

20th CSITC ROUND TRIAL COMPLETED

The 20th Round Trial under the auspices of the Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC RT 2011-3) was conducted from October to December 2011. During the 20th Round Trial, 80 testing facilities from all continents submitted results from 137 instruments – again an all-time high number of participants.

As the CFC/ICAC/33 Project on Commercial Standardization of Instrument Testing is ending, the CSITC Round Trials will be conducted without public funding from 2012 on.

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:

CSITC RT 2011-4

Property	Standard Deviation based on Single Tests	Standard Deviation based on 30 tests/sample
Micronaire	0.081 mic	0.068 mic
Strength	1.15 g/tex	0.90 g/tex
Length	0.017 inches	0.012 inches
Length Unif.	0.83 units	0.58 units
Color Rd	0.97 units	0.92 units
Color +b	0.40 units	0.36 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 137 instruments was 0.26 to 4.82 (a score of zero would be perfect), and the median overall evaluation of combined properties was 0.50.

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 2011-4

Property	Standard Deviation based on Single Tests	Standard Deviation based on 30 tests/sample
Trash Count	8.3	7.6
Trash Area	0.07%	0.05%
Maturity	4.3 units	4.5 units
SFI	2.2 units	2.1 units

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:

CSITC RT 2011-4

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	96	85
Strength	2.0 gf/tex	93	84	88	53
Length	0.03 inches	96	90	92	61
Length Unif.	2.0 units	98	93	96	76
Color Rd	1.5 units	88	76	86	63
Color +b	1.0 units	98	93	96	81

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