International Cotton Advisory Committee

CSITC
Global - Round Trial 2025 - 4
General Evaluation

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Section One: Result Distribution

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- -Summary Table
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System Provided by:
Generation 10 Limited

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which benefitted from support from the Common Fund for Commodities
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** Faserinstitut Bremen are a Cooperation Partner with ICA Bremen*

Global - Round Trial 2025 - 4

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

Micronaire							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			4.360	4.169	4.674	4.547	
Reference Values for Evaluation			4.360	4.169	4.674	4.547	
Number Of Instruments			175	175	175	175	**175**
Inter-Instrument Variation	based on 30 tests	SD	0.065	0.065	0.064	0.056	**0.062**
		CV %	1.5	1.6	1.4	1.2	**1.4**
	based on 6 tests	SD	0.069	0.070	0.066	0.059	**0.066**
		CV %	1.6	1.7	1.4	1.3	**1.5**
	based on single tests	SD	0.076	0.077	0.074	0.067	**0.074**
		CV %	1.8	1.8	1.6	1.5	**1.7**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.019	0.017	0.023	0.018	**0.019**
		CV %	0.4	0.4	0.5	0.4	**0.4**
	between single tests on one day	SD	0.033	0.035	0.036	0.035	**0.035**
		CV %	0.8	0.8	0.8	0.8	**0.8**
	between all tests on different days	SD	0.041	0.039	0.043	0.039	**0.041**
		CV %	0.9	0.9	0.9	0.9	**0.9**

Strength							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			28.804	28.751	31.487	25.175	
Reference Values for Evaluation			28.804	28.751	31.487	25.175	
Number Of Instruments			174	174	174	174	**174**
Inter-Instrument Variation	based on 30 tests	SD	0.562	0.669	0.551	0.645	**0.607**
		CV %	2.0	2.3	1.7	2.6	**2.1**
	based on 6 tests	SD	0.637	0.734	0.636	0.709	**0.679**
		CV %	2.2	2.6	2.0	2.8	**2.4**
	based on single tests	SD	0.798	0.886	0.829	0.856	**0.842**
		CV %	2.8	3.1	2.6	3.4	**3.0**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.261	0.277	0.293	0.270	**0.275**
		CV %	0.9	1.0	0.9	1.1	**1.0**
	between single tests on one day	SD	0.517	0.519	0.528	0.482	**0.511**
		CV %	1.8	1.8	1.7	1.9	**1.8**
	between all tests on different days	SD	0.580	0.614	0.623	0.550	**0.592**
		CV %	2.0	2.1	2.0	2.2	**2.1**

Length							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			1.1318	1.0762	1.1887	1.0087	
Reference Values for Evaluation			1.1318	1.0762	1.1887	1.0087	
Number Of Instruments			174	174	174	174	**174**
Inter-Instrument Variation	based on 30 tests	SD	0.0068	0.0088	0.0092	0.0093	**0.0085**
		CV %	0.6	0.8	0.8	0.9	**0.8**
	based on 6 tests	SD	0.0081	0.0101	0.0105	0.0108	**0.0098**
		CV %	0.7	0.9	0.9	1.1	**0.9**
	based on single tests	SD	0.0118	0.0133	0.0139	0.0141	**0.0133**
		CV %	1.0	1.2	1.2	1.4	**1.2**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.0040	0.0044	0.0046	0.0043	**0.0043**
		CV %	0.4	0.4	0.4	0.4	**0.4**
	between single tests on one day	SD	0.0087	0.0092	0.0095	0.0100	**0.0093**
		CV %	0.8	0.9	0.8	1.0	**0.9**
	between all tests on different days	SD	0.0096	0.0104	0.0107	0.0105	**0.0103**
		CV %	0.8	1.0	0.9	1.0	**0.9**

Uniformity							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			83.106	80.045	83.367	79.142	
Reference Values for Evaluation			83.106	80.045	83.367	79.142	
Number Of Instruments			174	174	174	174	**174**
Inter-Instrument Variation	based on 30 tests	SD	0.465	0.370	0.277	0.367	**0.370**
		CV %	0.6	0.5	0.3	0.5	**0.5**
	based on 6 tests	SD	0.521	0.424	0.365	0.436	**0.436**
		CV %	0.6	0.5	0.4	0.6	**0.5**
	based on single tests	SD	0.677	0.613	0.542	0.627	**0.615**
		CV %	0.8	0.8	0.7	0.8	**0.8**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.221	0.205	0.214	0.223	**0.216**
		CV %	0.3	0.3	0.3	0.3	**0.3**
	between single tests on one day	SD	0.426	0.458	0.410	0.487	**0.445**
		CV %	0.5	0.6	0.5	0.6	**0.5**
	between all tests on different days	SD	0.485	0.481	0.446	0.528	**0.485**
		CV %	0.6	0.6	0.5	0.7	**0.6**

Color Rd							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			79.437	75.952	73.571	75.132	
Reference Values for Evaluation			79.437	75.952	73.571	75.132	
Number Of Instruments			174	174	174	173	**174**
Inter-Instrument Variation	based on 30 tests	SD	0.580	0.576	0.542	0.403	**0.525**
		CV %	0.7	0.8	0.7	0.5	**0.7**
	based on 6 tests	SD	0.585	0.586	0.568	0.400	**0.535**
		CV %	0.7	0.8	0.8	0.5	**0.7**
	based on single tests	SD	0.617	0.613	0.595	0.433	**0.564**
		CV %	0.8	0.8	0.8	0.6	**0.7**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.115	0.110	0.107	0.122	**0.114**
		CV %	0.1	0.1	0.1	0.2	**0.1**
	between single tests on one day	SD	0.124	0.103	0.111	0.099	**0.109**
		CV %	0.2	0.1	0.2	0.1	**0.1**
	between all tests on different days	SD	0.204	0.169	0.204	0.169	**0.187**
		CV %	0.3	0.2	0.3	0.2	**0.2**

Color +b							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			9.595	10.413	15.252	15.291	
Reference Values for Evaluation			9.595	10.413	15.252	15.291	
Number Of Instruments			174	174	174	173	**174**
Inter-Instrument Variation	based on 30 tests	SD	0.197	0.242	0.252	0.269	**0.240**
		CV %	2.1	2.3	1.7	1.8	**1.9**
	based on 6 tests	SD	0.212	0.265	0.262	0.288	**0.257**
		CV %	2.2	2.5	1.7	1.9	**2.1**
	based on single tests	SD	0.237	0.280	0.292	0.301	**0.278**
		CV %	2.5	2.7	1.9	2.0	**2.3**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.070	0.062	0.084	0.075	**0.073**
		CV %	0.7	0.6	0.6	0.5	**0.6**
	between single tests on one day	SD	0.072	0.058	0.068	0.065	**0.066**
		CV %	0.7	0.6	0.4	0.4	**0.5**
	between all tests on different days	SD	0.118	0.105	0.128	0.114	**0.116**
		CV %	1.2	1.0	0.8	0.7	**1.0**

Optional Parameters

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

Trash Count							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			23.07	32.01	14.48	11.76	
Reference Values for Evaluation			23.07	32.01	14.48	11.76	
Number Of Instruments			109	109	109	109	**109**
Inter-Instrument Variation	based on 30 tests	SD	3.86	4.79	3.03	2.27	**3.49**
		CV %	16.7	15.0	20.9	19.3	**18.0**
	based on 6 tests	SD	4.28	5.68	3.31	2.72	**4.00**
		CV %	18.5	17.8	22.9	23.1	**20.6**
	based on single tests	SD	5.56	6.85	3.81	3.76	**5.00**
		CV %	24.1	21.4	26.3	32.0	**26.0**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	1.92	2.15	1.31	1.15	**1.63**
		CV %	8.3	6.7	9.0	9.7	**8.5**
	between single tests on one day	SD	1.86	1.80	1.30	1.23	**1.55**
		CV %	8.1	5.6	9.0	10.5	**8.3**
	between all tests on different days	SD	3.13	3.43	2.10	1.95	**2.65**
		CV %	13.6	10.7	14.5	16.6	**13.9**

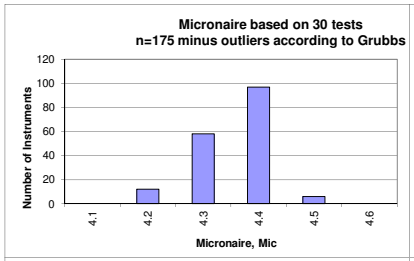
Trash Area							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			0.225	0.316	0.127	0.111	
Reference Values for Evaluation			0.225	0.316	0.127	0.111	
Number Of Instruments			109	109	109	109	**109**
Inter-Instrument Variation	based on 30 tests	SD	0.052	0.052	0.027	0.023	**0.039**
		CV %	23.1	16.6	21.5	20.3	**20.4**
	based on 6 tests	SD	0.061	0.067	0.031	0.027	**0.046**
		CV %	27.0	21.1	24.2	24.2	**24.1**
	based on single tests	SD	0.073	0.079	0.035	0.032	**0.055**
		CV %	32.3	25.2	27.9	28.7	**28.5**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.027	0.031	0.015	0.012	**0.021**
		CV %	11.9	9.9	12.0	10.9	**11.2**
	between single tests on one day	SD	0.022	0.023	0.010	0.010	**0.016**
		CV %	9.7	7.4	7.7	8.7	**8.4**
	between all tests on different days	SD	0.042	0.052	0.023	0.019	**0.034**
		CV %	18.8	16.6	18.2	17.5	**17.8**

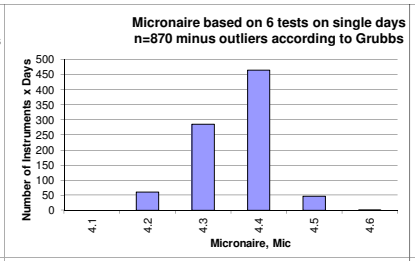
Maturity							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			86.31	86.21	87.11	86.31	
Reference Values for Evaluation			86.31	86.21	87.11	86.31	
Number Of Instruments			99	99	99	98	**99**
Inter-Instrument Variation	based on 30 tests	SD	0.67	0.69	0.58	0.70	**0.66**
		CV %	0.8	0.8	0.7	0.8	**0.8**
	based on 6 tests	SD	0.67	0.68	0.61	0.67	**0.66**
		CV %	0.8	0.8	0.7	0.8	**0.8**
	based on single tests	SD	0.71	0.71	0.72	0.68	**0.70**
		CV %	0.8	0.8	0.8	0.8	**0.8**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.09	0.07	0.10	0.09	**0.09**
		CV %	0.1	0.1	0.1	0.1	**0.1**
	between single tests on one day	SD	0.15	0.15	0.16	0.16	**0.16**
		CV %	0.2	0.2	0.2	0.2	**0.2**
	between all tests on different days	SD	0.19	0.18	0.25	0.23	**0.21**
		CV %	0.2	0.2	0.3	0.3	**0.2**

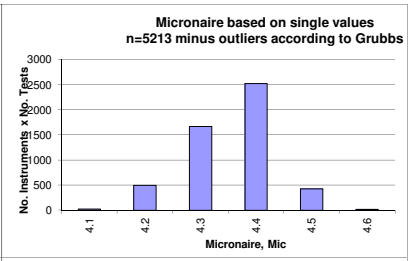
SFI							
			Cotton 1	**Cotton 2**	**Cotton 3**	**Cotton 4**	**Average**
Average of Instruments (Grubbs)			8.69	11.88	7.71	13.87	
Reference Values for Evaluation			8.69	11.88	7.71	13.87	
Number Of Instruments			108	108	108	107	**108**
Inter-Instrument Variation	based on 30 tests	SD	0.60	1.02	0.67	1.43	**0.93**
		CV %	6.9	8.6	8.7	10.3	**8.6**
	based on 6 tests	SD	0.73	1.06	0.68	1.37	**0.96**
		CV %	8.4	8.9	8.9	9.9	**9.0**
	based on single tests	SD	0.85	1.27	0.76	1.65	**1.13**
		CV %	9.8	10.7	9.9	11.9	**10.6**
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.27	0.33	0.18	0.42	**0.30**
		CV %	3.1	2.7	2.4	3.0	**2.8**
	between single tests on one day	SD	0.48	0.63	0.35	0.82	**0.57**
		CV %	5.6	5.3	4.6	5.9	**5.3**
	between all tests on different days	SD	0.53	0.71	0.39	0.92	**0.64**
		CV %	6.0	6.0	5.0	6.6	**5.9**

Test Result Distributions
Micronaire

Cotton 1







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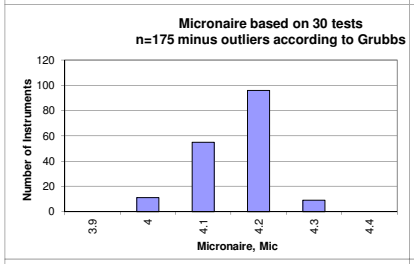

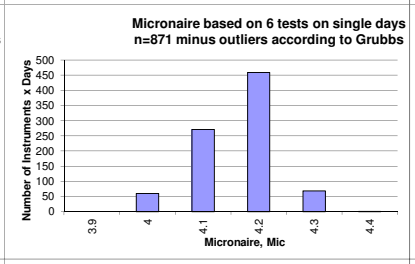

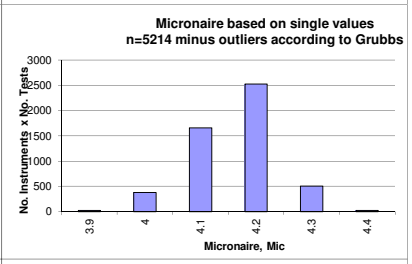

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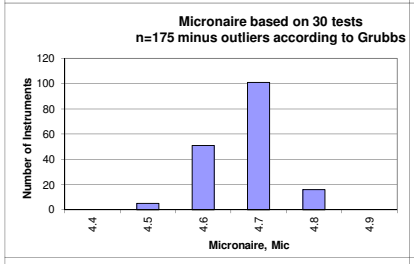

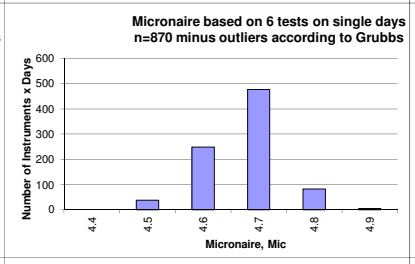

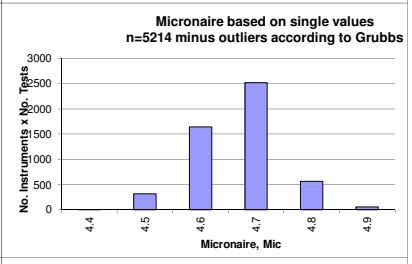

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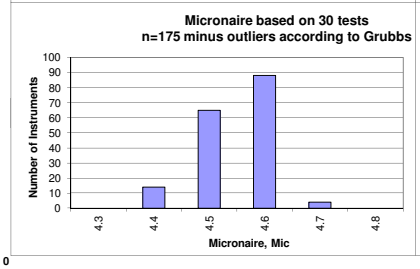

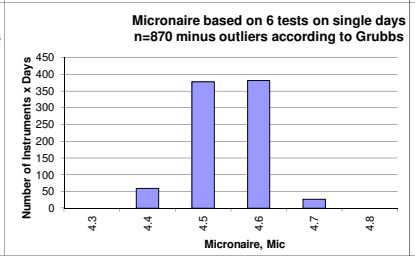

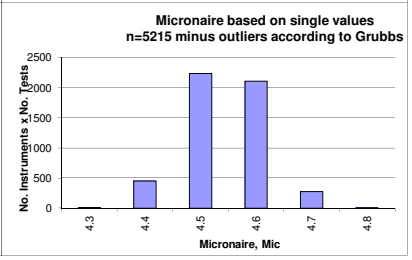

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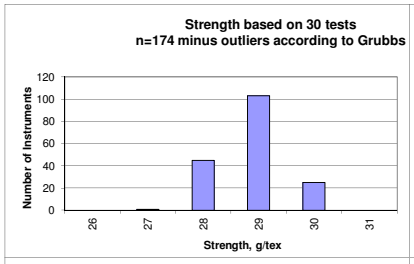
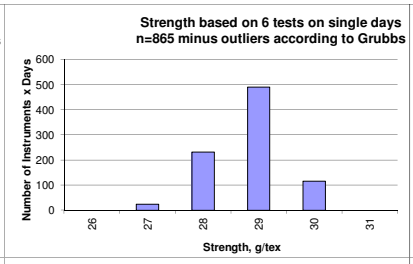
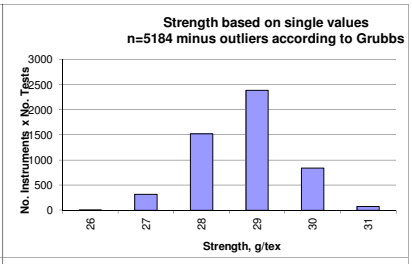
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Strength

Cotton 1







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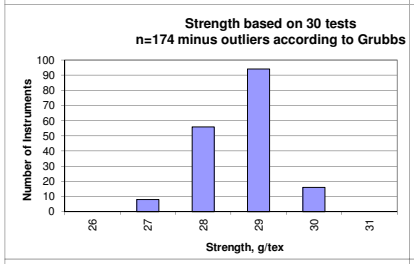

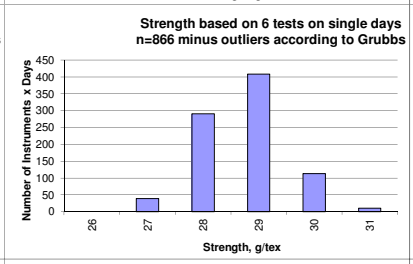

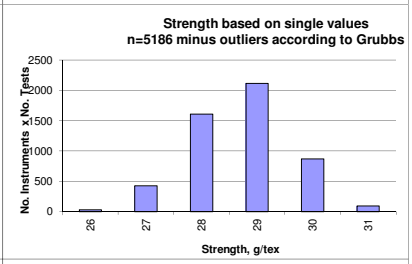

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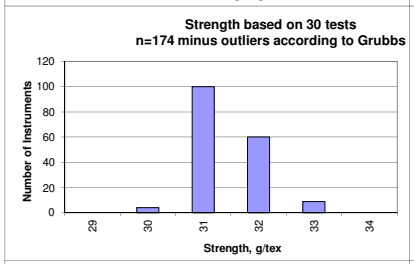
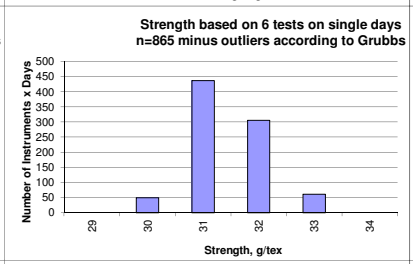
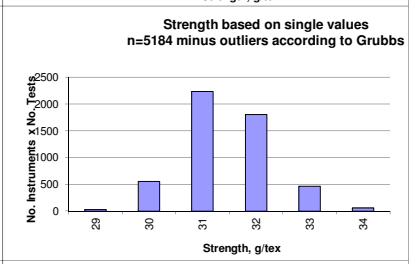
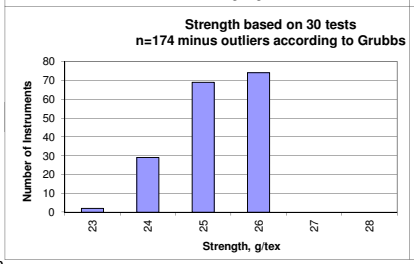
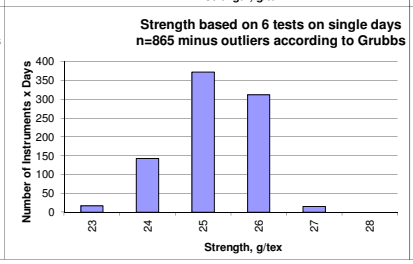


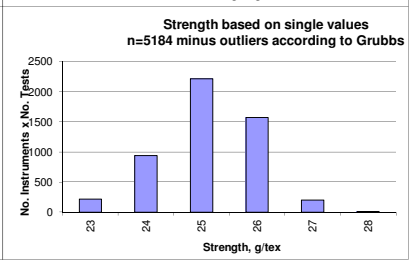




Cotton 4







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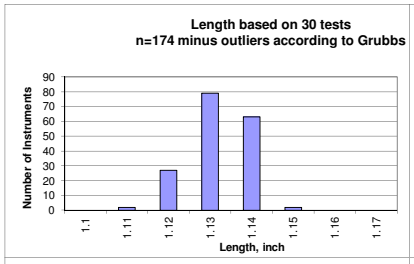
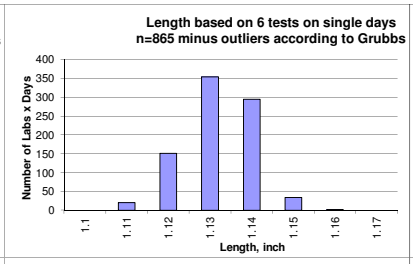
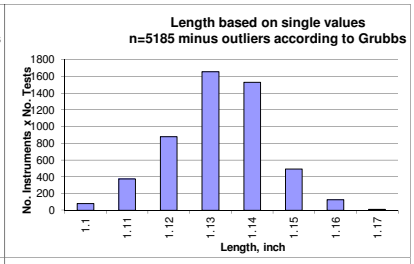
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Length

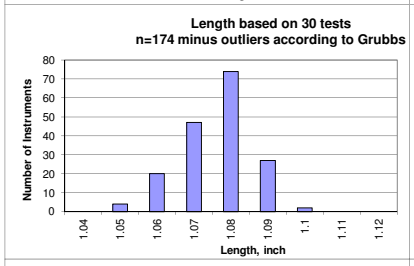
Cotton 1

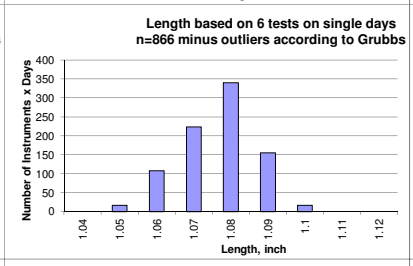


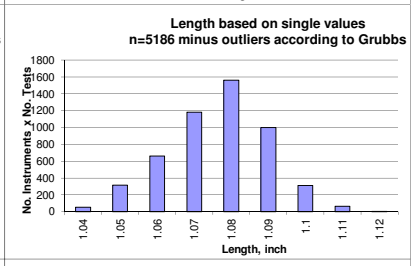




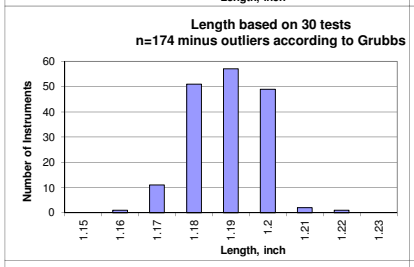
Cotton 2

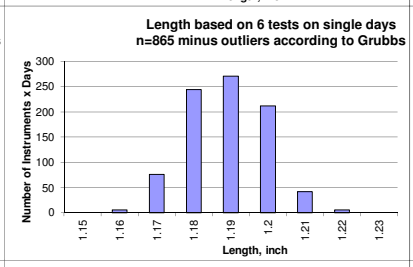


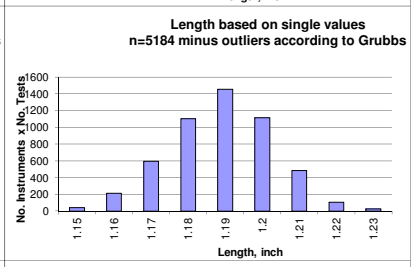




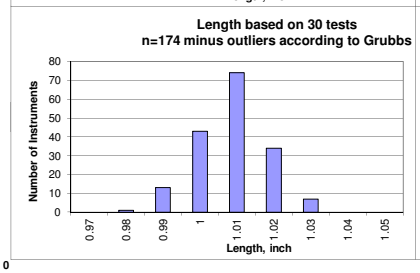
Cotton 3

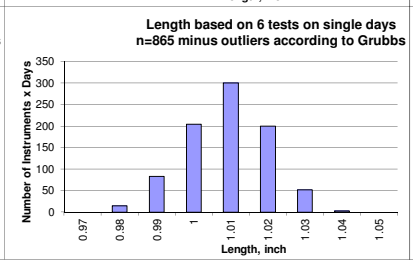


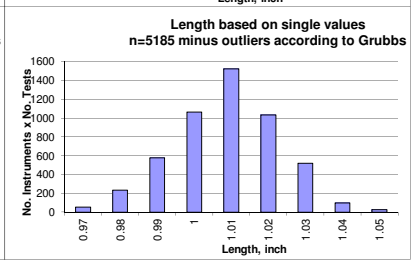




Cotton 4







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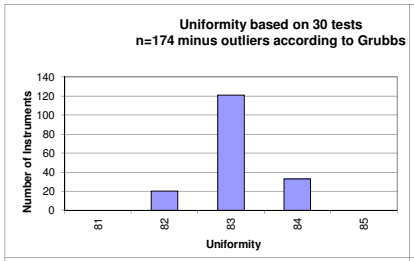
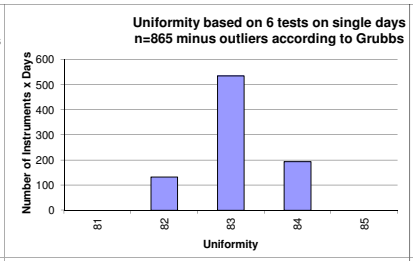
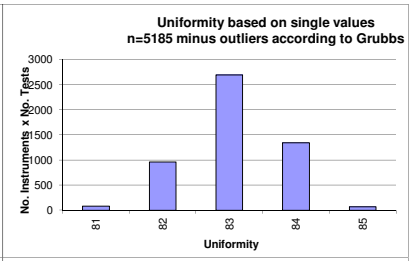
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Uniformity

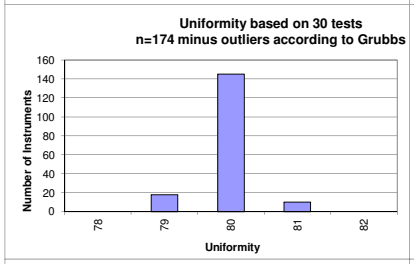
Cotton 1

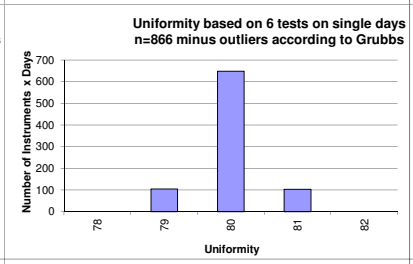


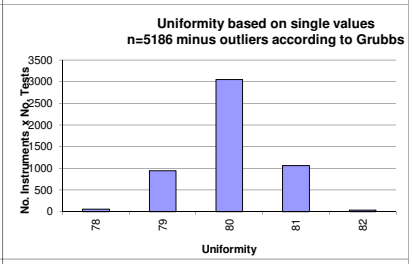




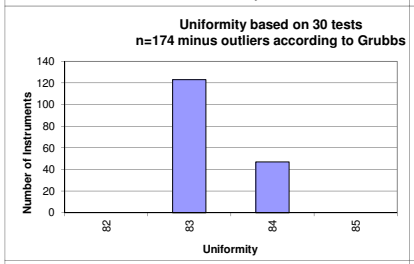
Cotton 2

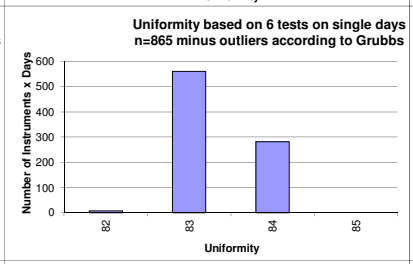


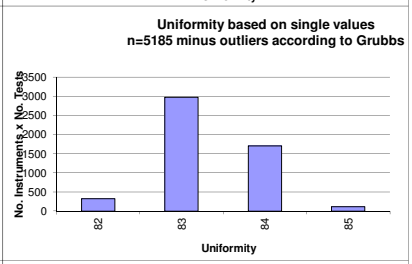




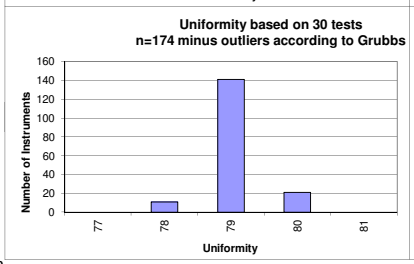
Cotton 3

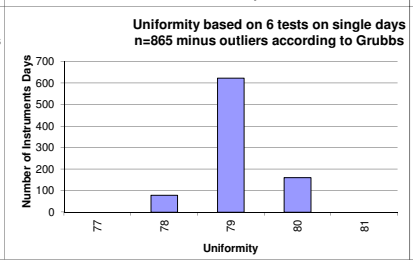


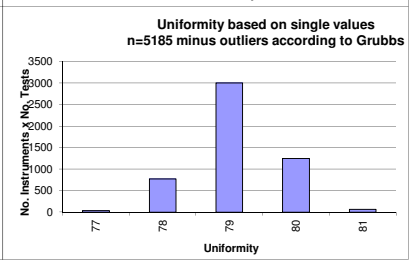




Cotton 4







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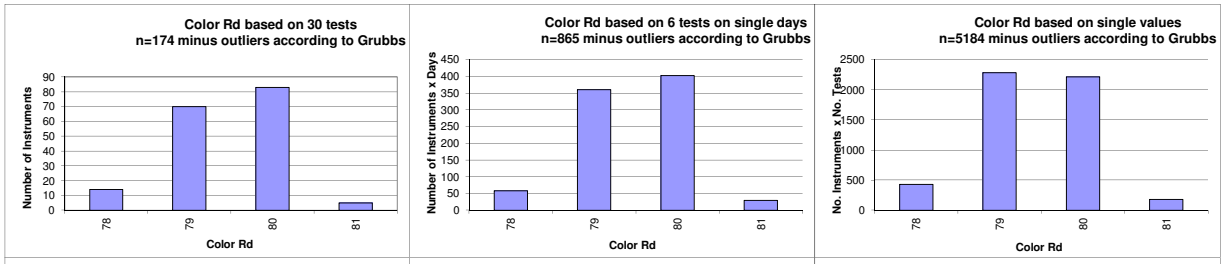
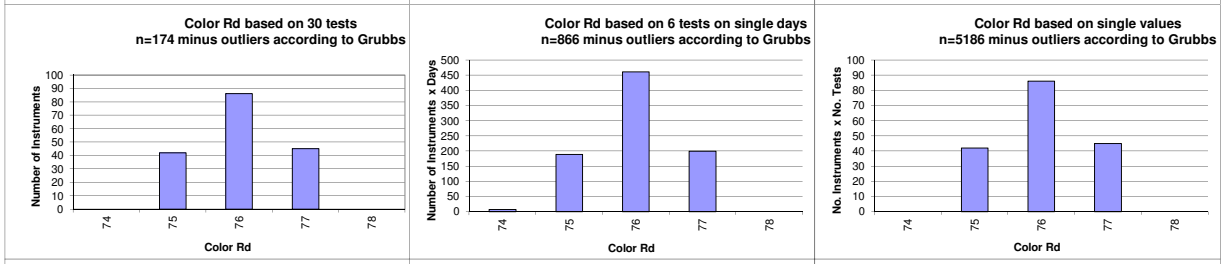
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color Rd

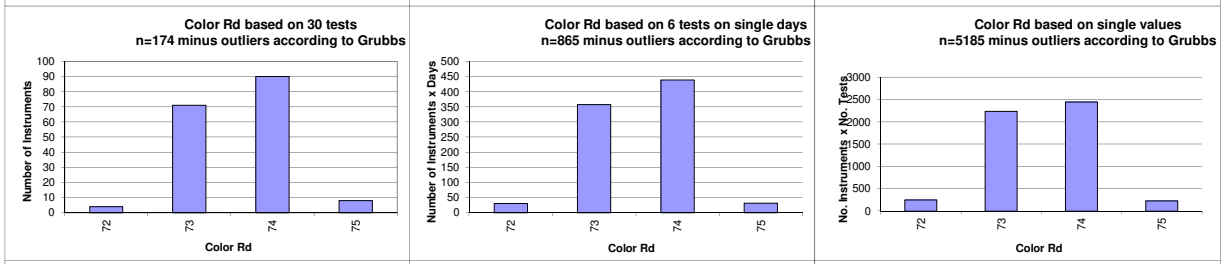
Cotton 1



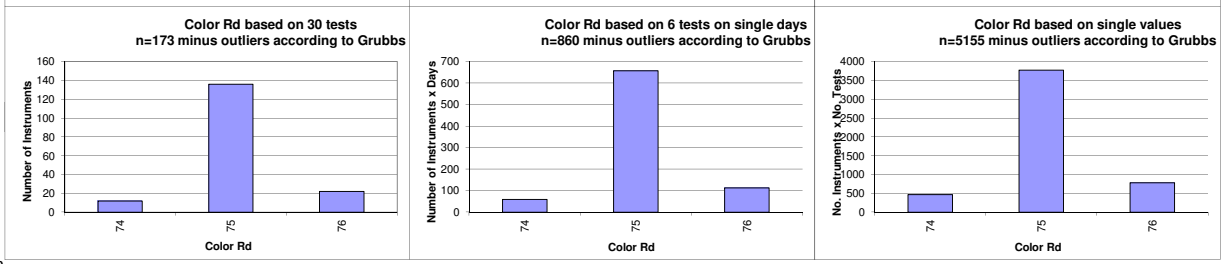
Cotton 2



Cotton 3



Cotton 4



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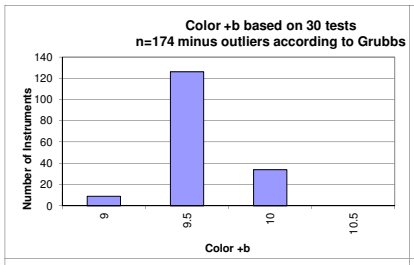
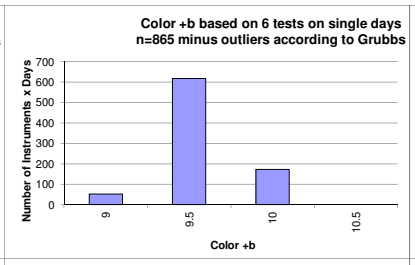
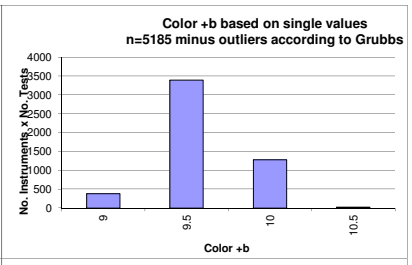
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color +b

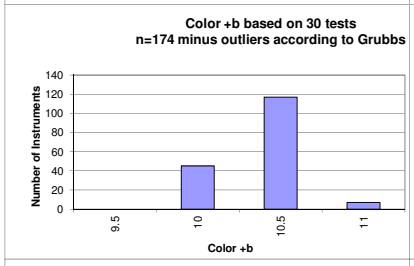
Cotton 1

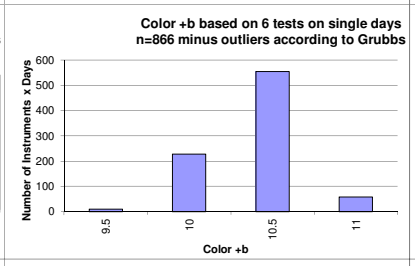


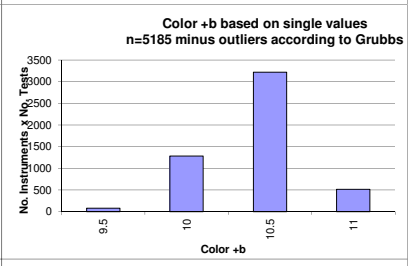




Cotton 2







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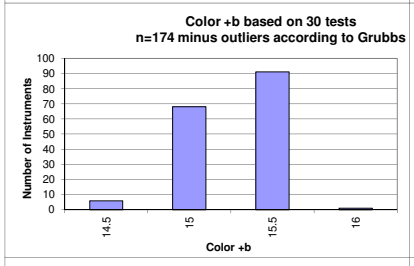
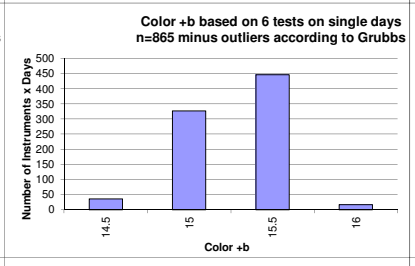
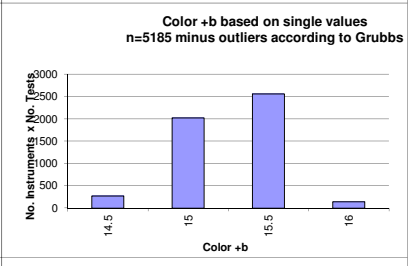
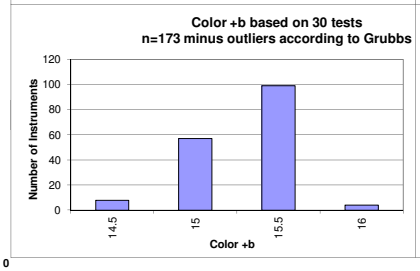
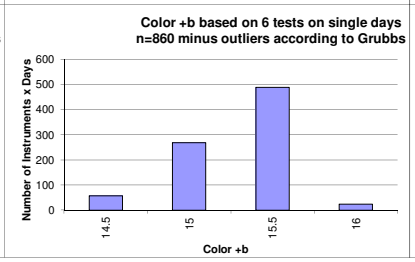


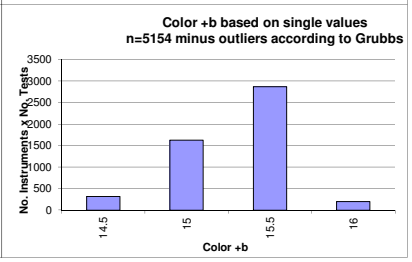




Cotton 4







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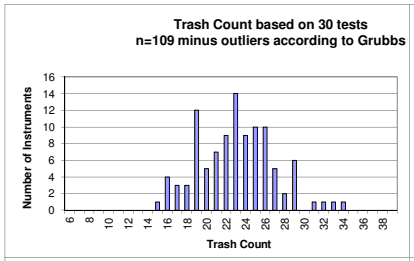
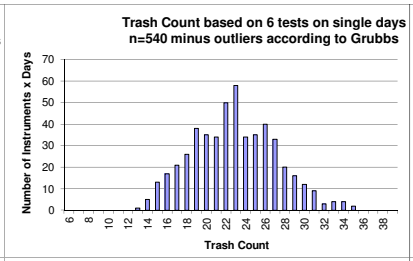
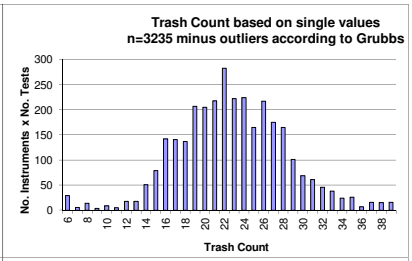
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Count

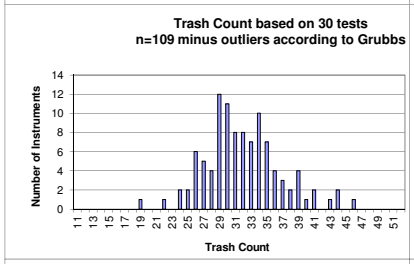
Cotton 1

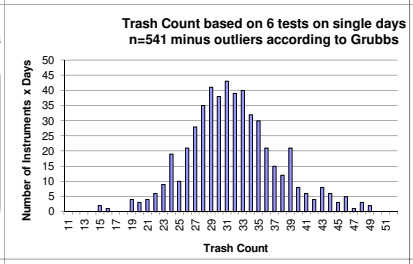


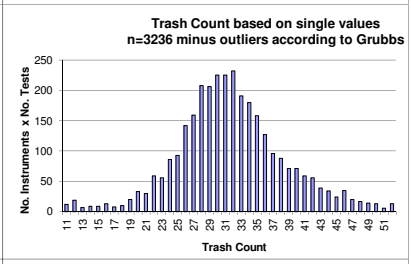




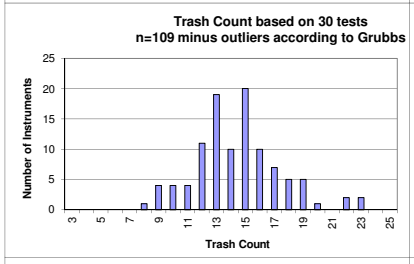
Cotton 2

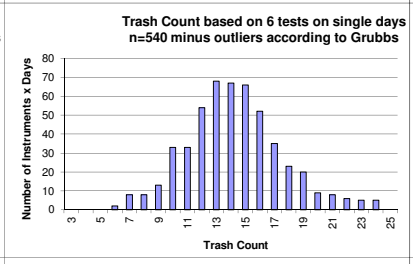


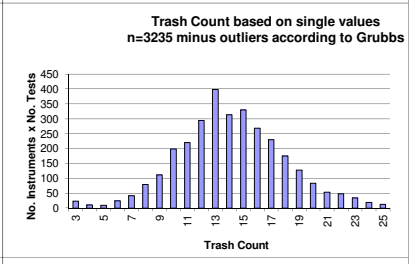




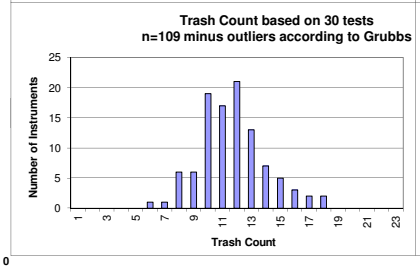
Cotton 3

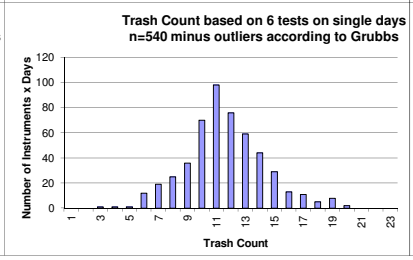


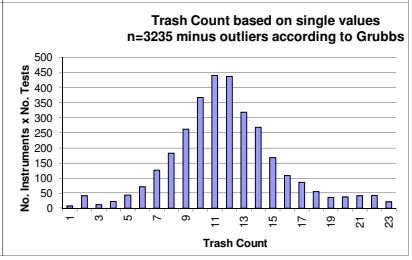




Cotton 4







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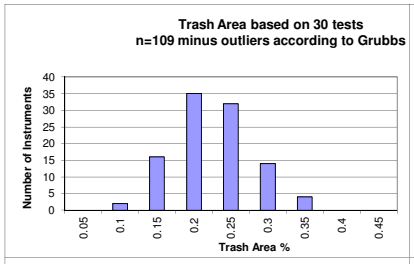
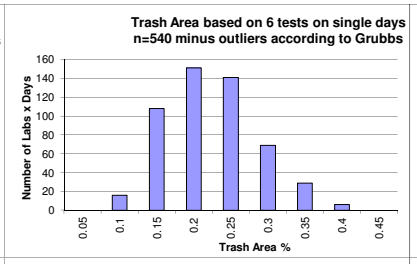
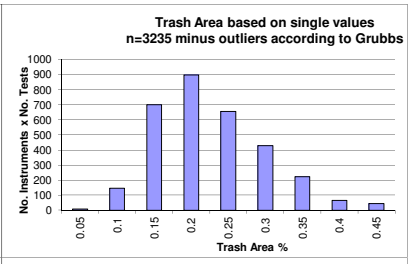
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Area

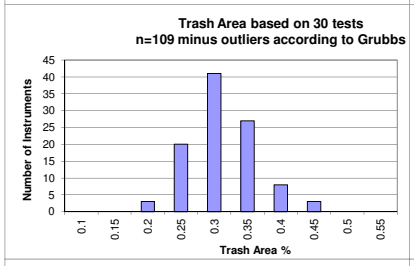
Cotton 1

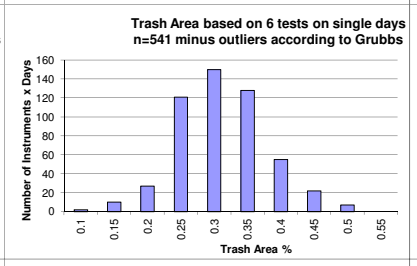


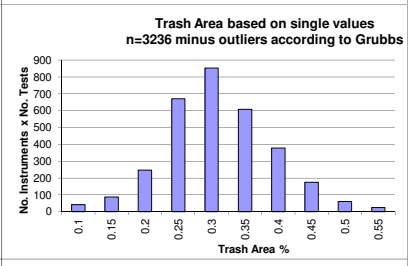




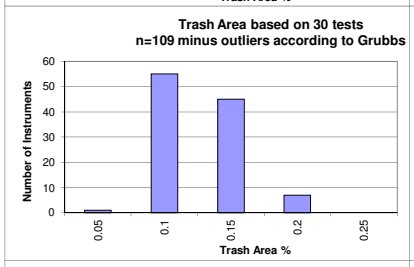
Cotton 2

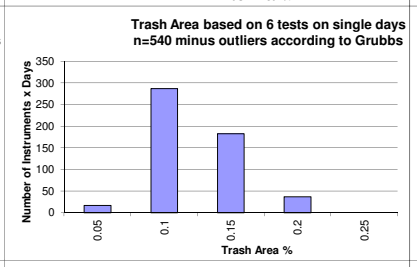


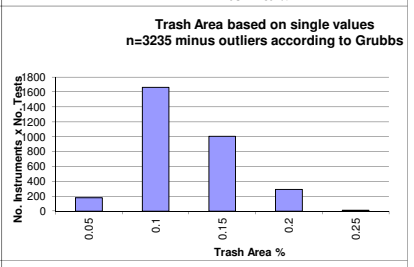




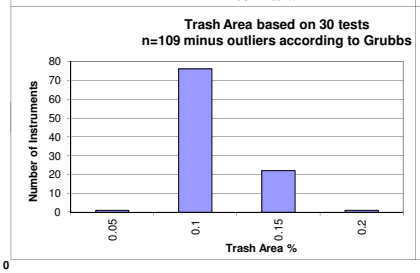
Cotton 3

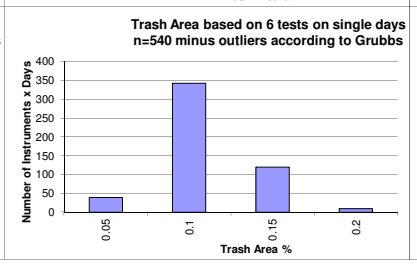


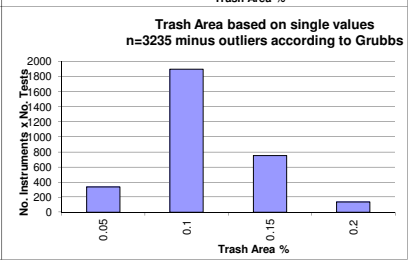




Cotton 4







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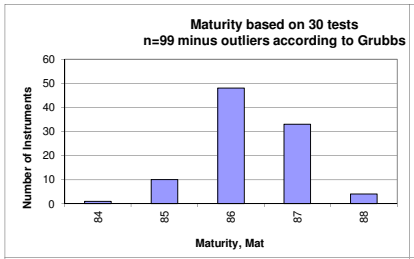
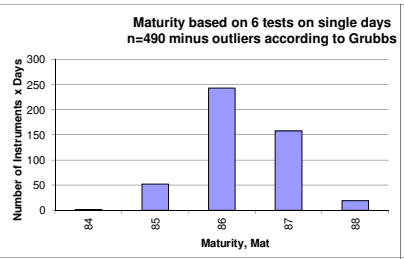
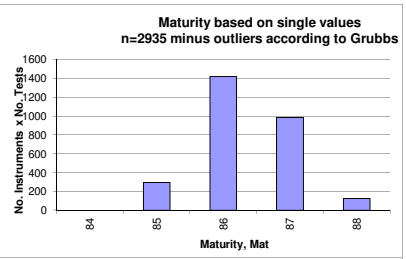
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Maturity

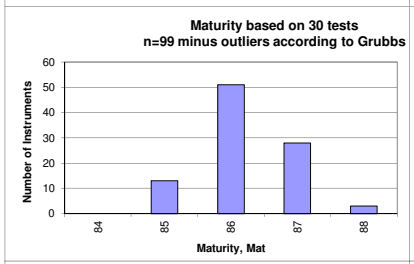
Cotton 1

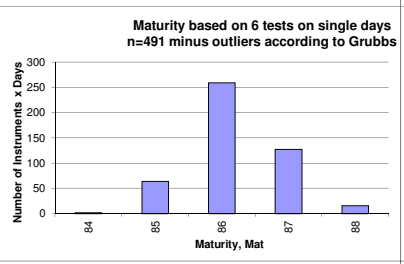


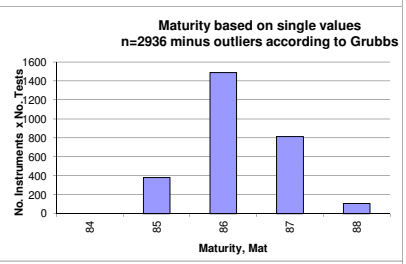




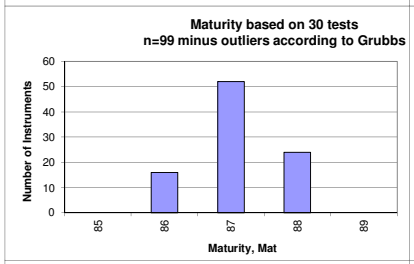
Cotton 2

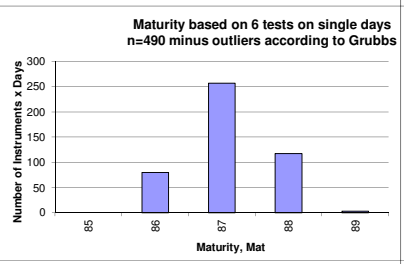


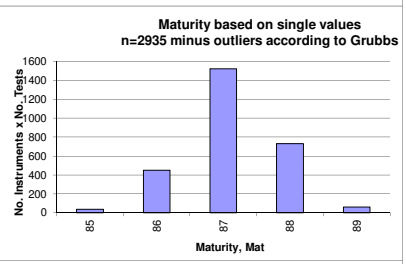




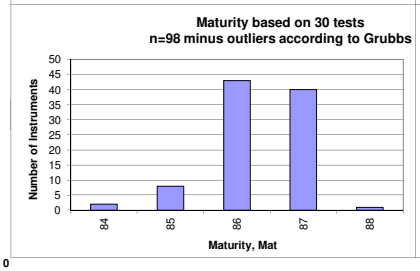
Cotton 3

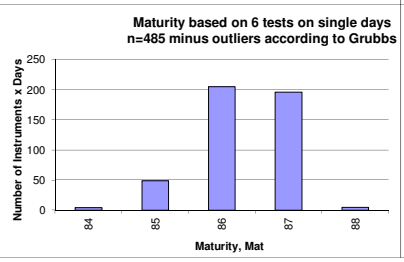


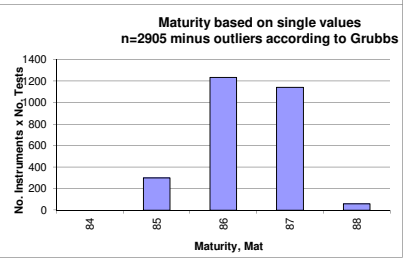




Cotton 4







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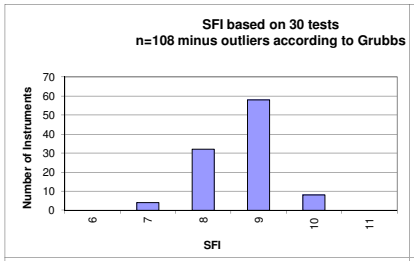
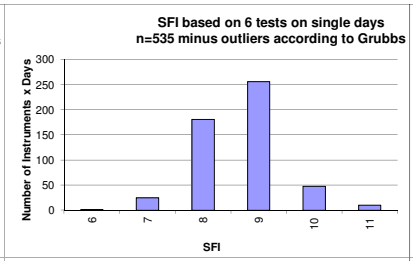
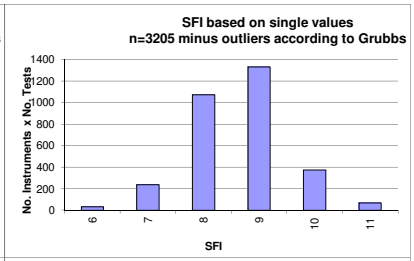
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
SFI

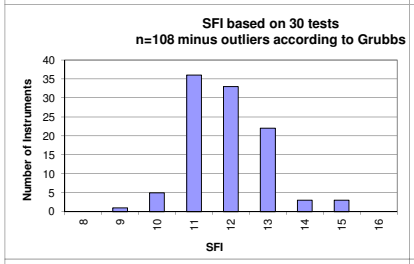
Cotton 1

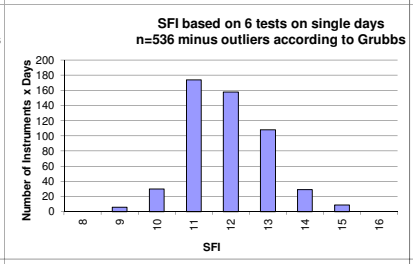


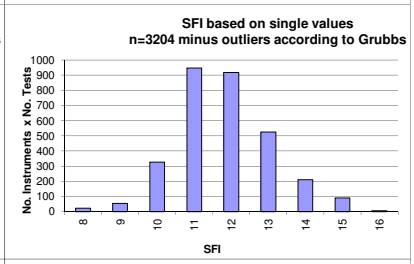




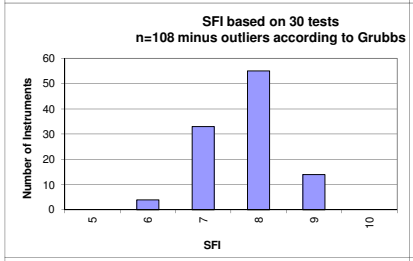
Cotton 2

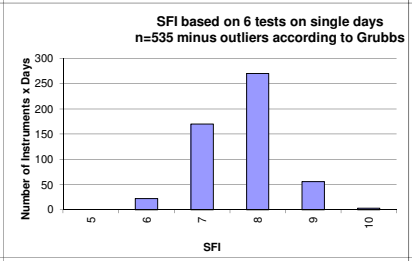


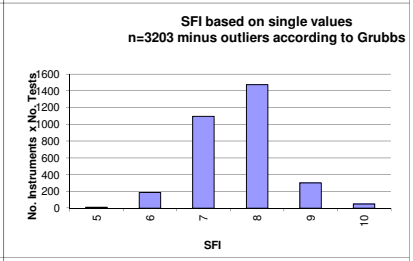




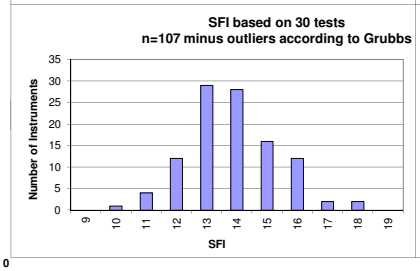
Cotton 3

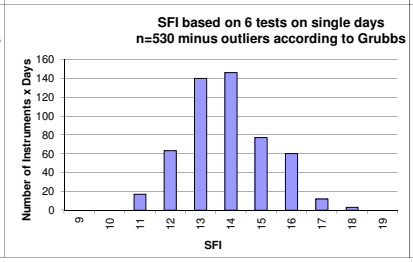


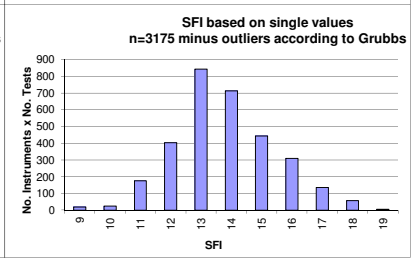




Cotton 4







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(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 2025 - 4
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.

* Faserinstitut Bremen are a Cooperation Partner with ICA Bremen

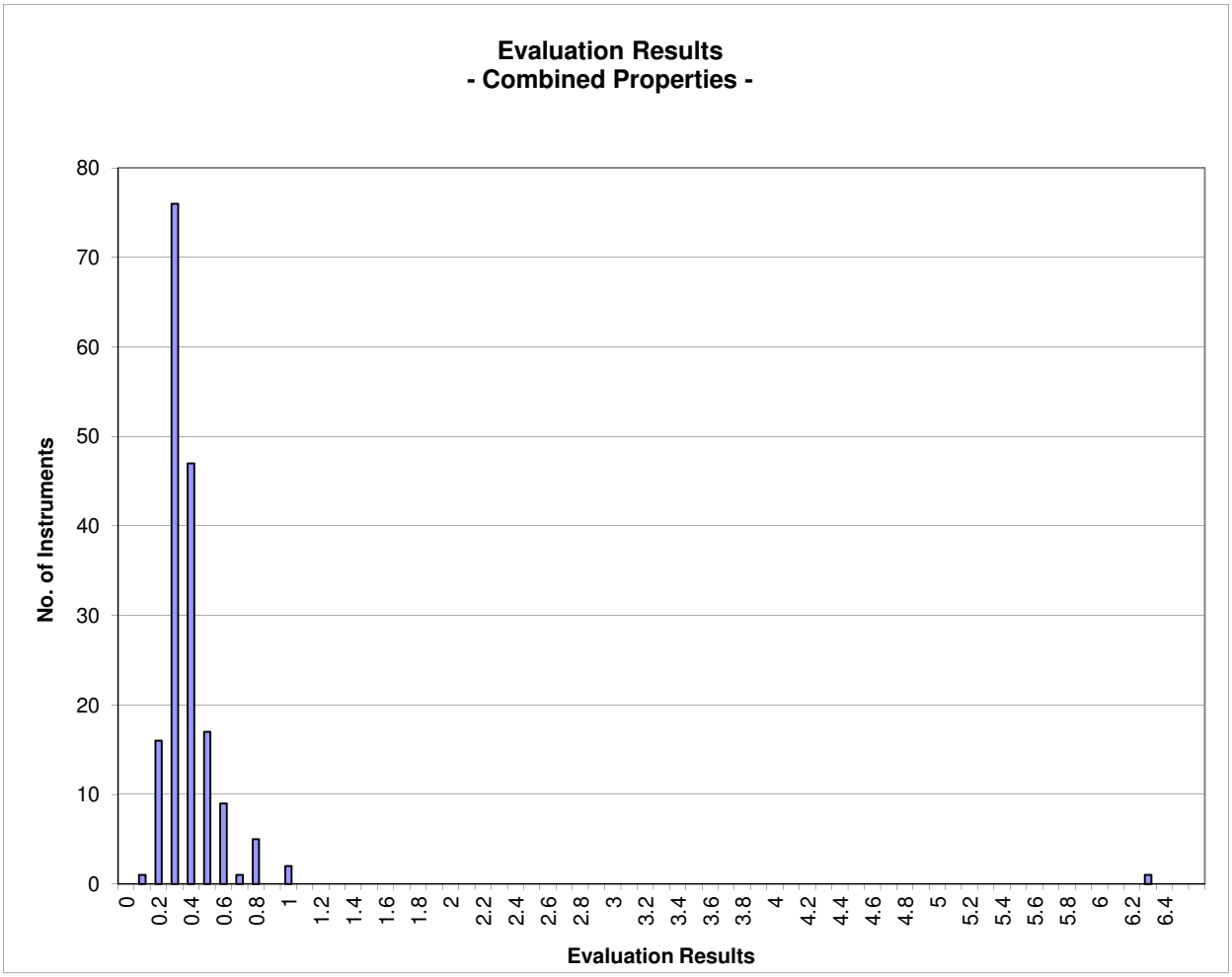
Instrument Evaluation

- Graph of Combined Properties -

According to ICAC CSITC Task Force Recommendations

Global - Round Trial 2025 - 4

Statistics	Evaluation Combined Prop.
Average Overall Evaluation Result (OER)	0.41
OER Rating for the best instrument	0.13
max. OER Limit for belonging to the best 10% of the instruments	0.25
max. OER Limit for belonging to the best 25% of the instruments	0.28
max. OER Limit for belonging to the best 50% of the instruments	**0.34**
max. OER Limit for belonging to the best 75% of the instruments	0.41
OER Rating for the worst instrument	6.35



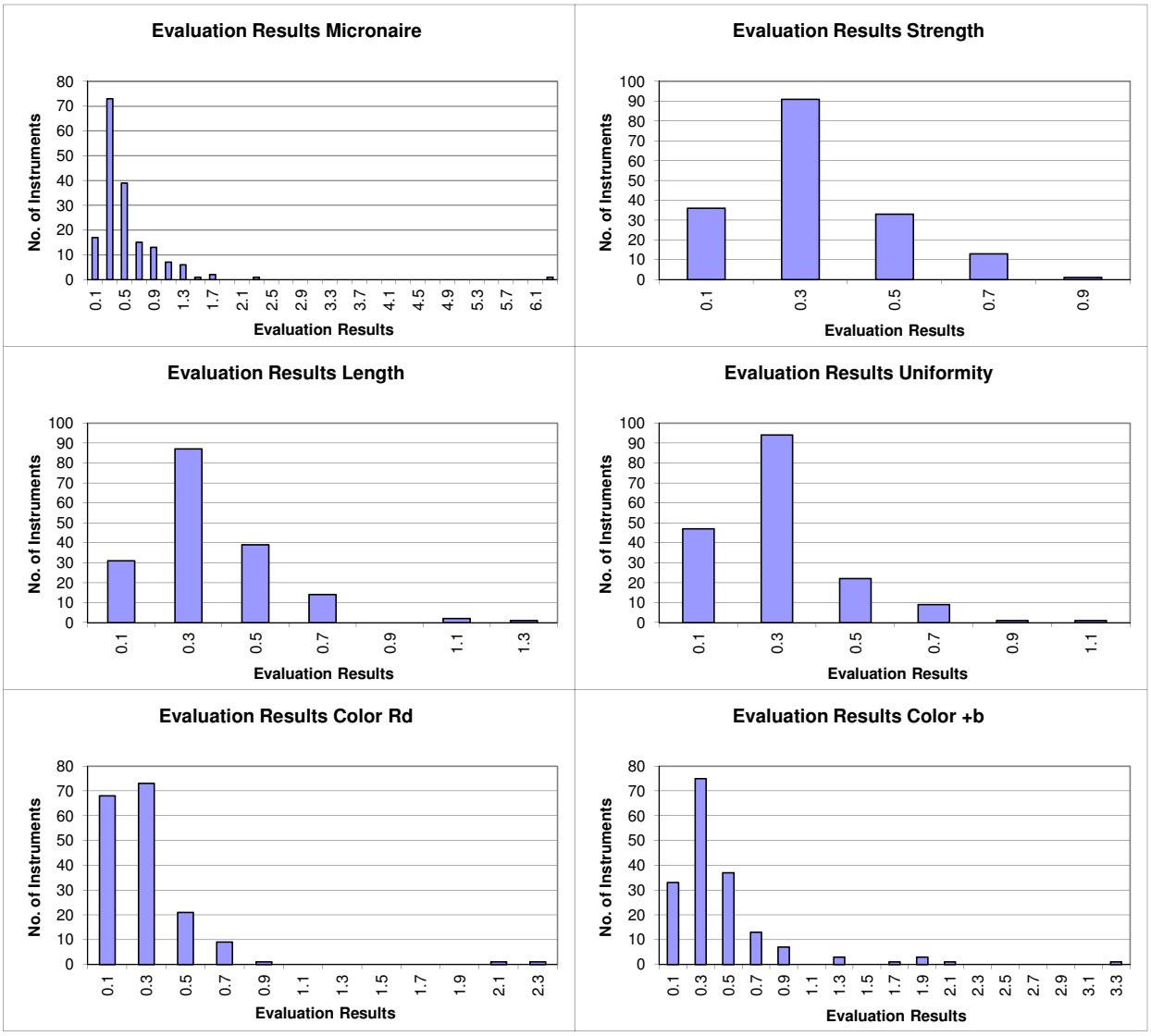
x-Axis shows midpoints of classes

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 2025 - 4

		Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
Statistics	Average	0.55	0.33	0.36	0.30	0.30	0.44
	Median	0.40	0.29	0.33	0.26	0.24	0.33
	Best Instr.	0.09	0.07	0.03	0.03	0.02	0.03
	Worst Instr.	6.35	0.82	1.31	1.18	2.31	3.23



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

International Cotton Advisory Committee

CSITC
Global - Round Trial 2025 - 4
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:
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Within Limits Evaluation

Based on average of 30 test results for each sample

	Micronaire	Strength	Length	Uniformity	Color Rd	Color +b
Limits	0.20	2.0	0.030	2.0	1.5	0.5
	units	g/tex	inch	%	units	units
Average % Results within Limits	98.6	100.0	99.6	100.0	98.9	92.7
Completely within limits	97.7	100.0	98.3	100.0	97.1	85.1
% of Instruments ≥75% within limits	98.9	100.0	100.0	100.0	99.4	92.5
% of Instruments ≥50% within limits	98.9	100.0	100.0	100.0	99.4	96.0

Within Limits Evaluation

Based on Single Test Results

	Micronaire	Strength	Length	Uniformity	Color Rd	Color +b
Limits	0.20	2.0	0.030	2.0	1.5	0.5
	units	g/tex	inch	%	units	units
Average % Results within Limits	97.1	97.3	92.4	99.2	97.8	89.7
% of Instruments 100% within limits	68.0	48.9	21.3	73.6	78.2	43.1
% of Instruments ≥95% within limits	88.0	83.9	48.9	97.1	90.8	64.4
% of Instruments ≥75% within limits	96.6	100.0	94.8	100.0	97.7	87.9
% of Instruments ≥65% within limits	98.9	100.0	98.3	100.0	98.9	91.4
% of Instruments ≥50% within limits	98.9	100.0	98.9	100.0	99.4	94.8