.13	81.3
143				29.2	1.15	82.2
143-2				28.9	1.14	82.1
146	28.9	1.14	43.1			
148				29.3	1.15	82.7
154				29.4	1.16	82.6
156				29.0	1.14	81.8
158				29.2	1.15	82.8
158-2				29.5	1.16	83.1
161				29.3	1.16	
162				29.0	1.14	81.8
163	29.6	1.17	46.2			
165				28.6	1.13	81.2
170				28.3	1.12	82.7
172				29.0	1.14	82.5
179				28.6	1.13	81.1

HVI	*(table is divided into 3 pages)*					Length
Lab.	ICCS			HVICCS		
	2.5 % SL		UR	UHM		UI
	mm	inch	%	mm	inch	%
183				29.2	1.15	82.2
186	28.6	1.13	45.9	28.5	1.12	82.1
193				29.4	1.16	82.9
200				29.3	1.15	82.6
201				29.5	1.16	83.8
202				(27.8)	(1.10)	82.1
203				28.9	1.14	
204				28.6	1.13	82.7
206						82.7
207				28.9	1.14	81.9
207-2				29.1	1.15	82.5
207-3				28.8	1.13	81.9
207-4				28.8	1.13	81.4
208				28.9	1.14	82.3
208-2				29.0	1.14	82.5
209				28.5	1.12	82.6
209-2				28.4	1.12	82.2
213	27.6	1.09	42.1			
219				29.6	1.16	81.6
223	29.3	1.15	45.2			
234				28.9	1.14	82.3
237				28.9	1.14	83.1
238	28.5	1.12	44.8			
242				29.1	1.15	82.4
242-2				29.0	1.14	82.5
251	30.1	1.18	44.8			
267	29.8	1.17	46.9			
271				(36.1)	(1.42)	82.3
271-2				29.7	1.17	82.7
272				28.7	1.13	81.6
277				28.4	1.12	81.4
287	29.4	1.16	44.7	29.2	1.15	83.4
288	27.9	1.10	44.0			
289	28.9	1.14	46.9			
295	28.9	1.14	46.6			
299	28.3	1.11	46.5			
300				29.4	1.16	82.1
315	28.0	1.10	45.1			
318				29.1	1.15	82.9
319	29.2	1.15	43.0	29.3	1.15	(80.6)
320	29.6	1.17	45.0			
Average	28.96	1.140	45.61	29.01	1.142	82.36
Median	28.88	1.137	45.97	29.01	1.142	82.3
StdDev	0.72	0.028	1.44	0.32	0.012	0.55
CV	2.47	2.474	3.15	1.09	1.086	0.66
Min	27.6	1.09	42.1	28.1	1.11	80.8
Max	30.6	1.2	48.0	29.8	1.17	83.8
n	26	26	26	123	123	117

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
4	73	12.7	13-4	1	0.02	11
5	73	12.8	13-4	2	0.1	13
5-2	73	12.9	13-3	2	0.1	12
6	74	13.1	14	2	0.12	14
6-2	74	12.9	14	2	0.13	13
6-3	74	12.8	14	2	0.17	21
7	72	12.8	13-4		0.29	19
8	71	13.7	24-1	1	0.09	9
9	(68)	13.4	24-2			
10	74	12.9	14	2	0.15	14
10-10	74	12.7	14	4	(0.35)	(79)
10-11	74	13.0	14	2	0.14	14
10-2	74	13.2	14	2	0.11	13
10-3	74	13.2	14	2	0.12	11
10-4	74	12.8	14	2	0.14	17
10-5	74	12.8	14	2	0.14	16
10-6	74	12.9	14	2	0.16	22
10-7	74	12.8	14	2	0.15	18
10-8	75	12.7	14	2	0.16	34
10-9	74	12.9	14	1	0.09	12
11	74	13.2	13-3	2	0.24	30
13	73	12.0	23-1		0.1	8
15	72	12.6	23-3	2	0.2	12
16	71	(14.8)	24-3	1		0
19	74	12.8	13-3	1	0.13	15
24	74	12.7	13-3			
27	72	12.6	23-3	1	0.2	15
30	73	12.4	13-4		0.08	7
31	72	12.7	23-3	1	0.09	11
33	70	11.3	33-1			
34	72	12.5	23-3			
38	75	12.9	13-3	2	0.2	28
41	73	12.9	13-4		0.07	8
43	74	12.7	13-3	1	0.16	19
48	73	11.7	23-1			
49	73	12.6	13-4	2	0.21	19
50	74	12.2	13-2	2	0.23	22
50-2	74	12.3	13-2	2	0.2	18
52	74	13.1	13-3	2	0.23	22
53	72	11.5	23-2	4	(0.38)	(53)
54	72	11.9	23-1	9	(10.00)	
56	71	12.5	23-3	1	0.06	4
59	74	12.8	13-3	2	0.2	28
59-2	74	13.0	13-3	2	0.17	19
59-3	72	12.7	23-3	3	0.3	30
59-4	72	12.9	23-3	2	0.2	17
60	74	12.8	13-3	2	0.19	21
64	72	12.2	23-3	1	0.14	16
68	74	12.6	13-3	3	0.24	13
71	74	12.3				
71-2	72	12.3				
72	75	12.6	13-3	1	0.17	23
75	72	12.0	23-3	1	0.07	8

HVI *(table is divided into 3 pages)*						Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
78	71	12.6	23-3	1	0.1	11
79	72	11.8	23-2	1	0.15	17
80	73	12.7	13-4	2	0.24	28
83	74	12.8		1	0.1	8
84	74	12.4	13-3	1	0.16	22
88	71	12.1	22-2	1	0.15	14
90	74	12.4	13-3		0.15	17
91	73	12.9	13-3	1	0.14	20
92	75	11.5	23-1			
93	71	12.6	23-3	1	(0.50)	38
96	73	12.5				
98	74	12.6			0.11	13
101	75	12.6	13-3	1	0.06	8
101-2	74	12.3	13-2	1	0.13	17
102	73	12.1				
102-2	73	12.5			0.1	9
102-3	75	12.8			0.16	20
103	75	13.5	13-3	2	0.21	26
104	73	(10.5)	32-1	1	0.0	2
105	74	12.6	13	2	0.18	18
105-2	73	12.0	23	3	(1.10)	
109	71	13.5	83			
117	(61)	12.6	44-2	1	0.12	11
118	74	13.1	13-3	1	0.15	21
119	74	12.8	13-3	2	0.2	24
120	73	12.9	13-4			
121	74	12.8	13-3		0.13	17
123	72	12.8	23-3	1	0.15	13
128	73	12.3			0.13	17
129	70	(14.4)	24-3			
130	73	11.8	23-1			
131	72	12.8				
132	72	12.8	13-4			
143	74	12.6	13-3	1	0.06	6
143-2	73	12.2	23-3	1	0.06	3
148	75	12.6	13-3	1	0.12	16
154	73	12.6	13-4	1	0.1	8
156	72	12.4	23-1			
158	74	12.6	13-4	1	0.1	2
158-2	73	12.2	13-4	1	0.1	8
161	71	13.2	24-1		0.18	14
162	(69)	13.5				
163	71	12.3	23-4			
165	75	12.6	13		0.12	13
170	72	12.9	13-4	3	0.26	27
172	72	11.8		1	0.09	9
179	75	12.3	13-1	1	0.16	22
183	73	13.0	13-3	1	0.1	13
193	72	12.5	23-3	2	0.12	9
200	74	12.7	13-3			
201	73	12.3	13-4	1	0.1	7
202	72	13.0	13-4			
203	74	11.5	23-1	4	(0.38)	32

HVI	*(table is divided into 3 pages)*					Color, Trash
Lab.	Color			Trash		
	Rd	+b	CG	leaf	area	cnt
206	73	13.3	24-1			
207	74	12.7	13-3	2	0.17	18
207-2	74	12.7	13-3	1	0.13	15
207-3	74	12.8	13-3	1	0.13	16
207-4	74	12.9	13-3	1	0.14	18
208	74	13.1	13-3	1	0.12	15
208-2	75	12.6	13-3	1	0.12	14
209	72	11.6	23-2			
209-2	72	11.7	23-2			
213	72	12.2	23-3			
219	72	12.8	13-4			
223	77	14.0	13-3			
234	72	11.9	23-3	4	(0.44)	(40)
237	73	13.4	24-1	1	0.05	4
238	(69)	13.7	24-2			
242	73	12.2	13-4	1	0.11	9
242-2	75	12.5	13-2	2	0.22	22
251	70	12.4	23-4			
267	71	12.4	23-3			
271	73	12.4	23-3	5	(0.62)	(42)
271-2	71	12.6	23-4			
272	74	13.0	13-3			
277	76	13.4	13-3			
287	73	11.9	23-1			
288	73	12.2	13-4			
289	(61)	12.4	13-4			
300	73	13.1	13-4			
319	(79)	(19.0)	24-3			
320	(69)	12.5	33-3			
Average	73.2	12.62			0.142	15.6
Median	73.4	12.6			0.14	15.0
StdDev	1.3	0.48			0.057	7.4
CV	1.8	3.79			40.049	47.6
Min	70	11.3			0.0	0
Max	77	14.0			0.3	38
n	128	131			87	90

HVI	*(table is divided into 3 pages)*			Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
4		5.2		
5		8.8		0.87
5-2		8.4		0.86
6		8.3	87	
6-2		7.6	87	
6-3		8.9	87	
7		8.0		
8		8.9		0.86
9	8.4			
10		6.4	86	
10-10		8.8	88	
10-11		7.7	87	
10-2		8.7	87	
10-3		8.3	87	
10-4		9.0	87	
10-5		9.2	87	
10-6		9.4	87	
10-7		10.2	88	
10-8		8.8	88	
10-9		7.8	87	
11		7.6		0.86
13		7.1		0.87
15		5.7	(80)	
16		9.5		0.89
19		9.8		0.88
24		7.8		0.88
27		8.7		0.87
28		8.2		
30				0.88
33	7.4			0.84
34	6.8			0.84
38				0.86
41		7.5		0.88
43		8.5		
48	6.7	8.3		
49		8.3		0.87
50		7.1	86	
50-2		9.3	86	
52		9.0		0.88
53		9.6		0.83
54		8.0		0.87
56		11.1		
59		8.7		0.87
59-2		8.9		0.86
59-3		8.5	87	
59-4		8.6	87	
60		8.9		0.87
64		8.3		0.88
65		7.0		0.83
68		9.0		0.83
71				0.85
71-2				0.88
72		9.2		

HVI *(table is divided into 3 pages)*			Short Fibre Index, Maturity	
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
75		8.6		0.88
78		7.8		0.88
80		8.5		0.87
84		8.4	87	
88		9.1		0.88
90		8.7		0.87
91		8.2		0.88
92	5.4	7.6		0.82
93		6.5		
101		8.6		(1.13)
101-2		9.3		0.87
102-2		6.8		0.87
102-3		8.0		0.87
103		8.0		0.87
104		7.6	86	
105		10.2		0.88
105-2		7.2		
109		10.1	(83)	
117		9.2		0.88
118		8.6		0.84
119		7.3		0.87
120		5.2	87	
121		8.7		0.86
123	10.4	10.7		0.85
128		9.5	(78)	0.88
130	6.0	8.8		0.88
132		9.3		0.83
143		8.8		0.83
143-2		8.3		0.88
146	8.8			0.83
148		8.9		0.87
154		5.7		
156		10.3		0.87
158		6.3		0.86
158-2		6.3		0.85
161		8.2		0.89
162		8.0		
163	8.5			
165		(19.4)		0.85
170		7.2		0.83
172		8.0		0.88
179		(12.1)		
183		8.6		0.86
186	6.9	6.9		
193		9.1		0.86
200		9.1		
201		7.6		0.87
202		8.9	(84)	
203		9.0		0.83
204		8.1		0.87
207		9.3		0.86
207-2		8.9		0.86
207-3		8.7		0.86

HVI *(table is divided into 3 pages)*				Short Fibre Index, Maturity
Lab.	ICCS SFI	HVICCS SFI	PM %	Maturity Ratio
207-4		8.9		0.87
208		9.9		0.88
208-2		8.9		0.87
209		7.6		0.82
209-2		7.9		0.81
213	11.5			
219		8.6		0.83
223	6.3			
234		8.6		0.88
237		7.1		0.87
238				0.82
242		9.0		0.86
242-2		10.2		0.86
251	5.5			0.83
267	8.8			0.83
271		8.3		
272		8.2		0.84
277				0.84
288	9.7			
289	5.4			
295	5.8			0.83
299	6.8			
300		7.4		
315	12.1			0.82
318		8.6		0.84
319	12.6	9.3		0.83
320	6.4			0.81
Average	7.92	8.38	87.0	0.858
Median	6.94	8.6	87.0	0.86
StdDev	2.24	1.08	0.6	0.021
CV	28.3	12.88	0.7	2.452
Min	5.4	5.2	86	0.81
Max	12.6	11.1	88	0.89
n	21	110	21	85

AFIS				General
Lab.	Manufacturer	Instrument	Std. Test Method	Repetitions
4	USTER			10
5	USTER	720		5
7	USTER			5
21	USTER	1190064		6
22	USTER	Autojet		10
24	USTER		USDA	10
27	USTER	Neptester 720		5
31	USTER			5
38	USTER			
39	USTER			
41	USTER			5
43	USTER			5
51	USTER	AFIS Pro 2	ISO-9001	5
59	USTER			5
75	USTER		ASTMD5866-05	5
80	USTER			10
88	USTER	AFIS Pro	Manufacturer	5
90	USTER		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
109	USTER			
110	USTER	206080		
114	USTER	AFIS Pro		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	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
154	USTER			10
158	USTER			5
161	USTER			5
163	USTER		ASTMD5866-05	5
172	USTER			
183	USTER	AFIS Pro	ASTMD5866-05	5
186	USTER		Manufacturer	10
186-2	USTER	AFIS Pro	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 *(table is divided into 2 pages)*								Length
Lab.	N							
	ML		CV	2.5 %		5%		SFC
	mm	inch	%	mm	inch	mm	inch	%
4	23.1	0.91	41.7	40.1	1.58	37.5	1.48	16.4
7	18.3	0.72	57.2	37.8	1.49	35.0	1.38	34.0
21	18.7	0.74	47.9	35.0	1.38	32.8	1.29	27.8
22	20.6	0.81	48.4	37.3	1.47	35.1	1.38	24.7
24	21.5	0.85	45.1			35.2	1.39	20.2
31	21.9	0.86	44.7	38.0	1.50	35.8	1.41	20.0
38	21.5	0.85	49.7	38.5	1.52	36.1	1.42	22.8
39	18.7	0.74	51.2	35.5	1.40	33.5	1.32	28.6
41	20.4	0.80	42.9	36.2	1.43	34.0	1.34	21.0
43	(79.5)	(3.13)				34.8	1.37	25.9
51	24.8	0.98				34.5	1.36	24.8
59	16.1	0.63	(68.2)	40.7	1.60	37.8	1.49	(43.6)
75	20.8	0.82	51.0			36.0	1.42	23.8
80	16.7	0.66	49.8			(30.7)	(1.21)	27.6
88	20.6	0.81				35.1	1.38	22.6
90	19.9	0.78	51.9	37.3	1.47	35.0	1.38	27.2
91	20.5	0.81	47.6			35.3	1.39	22.8
101	20.8	0.82	50.2	39.3	1.55	36.5	1.44	26.1
102	20.4	0.80	50.1	37.6	1.48	35.2	1.39	25.8
105	20.1	0.79	52.1	37.3	1.47	35.3	1.39	28.1
105-2	20.8	0.82	47.8	38.6	1.52	36.1	1.42	24.7
109	20.8	0.82	47.1	37.0	1.46	34.7	1.37	23.1
110	18.7	0.74	53.3			34.0	1.34	28.6
114				36.7	1.44	34.6	1.36	25.5
118	21.3	0.84	43.8	37.6	1.48	35.3	1.39	20.5
120	20.2	0.80	(34.9)			35.2	1.39	25.1
123	20.1	0.79	50.5			35.3	1.39	27.3
123-2	19.0	0.75	52.1			33.6	1.32	26.8
123-3	20.1	0.79	49.7			34.5	1.36	24.1
129	20.9	0.82	48.1			35.7	1.41	21.8
143	20.1	0.79	51.5	37.4	1.47	35.1	1.38	26.2
148	20.3	0.80	48.5					23.4
148-2	19.8	0.78	49.2			34.4	1.35	24.4
154	22.3	0.88	44.1	37.2	1.46	35.3	1.39	18.7
158	20.2	0.80	51.1	36.8	1.45	34.7	1.37	25.5
161	20.1	0.79		37.6	1.48	34.8	1.37	27.7
163	17.8	0.70	(60.4)	37.3	1.47	34.8	1.37	(38.8)
172	15.5	0.61		35.8	1.41	(46.5)	(1.83)	(42.6)
183	20.8	0.82	48.2			35.6	1.40	24.2
186	21.2	0.83	47.1	37.7	1.48	35.5	1.40	22.7
186-2	20.8	0.82	49.0			35.5	1.40	22.8
193	21.1	0.83	46.4			35.3	1.39	22.0
207	20.7	0.81	47.1			35.0	1.38	21.4
208	21.8	0.86	46.0			35.7	1.41	19.2
271	20.3	0.80	51.7	37.3	1.47	35.1	1.38	27.5
272	20.6	0.81	44.7	36.3	1.43	34.3	1.35	21.5
288	20.1	0.79				34.8	1.37	24.5
Average	20.24	0.797	48.61	37.46	1.475	35.12	1.383	24.3
Median	20.4	0.803	48.5	37.34	1.47	35.09	1.381	24.45
StdDev	1.64	0.065	3.2	1.28	0.05	0.9	0.036	3.25
CV	8.11	8.106	6.58	3.4	3.404	2.57	2.572	13.35
Min	15.5	0.61	41.7	35.0	1.38	32.8	1.29	16.4
Max	24.8	0.98	57.2	40.7	1.60	37.8	1.49	34.0
n	45	45	37	26	26	44	44	44

AFIS L	*(table is divided into 2 pages)*					Length
Lab.	W					
	ML		CV	UQL		SFC
	mm	inch	%	mm	inch	%
4	27.1	1.07	31.8			5.6
7	24.3	0.96	39.3	30.6	1.20	12.4
21	23.0	0.91	35.2	(28.5)	(1.12)	11.3
22	25.4	1.00	33.4	31.0	1.22	8.3
24	25.9	1.02	32.2	31.1	1.22	6.4
31	26.3	1.04	31.7	31.6	1.24	6.5
38	26.8	1.06	31.3	32.2	1.27	
39	23.7	0.93	34.6	29.4	1.16	10.2
41	24.2	0.95	33.0	29.5	1.16	
43	(9.9)	(0.39)		30.7	1.21	8.7
51	24.9	0.98		30.5	1.20	7.9
59	25.1	0.99	(42.7)	32.7	1.29	14.2
75	26.2	1.03	33.5	31.8	1.25	6.8
80	(21.8)	(0.86)	32.9	(27.2)	(1.07)	9.0
88	25.4	1.00		30.8	1.21	7.2
90	25.2	0.99	34.5	30.9	1.22	8.8
91	25.1	0.99	34.9	30.9	1.22	7.9
101	26.1	1.03	35.7	32.2	1.27	
102	25.4	1.00	34.3			8.6
105	25.4	1.00	34.7	31.2	1.23	9.2
105-2	25.7	1.01	35.7	31.8	1.25	9.3
109	25.3	1.00	32.8	30.6	1.20	7.7
110	24.0	0.94	36.4	29.8	1.17	9.6
114				30.4	1.20	
118	25.4	1.00	32.6	31.0	1.22	7.4
120	25.2	0.99	(50.1)	30.9	1.22	8.2
123	25.2	0.99	36.2	31.0	1.22	9.9
123-2	24.1	0.95	34.5	29.7	1.17	8.5
123-3	25.0	0.98	33.3	30.5	1.20	7.4
129	25.7	1.01	33.5	31.5	1.24	6.8
143	25.4	1.00	33.7	31.0	1.22	8.1
148	25.1	0.99	34.4	30.8	1.21	7.7
148-2	24.6	0.97	34.4	30.2	1.19	8.2
154	26.6	1.05	28.7	31.5	1.24	5.1
158	25.4	1.00	32.6	30.9	1.22	7.6
161	25.4	1.00		31.0	1.22	8.8
163	24.2	0.95	39.7	30.9	1.22	14.4
172	26.4	1.04		30.9	1.22	(1.3)
183	25.7	1.01	34.9	31.2	1.23	
186	26.0	1.02	32.4	31.4	1.24	7.3
186-2	25.8	1.02	33.2	31.4	1.24	6.8
193	25.7	1.01	32.6	31.0	1.22	7.1
207	25.3	1.00	33.2	30.9	1.22	6.9
208	26.3	1.04	31.6	31.5	1.24	5.5
271	25.7	1.01	34.2	31.2	1.23	8.9
272	24.6	0.97	32.7	30.0	1.18	7.8
288	25.1	0.99		30.7	1.21	(25.1)
Average	25.32	0.997	33.85	30.95	1.219	8.35
Median	25.4	1.00	33.5	30.9	1.217	8.0
StdDev	0.83	0.033	2.03	0.68	0.027	2.01
CV	3.27	3.269	5.99	2.21	2.207	24.03
Min	23.0	0.91	28.7	29.4	1.16	5.1
Max	27.1	1.07	39.7	32.7	1.29	14.4
n	44	44	38	43	43	40

AFIS D / M					Diameter, Maturity
Lab.	D (N) µm	CV (D(N)) %	Fineness mtex	IFC %	Mat. Ratio
4			172	4.4	0.97
22			167	6.8	0.88
24			173	8.1	0.89
31			166	6.6	0.88
38			153	6.3	0.84
41	13.8				
43			164	6.4	0.88
51			160	6.3	0.87
59			169	6.8	0.88
75			184	4.0	0.97
80			150	6.1	0.8
88			171	6.1	0.9
90			170	5.2	0.91
91			164	6.3	0.91
102			159	8.4	0.85
105			165	7.4	0.87
105-2			161	7.5	0.88
109			169	6.4	0.87
110			170	6.0	0.9
114			172	5.6	0.92
118			166	5.3	0.9
120			173	6.0	0.92
123			169	7.3	0.88
123-2			167	7.1	0.89
123-3			165	6.4	0.87
129			143		
143			158	6.1	0.86
148			173	5.5	0.93
148-2			173	6.2	0.92
154			153	9.7	0.84
158			167	6.2	0.9
161			187	5.6	0.93
172			169	(1.5)	0.89
183			170	5.5	0.93
186			166	7.8	0.86
186-2			160	7.4	0.87
193			173	6.1	0.91
207			167	8.2	0.88
208			159	8.7	0.85
271			158	10.2	0.78
272	12.2				
288			167	7.3	0.88
Average			166.0	6.66	0.886
Median			167.0	6.35	0.88
StdDev			8.3	1.29	0.038
CV			5.0	19.34	4.267
Min			143	4.0	0.78
Max			187	10.2	0.97
n	2	0	40	38	39

AFIS T				Trash
Lab.	Mean Diam. µm	Trash Cnt/g	Dust Cnt/g	V. F. M. %
4	320	50	284	1.2
21	379	42	166	0.87
22	352	58	262	1.45
31	345	60	272	1.44
38	(414)	49	366	0.9
43	348	52	239	1.02
51	315	35	240	0.86
88	272	36	338	0.91
90	320	43	262	1.09
91	327	45	239	0.89
102	295	46	246	0.78
105-2	309	51	289	1.07
110	309	56	304	1.01
114	322	55	352	1.67
129	302	38	256	0.83
143	272	41	326	0.82
148	364	52	214	1.19
148-2	338	44	243	1.24
154	281	54	407	1.01
158	296	47	327	1.17
183	318	51	299	1.06
186	334	51	290	1.42
186-2	319	47	268	1.06
193	311	43	247	0.82
207	325	31	167	0.71
208	324	50	246	0.87
272	285	41	378	1.4
Average	318.5	47.0	278.8	1.065
Median	319.5	47.0	268.0	1.02
StdDev	26.6	7.2	58.3	0.245
CV	8.3	15.3	20.9	22.995
Min	272	31	166	0.71
Max	379	60	407	1.67
n	26	27	27	27

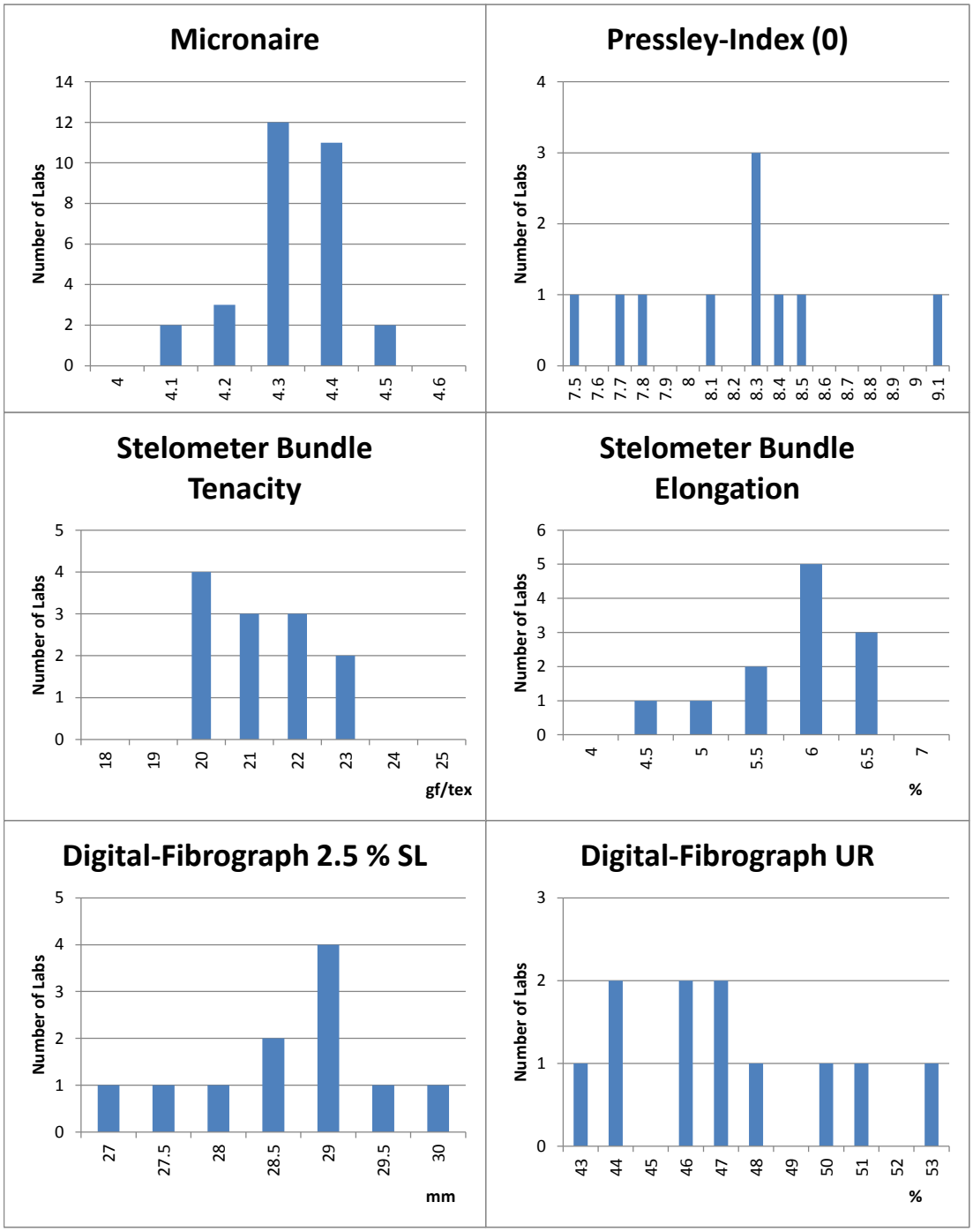
AFIS N	*(table is divided into 2 pages)*			Neps
Lab.	Neps		SCN	
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g
4	648	221		
5		212		
7	774	183		
21	692	(477)		
22	720	230	1186	23
24	697	224	1222	20
27		231		
31	719	239	1145	23
38	713	260	1001	20
39	632	191		
41	668	276		
43	739	291	1310	33
51	738	228	1400	27
59	704	241	1171	18
75	713	223	1166	27
80	703	225	1354	14
88	723	357	1298	29
90	723	270	1257	29
91	715	248	1382	19
101	783	232		
102	701	272	1060	29
105	741	223	1488	25
105-2	715	261	1141	36
109	710	270	1201	18
110	706	264	1147	26
114	704	272	1353	12
118	740	200	1252	20
120	714	252	1230	26
123	695	243	1172	19
123-2	683	300	934	17
123-3	730	317	1238	20
128		260		
129	747	244	1352	34
132	651	240		
143	702	228	1168	18
148	695	263	1075	18
148-2	705	324	1012	33
154	742	238	1359	36
158	701	307	1029	26
161	693	306	1233	31
163	722	267	994	28
183	695	292	1197	18
186	715	289	1183	25
186-2	723	247	1092	29
193	711	233	1597	13
200	702	238	1325	17

AFIS N	*(table is divided into 2 pages)*			Neps
Lab.	Neps		SCN	
	Mean Diameter µm	Cnt/g	Mean Diameter µm	Cnt/g
207	728	223	1283	27
208	719	237	1370	20
271	703	261	1273	21
272	667	234		
288	692	258	1148	21
Average	709.5	252.9	1220.0	23.6
Median	710.5	245.5	1211.5	23.0
StdDev	28.1	34.4	139.8	6.3
CV	4.0	13.6	11.5	26.7
Min	632	183	934	12
Max	783	357	1597	36
n	48	50	40	40

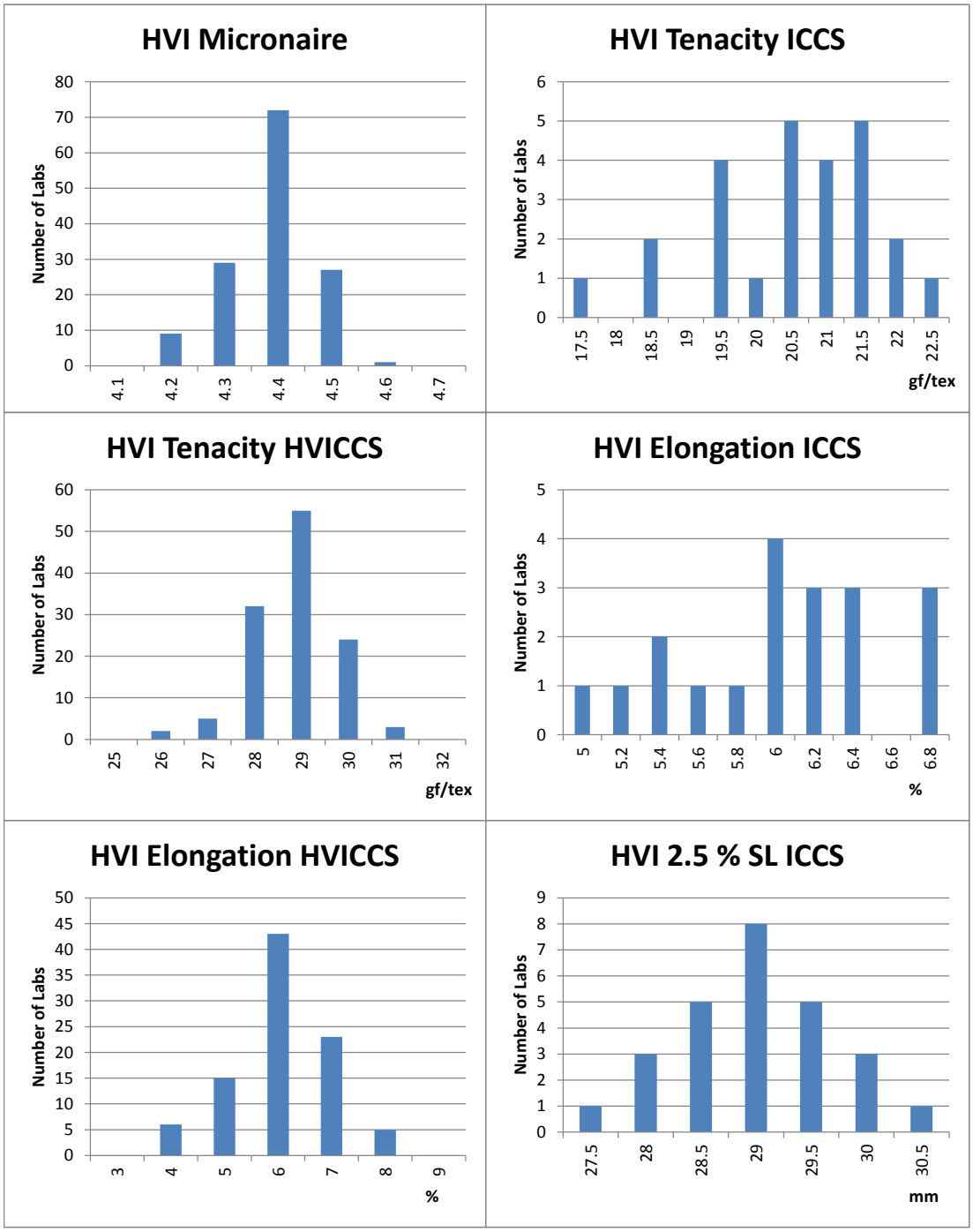
aQura *(further information see page "Multiple Devices")*							Length, Neps
Lab.	Repetitions	5.0 % L (n)	50 % L (n)	SFC (n) <12.7 mm	SFC (w) <12.7 mm	Fibre Neps	SCN
		mm	mm	%	%	Cnt/g	Cnt/g
53	4	32.6	16.7	29.0	13.5	164	26
82	4	30.0	18.3	23.5	10.4	168	20
101	4	32.8	(34.2)	24.1	10.4	216	39
116	4					245	49
146	4	31.1	18.5	25.5	10.4	195	56
170	4	31.4	19.3	22.8	10.7	213	35
213	5	30.9	17.8	25.2	12.1	131	15
234	4	31.7		21.9	9.0	207	37
251	4	31.4		31.2	15.2	261	48
277	5	30.7	15.9	34.2	16.4	244	33
300	4	32.0		15.7	6.5	207	38
Average		31.45	17.73	25.31	11.45	204.6	36.0
Median		31.4	18.03	24.64	10.55	207.0	37.0
StdDev		0.84	1.25	5.18	2.93	38.8	12.4
CV		2.68	7.07	20.48	25.61	19.0	34.4
Min		30.0	15.9	15.7	6.5	131	15
Max		32.8	19.3	34.2	16.4	261	56
n		10	6	10	10	11	11

Multiple Devices		*(information not provided in the respective table)*			General
Lab.	Device	Manufacturer	Instrument	Std. Test Method	Repetitions
8	DigitalFibrograph		730	ASTM1447	6
23	DigitalFibrograph	Keisokki			5
28	DigitalFibrograph	Textechno	Fibrotest		10
35	DigitalFibrograph	USTER	730		3
37	FMT	SDL	FMT		
53	aQura	Premier			4
56	Causticaire		Micronaire	JIS	2
70	GravFineness			ISO 1973-95	5
70	FMT	SDL	MK.1	ASTMD3818-92	6
79	GravFineness			RSTUz620-94	
82	aQura	Premier			4
85	CombSorter	Joh.Zw.		UNI10170-94	1
85	GravFineness			UNIENISO1973-98	10
85-2	CombSorter	Joh.Zw.		UNI10170-94	1
92	DigitalFibrograph		DigiLen	ASTMD 5332	5
93	DigitalFibrograph			ASTM1447	4
93	FMT	WIRA		ISO	4
101	aQura	Premier			4
102	DigitalFibrograph		530	ICCS	5
102	FMT	SDL	FMT 3	ICCS	2
116	DigitalFibrograph		Auto Span AS101		5
116	aQura	Premier			4
128	FMT		Micromat	ASTM	8
128	DigitalFibrograph			ASTM	8
129	Causticaire		Microscope	IS 236	
131	DigitalFibrograph		530	ASTM	6
131	Causticaire		Fibroscope	British	1
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
170	aQura	Premier			4
177	Causticaire			DIN53943-4	3
177	GravFineness			ASTMD1577-90	5
186	FMT	SDL	FMT	USDA	6
193	GravFineness			GB/T6100-07	3
213	aQura	Premier			5
234	aQura	Premier			4
251	aQura	Premier		ICC	4
277	aQura	Premier			5
300	aQura	Premier		ISO	4

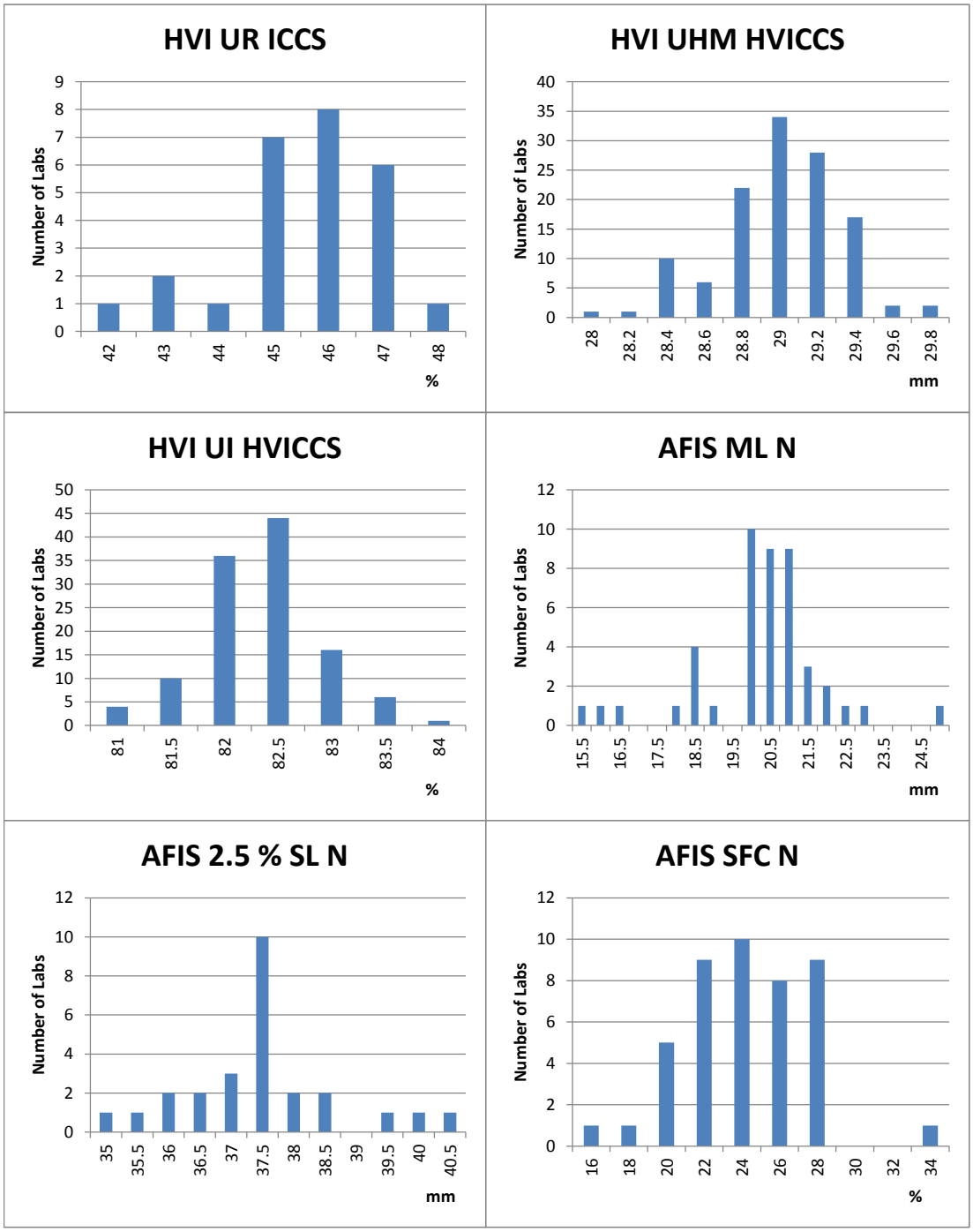
Graphics of selected round test data



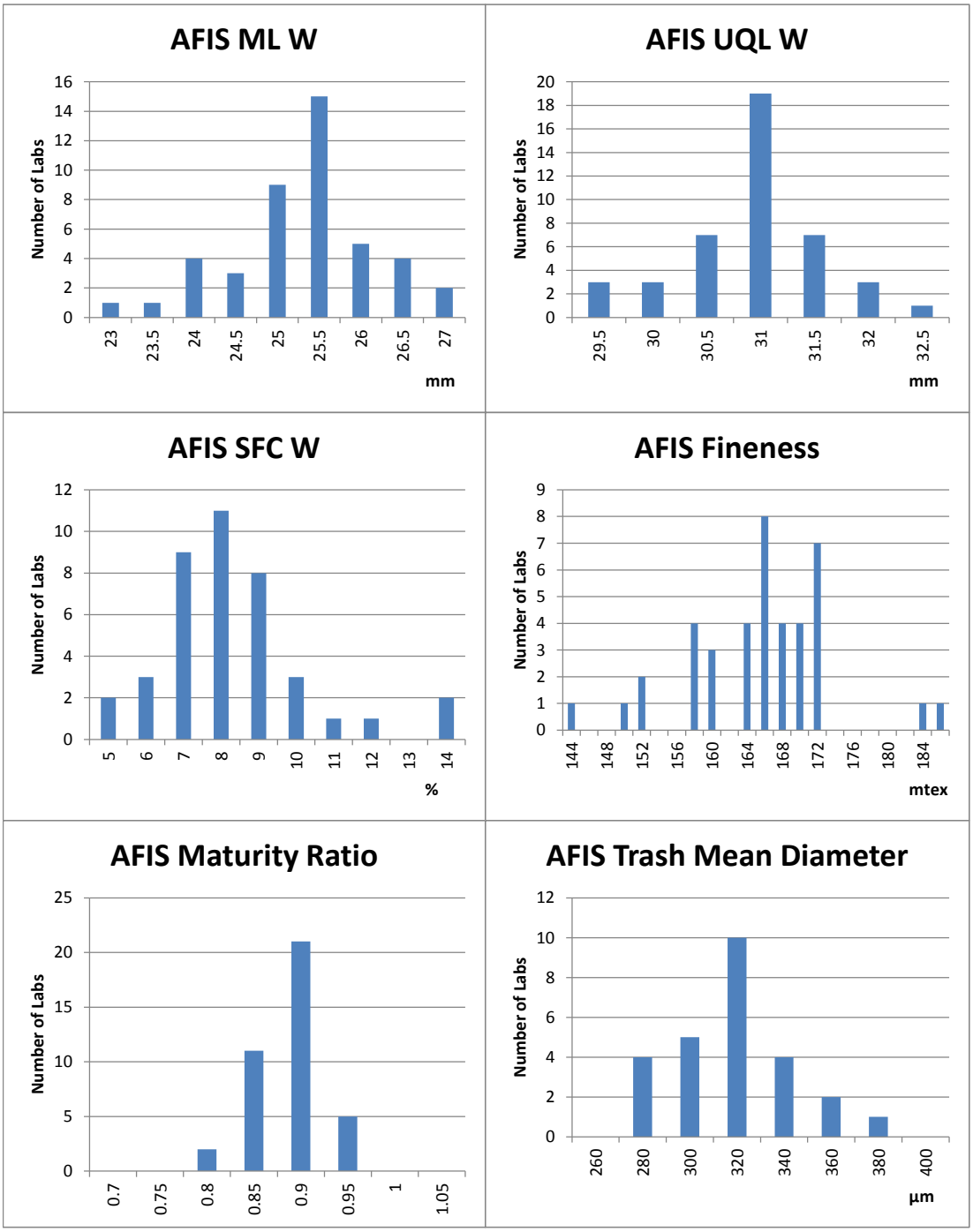
Graphics of selected round test data



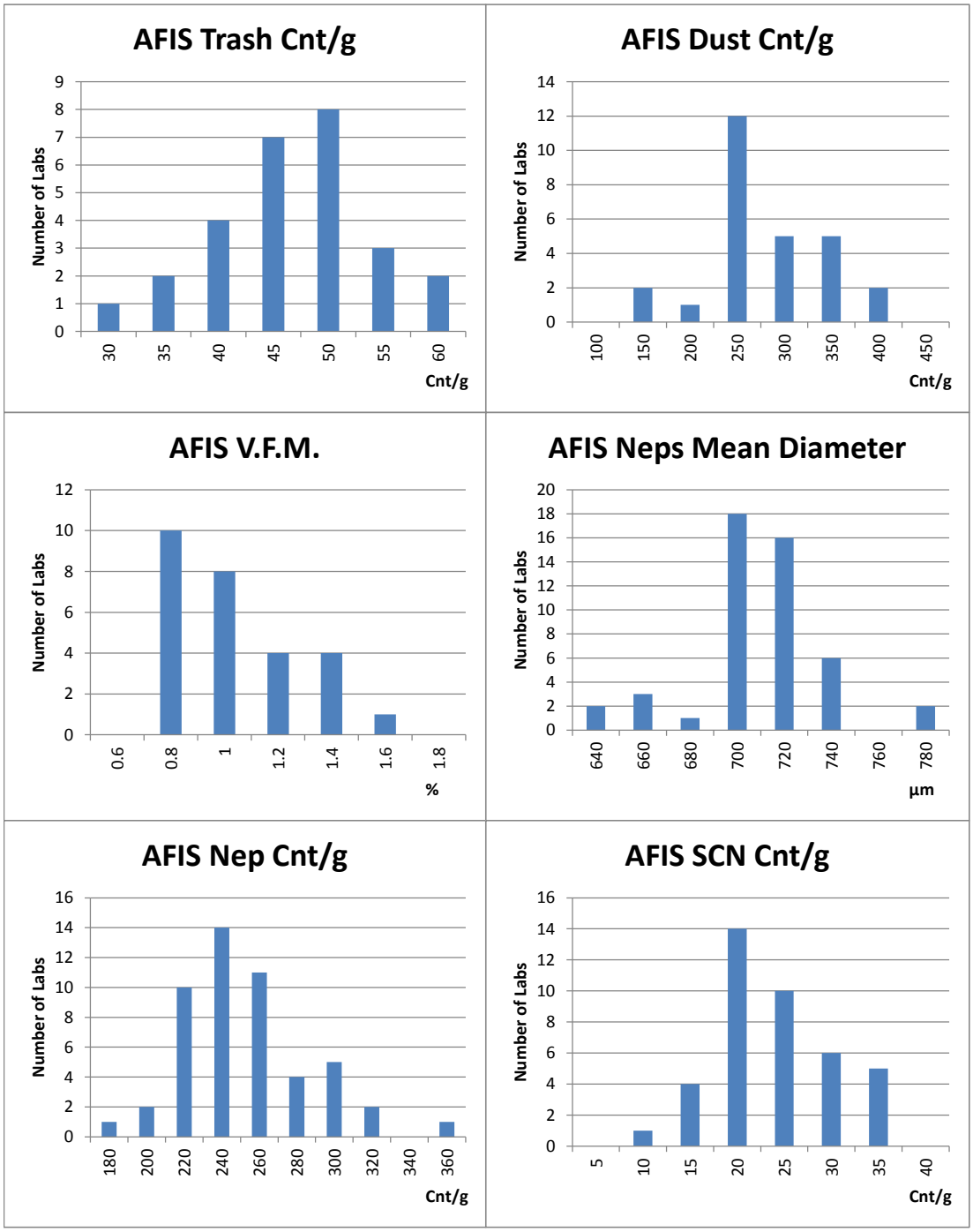
Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data