



International Cotton Advisory Committee



CSITC
Global - Round Trial 2024 - 1
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
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* Faserinstitut Bremen are a Cooperation Partner with ICA Bremen

Global - Round Trial 2024 - 1

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

Micronaire							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			4.246	4.248	4.221	4.498	
Reference Values for Evaluation			4.246	4.248	4.221	4.498	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.055	0.049	0.058	0.047	0.052
		CV %	1.3	1.2	1.4	1.0	1.2
	based on 6 tests	SD	0.060	0.055	0.061	0.052	0.057
		CV %	1.4	1.3	1.4	1.2	1.3
	based on single tests	SD	0.068	0.062	0.068	0.059	0.064
		CV %	1.6	1.5	1.6	1.3	1.5
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.021	0.021	0.021	0.021	0.021
		CV %	0.5	0.5	0.5	0.5	0.5
	between single tests on one day	SD	0.031	0.032	0.031	0.030	0.031
		CV %	0.7	0.7	0.7	0.7	0.7
	between all tests on different days	SD	0.039	0.039	0.038	0.037	0.038
		CV %	0.9	0.9	0.9	0.8	0.9

Strength							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			27.631	27.665	25.979	33.985	
Reference Values for Evaluation			27.631	27.665	25.979	33.985	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.518	0.660	0.786	0.596	0.640
		CV %	1.9	2.4	3.0	1.8	2.3
	based on 6 tests	SD	0.705	0.765	0.850	0.829	0.787
		CV %	2.6	2.8	3.3	2.4	2.8
	based on single tests	SD	0.867	0.911	1.041	1.041	0.965
		CV %	3.1	3.3	4.0	3.1	3.4
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.340	0.340	0.381	0.382	0.361
		CV %	1.2	1.2	1.5	1.1	1.3
	between single tests on one day	SD	0.503	0.554	0.611	0.558	0.557
		CV %	1.8	2.0	2.4	1.6	2.0
	between all tests on different days	SD	0.597	0.656	0.726	0.684	0.665
		CV %	2.2	2.4	2.8	2.0	2.3

Length							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			1.0650	1.1027	1.0131	1.2047	
Reference Values for Evaluation			1.0650	1.1027	1.0131	1.2047	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.0093	0.0086	0.0094	0.0083	0.0089
		CV %	0.9	0.8	0.9	0.7	0.8
	based on 6 tests	SD	0.0104	0.0090	0.0108	0.0102	0.0101
		CV %	1.0	0.8	1.1	0.8	0.9
	based on single tests	SD	0.0139	0.0136	0.0145	0.0135	0.0139
		CV %	1.3	1.2	1.4	1.1	1.3
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.0053	0.0045	0.0047	0.0054	0.0050
		CV %	0.5	0.4	0.5	0.5	0.5
	between single tests on one day	SD	0.0098	0.0110	0.0106	0.0094	0.0102
		CV %	0.9	1.0	1.1	0.8	0.9
	between all tests on different days	SD	0.0113	0.0115	0.0114	0.0108	0.0112
		CV %	1.1	1.0	1.1	0.9	1.0

Uniformity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			80.484	80.767	78.922	83.485	
Reference Values for Evaluation			80.484	80.767	78.922	83.485	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.433	0.368	0.486	0.339	0.406
		CV %	0.5	0.5	0.6	0.4	0.5
	based on 6 tests	SD	0.493	0.427	0.576	0.416	0.478
		CV %	0.6	0.5	0.7	0.5	0.6
Typical within-instrument Variation (Median)	based on single tests	SD	0.696	0.707	0.764	0.601	0.692
		CV %	0.9	0.9	1.0	0.7	0.9
	between different days with each 6 tests	SD	0.257	0.247	0.305	0.206	0.254
		CV %	0.3	0.3	0.4	0.2	0.3
Typical within-instrument Variation (Median)	between single tests on one day	SD	0.497	0.526	0.540	0.438	0.500
		CV %	0.6	0.7	0.7	0.5	0.6
	between all tests on different days	SD	0.562	0.569	0.607	0.481	0.555
		CV %	0.7	0.7	0.8	0.6	0.7

Color Rd							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			75.938	73.495	75.095	75.905	
Reference Values for Evaluation			75.938	73.495	75.095	75.905	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.496	0.467	0.384	0.447	0.449
		CV %	0.7	0.6	0.5	0.6	0.6
	based on 6 tests	SD	0.527	0.525	0.414	0.510	0.494
		CV %	0.7	0.7	0.6	0.7	0.7
Typical within-instrument Variation (Median)	based on single tests	SD	0.553	0.559	0.449	0.540	0.525
		CV %	0.7	0.8	0.6	0.7	0.7
	between different days with each 6 tests	SD	0.155	0.122	0.129	0.138	0.136
		CV %	0.2	0.2	0.2	0.2	0.2
Typical within-instrument Variation (Median)	between single tests on one day	SD	0.165	0.133	0.142	0.151	0.148
		CV %	0.2	0.2	0.2	0.2	0.2
	between all tests on different days	SD	0.232	0.202	0.195	0.202	0.208
		CV %	0.3	0.3	0.3	0.3	0.3

Color +b							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			13.152	16.112	10.751	13.621	
Reference Values for Evaluation			13.152	16.112	10.751	13.621	
Number Of Instruments			93	93	93	93	93
Inter-Instrument Variation	based on 30 tests	SD	0.278	0.334	0.272	0.374	0.315
		CV %	2.1	2.1	2.5	2.7	2.4
	based on 6 tests	SD	0.310	0.375	0.273	0.375	0.333
		CV %	2.4	2.3	2.5	2.8	2.5
Typical within-instrument Variation (Median)	based on single tests	SD	0.325	0.398	0.287	0.394	0.351
		CV %	2.5	2.5	2.7	2.9	2.6
	between different days with each 6 tests	SD	0.111	0.115	0.077	0.116	0.105
		CV %	0.8	0.7	0.7	0.9	0.8
Typical within-instrument Variation (Median)	between single tests on one day	SD	0.108	0.101	0.080	0.094	0.096
		CV %	0.8	0.6	0.7	0.7	0.7
	between all tests on different days	SD	0.147	0.169	0.114	0.145	0.144
		CV %	1.1	1.0	1.1	1.1	1.1

Optional Parameters

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

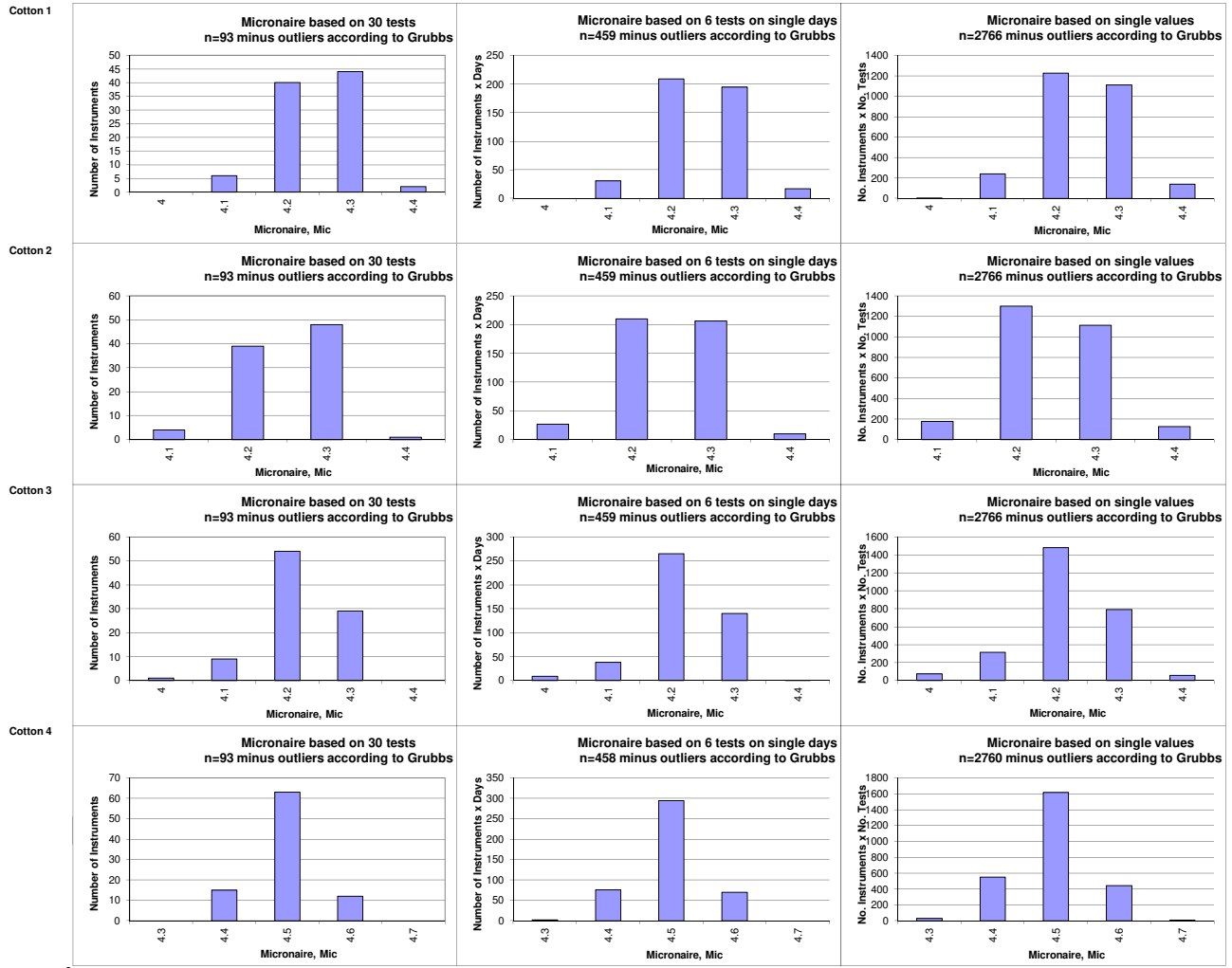
Trash Count							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			20.06	10.93	14.56	16.54	
Reference Values for Evaluation			20.06	10.93	14.56	16.54	
Number Of Instruments			76	76	76	76	76
Inter-Instrument Variation	based on 30 tests	SD	3.15	2.08	2.22	3.43	2.72
		CV %	15.7	19.0	15.3	20.8	17.7
	based on 6 tests	SD	3.71	2.48	2.94	3.87	3.25
		CV %	18.5	22.7	20.2	23.4	21.2
	based on single tests	SD	4.59	3.25	3.60	4.50	3.98
		CV %	22.9	29.7	24.7	27.2	26.1
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	1.79	1.43	1.37	1.62	1.55
		CV %	8.9	13.1	9.4	9.8	10.3
	between single tests on one day	SD	2.59	1.60	1.90	1.91	2.00
		CV %	12.9	14.6	13.1	11.5	13.0
	between all tests on different days	SD	3.37	2.22	2.63	2.77	2.75
		CV %	16.8	20.3	18.1	16.7	18.0

Trash Area							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			0.257	0.107	0.154	0.145	
Reference Values for Evaluation			0.257	0.107	0.154	0.145	
Number Of Instruments			76	76	76	76	76
Inter-Instrument Variation	based on 30 tests	SD	0.051	0.020	0.023	0.032	0.031
		CV %	20.0	18.9	14.8	21.8	18.9
	based on 6 tests	SD	0.061	0.024	0.032	0.034	0.038
		CV %	23.6	22.9	20.8	23.6	22.8
	based on single tests	SD	0.075	0.030	0.041	0.041	0.047
		CV %	29.2	28.0	26.7	28.0	28.0
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.034	0.016	0.022	0.017	0.022
		CV %	13.4	14.9	14.0	11.9	13.5
	between single tests on one day	SD	0.040	0.018	0.025	0.019	0.025
		CV %	15.6	16.6	16.2	13.0	15.4
	between all tests on different days	SD	0.060	0.027	0.036	0.029	0.038
		CV %	23.5	25.1	23.1	20.1	23.0

Maturity							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			85.14	86.21	86.57	86.10	
Reference Values for Evaluation			85.14	86.21	86.57	86.10	
Number Of Instruments			71	71	71	71	71
Inter-Instrument Variation	based on 30 tests	SD	1.22	0.56	0.67	1.08	0.88
		CV %	1.4	0.6	0.8	1.3	1.0
	based on 6 tests	SD	1.20	0.60	0.70	1.08	0.90
		CV %	1.4	0.7	0.8	1.3	1.0
	based on single tests	SD	1.15	0.75	0.83	1.10	0.96
		CV %	1.4	0.9	1.0	1.3	1.1
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.14	0.14	0.09	0.12	0.12
		CV %	0.2	0.2	0.1	0.1	0.1
	between single tests on one day	SD	0.16	0.17	0.11	0.17	0.15
		CV %	0.2	0.2	0.1	0.2	0.2
	between all tests on different days	SD	0.31	0.30	0.25	0.31	0.29
		CV %	0.4	0.3	0.3	0.4	0.3

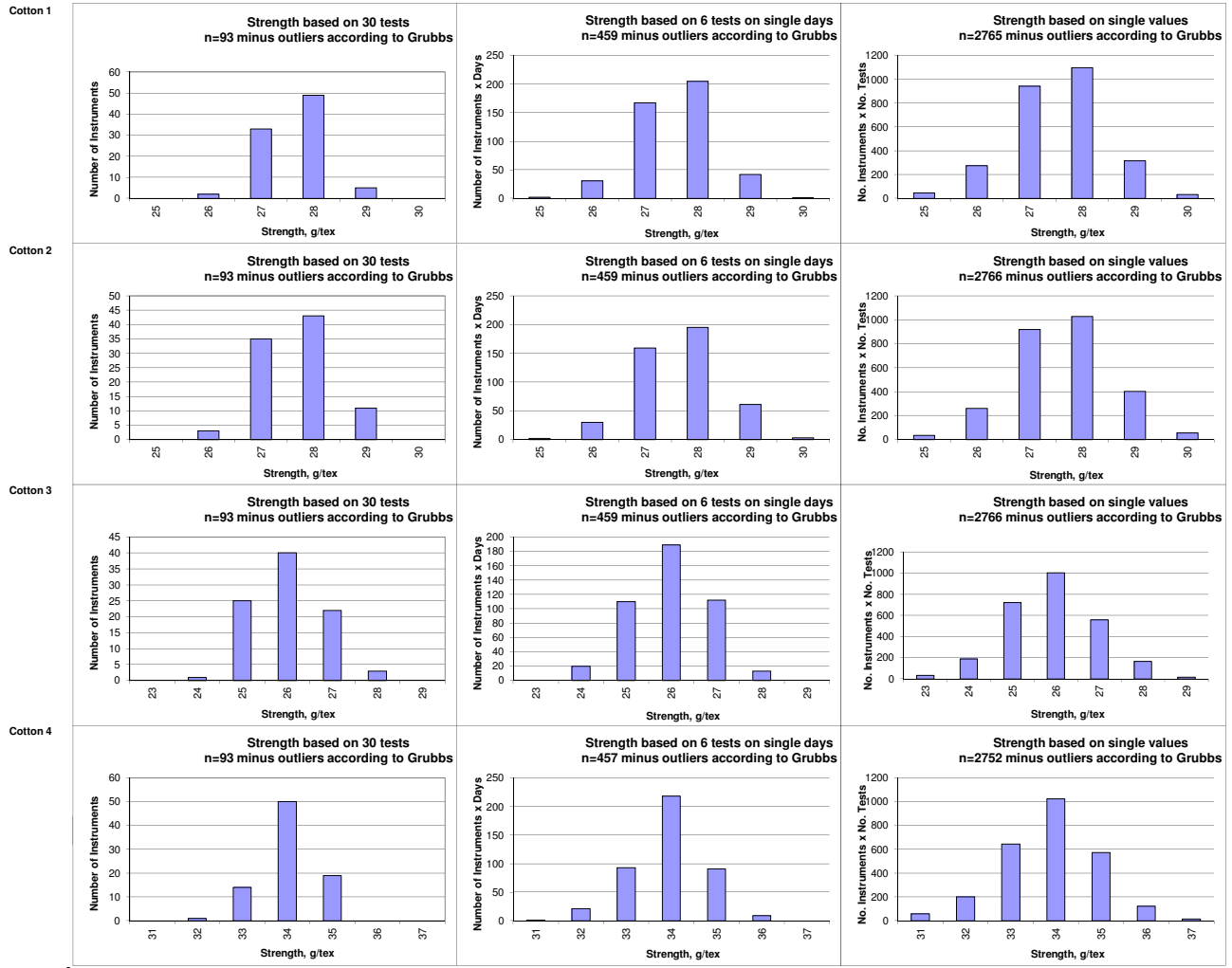
SFI							
			Cotton 1	Cotton 2	Cotton 3	Cotton 4	Average
Average of Instruments (Grubbs)			10.85	10.52	13.42	7.08	
Reference Values for Evaluation			10.85	10.52	13.42	7.08	
Number Of Instruments			80	80	80	80	80
Inter-Instrument Variation	based on 30 tests	SD	0.98	1.01	1.48	0.77	1.06
		CV %	9.1	9.6	11.0	10.9	10.1
	based on 6 tests	SD	1.04	1.07	1.41	0.82	1.08
		CV %	9.6	10.2	10.5	11.5	10.5
	based on single tests	SD	1.21	1.17	1.60	0.89	1.22
		CV %	11.1	11.1	11.9	12.5	11.7
Typical within-instrument Variation (Median)	between different days with each 6 tests	SD	0.31	0.29	0.38	0.15	0.28
		CV %	2.9	2.8	2.8	2.1	2.6
	between single tests on one day	SD	0.56	0.55	0.68	0.29	0.52
		CV %	5.2	5.2	5.1	4.1	4.9
	between all tests on different days	SD	0.64	0.59	0.76	0.32	0.58
		CV %	5.9	5.6	5.7	4.6	5.5

Test Result Distributions
Micronaire



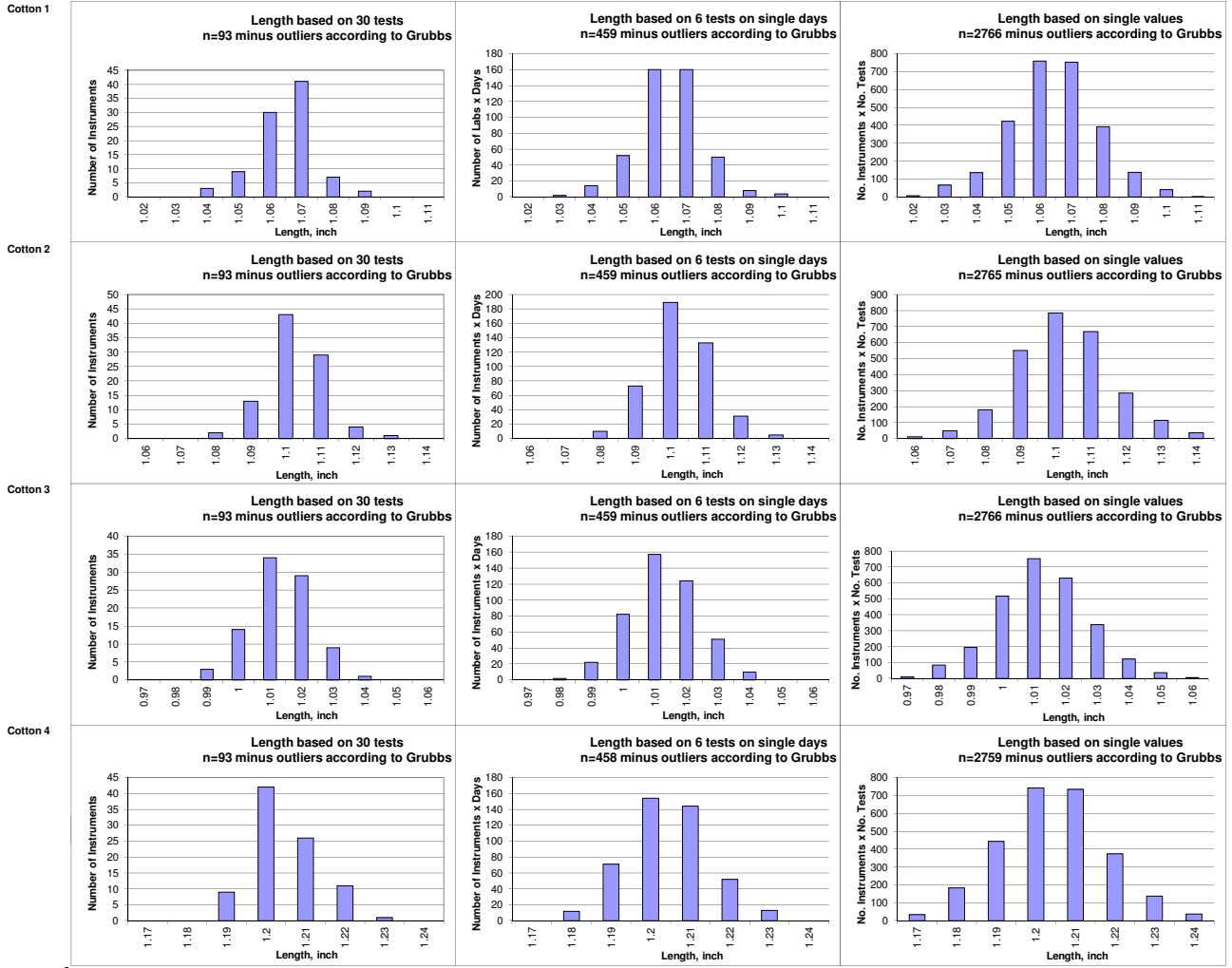
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method.)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Strength



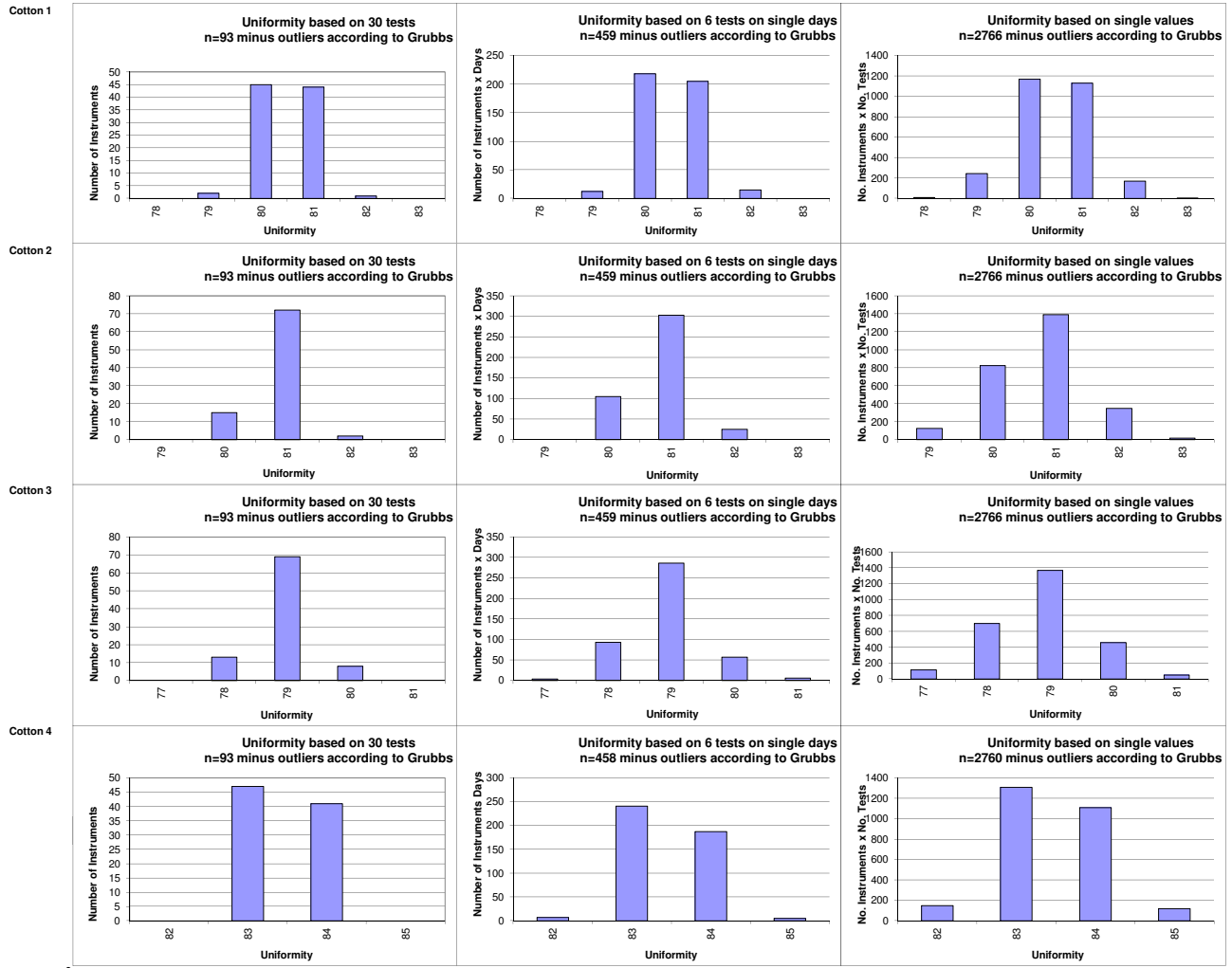
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Length



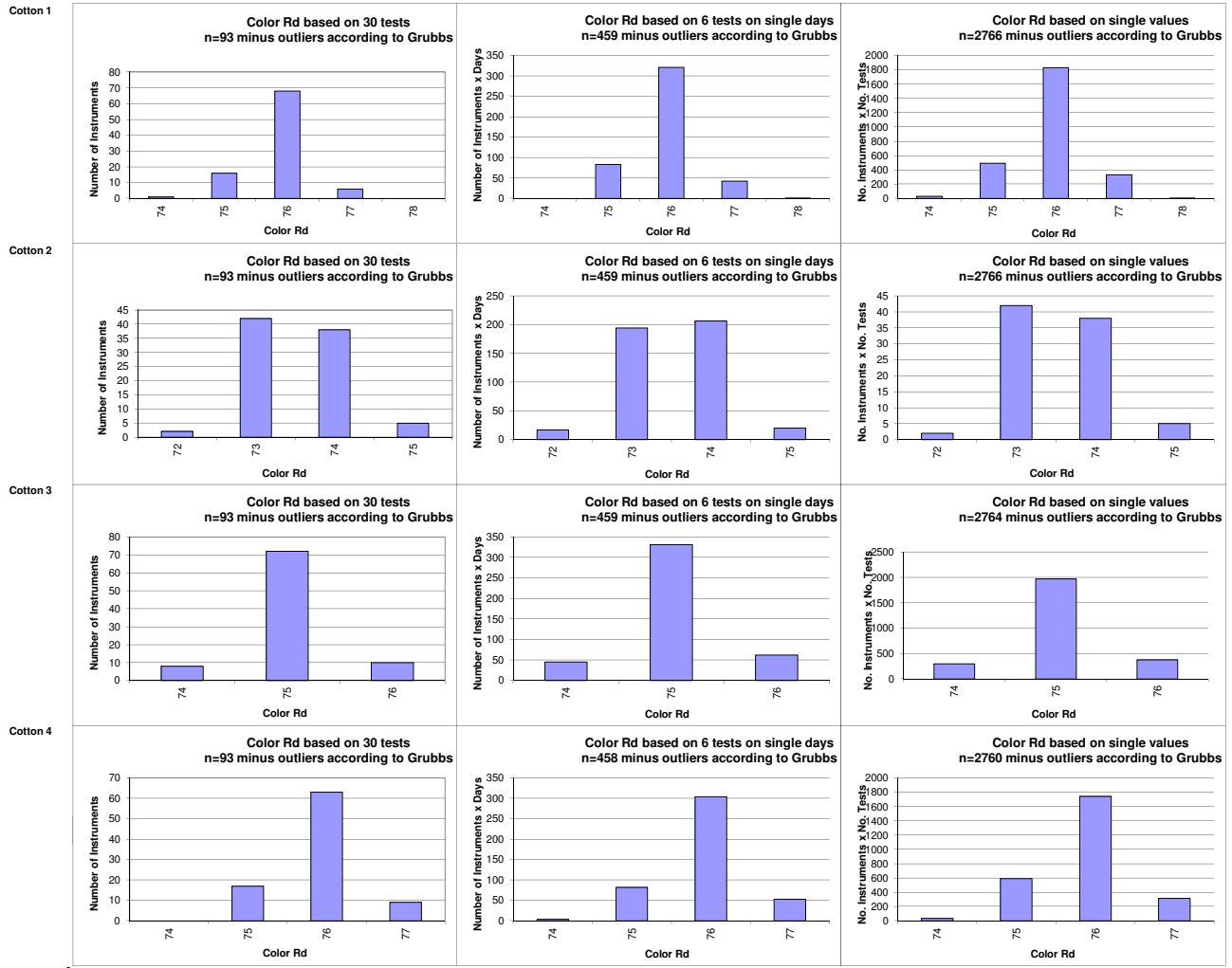
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Uniformity



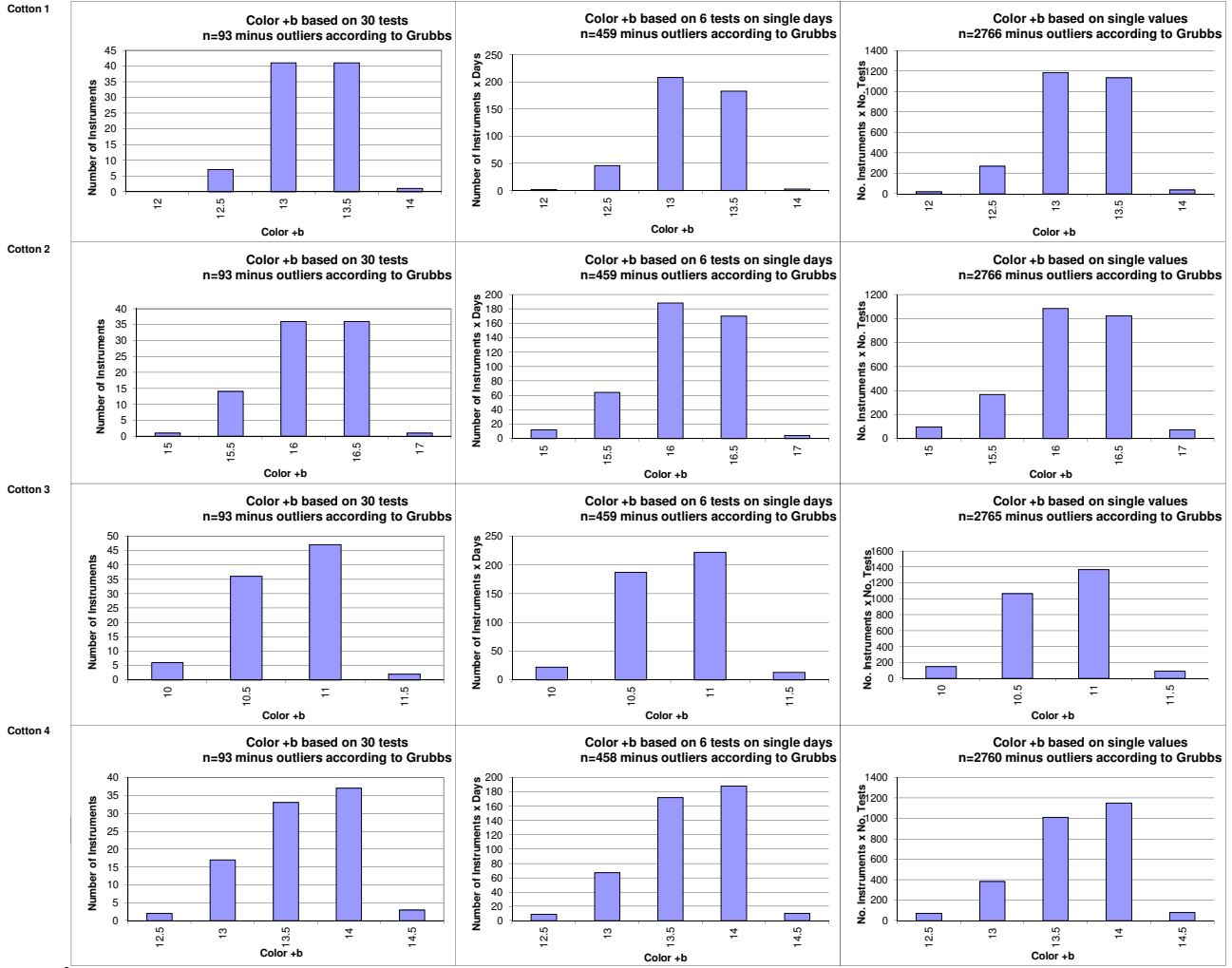
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color Rd



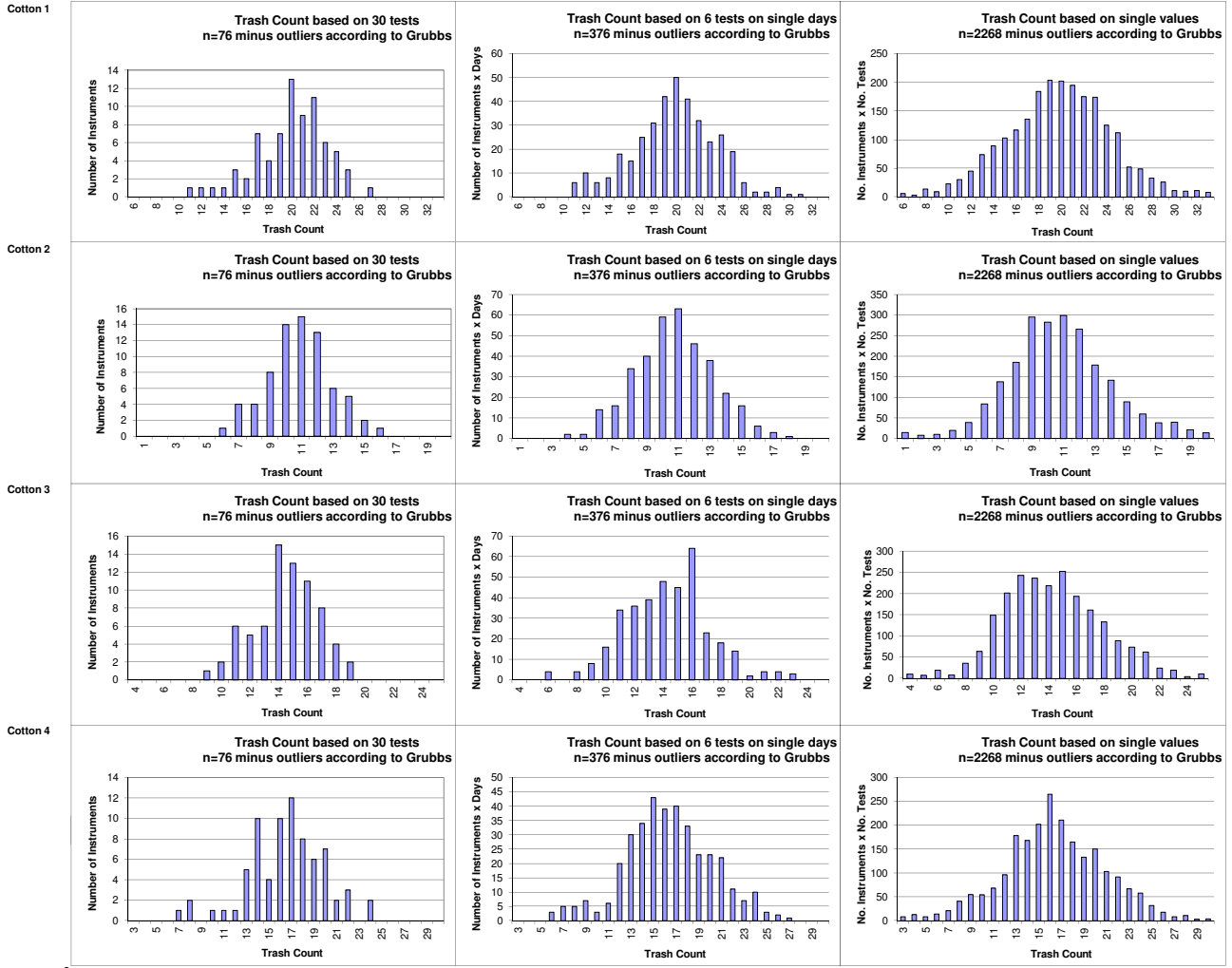
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Color +b



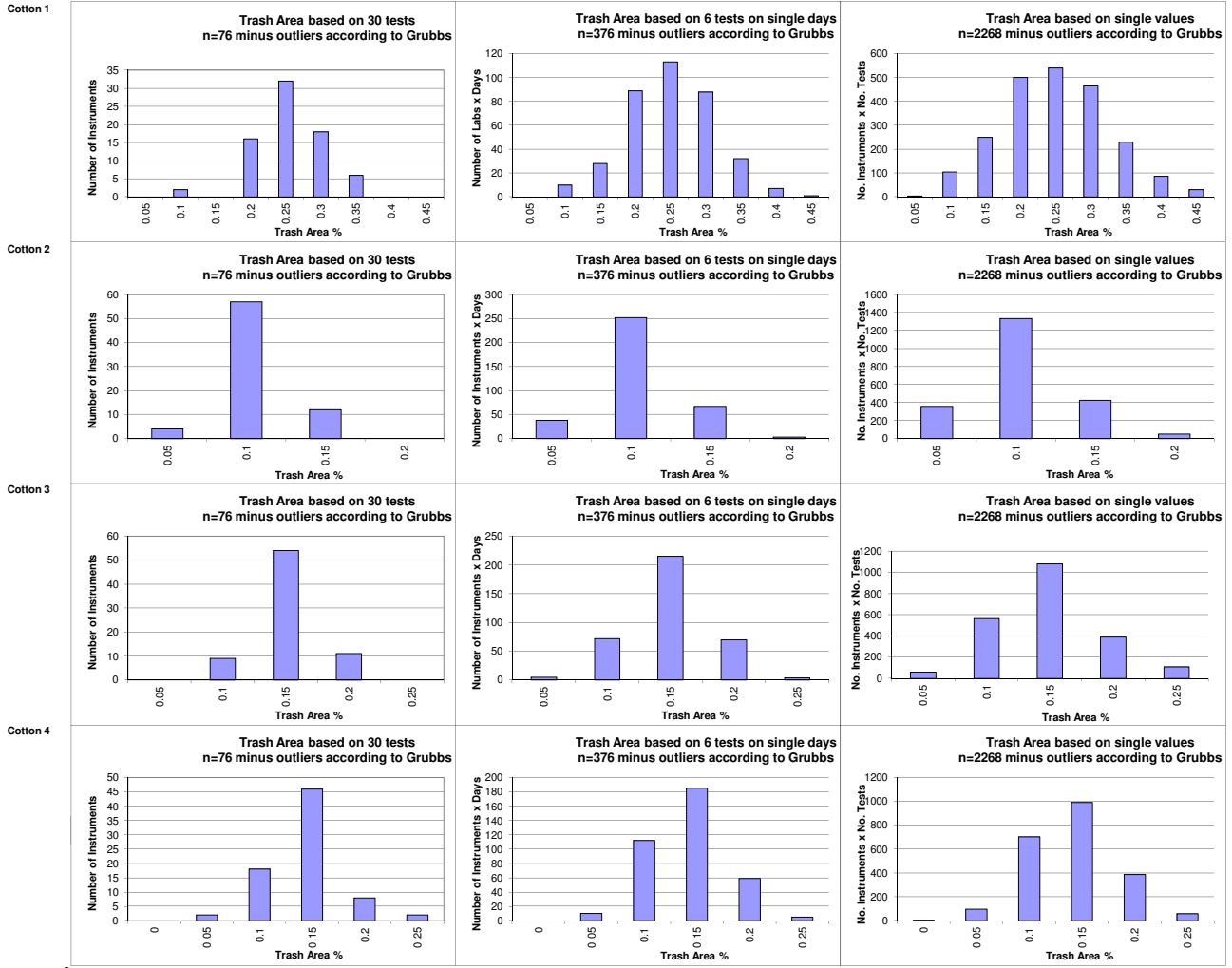
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Count



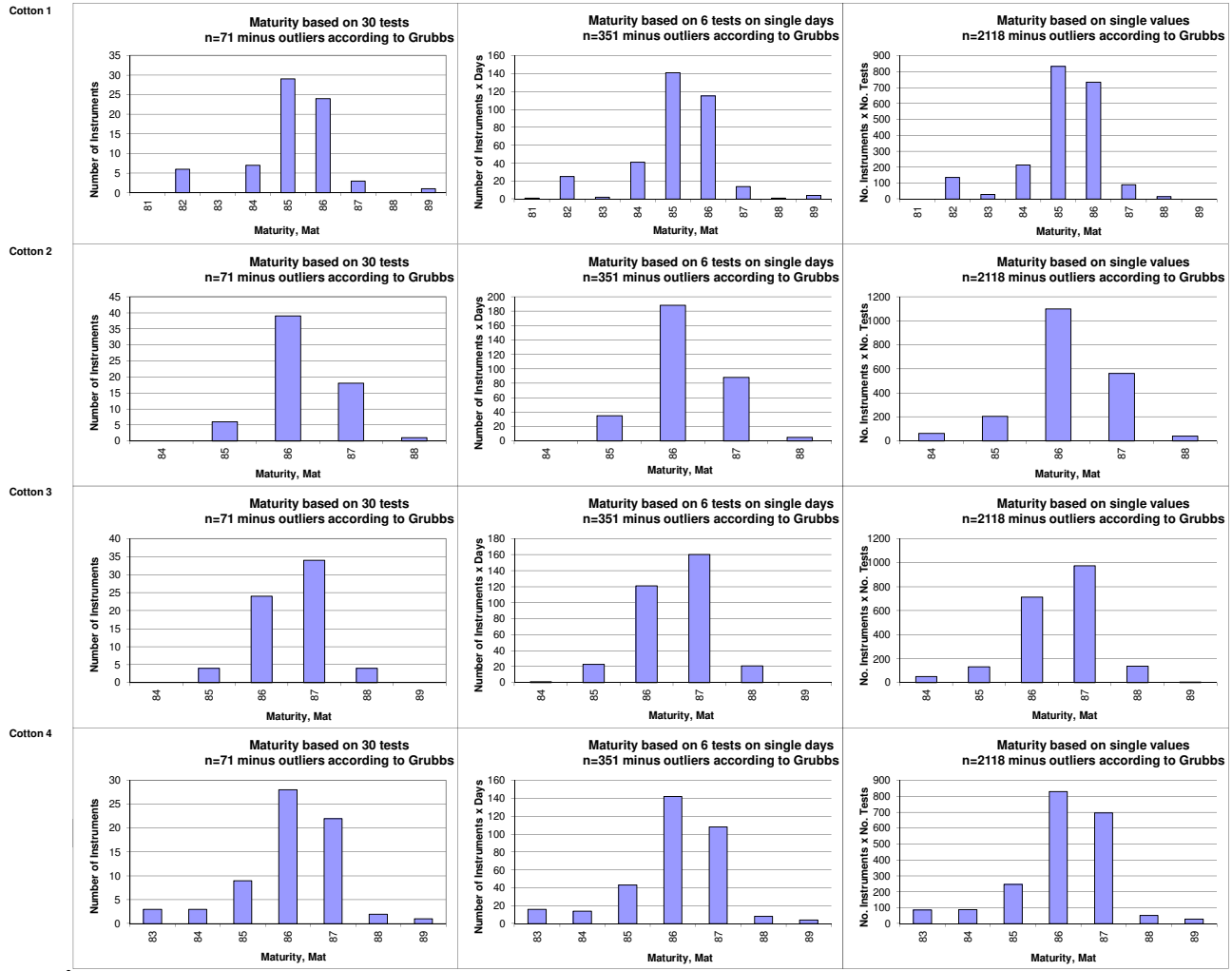
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Trash Area



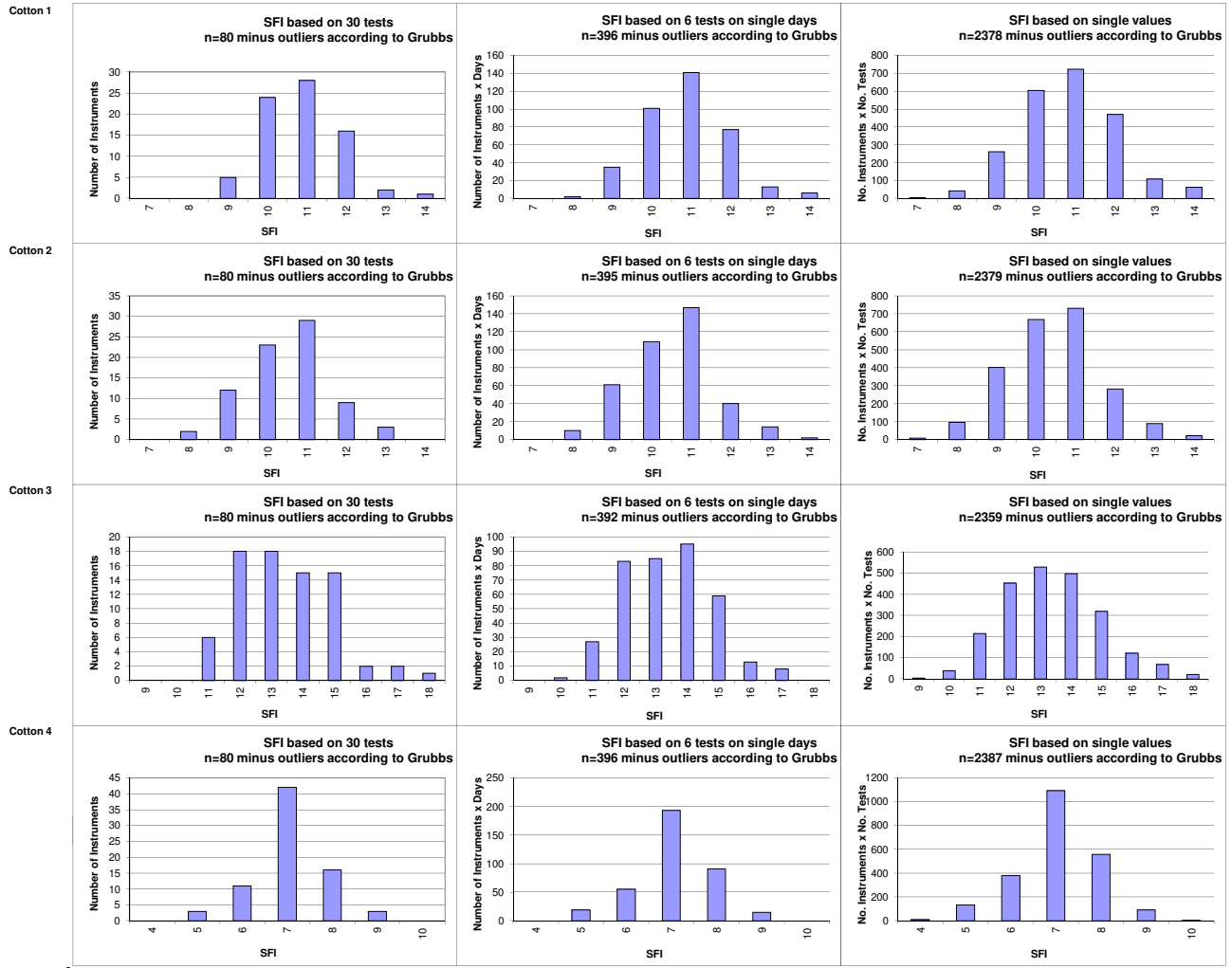
(Only results from instruments/days/single tests that are not regarded as outliers according to Grubbs' method)
(classes are defined as > lower limit and <= upper limit)

Test Result Distributions
Maturity



(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 2024 - 1 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:
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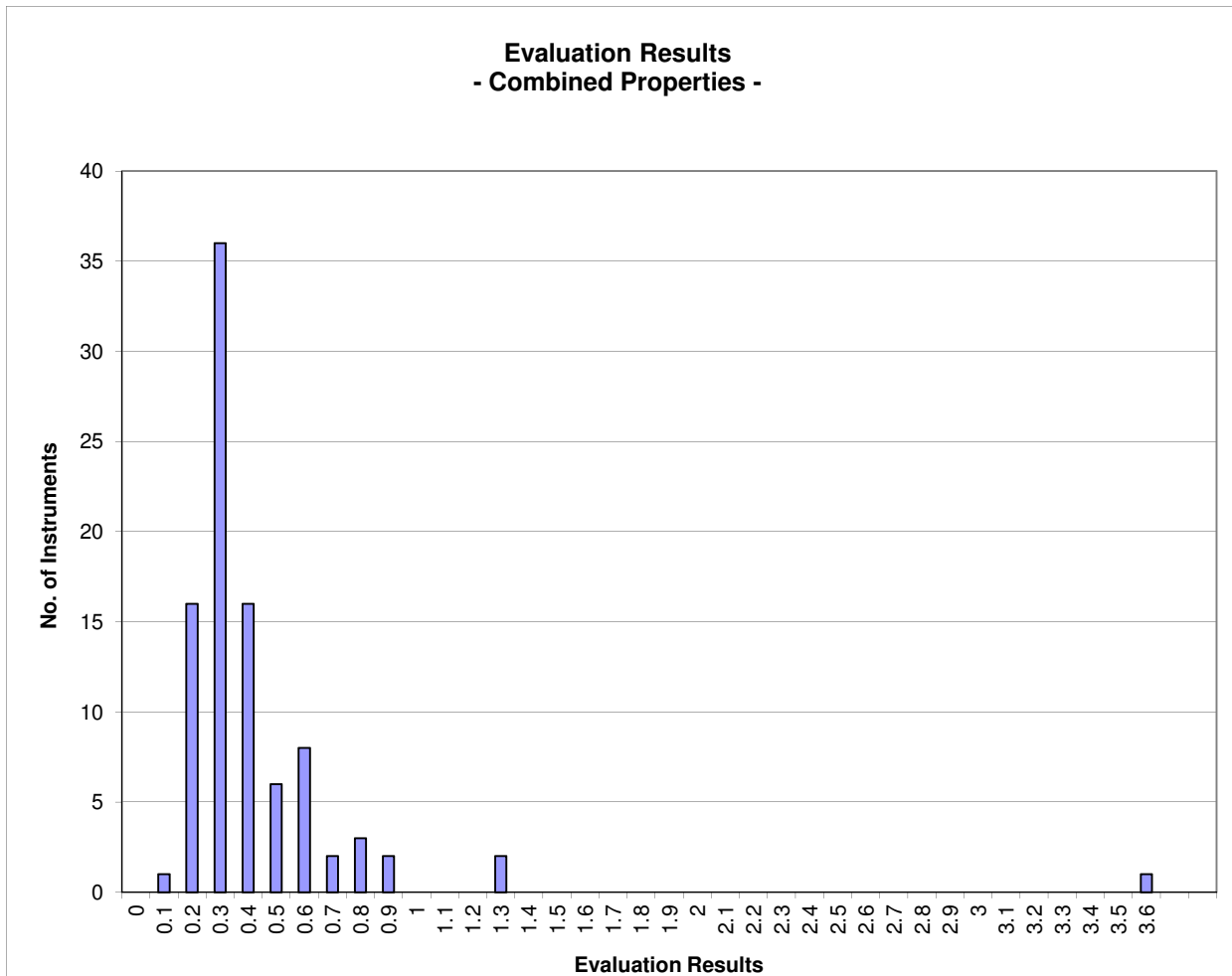
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Instrument Evaluation
 - Graph of Combined Properties -
 According to ICAC CSITC Task Force Recommendations
 Global - Round Trial 2024 - 1

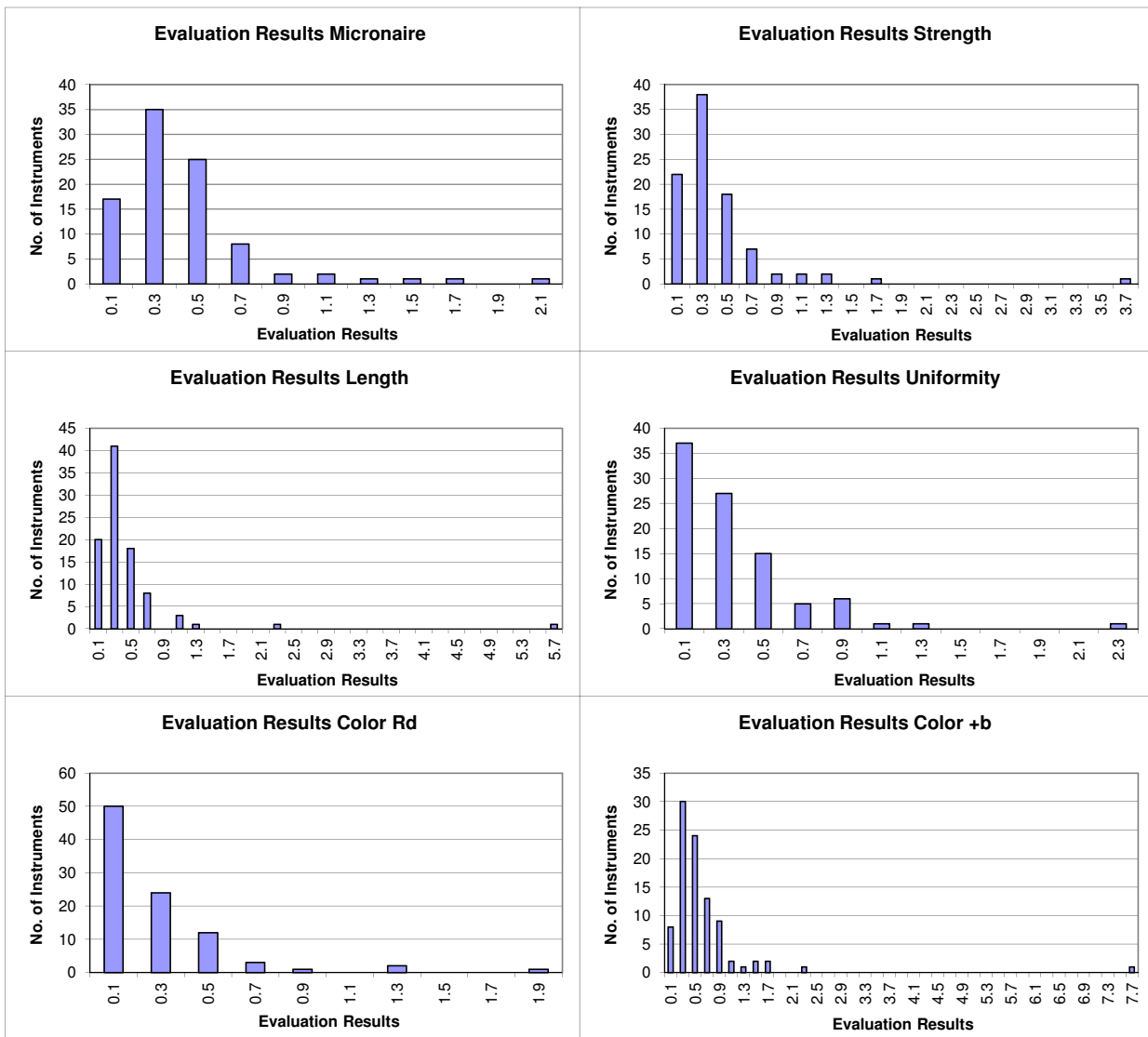
		Evaluation Combined Prop.
Statistics	Average	0.43
	Median	0.33
	Best Instrument	0.14
	Worst Instrument	3.58



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 2024 - 1

		Evaluation Micronaire	Evaluation Strength	Evaluation Length	Evaluation Uniformity	Evaluation Color Rd	Evaluation Color +b
Statistics	Average	0.44	0.42	0.44	0.36	0.28	0.64
	Median	0.37	0.32	0.31	0.25	0.19	0.48
	Best Instr.	0.08	0.04	0.07	0.07	0.03	0.11
	Worst Instr.	2.07	3.70	5.62	2.40	1.88	7.76



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



International Cotton Advisory Committee



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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

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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	98.7	96.2	97.8	99.2	96.2	87.6
Completely within limits	95.7	90.3	95.7	98.9	92.5	69.9
% of Instruments $\geq 75\%$ within limits	98.9	96.8	96.8	98.9	96.8	88.2
% of Instruments $\geq 50\%$ within limits	100.0	98.9	98.9	98.9	97.8	94.6

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	98.0	92.5	95.4	97.2	95.9	82.1
% of Instruments 100% within limits	64.5	32.3	31.2	66.7	71.0	18.3
% of Instruments $\geq 95\%$ within limits	90.3	66.7	78.5	84.9	89.2	45.2
% of Instruments $\geq 75\%$ within limits	97.8	92.5	97.8	96.8	92.5	75.3
% of Instruments $\geq 65\%$ within limits	98.9	95.7	97.8	97.8	95.7	80.6
% of Instruments $\geq 50\%$ within limits	100.0	96.8	97.8	98.9	96.8	90.3