



## International Cotton Advisory Committee



# CSITC Global - Round Trial 2011 - 3 General Evaluation

### **Section One: Result Distribution**

Section Two: Instrument Evaluation

Section Three: Within Limits Evaluation

### Section One: Result Distribution

#### Content:

#### Mandatory Parameters

- Summary Table
- Distribution Graphs

#### Optional Parameters

- Summary Table
- Distribution Graphs

#### Executed By:

Faserinstitut Bremen e.V., Bremen, Germany  
USDA-AMS, Memphis, TN, USA

#### System Provided by:

Generation 10 Limited



This report is an outcome of the Project CFC/ICAC/33 – CSITC, which benefitted from support from the Common Fund for Commodities and the European Union, partners in Commodity Development.



Global - Round Trial 2011 - 3

Inter-Instrument Averages, Inter-Instrument Variations, Typical within-instrument Variations

Micronaire								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			3.179	3.395	4.210	4.199		5.413
Reference Values for Evaluation			3.179	3.395	4.210	4.199		5.413
Number Of Instruments			135	135	135	135	<b>135</b>	135
Inter-Instrument Variation	based on 30 tests	SD	0.055	0.061	0.065	0.066	<b>0.062</b>	0.077
		CV %	1.7	1.8	1.5	1.6	<b>1.7</b>	1.4
	based on 6 tests	SD	0.060	0.064	0.070	0.072	<b>0.067</b>	0.085
		CV %	1.9	1.9	1.7	1.7	<b>1.8</b>	1.6
	based on single tests	SD	0.068	0.072	0.080	0.081	<b>0.075</b>	0.095
		CV %	2.2	2.1	1.9	1.9	<b>2.0</b>	1.7
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.022	0.023	0.023	0.027	<b>0.024</b>	0.027
		CV %	0.7	0.7	0.5	0.6	<b>0.6</b>	0.5
	between single tests on one day	SD	0.032	0.030	0.034	0.035	<b>0.033</b>	0.043
		CV %	1.0	0.9	0.8	0.8	<b>0.9</b>	0.8
	between all tests on different days	SD	0.041	0.043	0.044	0.045	<b>0.043</b>	0.049
		CV %	1.3	1.3	1.1	1.1	<b>1.2</b>	0.9

Strength								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			30.807	29.426	33.007	33.897		26.182
Reference Values for Evaluation			30.807	29.426	33.007	33.897		26.182
Number Of Instruments			136	136	136	136	<b>136</b>	136
Inter-Instrument Variation	based on 30 tests	SD	0.917	0.998	0.786	1.047	<b>0.937</b>	1.335
		CV %	3.0	3.4	2.4	3.1	<b>3.0</b>	5.1
	based on 6 tests	SD	1.016	1.098	1.088	1.101	<b>1.076</b>	1.332
		CV %	3.3	3.7	3.3	3.2	<b>3.4</b>	5.1
	based on single tests	SD	1.212	1.224	1.248	1.241	<b>1.231</b>	1.425
		CV %	3.9	4.2	3.8	3.7	<b>3.9</b>	5.4
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.366	0.369	0.420	0.367	<b>0.380</b>	0.297
		CV %	1.2	1.3	1.3	1.1	<b>1.2</b>	1.1
	between single tests on one day	SD	0.641	0.564	0.573	0.546	<b>0.581</b>	0.5
		CV %	2.1	1.9	1.7	1.6	<b>1.8</b>	1.9
	between all tests on different days	SD	0.727	0.653	0.729	0.673	<b>0.696</b>	0.586
		CV %	2.4	2.2	2.2	2.0	<b>2.2</b>	2.2

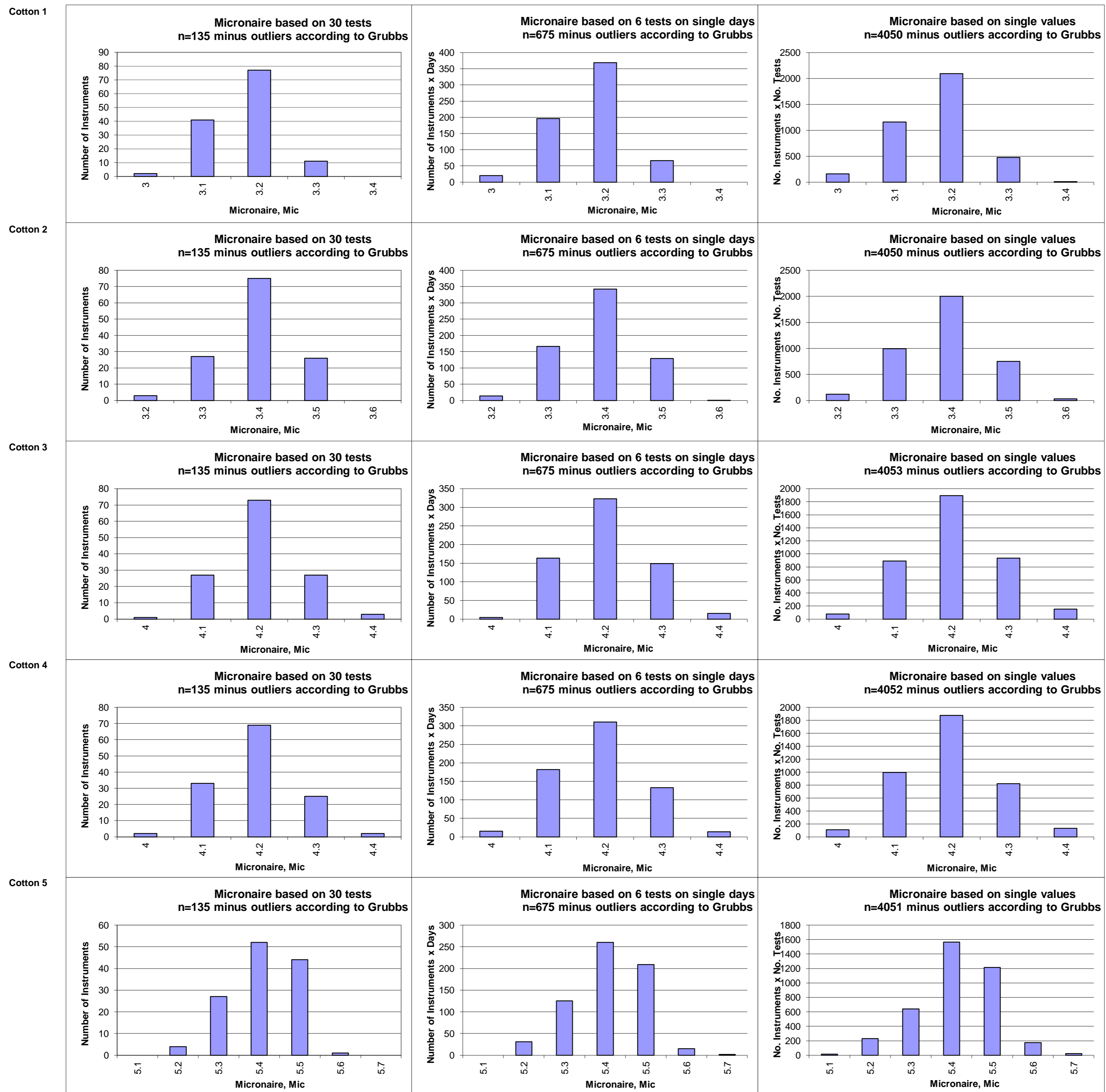
Length								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			1.0783	1.1229	1.2169	1.2296		0.9812
Reference Values for Evaluation			1.0783	1.1229	1.2169	1.2296		0.9812
Number Of Instruments			136	136	136	136	<b>136</b>	136
Inter-Instrument Variation	based on 30 tests	SD	0.0106	0.0116	0.0123	0.0129	<b>0.0118</b>	0.0190
		CV %	1.0	1.0	1.0	1.0	<b>1.0</b>	1.9
	based on 6 tests	SD	0.0118	0.0129	0.0143	0.0136	<b>0.0131</b>	0.0193
		CV %	1.1	1.1	1.2	1.1	<b>1.1</b>	2.0
	based on single tests	SD	0.0164	0.0163	0.0173	0.0172	<b>0.0168</b>	0.0214
		CV %	1.5	1.4	1.4	1.4	<b>1.4</b>	2.2
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.0050	0.0052	0.0064	0.0056	<b>0.0055</b>	0.0057
		CV %	0.5	0.5	0.5	0.5	<b>0.5</b>	0.6
	between single tests on one day	SD	0.0103	0.0097	0.0101	0.0098	<b>0.0100</b>	0.0106
		CV %	1.0	0.9	0.8	0.8	<b>0.9</b>	1.1
	between all tests on different days	SD	0.0111	0.0110	0.0122	0.0112	<b>0.0114</b>	0.0116
		CV %	1.0	1.0	1.0	0.9	<b>1.0</b>	1.2

Uniformity								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			80.563	81.637	83.375	83.708		80.669
Reference Values for Evaluation			80.563	81.637	83.375	83.708		80.669
Number Of Instruments			136	136	136	136	<b>136</b>	136
Inter-Instrument Variation	based on 30 tests	SD	0.611	0.541	0.432	0.393	<b>0.494</b>	0.753
		CV %	0.8	0.7	0.5	0.5	<b>0.6</b>	0.9
	based on 6 tests	SD	0.639	0.620	0.531	0.489	<b>0.570</b>	0.835
		CV %	0.8	0.8	0.6	0.6	<b>0.7</b>	1.0
	based on single tests	SD	0.829	0.791	0.740	0.688	<b>0.762</b>	0.979
		CV %	1.0	1.0	0.9	0.8	<b>0.9</b>	1.2
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.305	0.269	0.278	0.236	<b>0.272</b>	0.281
		CV %	0.4	0.3	0.3	0.3	<b>0.3</b>	0.3
	between single tests on one day	SD	0.524	0.486	0.499	0.470	<b>0.495</b>	0.506
		CV %	0.7	0.6	0.6	0.6	<b>0.6</b>	0.6
	between all tests on different days	SD	0.596	0.539	0.555	0.524	<b>0.553</b>	0.556
		CV %	0.7	0.7	0.7	0.6	<b>0.7</b>	0.7

Color Rd								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			76.990	71.096	75.768	75.967		78.483
Reference Values for Evaluation			76.990	71.096	75.768	75.967		78.483
Number Of Instruments			132	132	132	132	<b>132</b>	132
Inter-Instrument Variation	based on 30 tests	SD	0.847	1.077	0.992	0.987	<b>0.976</b>	1.067
		CV %	1.1	1.5	1.3	1.3	<b>1.3</b>	1.4
	based on 6 tests	SD	0.917	1.085	1.051	0.984	<b>1.009</b>	1.014
		CV %	1.2	1.5	1.4	1.3	<b>1.3</b>	1.3
	based on single tests	SD	0.958	1.128	1.074	0.979	<b>1.035</b>	1.017
		CV %	1.2	1.6	1.4	1.3	<b>1.4</b>	1.3
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.213	0.187	0.191	0.165	<b>0.189</b>	0.161
		CV %	0.3	0.3	0.3	0.2	<b>0.3</b>	0.2
	between single tests on one day	SD	0.232	0.212	0.231	0.215	<b>0.222</b>	0.196
		CV %	0.3	0.3	0.3	0.3	<b>0.3</b>	0.2
	between all tests on different days	SD	0.325	0.308	0.319	0.286	<b>0.310</b>	0.271
		CV %	0.4	0.4	0.4	0.4	<b>0.4</b>	0.3

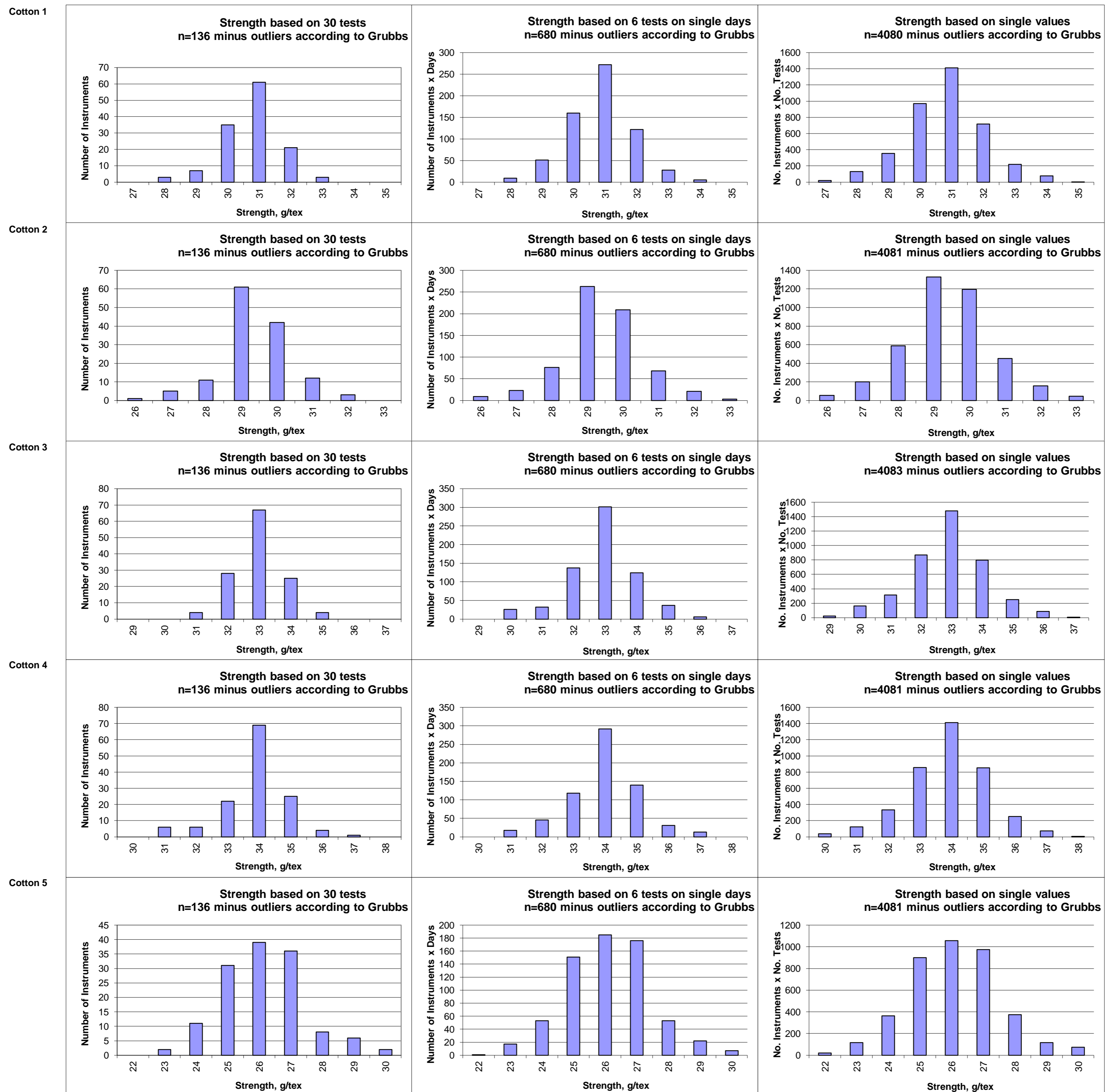
Color +b								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
Average of Instruments (Grubbs)			12.054	14.548	12.681	11.624		12.419
Reference Values for Evaluation			12.054	14.548	12.681	11.624		12.419
Number Of Instruments			132	132	132	132	<b>132</b>	132
Inter-Instrument Variation	based on 30 tests	SD	0.370	0.424	0.444	0.387	<b>0.406</b>	0.480
		CV %	3.1	2.9	3.5	3.3	<b>3.2</b>	3.9
	based on 6 tests	SD	0.380	0.448	0.482	0.403	<b>0.429</b>	0.494
		CV %	3.2	3.1	3.8	3.5	<b>3.4</b>	4.0
	based on single tests	SD	0.415	0.463	0.509	0.424	<b>0.453</b>	0.514
		CV %	3.4	3.2	4.0	3.6	<b>3.6</b>	4.1
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.113	0.115	0.133	0.114	<b>0.119</b>	0.119
		CV %	0.9	0.8	1.0	1.0	<b>0.9</b>	1.0
	between single tests on one day	SD	0.131	0.133	0.135	0.118	<b>0.129</b>	0.119
		CV %	1.1	0.9	1.1	1.0	<b>1.0</b>	1.0
	between all tests on different days	SD	0.168	0.178	0.216	0.179	<b>0.185</b>	0.168
		CV %	1.4	1.2	1.7	1.5	<b>1.5</b>	1.4

Test Result Distributions  
Micronaire



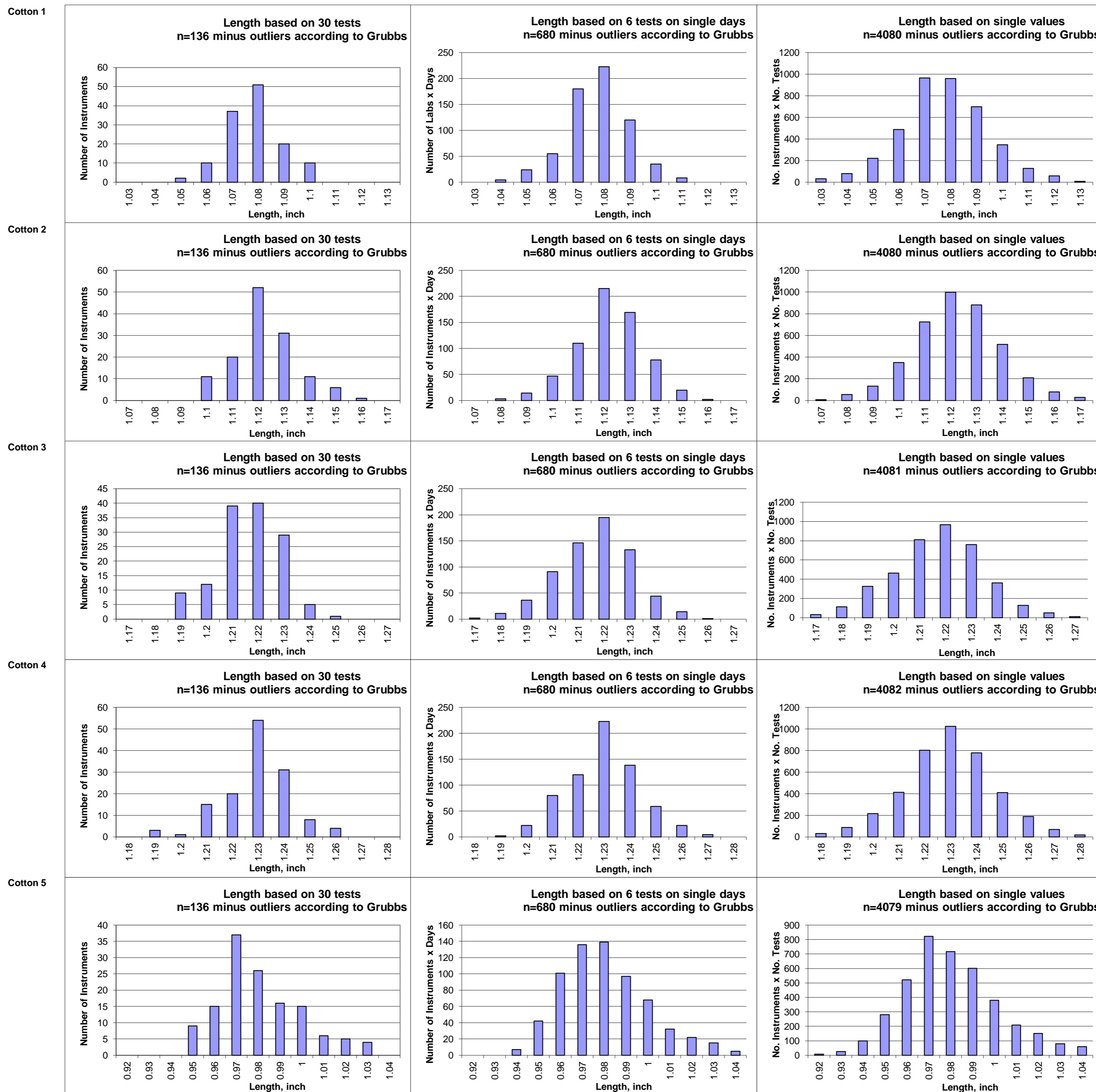
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Strength



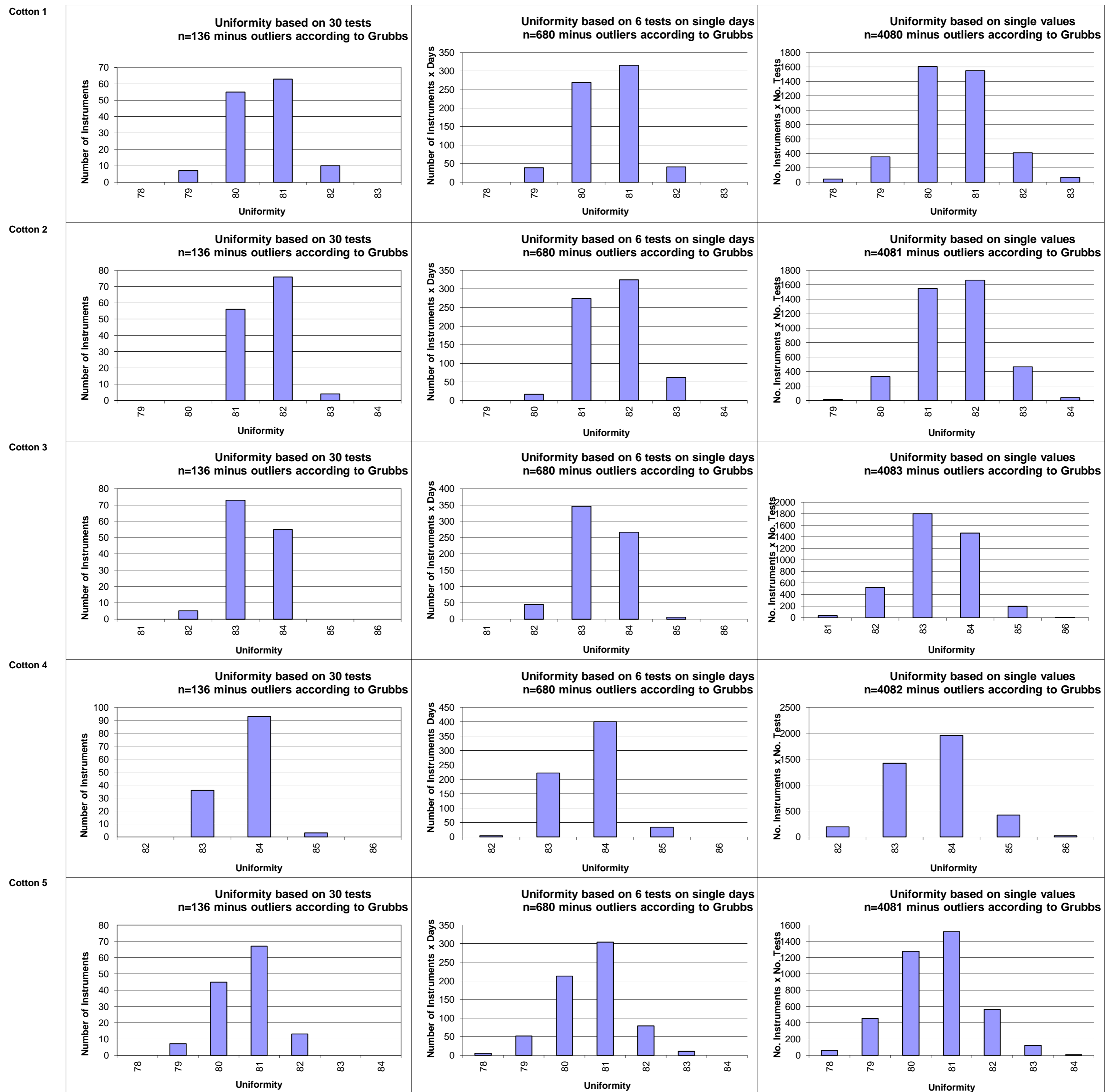
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Length



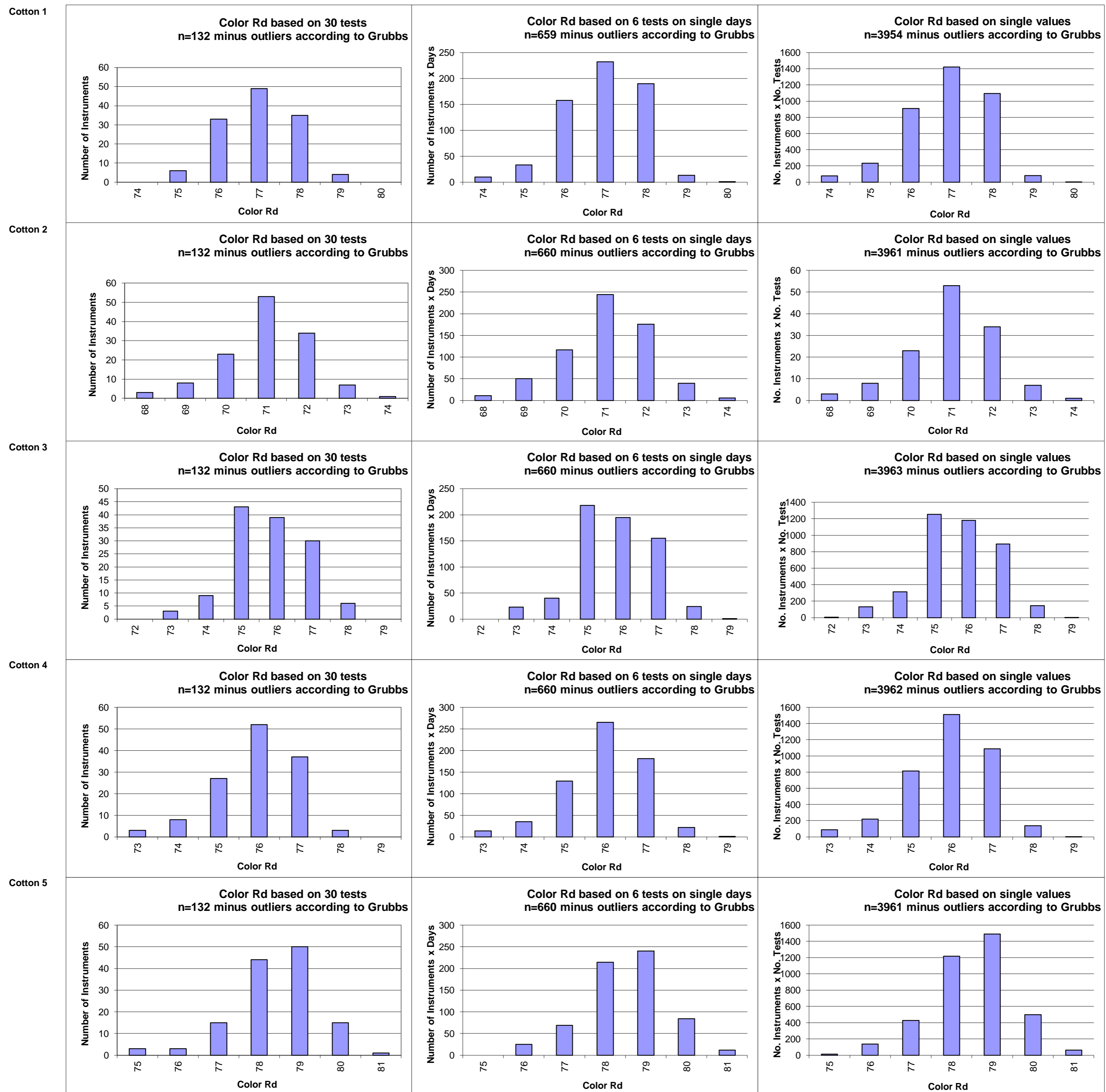
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
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Test Result Distributions  
Uniformity



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

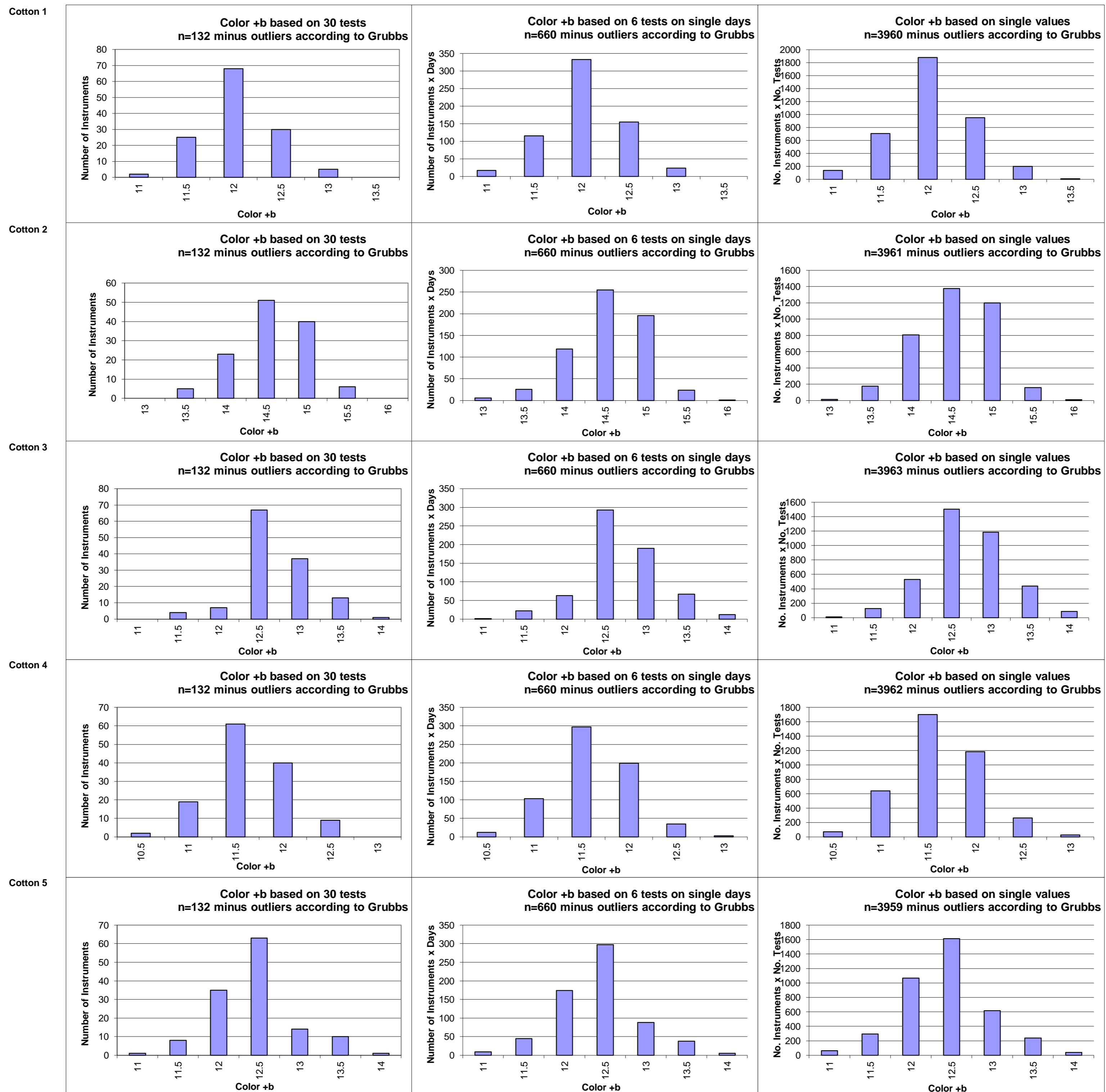
Test Result Distributions  
Color Rd



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)



Test Result Distributions  
Color +b



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

### Optional Parameters

Inter-Instrument Averages, Inter-Instrument Variations, Typical within-instrument Variations

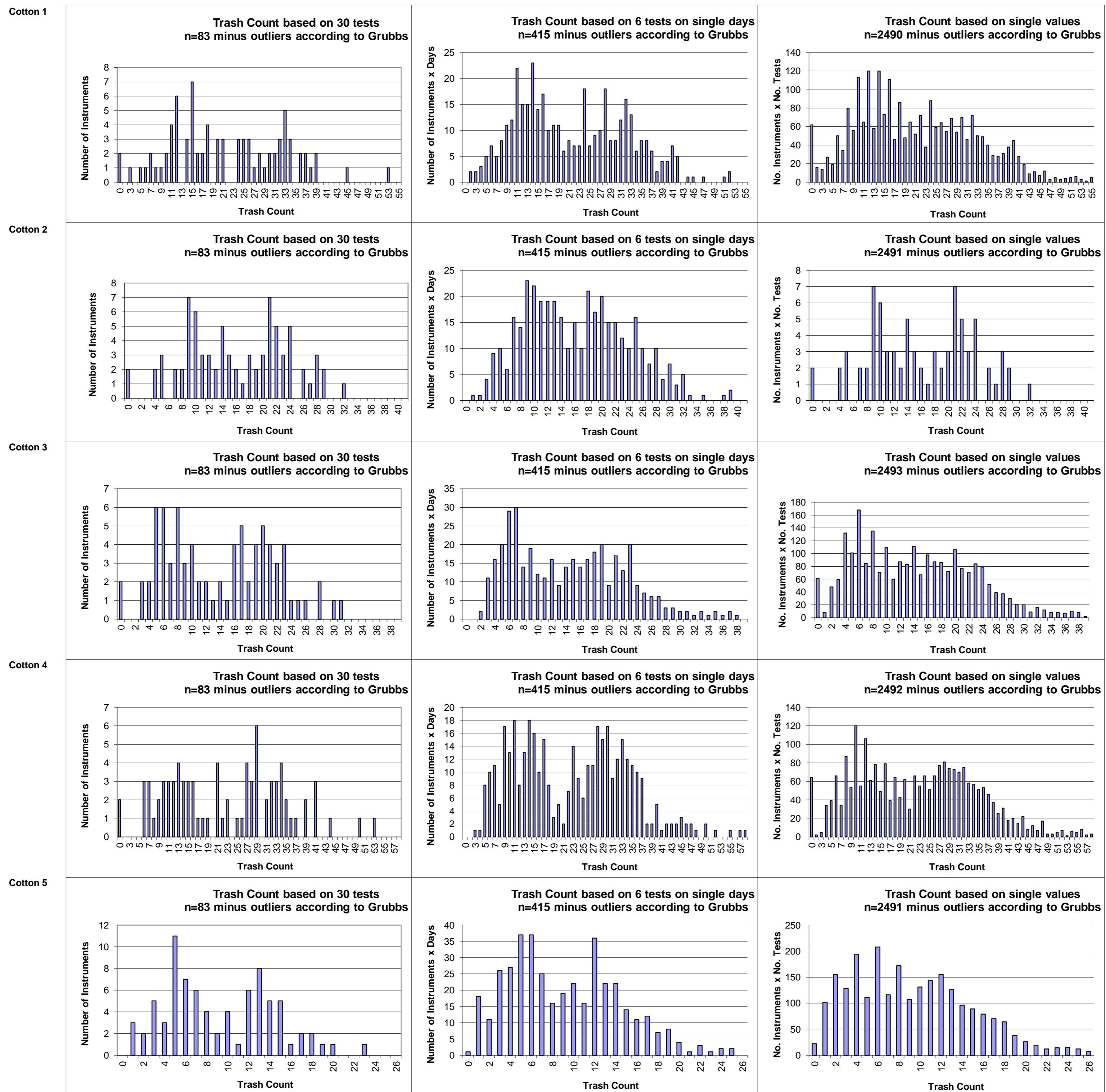
Trash Count								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
<b>Average of Instruments (Grubbs)</b>			21.65	16.04	13.99	22.68		9.28
<b>Reference Values for Evaluation</b>			21.65	16.04	13.99	22.68		9.28
<b>Number Of Instruments</b>			83	83	83	83	<b>83</b>	83
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	11.02	7.52	7.63	11.88	<b>9.51</b>	5.09
		CV %	50.9	46.8	54.6	52.4	<b>51.2</b>	54.9
	based on 6 tests	SD	10.93	7.95	8.11	11.77	<b>9.69</b>	5.33
		CV %	50.5	49.6	58.0	51.9	<b>52.5</b>	57.4
	based on single tests	SD	11.37	8.40	8.41	12.13	<b>10.08</b>	5.61
		CV %	52.5	52.3	60.1	53.5	<b>54.6</b>	60.4
<b>Typical within-instrument Variation (Median)</b>	between different days with each 6 tests	SD	2.18	2.35	1.73	2.25	<b>2.12</b>	1.49
		CV %	10.1	14.6	12.3	9.9	<b>11.7</b>	16.0
	between single tests on one day	SD	3.06	2.53	2.17	2.78	<b>2.63</b>	1.74
		CV %	14.1	15.8	15.5	12.2	<b>14.4</b>	18.7
	between all tests on different days	SD	4.03	3.67	2.79	3.91	<b>3.60</b>	2.41
		CV %	18.6	22.9	20.0	17.2	<b>19.7</b>	25.9

Trash Area								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
<b>Average of Instruments (Grubbs)</b>			0.198	0.154	0.127	0.188		0.090
<b>Reference Values for Evaluation</b>			0.198	0.154	0.127	0.188		0.090
<b>Number Of Instruments</b>			83	83	83	83	<b>83</b>	83
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	0.061	0.046	0.044	0.066	<b>0.054</b>	0.029
		CV %	31.0	30.0	34.5	35.4	<b>32.7</b>	32.0
	based on 6 tests	SD	0.062	0.054	0.044	0.069	<b>0.057</b>	0.031
		CV %	31.4	34.8	34.7	36.6	<b>34.4</b>	34.3
	based on single tests	SD	0.076	0.061	0.060	0.077	<b>0.069</b>	0.041
		CV %	38.3	39.9	47.4	41.2	<b>41.7</b>	46.2
<b>Typical within-instrument Variation (Median)</b>	between different days with each 6 tests	SD	0.026	0.026	0.019	0.023	<b>0.024</b>	0.016
		CV %	13.3	17.0	15.0	12.1	<b>14.4</b>	17.7
	between single tests on one day	SD	0.038	0.031	0.026	0.030	<b>0.031</b>	0.0
		CV %	19.3	20.3	20.1	16.0	<b>18.9</b>	19.2
	between all tests on different days	SD	0.050	0.045	0.035	0.043	<b>0.043</b>	0.023
		CV %	25.4	29.2	27.6	23.1	<b>26.3</b>	26.1

Maturity								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
<b>Average of Instruments (Grubbs)</b>			81.40	82.52	85.13	84.95		86.24
<b>Reference Values for Evaluation</b>			81.40	82.52	85.13	84.95		86.24
<b>Number Of Instruments</b>			90	90	90	90	<b>90</b>	90
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	3.31	2.67	3.17	3.71	<b>3.21</b>	5.11
		CV %	4.1	3.2	3.7	4.4	<b>3.8</b>	5.9
	based on 6 tests	SD	3.01	2.39	3.20	3.42	<b>3.01</b>	4.81
		CV %	3.7	2.9	3.8	4.0	<b>3.6</b>	5.6
	based on single tests	SD	3.19	2.58	3.32	3.77	<b>3.21</b>	5.11
		CV %	3.9	3.1	3.9	4.4	<b>3.8</b>	5.9
<b>Typical within-instrument Variation (Median)</b>	between different days with each 6 tests	SD	0.30	0.28	0.32	0.28	<b>0.30</b>	0.30
		CV %	0.4	0.3	0.4	0.3	<b>0.4</b>	0.3
	between single tests on one day	SD	0.43	0.40	0.38	0.42	<b>0.41</b>	0.42
		CV %	0.5	0.5	0.4	0.5	<b>0.5</b>	0.5
	between all tests on different days	SD	0.50	0.50	0.51	0.50	<b>0.50</b>	0.51
		CV %	0.6	0.6	0.6	0.6	<b>0.6</b>	0.6

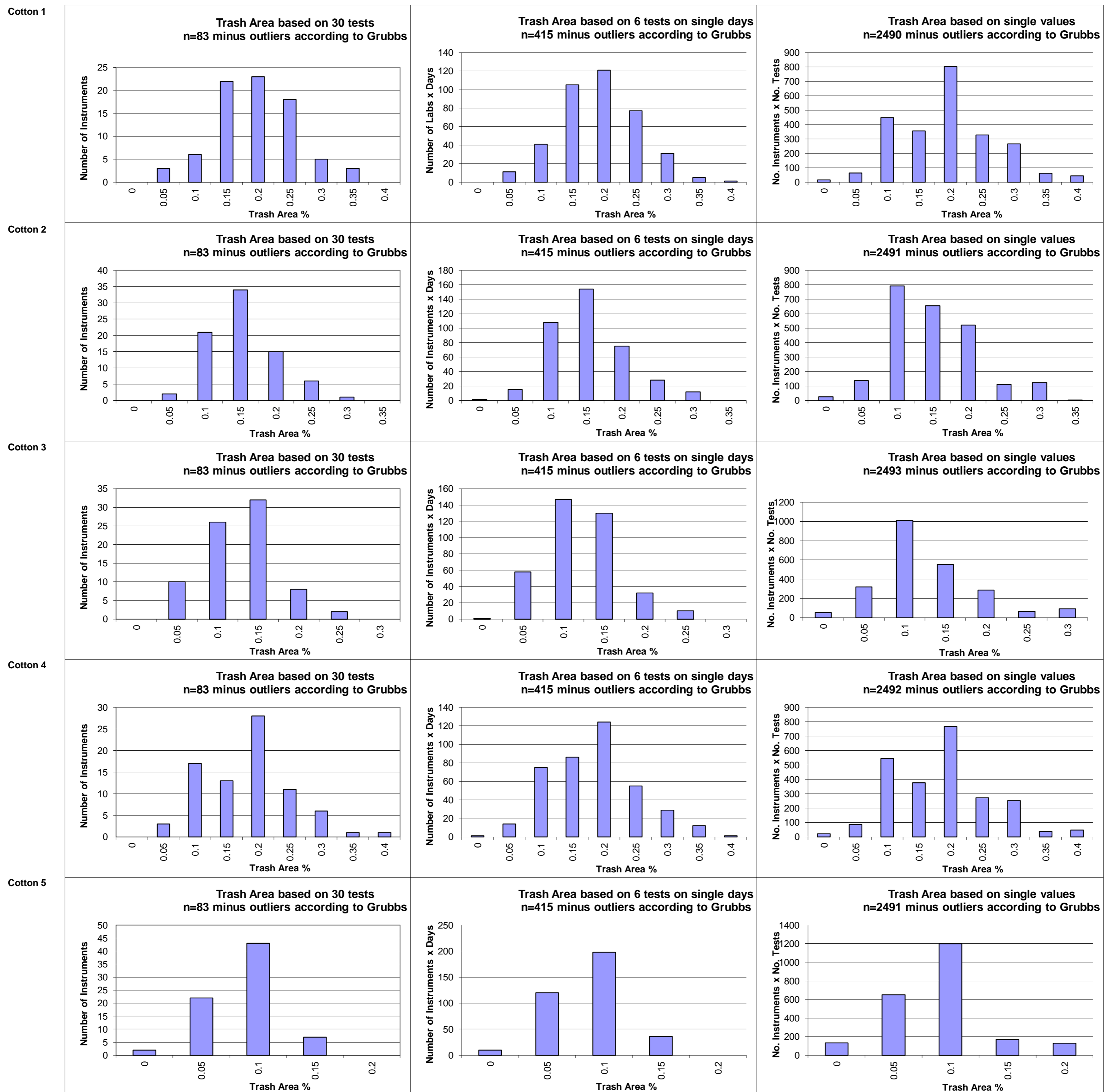
SFI								
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average	Cotton 5
<b>Average of Instruments (Grubbs)</b>			10.45	9.17	7.02	6.78		10.28
<b>Reference Values for Evaluation</b>			10.45	9.17	7.02	6.78		10.28
<b>Number Of Instruments</b>			95	95	95	95	<b>95</b>	95
<b>Inter-Instrument Variation</b>	based on 30 tests	SD	1.95	1.65	1.47	1.48	<b>1.64</b>	2.20
		CV %	18.7	18.0	21.0	21.9	<b>19.9</b>	21.4
	based on 6 tests	SD	2.01	1.64	1.47	1.48	<b>1.65</b>	2.20
		CV %	19.3	17.9	21.0	21.8	<b>20.0</b>	21.4
	based on single tests	SD	2.10	1.70	1.54	1.53	<b>1.72</b>	2.29
		CV %	20.1	18.5	21.9	22.6	<b>20.8</b>	22.2
<b>Typical within-instrument Variation (Median)</b>	between different days with each 6 tests	SD	0.34	0.31	0.16	0.16	<b>0.24</b>	0.33
		CV %	3.2	3.4	2.3	2.3	<b>2.8</b>	3.2
	between single tests on one day	SD	0.57	0.47	0.30	0.31	<b>0.41</b>	0.61
		CV %	5.5	5.1	4.3	4.5	<b>4.9</b>	5.9
	between all tests on different days	SD	0.64	0.54	0.34	0.33	<b>0.46</b>	0.74
		CV %	6.1	5.9	4.8	4.9	<b>5.4</b>	7.2

Test Result Distributions  
Trash Count



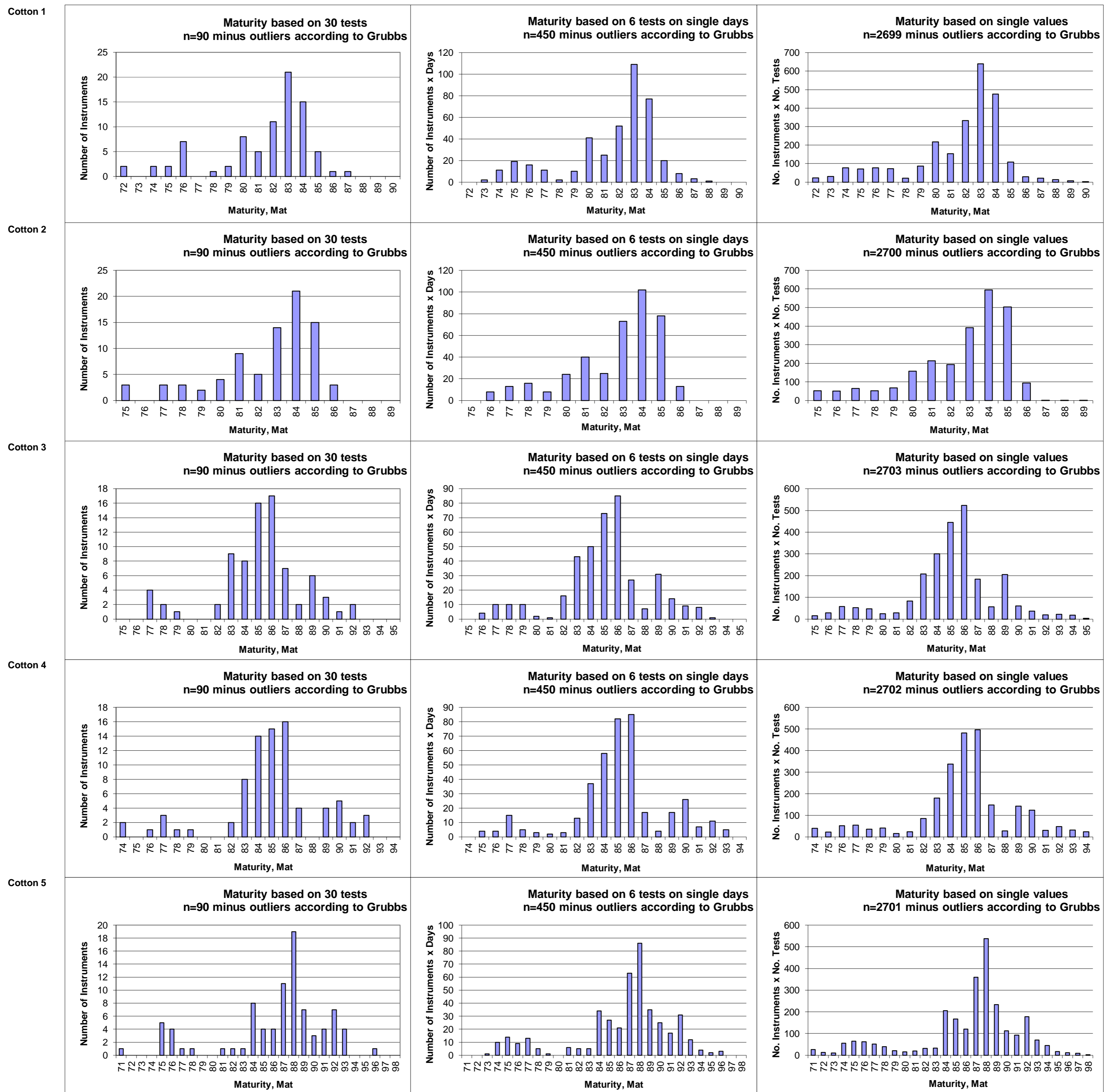
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Trash Area



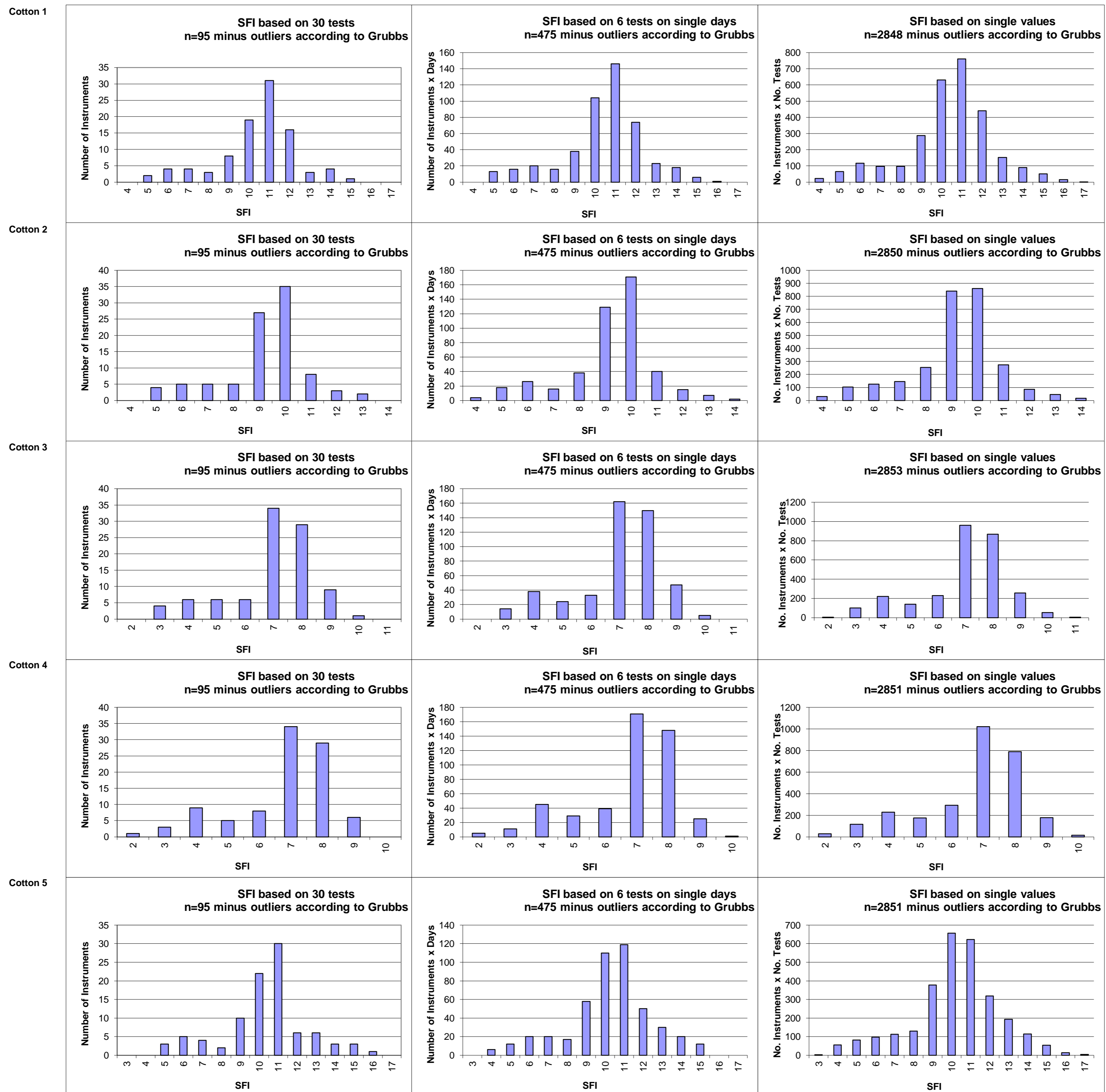
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(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
Maturity



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)  
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions  
SFI



(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)  
(classes are defined as > lower limit and <= upper limit)



International Cotton Advisory Committee



# CSITC

## Global - Round Trial 2011 - 3

### General Evaluation

Section One: Result Distribution  
**Section Two: Instrument Evaluation**  
Section Three: Within Limits Evaluation

#### Section Two: Instrument Evaluation

Content:

- Evaluation of Combined Parameters
- Evaluation of Single Parameters

Executed By:  
Faserinstitut Bremen e.V., Bremen, Germany  
USDA-AMS, Memphis, TN, USA

System Provided by:  
Generation 10 Limited



This report is an outcome of the Project CFC/ICAC/33 – CSITC, which benefitted from support from the Common Fund for Commodities and the European Union, partners in Commodity Development.





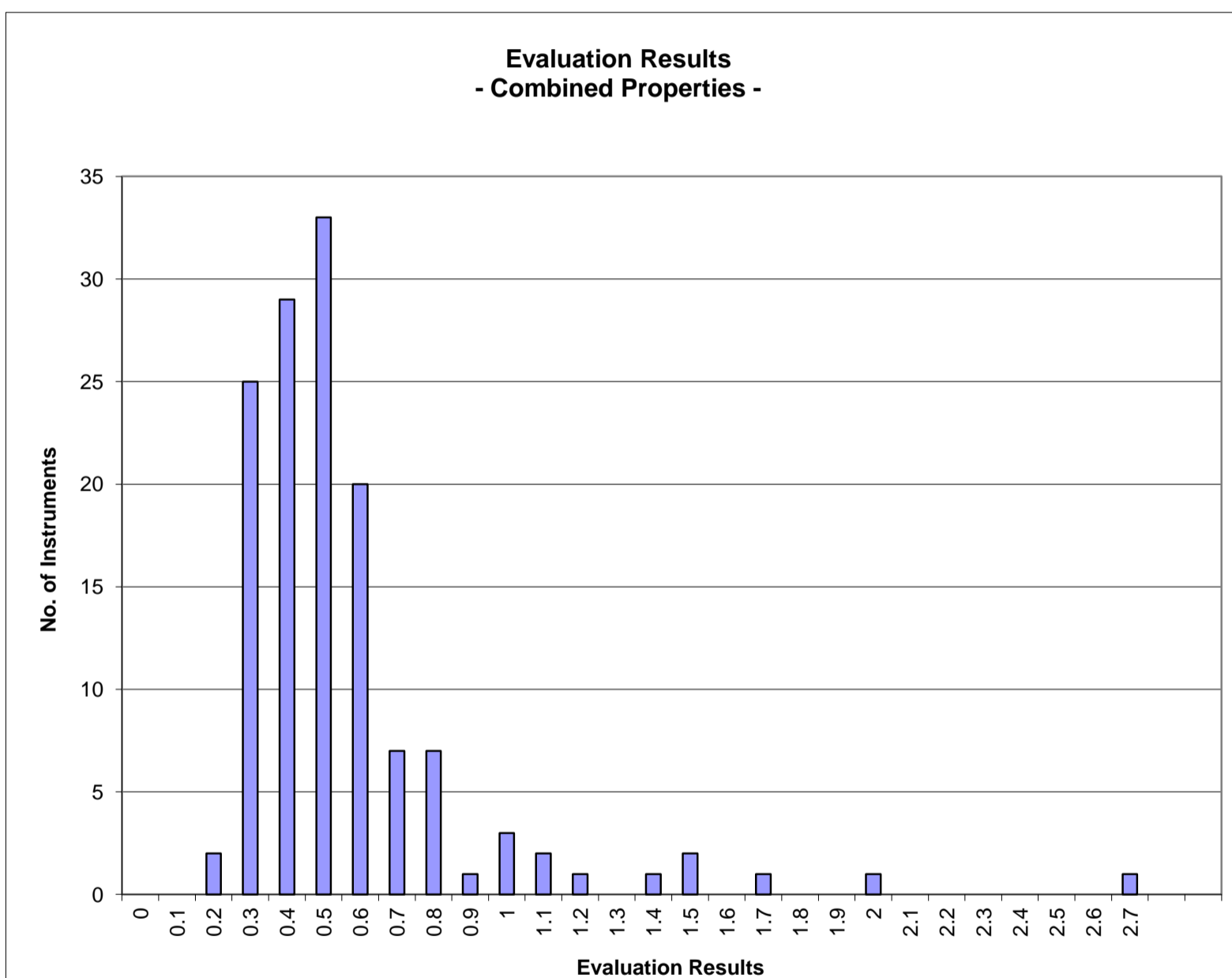
Instrument Evaluation

- Graph of Combined Properties -

According to ICAC CSITC Task Force Recommendations

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		<b>Evaluation Combined Prop.</b>
<b>Statistics</b>	Average	0.56
	Median	0.47
	Best Instrument	0.24
	Worst Instrument	2.72

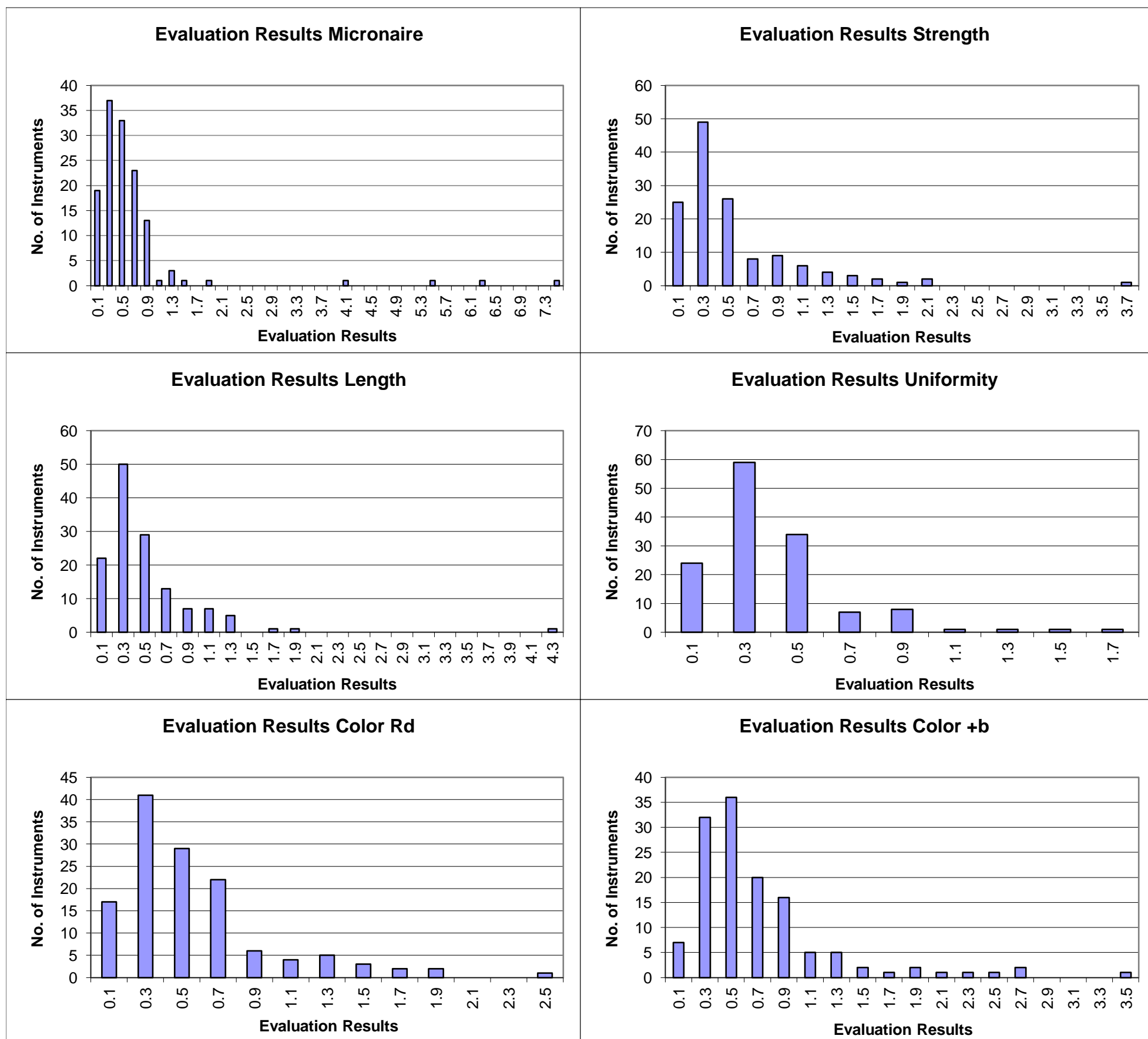


x-Axis shows midpoints of classes

The evaluation results are entered based on the unrounded values  
(classes are defined as > lower limit and <= upper limit)

Instrument Evaluation  
 - Graph of Single Properties -  
 According to ICAC CSITC Task Force Recommendations  
 Global - Round Trial 2011 - 3

		Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
<b>Statistics</b>	Average	0.66	0.54	0.51	0.41	0.56	0.70
	Median	0.46	0.38	0.36	0.34	0.46	0.52
	Best Instr.	0.06	0.08	0.05	0.08	0.07	0.10
	Worst Instr.	7.50	3.79	4.36	1.74	2.45	3.48



x-Axis shows midpoints of classes  
 The evaluation results are entered based on the unrounded values



**International Cotton Advisory Committee**



**CSITC**  
**Global - Round Trial 2011 - 3**  
**General Evaluation**

Section One: Result Distribution  
Section Two: Instrument Evaluation  
**Section Three: Within Limits Evaluation**

Section Three: Within Limits Evaluation

Content:

- Based on Average of 30 Test Results
- Based on Single Test Results

Executed By:  
Faserinstitut Bremen e.V., Bremen, Germany  
USDA-AMS, Memphis, TN, USA

System Provided by:  
Generation 10 Limited



This report is an outcome of the Project CFC/ICAC/33 – CSITC, which benefitted from support from the Common Fund for Commodities and the European Union, partners in Commodity Development.



## Within Limits Evaluation

Based on average of 30 test results for each sample

	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
Limits	0.20	2.0	0.030	2.0	1.5	1.0
	units	g/tex	inch	%	units	units
Average % Results within Limits	97.0	92.3	96.7	99.6	86.4	95.1
% of Instruments Completely within limits	95.6	83.1	91.2	98.5	76.5	89.4

Percentage of Results Within Limits						
<b>Instrument</b>	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
GL113-002-03	100	100	100	100	75	100
GL113-002-04	100	100	100	100	100	100
GL113-003-01	100	100	100	100	100	100
GL113-004-01	100	100	100	100	100	75
GL113-005-01	100	100	100	100	100	100
GL113-005-02	100	100	100	100	100	100
GL113-005-03	100	100	100	100	100	100
GL113-005-04	100	100	100	100	100	100
GL113-005-05	100	100	100	100	100	100
GL113-005-07	100	100	100	100	100	100
GL113-005-08	100	100	100	100	100	100
GL113-005-09	100	100	100	100	100	100
GL113-007-01	100	100	100	100	100	100
GL113-007-02	100	100	100	100	100	100
GL113-008-02	100	100	100	100	75	100
GL113-008-04	100	100	100	100	100	100
GL113-008-05	100	100	100	100	100	100
GL113-008-06	100	100	100	100	100	100
GL113-009-01	100	100	100	100	100	100
GL113-009-02	100	100	100	100	100	100
GL113-009-03	100	100	100	100	100	100
GL113-010-01	100	100	100	100	100	100
GL113-011-35	100	100	100	100	25	100
GL113-011-36	100	100	100	100	25	100
GL113-012-02	0	0	100	100	0	100
GL113-013-01	100	100	100	100	100	100
GL113-013-02	100	100	100	100	100	100
GL113-014-02	100	100	75	100	100	100
GL113-014-03	100	100	100	100	100	100
GL113-014-07	100	50	100	100	100	100
GL113-014-08	100	100	100	100	100	100
GL113-015-02	100	100	100	100	100	100
GL113-016-01	100	100	100	100	100	100
GL113-016-02	100	100	100	100	100	100
GL113-016-06	100	100	100	100	100	100
GL113-017-01	100	75	75	100	0	100
GL113-018-01	100	100	100	100	100	75
GL113-020-03	100	100	100	100	100	100
GL113-022-01	100	100	100	100	100	100
GL113-023-01	100	100	100	100	100	100
GL113-023-02	100	100	100	100	100	100
GL113-024-01	100	100	100	100	100	100
GL113-025-01	100	75	75	75	100	50
GL113-026-01	100	75	0	100	100	100

GL113-027-01	100	50	100	100	100	100
GL113-028-02	100	100	100	100	75	100
GL113-031-01	100	75	100	100	25	100
GL113-031-02	100	75	100	100	100	100
GL113-032-03	100	100	100	100	100	100
GL113-032-04	100	100	100	100	100	100
GL113-032-05	100	100	100	100	100	100
GL113-033-01	100	100	100	100	100	100
GL113-033-02	100	100	100	100	100	100
GL113-033-04	100	100	100	100	100	100
GL113-033-05	100	100	100	100	100	100
GL113-034-01	100	100	100	100	100	100
GL113-034-02	100	100	100	100	100	100
GL113-034-03	100	0	100	100	100	75
GL113-034-04	100	100	100	100	75	100
GL113-036-01		100	100	100		
GL113-038-01	100	100	100	100	100	100
GL113-038-02	100	100	100	100	100	100
GL113-039-01	100	100	50	75	100	100
GL113-040-01	100	50	100	100	100	100
GL113-041-01	100	100	100	100	100	100
GL113-041-02	100	100	100	100	100	100
GL113-042-01	100	100	100	100	100	100
GL113-042-02	100	100	100	100	100	100
GL113-042-04	100	100	100	100	50	100
GL113-043-01	100	100	100	100	100	100
GL113-045-01	100	75	100	100	100	100
GL113-045-03	100	100	100	100	100	100
GL113-046-01	100	75	100	100	25	0
GL113-047-01	100	100	100	100	100	100
GL113-048-01	100	0	75	100	100	50
GL113-049-01	100	100	100	100	100	100
GL113-051-01	100	100	100	100	100	100
GL113-052-01	100	100	100	100	0	100
GL113-052-03	100	100	100	100	0	100
GL113-052-04	100	100	100	100	100	100
GL113-052-05	100	100	100	100	0	100
GL113-053-03	100	100	100	100	100	100
GL113-054-01	100	100	100	100	100	75
GL113-057-01	100	100	100	100	100	100
GL113-058-01	100	75	75	100	100	100
GL113-059-01	100	100	100	100	75	100
GL113-059-02	100	100	100	100	75	100
GL113-061-02	100	100	100	100	0	100
GL113-064-01	100	75	100	100	50	75
GL113-065-20	100	100	100	100	100	100
GL113-065-21	100	100	100	100	100	100
GL113-066-01	100	100	100	100	100	100
GL113-067-01	100	100	100	100	75	100
GL113-068-02	100	100	100	100	100	100
GL113-069-01	100	100	100	100	100	100
GL113-069-02	100	100	100	100	100	100
GL113-069-03	100	100	100	100	100	100
GL113-070-01	100	100	100	100	100	100
GL113-071-01	100	100	100	100	100	100
GL113-072-01	100	50	50	100	50	100
GL113-073-01	100	100	100	100	100	100
GL113-074-09	50	100	75	100	50	75
GL113-075-01	100	50	100	100	100	100
GL113-077-01	100	100	100	100	100	100

GL113-079-01	100	100	100	100	0	100
GL113-080-01	100	100	100	100	100	100
GL113-080-02	100	100	100	100	100	100
GL113-080-03	100	100	100	100	100	100
GL113-080-06	100	100	100	100	100	100
GL113-081-01	100	100	100	100	0	100
GL113-081-02	100	100	100	100	75	100
GL113-081-03	100	100	100	100	75	100
GL113-082-01	100	100	100	100	75	100
GL113-082-02	100	100	100	100	100	50
GL113-086-01	100	75	100	100		
GL113-086-02	100	100	100	100		
GL113-086-03	100	100	100	100		
GL113-087-01	100	100	100	100	100	100
GL113-088-02	75	50	75	100	100	0
GL113-091-01	100	100	100	100	75	100
GL113-092-01	100	100	100	100	100	100
GL113-096-02	100	100	100	100	100	100
GL113-097-01	100	100	100	100	100	100
GL113-098-01	100	100	100	100	100	100
GL113-098-05	100	100	100	100	100	100
GL113-098-06	100	100	100	100	75	75
GL113-099-03	100	75	75	100	25	0
GL113-100-01	25	25	100	100	100	100
GL113-100-02	25	25	100	100	100	100
GL113-101-01	100	100	100	100	25	100
GL113-102-01	100	100	100	100	100	100
GL113-104-02	100	100	100	100	100	100
GL113-104-03	100	100	100	100	100	100
GL113-104-04	100	100	100	100	100	100
GL113-104-05	100	100	100	100	100	100
GL113-105-01	25	75	50	100	50	75

## Within Limits Evaluation

Based on Single Test Results

	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
Limits	0.20	2.0	0.030	2.0	1.5	1.0
	units	g/tex	inch	%	units	units
% of Instruments 100% within limits	68.9	34.6	32.4	52.9	43.2	63.6
% of Instruments ≥95% within limits	89.6	57.4	74.3	83.8	60.6	81.8
% of Instruments ≥75% within limits	95.6	78.7	91.2	99.3	81.8	89.4
% of Instruments ≥65% within limits	96.3	86.0	96.3	99.3	85.6	93.9

Percentage of Results Within Limits						
<b>Instrument</b>	<b>Micronaire</b>	<b>Strength</b>	<b>Length</b>	<b>Uniformity</b>	<b>Color Rd</b>	<b>Color +b</b>
GL113-002-03	100	98	100	99	92	100
GL113-002-04	100	98	97	93	98	100
GL113-003-01	100	100	100	99	100	100
GL113-004-01	89	87	68	93	100	83
GL113-005-01	100	100	98	100	100	100
GL113-005-02	100	100	96	100	100	100
GL113-005-03	95	100	97	100	100	100
GL113-005-04	99	100	97	100	100	100
GL113-005-05	100	100	100	100	100	100
GL113-005-07	100	99	97	100	100	100
GL113-005-08	100	100	98	100	100	100
GL113-005-09	100	100	97	100	100	100
GL113-007-01	100	99	100	100	100	100
GL113-007-02	100	100	100	100	100	100
GL113-008-02	99	95	99	98	78	100
GL113-008-04	100	97	93	99	90	98
GL113-008-05	100	96	98	100	92	100
GL113-008-06	100	97	90	94	99	100
GL113-009-01	99	100	97	100	100	100
GL113-009-02	84	100	100	100	100	98
GL113-009-03	95	95	92	100	95	94
GL113-010-01	93	74	98	92	100	100
GL113-011-35	100	100	100	100	33	100
GL113-011-36	100	100	100	100	38	100
GL113-012-02	0	2	97	100	23	96
GL113-013-01	100	100	100	100	100	100
GL113-013-02	100	100	98	100	100	100
GL113-014-02	98	100	71	99	95	98
GL113-014-03	99	83	93	98	93	95
GL113-014-07	99	36	96	95	100	100
GL113-014-08	100	100	100	100	83	94
GL113-015-02	91	87	100	100	96	99
GL113-016-01	100	100	97	99	98	94
GL113-016-02	100	100	97	99	98	94
GL113-016-06	100	100	99	100	95	87
GL113-017-01	98	59	71	92	14	100
GL113-018-01	93	97	99	99	72	68
GL113-020-03	100	99	100	100	100	100
GL113-022-01	98	93	93	98	98	100
GL113-023-01	100	100	100	100	100	100

GL113-023-02	100	100	100	100	100	100
GL113-024-01	100	97	100	100	89	100
GL113-025-01	99	63	78	87	100	51
GL113-026-01	100	58	37	98	92	100
GL113-027-01	100	43	99	98	96	100
GL113-028-02	100	96	100	100	84	95
GL113-031-01	100	72	98	99	24	100
GL113-031-02	100	71	93	100	86	99
GL113-032-03	99	97	95	100	100	100
GL113-032-04	100	100	100	100	100	100
GL113-032-05	99	98	96	100	100	100
GL113-033-01	100	100	97	100	99	100
GL113-033-02	100	100	100	100	100	100
GL113-033-04	100	100	100	100	100	100
GL113-033-05	100	100	98	100	100	100
GL113-034-01	98	77	100	97	89	99
GL113-034-02	100	92	100	99	85	99
GL113-034-03	100	19	81	89	89	78
GL113-034-04	100	93	69	76	84	100
GL113-036-01		74	97	93		
GL113-038-01	100	98	97	84	100	96
GL113-038-02	97	95	76	98	100	100
GL113-039-01	100	100	53	57	95	100
GL113-040-01	100	39	100	100	100	100
GL113-041-01	93	100	98	100	100	100
GL113-041-02	100	100	100	100	100	100
GL113-042-01	100	96	100	99	86	100
GL113-042-02	100	100	100	100	99	100
GL113-042-04	100	98	99	100	56	100
GL113-043-01	100	100	100	100	96	100
GL113-045-01	100	48	98	98	88	100
GL113-045-03	100	75	99	98	99	100
GL113-046-01	88	72	91	85	12	14
GL113-047-01	100	81	100	100	92	100
GL113-048-01	100	12	70	100	99	57
GL113-049-01	100	73	83	94	98	100
GL113-051-01	100	72	98	100	100	100
GL113-052-01	99	91	93	100	0	99
GL113-052-03	100	83	98	100	4	99
GL113-052-04	99	88	97	98	96	71
GL113-052-05	98	89	92	100	3	70
GL113-053-03	100	100	94	100	100	100
GL113-054-01	98	93	96	93	100	69
GL113-057-01	100	99	98	100	100	98
GL113-058-01	99	58	62	93	98	100
GL113-059-01	100	93	100	100	75	100
GL113-059-02	100	82	99	100	69	93
GL113-061-02	99	98	99	100	8	100
GL113-064-01	100	72	99	98	72	66
GL113-065-20	100	100	100	100	100	100
GL113-065-21	98	100	100	99	100	100
GL113-066-01	99	61	80	80	75	100
GL113-067-01	100	100	100	100	66	100
GL113-068-02	100	100	100	100	98	93
GL113-069-01	100	84	97	98	100	100
GL113-069-02	100	88	100	100	100	100
GL113-069-03	100	98	100	100	96	100
GL113-070-01	100	95	99	98	100	100
GL113-071-01	100	97	96	100	76	100
GL113-072-01	100	58	69	97	57	99



GL113-073-01	100	90	100	100	100	100
GL113-074-09	59	83	70	100	42	50
GL113-075-01	100	35	100	100	100	100
GL113-077-01	95	95	98	99	95	100
GL113-079-01	100	95	98	98	12	100
GL113-080-01	100	100	94	100	100	100
GL113-080-02	100	98	99	100	100	100
GL113-080-03	100	100	100	100	100	100
GL113-080-06	100	99	97	100	100	100
GL113-081-01	100	49	86	93	39	100
GL113-081-02	100	86	86	99	62	98
GL113-081-03	100	75	97	94	78	98
GL113-082-01	100	100	98	99	85	98
GL113-082-02	100	96	100	100	84	36
GL113-086-01	100	68	90	96		
GL113-086-02	100	76	99	99		
GL113-086-03	99	84	100	98		
GL113-087-01	100	100	90	99	83	98
GL113-088-02	73	49	60	95	88	21
GL113-091-01	99	92	99	100	74	100
GL113-092-01	100	100	96	98	89	100
GL113-096-02	100	92	99	99	100	100
GL113-097-01	87	94	98	99	100	98
GL113-098-01	100	99	100	100	100	100
GL113-098-05	100	100	98	100	100	99
GL113-098-06	100	94	84	92	84	63
GL113-099-03	100	73	81	83	33	14
GL113-100-01	23	43	88	93	87	89
GL113-100-02	23	18	95	95	100	100
GL113-101-01	100	96	100	99	33	97
GL113-102-01	99	93	97	98	100	100
GL113-104-02	100	100	99	100	100	100
GL113-104-03	100	100	100	100	100	100
GL113-104-04	100	100	100	100	98	99
GL113-104-05	98	100	100	99	100	98
GL113-105-01	25	58	35	87	49	68