

## 21st CSITC ROUND TRIAL COMPLETED

The 21<sup>st</sup> Round Trial under the auspices of the Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC RT 2012-1) was conducted from January to March 2012 (CSITC RT 2012-1). During the Round Trial, 66 testing facilities from all continents submitted results from 105 instruments.

This is the first CSITC Round Trial conducted without public funding, but solely financed by the participation fees.

Each round trial consists of five samples prepared by the U.S. Department of Agriculture (USDA) and sent to participating laboratories. Each sample is tested in each laboratory six times a day for five days for all six CSITC parameters of micronaire, length, length uniformity, strength, Rd and +b, resulting in a total of 900 measurements from each instrument. Results are downloaded electronically and sent to the Bremen Fibre Institute for evaluation. Because of the large number of observations over a five-day period, the resulting pattern of results can be used for detailed diagnostic evaluation.

Laboratories are not given grades or pass/fail results, and all results are confidential. The purpose of CSITC round trials are to facilitate improvements in both accuracy and precision among cotton testing laboratories around the world.

### **The typical inter-laboratory variations achieved by instrument testing, given as standard deviations, were:**

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Property	Standard Deviation based on Single Tests	Standard Deviation based on 30 tests/sample
Micronaire	0.079 mic	0.068 mic
Strength	1.08 g/tex	0.85 g/tex
Length	0.016 inches	0.012 inches
Length Unif.	0.83 units	0.57 units
Color Rd	0.94 units	0.88 units
Color +b	0.40 units	0.35 units

Laboratories are given an overall ranking, as well as rankings for performance on each of the six parameters. Rankings are based on the results of each lab in coming closest to the mean (average) values for all laboratories participating in the Round Trial on all six parameters.

The range of scores for the combined properties among the 105 instruments was 0.15 to 4.93 (a score of zero would be perfect), and the median overall evaluation of combined properties was 0.50. This implies that any instrument with a rating lower than 0.50 is belonging to the 50% of the best instruments in the Round Test.

### **Optional Parameters**

Besides the 6 parameters for ranking, an additional 4 parameters were included for information purposes: Short Fiber Index (SFI), Maturity, Trash Area and Trash Count. The inter-laboratory variations for the four additional parameters are higher than the variations for the 6 parameters approved by CSITC. Therefore, laboratories are not evaluated according to the extra four parameters. Nevertheless, the resulting deviations for each parameter provide useful information to market participants.

**The typical inter-laboratory variations achieved by instrument testing, given as standard deviations, were:**

CSITC RT 2012-1

Property	Standard Deviation based on Single Tests	CV% based on Single Tests
Trash Count	9.4	53 %
Trash Area	0.08%	45 %
Maturity	2.8 units	3.4 %
SFI	1.8 units	17 %

### **Within-Limits Evaluations**

Laboratories are also being informed as to what proportion of their test results are within a given limit for each parameter. This information provides additional practical information that will be useful in improving testing performance.

### **Average Percent of Results or Instruments Testing Within Established Limits:**

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Property	Limit chosen by CSITC	Average % of results inside the limits	% of instruments with all sample results inside the limits	Average % of results inside the limits	% of instruments with 95% of sample results inside the limits
		based on 30 tests/sample	based on 30 tests/sample	based on 1 test/sample	based on 1 test/sample
Micronaire	0.20 units	97	93	97	87
Strength	2.0 gf/tex	96	88	91	52
Length	0.03 inches	95	90	93	70
Length Unif.	2.0 units	98	94	95	74
Color Rd	1.5 units	88	80	86	61
Color +b	1.0 units	98	96	96	85

Information about CSITC and overall Round Trial results (information for individual laboratories is confidential) is available at [www.CSITC.org](http://www.CSITC.org).