# ICA Bremen Cotton Round Test

in Cooperation with Bremer Baumwollboerse

carried out by Bremen Fibre Institute (FIBRE)

Bremen, 30.09.2015

## Evaluation of the Test Results 2015 / 2

Tested Cotton: **Egypt Giza 86**
Cotton Number: **RM 42**
Number of Laboratories: **120**

| | | | |
|---|---|---|---|
| Argentina | - | Mauritius, Rep of | 1 |
| Australia | 1 | Mozambique | - |
| Bangladesh | - | The Netherlands | 1 |
| Brazil | 5 | Pakistan | 2 |
| China, PR | 18 | Poland | 2 |
| Czech Republic | 4 | Russia | 1 |
| Egypt | 2 | Serbia | 1 |
| France | 1 | Slovenia | 2 |
| Germany | 11 | South Africa | 1 |
| Greece | 6 | Spain | 3 |
| Hungary | 1 | Sudan | 1 |
| India | 31 | Switzerland | 3 |
| Indonesia | 1 | Taiwan | 1 |
| Iran | - | Thailand | 2 |
| Israel | - | Turkey | 2 |
| Italy | 1 | Uganda | - |
| Japan | 2 | United Kingdom | - |
| Kazakhstan | 1 | United States | 7 |
| Korea, R | 1 | Uzbekistan | 1 |
| Latvia | - | Vietnam, SR | 2 |
| Mali | 1 | | |

For any questions, please mail to gerardi@faserinstitut.de

# ICA Bremen Cotton Round Test 2015-2

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## Explanations:

### test material

The sample material is generally unprocessed cotton lint without additional homogenisation from varying origins with a wide spectrum of properties. The Bremen Fibre Institute (FIBRE) usually avoids origins with high result variations.

In this Round Test the cotton is: **Egypt Giza 86 (RM 42)**

The variation of the utilized cotton was measured at the Bremen Fibre Institute (FIBRE) with an Uster HVI 1000 with 10 tests on samples from 10 different layers with the following results:

| HVI<br>HVICCS | SD between bale layers<br>(based on 10 tests per layer) | SD between single tests<br>(based on 10 times 10 tests) |
|---|---|---|
| Mic | 0,097 | 0,082 |
| Strength, g/tex | 0,436 | 1,844 |
| Length, UHM, inch | 0,007 | 0,023 |
| Length, UHM, mm | 0,170 | 0,571 |

The test material is not suitable as a reference for calibration.

### result evaluation

The results of the participating laboratories for one test method and one parameter are grouped in one table implying that the used instruments yield comparable results despite different instrument types or different national standard test methods. The results are partitioned in different tables as soon as significant differences appear.
Based on the compilation of the results, an identification of outliers is carried out, which is according to Grubbs' Test for Outliers described in ISO 5725 with one slight modification: the algorithm is applied repeatedly to ensure that all outliers are excluded. All outliers are marked by putting the result in brackets. The statistical parameters for all tables and characteristics are calculated after the exclusion of outliers. For the usage of


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the statistical data, the different numbers of repetitions in each lab have to be considered.

### assessment of the laboratory performance

From the results, the bias of each laboratory can be calculated. Stability and repeatability cannot be assessed.

The ICA Bremen Cotton Round Test does not include any benchmarking or rating of the laboratories and their results. Rather the results can be used by each laboratory to evaluate its own performance.

- For estimating a bias to results of other laboratories, please calculate the difference between your result and either the average or the median of all laboratories (after exclusion of outliers).
- For evaluating the bias, the z-score calculation may be applied:

$$z = \frac{your\ value - average\ (or\ median)}{StdDev}$$

- If the z-score is between -1 and 1 your lab belongs to the better 68% of all labs and no measures are necessary. In the z-score range of -2 to 2 are 95 % of all values. The closer your z-score is to 2 (-2) the more urgently it is to take measures to improve performance. If your z-score is above 2 (below -2) a basic revision of all conditions will be necessary.
- For assessing permanent deviations, please monitor all deviations in subsequent ICA Bremen Round Tests or in comparison to other round trial programmes like the CSITC Round Trials or the USDA HVI Checktest.

### laboratory numbers

The laboratory numbers for each laboratory are confident. The numbers are usually kept constant for subsequent Round Tests. In case that any laboratory has doubts in the anonymity of its number, a new laboratory number should be requested.

In case of more than one instruments of the same type, an adjunct number or character is given (e.g. 123-1 and 123-2). In order to distinguish between your instruments, please provide specific adjunct characters for each of your instruments with your data sheet.

### registration and participation

To register a new laboratory to the ICA Bremen Round Test, please send the laboratory's contact details to Mrs Hannelore Gerardi – contact details provided below
In the case that a laboratory does not send any results back for a whole year's period, we have to exclude it from the participants.


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ICA Bremen
The Global Centre for Cotton Testing and Research

### choice of test methods included in the round test

The ICA Bremen Round Test strives to include every commonly used test method.

- Test methods will remain included as long as sufficient participant numbers are given, although the Bremen Fibre Institute (FIBRE) maintains the right to exclude methods.
- Proposals for the inclusion of new methods/instruments/parameters are appreciated. For this, an adequate number of long term participants should be given.
- Test methods for stickiness are excluded due to difficulties in sample provision.

### improvement of the ica bremen cotton round test

Any proposals for improving the Round Test are highly appreciated. For this, please contact Mr Axel Drieling – contact details provided below.

### important notes

Please take care to fill in all the necessary information on the test forms (e.g. the test methods, the instrument types and the number of repetitions for each test). Please provide one or two reliable e-mail addresses to Mrs Gerardi - contact details are provided in the last section.

### Contact

For any questions regarding the ICA Bremen Cotton Round Test, please contact:

- Mr Axel Drieling for general questions relating to the Round Test and cotton testing,
  Tel. +49 421 218 58650, e-mail: axel@ica-bremen.org
- Mrs Hannelore Gerardi for questions relating to the realization of the current tests,
  Tel. +49 421 218 58671, e-mail: gerardi@faserinstitut.de

With kind regards,

Axel Drieling
Hannelore Gerardi



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| MICRONAIRE | | | | |
|---|---|---|---|---|
| Lab. | Rep. | Mic. | Instrument | Standard Test Method |
| *12* | | 4.5 | 775 | GB/T6498-05 |
| *22* | 3 | 4.6 | Fibronaire | |
| *29* | 4 | 4.0 | Sheffield | ISO 2403 |
| *32* | 6 | 4.2 | WIRA | |
| *32-2* | 6 | 4.2 | WIRA | |
| *32-3* | 6 | 4.2 | WIRA | |
| *35* | 3 | 4.5 | 775 | |
| *36* | | 4.3 | | |
| *37* | | 4.3 | | |
| *56* | 2 | 4.3 | Fibronaire | JIS |
| *67* | 4 | 4.3 | Fibronaire | |
| *70* | 6 | 4.4 | MK.1 | ASTMD3818-92 |
| *76* | 3 | 4.3 | RM 1070 | |
| *77* | | 4.3 | | |
| *79* | | 4.6 | Sheffield | ASTMD1448 |
| *92* | 10 | 4.5 | DigiMic XT | ASTMD1448 |
| *100* | 12 | 4.5 | 675 | ASTMD1448-97 |
| *100-2* | 8 | 4.5 | WIRA | ASTMD1448-97 |
| *100-3* | 12 | 3.9 | WIRA | ASTMD3813-92 |
| *102* | 6 | 4.6 | Fibronaire | ICCS |
| *112* | 2 | 4.5 | Fibronaire | ASTMD1448 |
| *116* | 4 | (3.6) | STATEX | |
| *126* | 4 | 4.4 | FMT | ASTM |
| *129* | 4 | 4.6 | Sheffield | BS 3181 |
| *131* | 6 | 4.5 | | ASTM |
| *132* | 3 | 4.3 | 775 | DIN 53941 |
| *132-2* | 3 | 4.4 | WIRA | ASTMD1448 |
| *142* | 3 | 4.6 | 80400 | ISO |
| *155* | 3 | 4.4 | 275 | DIN 53941 |
| *167* | 3 | 4.6 | 275 | USDA |
| *168* | | 4.7 | | |
| *169* | 3 | 4.4 | Sheffield | |
| *177* | 3 | 4.6 | DPM 60 | DIN 53941 |
| *186* | 6 | 4.3 | FMT | USDA |
| *193* | 3 | 4.6 | Y145 | GB/T6498-08 |
| *201* | 3 | 4.6 | 275 | |
| Average | | 4.41 | | |
| Median | | 4.4 | | |
| StdDev | | 0.18 | | |
| CV | | 3.98 | | |
| Min | | 3.9 | | |
| Max | | 4.7 | | |
| n | | 35 | | |

| PRESSLEY, STELOMETER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Lab. | Pressley Tester | | | | Stelometer | | | |
| | Rep. | PI (0) | PI (3.2) | Standard Test Method | Rep. | Bundle Tenacity gf/tex | Elongation % | Standard Test Method |
| *29* | 10 | 9.8 | | ISO 3060 | | | | |
| *35* | | | | | 6 | (44.0) | 6.5 | |
| *46* | 10 | 10.5 | 4.3 | ISO 3060 | | | | |
| *56* | 5 | 10.9 | | JIS | | | | |
| *76* | 5 | 10.0 | | | | | | |
| *79* | | 10.4 | | ASTM1445 | | | | |
| *92* | | | | | 5 | 29.8 | 7.5 | ASTM 1445 |
| *102* | | | | | 5 | 32.8 | 6.1 | ICCS |
| *112* | | | | | 3 | (3.0) | 5.8 | ASTM 1445 |
| *116* | | | | | 10 | 30.5 | 6.7 | |
| *131* | 6 | 12.1 | 6.1 | ASTM | 6 | 33.9 | 6.0 | ASTM |
| *177* | 4 | 8.9 | | DIN 53942 | | | | |
| *193* | | | | | 12 | 30.8 | 6.3 | GB/T13783-92 |
| Average | | 10.37 | | | | 31.55 | 6.42 | |
| Median | | 10.4 | | | | 30.8 | 6.3 | |
| StdDev | | 0.99 | | | | 1.73 | 0.57 | |
| CV | | 9.56 | | | | 5.47 | 8.85 | |
| Min | | 8.9 | | | | 29.8 | 5.8 | |
| Max | | 12.1 | | | | 33.9 | 7.5 | |
| n | | 7 | | | | 5 | 7 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pressley | PI(0) | Av., gf/tex | 55.61 | StdDev, gf/tex | 5.32 | | CV, % | 9.56 |
| | (3.2) | Av., gf/tex | | StdDev, gf/tex | | | CV, % | |

| DIGITAL - FIBROGRAPH *(further information see page "Multiple Devices")* | | | | | | | | | Span Length |
|---|---|---|---|---|---|---|---|---|---|
| Lab. | Rep. | 2.5 % SL | | 50 % SL | | UR | SFC (N) | SFC (W) | SFI |
| | | mm | inch | mm | inch | % | % | % | |
| *8* | 16 | 32.9 | 1.30 | 16.7 | 0.66 | 51 | | | 3.7 |
| *35* | 6 | 33.2 | 1.31 | 16.5 | 0.65 | 50 | | | 3.3 |
| *92* | 6 | 32.5 | 1.28 | 15.7 | 0.62 | 48 | | | 7.1 |
| *100* | 12 | 31.0 | 1.22 | 13.6 | 0.53 | 44 | | 12.7 | 4.4 |
| *102* | 5 | 32.1 | 1.26 | 15.0 | 0.59 | 47 | | | |
| *116* | 5 | 33.2 | 1.31 | 16.9 | 0.66 | 51 | | | |
| *126* | 3 | 32.1 | 1.26 | 15.4 | 0.61 | 48 | | | |
| *131* | 6 | 33.3 | 1.31 | 15.7 | 0.62 | 47 | | | |
| *132* | 10 | 32.5 | 1.28 | 15.1 | 0.59 | 46 | | | |
| *143* | 2 | 32.4 | 1.28 | 17.2 | 0.68 | 53 | | | |
| Average | | 32.53 | 1.281 | 15.78 | 0.621 | 48.5 | | | |
| Median | | 32.50 | 1.28 | 15.69 | 0.618 | 48.1 | | | |
| StdDev | | 0.70 | 0.028 | 1.09 | 0.043 | 2.7 | | | |
| CV | | 2.15 | 2.148 | 6.90 | 6.901 | 5.6 | | | |
| Min | | 31.0 | 1.22 | 13.6 | 0.53 | 44 | | | |
| Max | | 33.3 | 1.31 | 17.2 | 0.68 | 53 | | | |
| n | | 10 | 10 | 10 | 10 | 10 | 0 | 1 | 4 |

| COMB SORTER *(further information see page "Multiple Devices")* | | | | | | | | Staple Length |
|---|---|---|---|---|---|---|---|---|
| Lab. | Rep. | Instrument | N | | | W | | |
| | | | ML | CV | < 12.5 mm | ML | CV | <12.5 mm |
| | | | mm | % | % | mm | % | % |
| *85* | 1 | Keisokki | | | | 28.3 | 24.5 | 5.5 |
| *85-2* | 1 | Keisokki | | | | 26.1 | 29.3 | 5.0 |
| *85-3* | 1 | Keisokki | | | | 29.3 | 29.6 | 6.4 |

| ALMETER *(further information see page "Multiple Devices")* | | | | | | | Staple Length |
|---|---|---|---|---|---|---|---|
| Lab. | Rep. | N | | | W | | |
| | | ML | CV | < 12.5 mm | ML | CV | <12.5 mm |
| | | mm | % | % | mm | % | % |
| *58* | 3 | 22.6 | 41.2 | 18.8 | 26.5 | 33.5 | 8.1 |
| *132* | 5 | 23.6 | 35.4 | 13.2 | 27.8 | 28.1 | 4.7 |

| Maturity, Fineness *(further information see page "Multiple Devices")* | | | | | |
|---|---|---|---|---|---|
| Lab | Fibrograph | Causticaire (18 % NaOH) | Microscopic Test | | Gravimetric Fineness |
| | % | % | ASTM, % | BS, % | dtex |
| *56* | | 85 | | | |
| *70* | | | | | 1.72 |
| *79* | | | | | 1.57 |
| *85* | | | | | 1.46 |
| *85-2* | | | | | 1.65 |
| *85-3* | | | | | 1.55 |
| *85-4* | | | | | 1.46 |
| *92* | | 1 | | | |
| *112* | | | | | 1.57 |
| *129* | | 83 | | | |
| *131* | | 69 | | | |
| *177* | | 87 | | | 1.89 |
| *193* | | | | | 1.65 |

| IIC/SHIRLEY FM-TESTER *(further information see page "Multiple Devices")* | | | | Maturity, Fineness |
|---|---|---|---|---|
| Lab. | Rep. | PM, % | MAT | FIN, mtex |
| *32* | 6 | 79.7 | 0.9 | 178 |
| *32-2* | 6 | 79.8 | 0.9 | 175 |
| *32-3* | 6 | 79.0 | 0.84 | 174 |
| *37* | | 85.5 | 0.93 | 171 |
| *70* | 6 | 89.0 | 1.02 | 165 |
| *100* | 12 | 77.9 | 0.87 | 161 |
| *102* | 2 | 85.5 | 0.97 | 161 |
| *186* | 6 | 80.6 | 0.91 | 176 |
| Average | | 82.12 | 0.918 | 170.0 |
| Median | | 80.19 | 0.905 | 172.5 |
| StdDev | | 3.99 | 0.057 | 6.7 |
| CV | | 4.86 | 6.159 | 4.0 |
| Min | | 77.9 | 0.84 | 161 |
| Max | | 89.0 | 1.02 | 178 |
| n | | 8 | 8 | 8 |

| HVI *(table is divided into 3 pages)* | | | | | | | General |
|---|---|---|---|---|---|---|---|
| Lab. | Manufacturer | Instrument | Std. Test Method | Rep. | Each rep. consisting of | | |
| | | | | | Mic. meas. | Combs for length/strength | Color readings |
| *5* | USTER | 1000 Line4 | CCAA | 12 | 1 | 2 | 2 |
| *5-2* | USTER | 1000 Line5 | CCAA | 12 | | | |
| *6* | USTER | 1000 | | | 1 | 2 | 2 |
| *7* | USTER | | | 10 | 1 | 2 | 2 |
| *8* | USTER | Spectrum I | ASTMD5867-05 | 10 | 1 | 1 | 1 |
| *12* | USTER | Spectrum I | SN/T1512-11 | 12 | 1 | 1 | 1 |
| *13* | USTER | Spectrum | internal | 10 | 1 | 1 | 1 |
| *19* | USTER | 1000 | SN/T1512-11 | | 1 | 2 | 2 |
| *24* | USTER | Spectrum | USDA | 10 | 1 | 2 | 2 |
| *25* | USTER | 1000 | | 10 | 1 | 2 | 2 |
| *26* | USTER | 1000 | | 10 | 1 | 2 | 2 |
| *27* | USTER | 900 A | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *28* | Textechno | CCS-V5 | ASTMD5867-05 | 5 | 1 | 2 | 1 |
| *31* | USTER | 900 | | 6 | 1 | 2 | 2 |
| *32* | USTER | 900 A | internal | | 4 | 10 | 4 |
| *32-2* | USTER | 900 A | internal | | 4 | 10 | 4 |
| *32-3* | USTER | 900 A | internal | | 4 | 10 | 4 |
| *36* | USTER | Classing | | | 1 | 2 | 2 |
| *38* | USTER | 1000 | | | 1 | 2 | 2 |
| *41* | USTER | Spectrum | | 5 | 5 | 5 | 5 |
| *43* | USTER | 1000 | | | 1 | 2 | 2 |
| *44* | USTER | Spectrum | internal | 10 | 1 | 2 | 2 |
| *48* | Premier | HFT | ASTMD5867-12 | 8 | 1 | 2 | 2 |
| *49* | USTER | 1000 | ASTM1776 | | 1 | 2 | 2 |
| *50* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *50-2* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *50-3* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *52* | USTER | 1000M700 | ASTM | 6 | 6 | 6 | 6 |
| *53* | Premier | ART | GB/T20392-06 | 5 | 1 | 2 | 2 |
| *54* | USTER | Spectrum | USDA | | 1 | 2 | 2 |
| *56* | USTER | Spectrum I | HVI Test Method | 5 | 1 | 2 | 2 |
| *58* | USTER | 1000 | internal | 10 | 1 | 1 | 1 |
| *59* | USTER | 1000 | USDA | 10 | 1 | 2 | 2 |
| *59-2* | USTER | 1000 | USDA | 10 | 1 | 2 | 2 |
| *59-3* | USTER | 1000 | USDA | 10 | 1 | 2 | 2 |
| *59-4* | USTER | Classing | USDA | 10 | 1 | 2 | 2 |
| *59-5* | USTER | Classing | USDA | 10 | 1 | 2 | 2 |
| *59-6* | USTER | Classing | USDA | 10 | 1 | 2 | 2 |
| *60* | USTER | 1000 | ASTM | 6 | 1 | 2 | 2 |
| *61* | USTER | 900 | ASTMD5867-05 | | 1 | 2 | 2 |
| *62* | Premier | ART 2 | ASTMD5867 | 6 | 1 | 2 | 2 |
| *68* | USTER | 1000 | USDA | 10 | 1 | 2 | 2 |
| *75* | USTER | Spectrum | SN/T1512-11 | 6 | 1 | 2 | 2 |
| *78* | USTER | Spectrum 1 | | 6 | 1 | 2 | 2 |
| *78-2* | USTER | Spectrum 1 | | 6 | | | 2 |
| *79* | USTER | 900 | | | 1 | 2 | 2 |
| *83* | USTER | Spectrum I | SN/T1512-11 | 6 | 1 | 2 | 2 |
| *84* | USTER | 1000 | USDA | 12 | 1 | 1 | 1 |
| *89* | Premier | ART | | 6 | 1 | 2 | 2 |
| *89-2* | Premier | ART | | 6 | 1 | 2 | 2 |
| *89-3* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *89-4* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *91* | USTER | 1000 | ASTMD5867 | 6 | 1 | 2 | 2 |
| *92* | MAG | HVT Expert 1201 | ASTMD5867 | 6 | 1 | 1 | 1 |
| *95* | Premier | ART 2 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *96* | USTER | 1000 | GB/T20392-06 | 10 | 1 | 2 | 2 |

| HVI *(table is divided into 3 pages)* | | | | | General | | |
|---|---|---|---|---|---|---|---|
| Lab. | Manufacturer | Instrument | Std. Test Method | Rep. | Each rep. consisting of | | |
| | | | | | Mic. meas. | Combs for length/strength | Color readings |
| *96-2* | Premier | HFT | GB/T20392-06 | 10 | 1 | 2 | 2 |
| *96-3* | Premier | HFT | GB/T20392-06 | 10 | 1 | 2 | 2 |
| *96-4* | Premier | HFT | GB/T20392-06 | 10 | 1 | 2 | 2 |
| *98* | USTER | 1000 | USDA. ASTM | 12 | 1 | 2 | 4 |
| *99* | MAG | HFT 1401 | ASTMD5867-05 | 10 | 1 | 2 | 2 |
| *100* | Textechno | CCS-V5 | ASTMD5867-05 | 12 | 2 | 2 | 2 |
| *101* | USTER | 1000 | ASTMD5687-12 | 6 | 1 | 2 | 2 |
| *102* | USTER | 900 B | USDA | 6 | 3 | 6 | 4 |
| *102-2* | USTER | SW700V3.1.3.18 | ASTMD5867 | 6 | 1 | 1 | 1 |
| *103* | USTER | 1000 | SN/T1512-11 | 6 | 1 | 2 | 2 |
| *106* | Premier | ART | | 5 | 1 | 2 | 2 |
| *107* | Premier | ART 2 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *108* | USTER | 1000 | ASTMD5867-12 | 12 | 1 | 2 | 2 |
| *109* | USTER | 1000 | | 10 | 1 | 2 | |
| *111* | USTER | 1000 | internal | 6 | 1 | 2 | 2 |
| *112* | USTER | 1000 | ASTMD5867 | 6 | 1 | 2 | 2 |
| *113* | Premier | ART | ASTMD5867-05 | 10 | 1 | 2 | 2 |
| *117* | USTER | Spectrum | SN/T1512-11 | 12 | 1 | 1 | 1 |
| *118* | USTER | 1000M700 | ASTMD5867-05 | 5 | | 2 | 2 |
| *121* | USTER | 1000 | SN/T1512-11 | | 1 | 2 | 2 |
| *122* | USTER | 1000 | | 5 | 1 | 2 | 2 |
| *123* | USTER | 1000 | ASTMD5867-05 | 10 | 1 | 1 | 1 |
| *125* | USTER | 1000 | ASTM | 6 | 6 | 6 | 6 |
| *126* | Premier | HFT | ASTM | 61 | 2 | | |
| *129* | USTER | 900 SA | ASTMD5867 | 8 | 1 | 1 | 1 |
| *131* | USTER | Spectrum | USDA | 6 | 1 | 2 | 2 |
| *132* | Textechno | Fibrotest | ASTMD5867 | 10 | 0 | 1 | 0 |
| *134* | USTER | Classing | ASTMD5867-95 | 6 | 1 | 2 | 2 |
| *135* | USTER | Spectrum I | ASTMD5867-95 | 6 | 1 | 2 | 2 |
| *139* | Premier | ART 2 | | 12 | 1 | 2 | 2 |
| *140* | USTER | 1000M700 | | 10 | 10 | 10 | 10 |
| *143* | USTER | Spectrum | | 6 | 1 | 2 | 2 |
| *143-2* | Premier | ART | | 6 | 1 | 2 | 2 |
| *148* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *154* | USTER | 900 A | | 10 | 1 | 2 | 2 |
| *158* | USTER | 900 | | 6 | 1 | 2 | 2 |
| *158-2* | USTER | 900 | | | 1 | 2 | 2 |
| *161* | Premier | ART 2 | USDA | 5 | 1 | 2 | 2 |
| *163* | USTER | 900 | ASTMD5867-12 | 6 | 3 | 6 | 2 |
| *176* | USTER | 1000 | HVICC | 10 | 1 | 2 | 2 |
| *179* | USTER | 1000 | SN/T1512-11 | 12 | 1 | 2 | 2 |
| *183* | USTER | 1000 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *193* | USTER | 1000 | GB/T20392-06 | 6 | 1 | 2 | 2 |
| *201* | USTER | 900 | | 6 | 1 | 2 | 2 |
| *204* | Premier | HFT | GB/T20392-06 | 10 | 1 | 2 | |
| *204-2* | USTER | 1000 | GB/T20392-06 | 10 | 1 | 2 | 2 |
| *204-3* | USTER | Spectrum I | GB/T20392-06 | 10 | 1 | 2 | |
| *207* | USTER | 1000 | ASTMD5867-12 | 10 | 1 | 2 | 2 |
| *207-2* | USTER | 1000 | ASTMD5867-12 | 10 | 1 | 2 | 2 |
| *207-3* | USTER | 1000 | ASTMD5867-12 | 10 | 1 | 2 | 2 |
| *207-4* | USTER | 1000 | ASTMD5867-12 | 10 | 1 | 2 | 2 |
| *208* | USTER | 1000 | ASTMD5867-12 | 10 | 1 | 2 | 2 |
| *209* | MAG | HVT Expert 1201 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *213* | Premier | ART | ICC | 6 | 1 | 2 | 2 |
| *215* | MAG | HVT Expert 1201 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *216* | MAG | HVT Expert 1201 | | | 1 | 2 | 2 |

| HVI *(table is divided into 3 pages)* | | | | | General | | |
|---|---|---|---|---|---|---|---|
| Lab. | Manufacturer | Instrument | Std. Test Method | Rep. | Each rep. consisting of | | |
| | | | | | Mic. meas. | Combs for length/strength | Color readings |
| *217* | MAG | HVT Expert 1201 | ASTMD5867-05 | 6 | 1 | 2 | 2 |
| *242* | USTER | Spectrum | | 6 | 1 | 2 | 2 |
| *242-2* | USTER | 1000 | | 6 | 1 | 2 | 2 |
| *267* | Premier | ART | USDA | | 1 | 2 | 2 |
| *271* | USTER | 900 | internal | 10 | 1 | 1 | 1 |
| *272* | Premier | ART | | 5 | 1 | 1 | 2 |
| *287* | Premier | ART 2 | USDA | 10 | 1 | 2 | 2 |
| *300* | Premier | ART 2 | ASTM | 6 | 1 | 2 | 2 |
| *315* | Premier | HFT | ICC | 8 | 1 | 1 | |
| *318* | Premier | HFT | | | 1 | 1 | |
| *320* | MAG | HVT Expert 1201 | | 10 | 1 | 2 | 2 |

| HVI *(table is divided into 3 pages)* | | | | | Micronaire, Tenacity, Elongation |
|---|---|---|---|---|---|
| Lab. | Micronaire | Tenacity | | Elongation | |
| | | ICCS, gf/tex | HVICCS, gf/tex | ICCS, % | HVICCS, % |
| *5* | 4.6 | | 46.1 | | 6.9 |
| *5-2* | 4.7 | | 45.7 | | 6.2 |
| *6* | 4.7 | | 49.0 | | (0.9) |
| *7* | 4.5 | | 42.5 | | 3.3 |
| *8* | 4.5 | | 42.5 | | 9.4 |
| *12* | 4.5 | | 45.0 | | 6.7 |
| *13* | 4.4 | | 44.0 | | 5.4 |
| *19* | 4.6 | | 45.5 | | 6.7 |
| *24* | 4.5 | | 50.4 | | 4.4 |
| *25* | 4.5 | | 44.7 | | 6.5 |
| *26* | 4.5 | | 45.3 | | 6.1 |
| *27* | 4.7 | | 47.6 | | 4.8 |
| *28* | 4.4 | | 40.0 | | (13.3) |
| *31* | 4.2 | 32.6 | 46.7 | 6.1 | 6.1 |
| *32* | 4.2 | | 48.0 | | 5.2 |
| *32-2* | 4.2 | | 47.6 | | 5.2 |
| *32-3* | 4.3 | | 47.9 | | 5.2 |
| *36* | 4.3 | | 44.4 | | 5.0 |
| *38* | 4.8 | | 43.6 | | 6.2 |
| *41* | 4.6 | | 45.9 | | 4.0 |
| *43* | 4.6 | | 44.5 | | 4.6 |
| *44* | 4.7 | | 46.1 | | 7.6 |
| *48* | 4.3 | | 37.6 | | 6.1 |
| *49* | 4.6 | | 43.1 | | 5.7 |
| *50* | 4.9 | | 46.2 | | 6.2 |
| *50-2* | 4.8 | | 43.1 | | (11.6) |
| *50-3* | 4.8 | | 46.1 | | 5.6 |
| *52* | 4.5 | | 46.9 | | 7.4 |
| *53* | 4.6 | | 41.0 | | 7.2 |
| *54* | 4.6 | | 45.8 | | 3.0 |
| *56* | 4.3 | | 46.2 | | 5.6 |
| *58* | 4.4 | | 43.7 | | 5.9 |
| *59* | 4.7 | | 49.4 | | |
| *59-2* | 4.8 | | 48.3 | | |
| *59-3* | 4.7 | | 49.0 | | |
| *59-4* | 4.6 | | 49.2 | | |
| *59-5* | 4.7 | | 49.1 | | |
| *59-6* | 4.8 | | 48.8 | | |
| *60* | 4.6 | | 46.1 | | 9.5 |
| *61* | 4.4 | 31.2 | 40.5 | 5.6 | 5.8 |
| *62* | 4.5 | 24.7 | 36.3 | 6.5 | 5.4 |
| *68* | 4.8 | | 41.1 | | |
| *75* | 4.8 | | 45.5 | | 5.9 |
| *78* | 4.8 | | 41.4 | | |
| *79* | 4.5 | | 44.2 | | 7.0 |
| *83* | 4.5 | | 41.7 | | 6.0 |
| *84* | 4.6 | | 42.6 | | 5.2 |
| *89* | 4.7 | | 42.5 | | |
| *89-2* | 4.7 | | 42.8 | | |
| *89-3* | 4.8 | | 43.5 | | |
| *89-4* | 4.8 | | 42.9 | | |
| *91* | 4.5 | | 44.7 | | 5.0 |

| HVI *(table is divided into 3 pages)* | | | | | Micronaire, Tenacity, Elongation |
|---|---|---|---|---|---|
| Lab. | Micronaire | Tenacity | | Elongation | |
| | | ICCS, gf/tex | HVICCS, gf/tex | ICCS, % | HVICCS, % |
| *92* | 4.5 | 30.5 | 36.2 | 7.6 | 7.5 |
| *95* | 4.5 | | 35.8 | | 7.2 |
| *96* | 4.6 | | 42.8 | | 4.0 |
| *96-2* | 4.6 | | 45.5 | | 7.5 |
| *96-3* | 4.5 | | 45.1 | | 7.2 |
| *96-4* | 4.6 | | 43.7 | | 7.0 |
| *98* | 4.6 | | 47.2 | | |
| *99* | 4.6 | | 43.7 | | 7.7 |
| *100* | 4.5 | 18.8 | 37.9 | 6.9 | 6.9 |
| *101* | 4.6 | | 41.8 | | 6.6 |
| *102* | 4.6 | | 42.9 | | 5.8 |
| *102-2* | 4.6 | | 40.9 | | 5.7 |
| *103* | 4.6 | | 45.0 | | 5.8 |
| *106* | 4.7 | | 46.1 | | |
| *107* | 4.5 | | 35.7 | | 7.0 |
| *108* | 4.6 | | 46.8 | | 5.3 |
| *109* | 4.6 | | 42.7 | | |
| *111* | 4.5 | | 45.6 | | 6.5 |
| *112* | 4.5 | | 45.5 | | 7.1 |
| *113* | 4.4 | | 43.0 | | 7.1 |
| *117* | 4.5 | | 45.2 | | 6.6 |
| *118* | | | 35.3 | | (15.2) |
| *121* | 4.7 | | 45.8 | | 6.7 |
| *122* | 4.7 | | 39.1 | | 6.3 |
| *123* | 4.3 | 30.0 | 45.3 | 5.4 | 4.9 |
| *125* | 4.5 | | 47.0 | | 6.3 |
| *126* | 4.4 | | 33.6 | | |
| *129* | 4.6 | 30.9 | 40.0 | 5.7 | 5.7 |
| *131* | 4.7 | | 44.2 | | 6.3 |
| *132* | | | 41.5 | | 8.6 |
| *134* | 4.4 | | 42.2 | | 5.1 |
| *135* | 4.6 | | 42.9 | | 5.6 |
| *139* | 4.8 | | 42.9 | | 7.2 |
| *140* | 4.5 | | 44.9 | | 5.9 |
| *143* | 4.7 | | 42.6 | | 6.7 |
| *143-2* | 4.5 | | 42.8 | | 7.0 |
| *148* | 4.4 | | 41.5 | | 6.5 |
| *154* | 4.7 | | 45.7 | | 6.2 |
| *158* | 4.6 | | 48.4 | | 6.2 |
| *158-2* | 4.5 | | 47.4 | | 6.7 |
| *161* | 4.9 | | 36.4 | | |
| *163* | 4.4 | 34.1 | | 6.2 | |
| *176* | 4.5 | | 38.8 | | 6.4 |
| *179* | 4.7 | | 46.2 | | 4.1 |
| *183* | 4.5 | | 43.8 | | 5.8 |
| *193* | 4.7 | | 44.9 | | 5.5 |
| *201* | 4.6 | | 40.8 | | (9.8) |
| *204* | 4.8 | | 39.1 | | 6.7 |
| *204-2* | 4.7 | | 42.2 | | 5.5 |
| *204-3* | 4.6 | | 42.5 | | 6.8 |
| *207* | 4.5 | | 43.2 | | 5.5 |
| *207-2* | 4.5 | | 42.2 | | 6.4 |

| HVI *(table is divided into 3 pages)* | | | | | Micronaire, Tenacity, Elongation |
|---|---|---|---|---|---|
| Lab. | Micronaire | Tenacity | | Elongation | |
| | | ICCS, gf/tex | HVICCS, gf/tex | ICCS, % | HVICCS, % |
| *207-3* | 4.5 | | 43.0 | | 6.7 |
| *207-4* | 4.6 | | 42.7 | | 6.7 |
| *208* | 4.5 | | 42.8 | | 5.9 |
| *209* | 4.5 | | 35.2 | | 7.2 |
| *213* | 4.6 | 27.4 | | 6.8 | |
| *215* | 4.6 | | 34.8 | | 5.4 |
| *216* | 4.4 | | 34.6 | | 6.9 |
| *217* | 4.4 | | 34.2 | | 5.5 |
| *242* | 4.7 | | 46.6 | | 6.1 |
| *242-2* | 4.5 | | 44.8 | | 5.5 |
| *267* | 4.5 | | 34.2 | | 7.9 |
| *271* | 4.7 | | 44.2 | | 4.7 |
| *272* | 4.6 | | 39.0 | | 7.3 |
| *287* | 4.5 | 25.2 | 35.8 | 6.4 | 7.5 |
| *300* | 4.5 | | 42.5 | | 7.2 |
| *315* | 4.4 | 24.6 | | 6.8 | |
| *318* | 4.5 | | 35.2 | | |
| *320* | 4.4 | 29.7 | | 7.2 | |
| Average | 4.56 | 28.3 | 43.17 | 6.43 | 6.19 |
| Median | 4.55 | 29.85 | 43.65 | 6.45 | 6.2 |
| StdDev | 0.15 | 4.31 | 3.89 | 0.66 | 1.12 |
| CV | 3.19 | 15.24 | 9.0 | 10.32 | 18.04 |
| Min | 4.2 | 18.8 | 33.6 | 5.4 | 3.0 |
| Max | 4.9 | 34.1 | 50.4 | 7.6 | 9.5 |
| n | 120 | 12 | 118 | 12 | 95 |

| HVI | *(table is divided into 3 pages)* | | | | | Length |
|---|---|---|---|---|---|---|
| Lab. | ICCS | | | HVICCS | | |
| | 2.5 % SL | | UR | UHM | | UI |
| | mm | inch | % | mm | inch | % |
| *5* | | | | 33.1 | 1.30 | 85.7 |
| *5-2* | | | | 33.2 | 1.31 | 86.4 |
| *6* | | | | 33.3 | 1.31 | 85.7 |
| *7* | | | | 31.8 | 1.25 | 85.4 |
| *8* | | | | 32.5 | 1.28 | 85.6 |
| *12* | | | | 32.1 | 1.26 | 85.5 |
| *13* | | | | 32.0 | 1.26 | 86.4 |
| *19* | | | | 32.6 | 1.28 | 85.9 |
| *24* | | | | 33.2 | 1.31 | 85.6 |
| *25* | | | | 33.0 | 1.30 | 86.2 |
| *26* | | | | 33.1 | 1.30 | 86.7 |
| *27* | | | | 33.0 | 1.30 | 86.3 |
| *28* | 32.5 | 1.28 | 48.1 | 32.5 | 1.28 | 86.7 |
| *31* | 32.4 | 1.28 | 55.1 | 32.2 | 1.27 | (89.3) |
| *32* | | | | 32.2 | 1.27 | 85.3 |
| *32-2* | | | | 34.0 | 1.34 | 85.8 |
| *32-3* | | | | 32.8 | 1.29 | 86.3 |
| *36* | | | | (29.0) | (1.14) | 86.5 |
| *38* | | | | 32.7 | 1.29 | 87.3 |
| *41* | | | | 32.3 | 1.27 | 86.4 |
| *43* | | | | 32.3 | 1.27 | 86.1 |
| *44* | | | | 32.6 | 1.28 | 87.1 |
| *48* | | | | 31.9 | 1.26 | (83.7) |
| *49* | | | | 33.2 | 1.31 | 85.9 |
| *50* | | | | 33.1 | 1.30 | 86.1 |
| *50-2* | | | | 32.5 | 1.28 | 86.6 |
| *50-3* | | | | 33.0 | 1.30 | 87.3 |
| *52* | | | | 32.2 | 1.27 | 85.9 |
| *53* | | | | 33.8 | 1.33 | (28.9) |
| *54* | | | | 31.8 | 1.25 | 86.4 |
| *56* | | | | 33.0 | 1.30 | 86.3 |
| *58* | | | | 33.2 | 1.31 | 85.7 |
| *59* | | | | 33.5 | 1.32 | 86.5 |
| *59-2* | | | | 32.7 | 1.29 | 85.6 |
| *59-3* | | | | 32.9 | 1.30 | 86.2 |
| *59-4* | | | | 32.3 | 1.27 | 86.2 |
| *59-5* | | | | 32.5 | 1.28 | 85.9 |
| *59-6* | | | | 32.6 | 1.28 | 86.5 |
| *60* | | | | 32.8 | 1.29 | 86.4 |
| *61* | 33.6 | 1.32 | 49.0 | 32.5 | 1.28 | 86.0 |
| *62* | 32.8 | 1.29 | 47.3 | 32.7 | 1.29 | 85.4 |
| *68* | | | | 32.1 | 1.26 | 87.0 |
| *75* | | | | 31.9 | 1.25 | 86.4 |
| *78* | | | | 31.4 | 1.24 | 85.5 |
| *79* | | | | 33.5 | 1.32 | 85.2 |
| *83* | | | | 31.6 | 1.25 | 85.1 |
| *84* | | | | 32.6 | 1.28 | 86.1 |
| *89* | | | | 32.3 | 1.27 | 86.2 |
| *89-2* | | | | 32.2 | 1.27 | 86.0 |
| *89-3* | | | | 32.4 | 1.28 | 85.9 |
| *89-4* | | | | 32.9 | 1.30 | 86.0 |
| *91* | | | | 32.5 | 1.28 | 86.2 |

| HVI | *(table is divided into 3 pages)* | | | | | Length |
|---|---|---|---|---|---|---|
| Lab. | ICCS | | | HVICCS | | |
| | 2.5 % SL | | UR | UHM | | UI |
| | mm | inch | % | mm | inch | % |
| *92* | 32.7 | 1.29 | 48.6 | 32.2 | 1.27 | 85.2 |
| *95* | | | | 32.4 | 1.28 | 85.3 |
| *96* | | | | 32.3 | 1.27 | 85.8 |
| *96-2* | | | | 32.9 | 1.30 | 84.7 |
| *96-3* | | | | 32.2 | 1.27 | 84.8 |
| *96-4* | | | | 32.4 | 1.28 | 84.5 |
| *98* | | | | 32.5 | 1.28 | 86.2 |
| *99* | | | | 32.5 | 1.28 | 85.0 |
| *100* | | | | 31.4 | 1.24 | (83.7) |
| *101* | | | | 32.4 | 1.27 | 86.9 |
| *102* | | | | 32.2 | 1.27 | 85.1 |
| *102-2* | | | | 32.5 | 1.28 | 86.0 |
| *103* | | | | 33.2 | 1.31 | 86.0 |
| *106* | | | | (30.6) | (1.20) | (24.9) |
| *107* | | | | 32.2 | 1.27 | 85.2 |
| *108* | | | | 32.7 | 1.29 | 86.7 |
| *109* | | | | 33.1 | 1.30 | 86.6 |
| *111* | | | | 33.0 | 1.30 | 86.1 |
| *112* | | | | 32.7 | 1.29 | 86.9 |
| *113* | | | | 32.0 | 1.26 | 84.7 |
| *117* | | | | 32.4 | 1.28 | 85.8 |
| *118* | | | | 32.8 | 1.29 | 86.7 |
| *121* | | | | 33.0 | 1.30 | 86.4 |
| *122* | | | | 33.2 | 1.31 | 86.7 |
| *123* | 32.7 | 1.29 | 48.9 | 32.6 | 1.28 | 84.5 |
| *125* | | | | 32.3 | 1.27 | 85.0 |
| *126* | | | | 31.8 | 1.25 | (83.2) |
| *129* | 33.7 | 1.33 | 50.0 | 33.1 | 1.30 | 86.0 |
| *131* | | | | 32.8 | 1.29 | 85.2 |
| *132* | | | | 33.2 | 1.31 | 85.1 |
| *134* | | | | 32.6 | 1.28 | 85.6 |
| *135* | | | | 32.6 | 1.28 | 86.8 |
| *139* | | | | 31.4 | 1.24 | 85.8 |
| *140* | | | | 32.3 | 1.27 | 85.1 |
| *143* | | | | 32.5 | 1.28 | 86.6 |
| *143-2* | | | | 32.6 | 1.28 | 87.7 |
| *148* | | | | 32.3 | 1.27 | 85.7 |
| *154* | | | | 32.9 | 1.30 | 86.7 |
| *158* | | | | 33.0 | 1.30 | 86.9 |
| *158-2* | | | | 33.3 | 1.31 | 86.3 |
| *161* | | | | 32.2 | 1.27 | 86.0 |
| *163* | 34.1 | 1.34 | 53.6 | | | |
| *176* | | | | 32.0 | 1.26 | 86.2 |
| *179* | | | | 32.6 | 1.28 | 85.4 |
| *183* | | | | 33.0 | 1.30 | 86.0 |
| *193* | | | | 32.7 | 1.29 | 86.0 |
| *201* | | | | 32.3 | 1.27 | 85.6 |
| *204* | | | | 32.3 | 1.27 | 86.7 |
| *204-2* | | | | 33.0 | 1.30 | 86.9 |
| *204-3* | | | | 32.2 | 1.27 | 86.8 |
| *207* | | | | 32.4 | 1.28 | 86.2 |
| *207-2* | | | | 32.2 | 1.27 | 85.7 |

| HVI | *(table is divided into 3 pages)* | | | | | Length |
|---|---|---|---|---|---|---|
| Lab. | ICCS | | | HVICCS | | |
| | 2.5 % SL | | UR | UHM | | UI |
| | mm | inch | % | mm | inch | % |
| *207-3* | | | | 32.4 | 1.28 | 86.2 |
| *207-4* | | | | 32.4 | 1.27 | 86.2 |
| *208* | | | | 32.5 | 1.28 | 85.8 |
| *209* | | | | 32.2 | 1.27 | 85.2 |
| *213* | 32.3 | 1.27 | 46.2 | | | |
| *215* | | | | 33.0 | 1.30 | 85.3 |
| *216* | | | | 32.2 | 1.27 | 85.1 |
| *217* | | | | 32.5 | 1.28 | (26.7) |
| *242* | | | | 31.8 | 1.25 | |
| *242-2* | | | | 33.3 | 1.31 | |
| *267* | | | | 33.2 | 1.31 | 86.0 |
| *271* | | | | 34.0 | 1.34 | 87.1 |
| *272* | | | | 32.9 | 1.30 | 87.3 |
| *287* | 33.3 | 1.31 | 45.4 | 33.2 | 1.31 | 86.7 |
| *300* | | | | 32.9 | 1.29 | 85.2 |
| *315* | 32.1 | 1.26 | 50.0 | | | |
| *318* | | | | 32.1 | 1.26 | 86.5 |
| *320* | 32.7 | 1.29 | 48.0 | | | |
| Average | 32.9 | 1.295 | 49.18 | 32.59 | 1.283 | 86.02 |
| Median | 32.7 | 1.287 | 48.74 | 32.53 | 1.281 | 86.0 |
| StdDev | 0.63 | 0.025 | 2.8 | 0.51 | 0.020 | 0.66 |
| CV | 1.93 | 1.929 | 5.69 | 1.57 | 1.565 | 0.77 |
| Min | 32.1 | 1.26 | 45.4 | 31.4 | 1.24 | 84.5 |
| Max | 34.1 | 1.34 | 55.1 | 34.0 | 1.34 | 87.7 |
| n | 12 | 12 | 12 | 116 | 116 | 109 |

| HVI *(table is divided into 3 pages)* | | | | | | Color, Trash |
|---|---|---|---|---|---|---|
| Lab. | Color | | | Trash | | |
| | Rd | +b | CG | leaf | area | cnt |
| *5* | 76 | 9.0 | 31-3 | 3 | 0.42 | 28 |
| *5-2* | 76 | 9.1 | 31-3 | 3 | 0.39 | 24 |
| *6* | 77 | 9.6 | 12 | 3 | 0.48 | 33 |
| *7* | 74 | 9.3 | 31-4 | | 0.53 | 33 |
| *8* | 75 | 9.6 | 32-1 | 4 | 0.4 | 23 |
| *12* | 76 | 9.2 | 31-4 | 4 | 0.62 | 22 |
| *13* | 76 | 8.9 | 31-3 | | | |
| *19* | 76 | 9.1 | 31-3 | 4 | 0.6 | 33 |
| *24* | 77 | 9.2 | 21-4 | | | |
| *25* | 77 | 9.4 | 21-4 | 3 | 0.53 | 34 |
| *26* | 77 | 9.4 | 21-4 | 3 | 0.6 | 32 |
| *27* | 76 | 9.7 | 22-2 | 2 | 0.53 | 26 |
| *28* | (71) | 9.1 | 31-4 | | 0.55 | 12 |
| *31* | 75 | 9.1 | 31-4 | 5 | 1.09 | 46 |
| *32* | 75 | 9.6 | 31-3 | | | |
| *32-2* | 74 | 9.2 | 31-4 | | | |
| *32-3* | 77 | 8.9 | 31-3 | | | |
| *36* | 77 | 9.3 | 22 | 3 | 0.58 | 31 |
| *38* | 77 | 9.2 | 31-3 | 5 | 0.82 | 38 |
| *41* | 76 | 9.5 | 31-3 | | 0.44 | 16 |
| *43* | 77 | 9.8 | 21-3 | | 0.82 | 39 |
| *44* | 77 | 9.2 | 31-3 | | 0.41 | 20 |
| *48* | 76 | 9.2 | 31-3 | | | |
| *49* | 77 | 8.8 | 31-1 | 6 | 0.92 | 34 |
| *50* | 79 | 8.4 | 31-1 | 3 | 0.37 | 37 |
| *50-2* | 79 | 9.0 | 21-1 | 4 | 0.61 | 28 |
| *50-3* | 77 | 9.1 | 31-3 | 5 | 0.79 | 28 |
| *52* | 77 | 9.2 | 21-4 | 5 | 0.78 | 34 |
| *53* | 75 | 9.4 | 31-3 | 4 | 0.46 | 26 |
| *54* | 76 | 9.3 | 31-3 | 2 | 0.19 | 16 |
| *56* | 79 | 9.0 | 21-1 | 4 | 0.52 | 24 |
| *58* | 78 | 9.2 | | 4 | 0.51 | 32 |
| *59* | 78 | 9.5 | 21-3 | 3 | 0.28 | 40 |
| *59-2* | 78 | 9.6 | 21-4 | 3 | 0.42 | 46 |
| *59-3* | 76 | 9.1 | 31-4 | 4 | 0.73 | 36 |
| *59-4* | 77 | 9.2 | 31-3 | 3 | 0.4 | 42 |
| *59-5* | 76 | 9.3 | 31-3 | 2 | 0.2 | 29 |
| *59-6* | 78 | 8.9 | 31-3 | 2 | 0.2 | 30 |
| *60* | 77 | 9.2 | 31-3 | 4 | 0.54 | 33 |
| *61* | 80 | (7.3) | 31-1 | | | |
| *62* | 78 | 9.0 | 21-4 | 4 | 0.27 | 6 |
| *68* | 77 | 9.7 | 22-1 | 3 | 0.42 | 26 |
| *75* | 76 | 8.7 | 31-2 | 26 | 0.58 | 4 |
| *78* | 75 | 9.3 | 41-3 | 3 | 0.34 | 16 |
| *78-2* | | | 31-3 | | | |
| *79* | 75 | 8.7 | 31-4 | 5 | 1.01 | 39 |
| *83* | 78 | 9.4 | 21-3 | | | |
| *84* | 77 | 9.7 | 22-1 | 5 | 0.69 | 37 |
| *89* | 75 | 8.3 | 31-4 | 5 | 0.56 | 19 |
| *89-2* | 74 | 8.4 | 31-4 | 5 | 0.5 | 28 |
| *89-3* | 75 | 9.1 | 31-4 | 6 | 0.88 | 31 |
| *89-4* | 75 | 9.3 | 31-3 | 5 | 0.84 | 34 |

| HVI | *(table is divided into 3 pages)* | | | | | Color, Trash |
|---|---|---|---|---|---|---|
| Lab. | Color | | | Trash | | |
| | Rd | +b | CG | leaf | area | cnt |
| *91* | 77 | 9.1 | 31-3 | 4 | 0.59 | 27 |
| *92* | 77 | 8.4 | 31-1 | | | |
| *95* | 77 | 9.2 | 31-3 | | | |
| *96* | 78 | 9.4 | 21-4 | 3 | 0.4 | 34 |
| *96-2* | (71) | 9.2 | 42-1 | | | |
| *96-3* | 74 | 8.6 | | | | |
| *96-4* | (72) | 8.0 | 41-3 | | | |
| *98* | 76 | 9.4 | | | 0.32 | 24 |
| *99* | 77 | 8.8 | 31-1 | | | |
| *100* | (71) | 8.9 | 31-3 | | (1.47) | (63) |
| *101* | 77 | 9.1 | 31-3 | 5 | 0.71 | 37 |
| *102* | 77 | 8.9 | | | | |
| *102-2* | 78 | 9.3 | | 5 | 0.74 | 40 |
| *103* | 78 | 9.7 | 21-3 | 5 | 0.75 | 43 |
| *106* | 78 | 9.9 | 11-4 | | | |
| *107* | 77 | 8.6 | 31-1 | | | |
| *108* | 76 | 8.9 | 31-3 | 5 | 0.83 | 38 |
| *109* | 77 | 9.4 | 21-4 | 762 | 0.66 | 28 |
| *111* | 78 | 9.0 | | | 0.54 | 27 |
| *112* | 77 | 9.1 | 33-3 | 3 | 0.4 | 31 |
| *113* | 77 | 9.3 | 21-4 | | | |
| *117* | 75 | 9.3 | 31-3 | 3 | 0.54 | 30 |
| *118* | 76 | 9.3 | 31-3 | 4 | 0.7 | 38 |
| *121* | 77 | 9.0 | 31-3 | | 0.73 | 37 |
| *122* | 76 | 10.0 | 22-2 | 4 | 0.56 | 40 |
| *123* | 76 | 9.4 | 31-3 | 4 | 0.61 | 32 |
| *125* | 79 | 9.4 | 21-3 | 3 | 0.28 | 31 |
| *129* | (72) | 9.1 | 41-3 | | | |
| *131* | (72) | 10.0 | | | 0.63 | 29 |
| *134* | 73 | 9.8 | 32 | 2 | 0.78 | 27 |
| *135* | 76 | 9.2 | 31 | 4 | 0.53 | 24 |
| *139* | 76 | 9.2 | 21-4 | 4 | 0.39 | 39 |
| *140* | 77 | 9.1 | 31-3 | | 0.75 | 35 |
| *143* | 77 | 9.5 | 1 | 4 | 0.43 | 18 |
| *143-2* | 76 | 9.1 | 1 | 4 | 0.46 | 21 |
| *148* | 76 | 9.3 | 31-3 | 5 | 0.72 | 36 |
| *154* | 76 | 8.9 | 31-3 | 2 | 0.8 | 25 |
| *158* | 76 | 8.4 | 31-2 | 3 | 0.3 | 14 |
| *158-2* | 77 | 8.4 | 31-2 | 2 | 0.3 | 12 |
| *161* | 73 | (12.8) | 47 | | 0.54 | 47 |
| *163* | 76 | 9.2 | 31-3 | | | |
| *176* | 77 | 9.0 | 31-3 | 5 | 0.78 | 53 |
| *179* | 77 | 9.0 | 1 | 5 | 0.63 | 36 |
| *183* | 75 | 9.5 | 32-1 | 4 | 0.58 | 37 |
| *193* | 76 | 9.6 | 32-1 | 3 | 0.41 | 28 |
| *201* | 77 | 9.1 | 31-3 | 4 | 0.37 | 18 |
| *204-2* | 75 | 9.5 | 32-1 | | | |
| *207* | 78 | 9.2 | 21-4 | 4 | 0.46 | 29 |
| *207-2* | 78 | 9.4 | 21-3 | 4 | 0.51 | 26 |
| *207-3* | 78 | 9.4 | 21-3 | 4 | 0.44 | 28 |
| *207-4* | 77 | 9.0 | 31-3 | 4 | 0.59 | 35 |
| *208* | 77 | 9.4 | 21-4 | 5 | 0.81 | 35 |

| HVI | *(table is divided into 3 pages)* | | | | | Color, Trash |
|---|---|---|---|---|---|---|
| Lab. | Color | | | Trash | | |
| | Rd | +b | CG | leaf | area | cnt |
| *209* | 77 | 8.5 | 31-1 | | | |
| *213* | 78 | 8.3 | 31-1 | | | |
| *215* | 76 | (7.1) | 41-1 | 2 | | |
| *216* | 77 | 8.8 | 31-1 | | | |
| *217* | 77 | 9.2 | 31-1 | | | |
| *242* | 77 | 8.4 | 31-2 | 3 | 0.41 | 23 |
| *242-2* | 76 | 8.7 | 31-1 | 6 | 0.91 | 36 |
| *267* | (69) | 8.9 | 42-2 | | | |
| *271* | 76 | 9.5 | 31-3 | | | |
| *272* | 77 | 9.1 | 21-4 | | | |
| *287* | 75 | 9.7 | 31-3 | | | |
| *300* | 77 | 9.2 | 21-4 | | | |
| *320* | (71) | 8.5 | 41-4 | | | |
| Average | 76.5 | 9.15 | | | 0.563 | 30.0 |
| Median | 76.7 | 9.2 | | | 0.54 | 31.0 |
| StdDev | 1.3 | 0.38 | | | 0.193 | 9.1 |
| CV | 1.6 | 4.18 | | | 34.315 | 30.2 |
| Min | 73 | 8.0 | | | 0.19 | 4 |
| Max | 80 | 10.0 | | | 1.09 | 53 |
| n | 108 | 113 | | | 83 | 83 |

| HVI *(table is divided into 3 pages)* | | | | Short Fibre Index, Maturity |
|---|---|---|---|---|
| Lab. | ICCS SFI | HVICCS SFI | PM % | Maturity Ratio |
| *5* | | 5.2 | | 0.88 |
| *5-2* | | 4.8 | | 0.88 |
| *6* | | 5.0 | | |
| *7* | | 5.6 | | |
| *8* | | 6.4 | | 0.96 |
| *12* | | 5.7 | | 0.95 |
| *13* | | 5.4 | | 0.94 |
| *19* | | 7.4 | | 0.89 |
| *24* | | 6.8 | | 0.97 |
| *25* | | 5.7 | | 0.87 |
| *26* | | 5.6 | | 0.87 |
| *27* | | 5.6 | | 0.89 |
| *28* | | (1.9) | 90 | (1.02) |
| *32* | | 7.9 | | |
| *32-2* | | 7.5 | | |
| *32-3* | | 7.7 | | |
| *36* | | | | (36.00) |
| *38* | | | | 0.88 |
| *41* | | 4.0 | | 0.96 |
| *43* | | 6.5 | | |
| *44* | | 6.1 | | 0.97 |
| *48* | | 4.4 | | |
| *49* | | 3.7 | | 0.88 |
| *50* | | 4.8 | 88 | |
| *50-2* | | 5.3 | (84) | |
| *50-3* | | 4.9 | 88 | |
| *52* | | 5.3 | | 0.87 |
| *53* | | 3.5 | | 0.87 |
| *54* | | 6.5 | | 0.96 |
| *56* | | 6.1 | | |
| *58* | | 5.1 | | 0.87 |
| *59* | | 4.6 | | 0.88 |
| *59-2* | | 5.2 | | 0.88 |
| *59-3* | | 4.8 | | 0.88 |
| *59-4* | | 6.6 | 88 | |
| *59-5* | | 5.4 | 87 | |
| *59-6* | | 4.9 | 88 | |
| *60* | | 6.1 | | 0.85 |
| *61* | 4.3 | 4.5 | | |
| *62* | 3.5 | 6.5 | | (1.12) |
| *68* | | 4.2 | | 0.88 |
| *75* | | 4.9 | | 0.96 |
| *78* | | 7.6 | | 0.95 |
| *84* | | 5.9 | 88 | |
| *89* | | 5.3 | 89 | |
| *89-2* | | 5.3 | 89 | |
| *89-3* | | 3.6 | 88 | |
| *89-4* | | 4.4 | 88 | |
| *91* | | 4.9 | | 0.88 |
| *92* | 7.0 | 7.0 | | 0.86 |
| *95* | | 6.7 | | 0.86 |
| *96* | | 6.6 | | 0.89 |

| HVI *(table is divided into 3 pages)* | | | | Short Fibre Index, Maturity |
|---|---|---|---|---|
| Lab. | ICCS SFI | HVICCS SFI | PM % | Maturity Ratio |
| *96-3* | | 5.7 | | |
| *96-4* | | 5.5 | | |
| *98* | | 5.3 | | |
| *99* | | 6.9 | | 0.83 |
| *100* | | 4.7 | (78) | 0.88 |
| *101* | | 6.6 | | 0.87 |
| *102-2* | | 6.5 | | 0.88 |
| *103* | | 5.3 | | 0.88 |
| *106* | | 7.5 | | 0.88 |
| *107* | | 6.5 | | 0.92 |
| *108* | | 5.9 | | 0.88 |
| *109* | | 6.1 | | 0.86 |
| *111* | | 4.6 | | 0.87 |
| *112* | | 5.4 | | 0.87 |
| *113* | | 6.3 | | 0.87 |
| *117* | | 6.3 | | 0.95 |
| *118* | | 5.5 | | 0.8 |
| *121* | | 7.0 | | 0.87 |
| *122* | | 6.5 | | 0.87 |
| *123* | 8.0 | 8.0 | | 0.87 |
| *125* | | 6.8 | | 0.87 |
| *129* | 4.3 | 3.4 | | |
| *131* | | | | 0.97 |
| *132* | | 4.8 | | |
| *134* | | 4.3 | | 0.88 |
| *135* | | 4.5 | | 0.95 |
| *139* | | 6.5 | | |
| *140* | | 6.6 | | 0.87 |
| *143* | | 4.8 | | 0.95 |
| *143-2* | | 4.5 | | 0.87 |
| *148* | | 4.7 | | 0.87 |
| *154* | | (1.4) | | |
| *158* | | 4.6 | | 0.88 |
| *158-2* | | 5.4 | | 0.86 |
| *161* | | 6.7 | | 0.93 |
| *163* | 5.2 | | | |
| *176* | | 6.4 | | 0.87 |
| *179* | | 5.4 | | 0.89 |
| *183* | | 5.1 | | 0.88 |
| *193* | | 3.8 | | 0.88 |
| *201* | | 6.5 | | 0.83 |
| *204* | | 6.5 | | 0.87 |
| *204-2* | | 3.5 | | 0.88 |
| *204-3* | | 4.2 | | 0.94 |
| *207* | | 6.4 | | 0.88 |
| *207-2* | | 6.5 | | 0.87 |
| *207-3* | | 6.0 | | 0.87 |
| *207-4* | | 6.3 | | 0.87 |
| *208* | | 7.3 | | 0.88 |
| *209* | | 6.9 | | 0.84 |
| *213* | 3.5 | | | |
| *215* | | 6.9 | | 0.83 |

| HVI *(table is divided into 3 pages)* | | | | Short Fibre Index, Maturity |
|---|---|---|---|---|
| Lab. | ICCS SFI | HVICCS SFI | PM % | Maturity Ratio |
| *216* | | 7.0 | | 0.82 |
| *217* | | 7.0 | | 0.84 |
| *242* | | 3.8 | | 0.97 |
| *242-2* | | 5.8 | | 0.88 |
| *267* | | 7.2 | | 0.91 |
| *272* | | 3.5 | | 0.86 |
| *300* | | 6.5 | | 0.94 |
| *315* | 4.9 | | | 0.85 |
| *318* | | 5.2 | | 0.86 |
| *320* | 4.0 | | | 0.82 |
| Average | 4.96 | 5.68 | 88.3 | 0.887 |
| Median | 4.3 | 5.6 | 88.0 | 0.88 |
| StdDev | 1.56 | 1.12 | 0.8 | 0.039 |
| CV | 31.35 | 19.62 | 0.9 | 4.44 |
| Min | 3.5 | 3.4 | 87 | 0.8 |
| Max | 8.0 | 8.0 | 90 | 0.97 |
| n | 9 | 105 | 11 | 82 |

| AFIS | | | | General |
|---|---|---|---|---|
| Lab. | Manufacturer | Instrument | Std. Test Method | Repetitions |
| *5* | USTER | | | 5 |
| *7* | USTER | | | 10 |
| *21* | USTER | 1190064 | | |
| *22* | USTER | Autojet | | 10 |
| *24* | USTER | | USDA | 10 |
| *27* | USTER | | | |
| *28* | Textechno | CCS-V5 | ASTMD5866-05 | 5 |
| *31* | USTER | | | 5 |
| *32* | USTER | AFIS Pro 2 | | 10 |
| *32-2* | USTER | AFIS Pro 2 | | 10 |
| *32-3* | USTER | AFIS Pro 2 | | 10 |
| *38* | USTER | | | |
| *39* | USTER | | | |
| *41* | USTER | | | 5 |
| *43* | USTER | | | 5 |
| *44* | USTER | AFIS Pro | internal | 10 |
| *51* | USTER | AFIS Pro 2 | | 5 |
| *58* | USTER | | internal | 10 |
| *59* | USTER | | USDA | 5 |
| *62* | USTER | 908085 | ASTMD5866-95 | 6 |
| *75* | USTER | | ASTMD5866-12 | 5 |
| *90* | USTER | 4.22 | Manufacturer | 10 |
| *91* | USTER | AFIS-Pro.old | | |
| *91-2* | USTER | MN100 | | 10 |
| *96* | USTER | AFIS Pro 2 | | 30 |
| *100* | Textechno | CCS-V5 | ASTMD5866-05 | 6 |
| *101* | USTER | AFIS Pro 2 | internal | 5 |
| *102* | USTER | | | 3 |
| *109* | USTER | | | |
| *111* | USTER | AFIS Pro | | 10 |
| *112* | USTER | AFIS Pro | ASTMD5866 | 5 |
| *118* | USTER | | | 5 |
| *123* | USTER | | ASTMD5866-05 | 10 |
| *123-2* | USTER | AFIS Pro | ASTMD5866-05 | 10 |
| *123-3* | USTER | AFIS-Pro.old | ASTMD5866-05 | |
| *129* | USTER | AFIS Pro | | 5 |
| *132* | USTER | | | |
| *134* | USTER | AFIS Pro | ASTMD5848-95 | 5 |
| *139* | USTER | AFIS Pro 2 | | 12 |
| *140* | USTER | AFIS Pro | | 10 |
| *142* | USTER | | | 5 |
| *143* | USTER | | ASTMD5866 | 5 |
| *148* | USTER | AFIS Pro | | 10 |
| *148-2* | USTER | AFIS Pro 2 | | 10 |
| *148-3* | USTER | Neptester | | 10 |
| *154* | USTER | | | 10 |
| *158* | USTER | 3000 | | 5 |
| *161* | USTER | AFIS Pro | | 4 |
| *176* | USTER | | | 5 |
| *183* | USTER | AFIS Pro | ASTMD5866-05 | 5 |
| *186* | USTER | Afis old | Manufacturer | 10 |
| *186-2* | USTER | AFIS Pro | Manufacturer | 10 |
| *207* | USTER | AFIS Pro | | |
| *208* | USTER | AFIS Pro | ASTMD5866-05 | 10 |
| *271* | USTER | | internal | 10 |
| *272* | USTER | | | 5 |

| AFIS L *(table is divided into 2 pages)* | | | | | | | | Length |
|---|---|---|---|---|---|---|---|---|
| Lab. | N | | | | | | | |
| | ML | | CV | 2.5 % | | 5% | | SFC |
| | mm | inch | % | mm | inch | mm | inch | % |
| *7* | 21.2 | 0.83 | 51.8 | 42.1 | 1.66 | 38.9 | 1.53 | 23.8 |
| *21* | 24.4 | 0.96 | 36.2 | 39.3 | 1.55 | 37.1 | 1.46 | 10.8 |
| *22* | 22.4 | 0.88 | 47.3 | 40.4 | 1.59 | 37.6 | 1.48 | 20.9 |
| *24* | 24.6 | 0.97 | 42.0 | | | 38.5 | 1.52 | 13.7 |
| *31* | 22.3 | 0.88 | 43.3 | 38.4 | 1.51 | 36.0 | 1.42 | 18.4 |
| *32* | 21.9 | 0.86 | 49.5 | | | 37.6 | 1.48 | 21.0 |
| *32-2* | 21.6 | 0.85 | 51.0 | | | 37.3 | 1.47 | 22.6 |
| *32-3* | 22.2 | 0.87 | 47.6 | | | 37.3 | 1.47 | 19.3 |
| *38* | 22.6 | 0.89 | 46.2 | 41.4 | 1.63 | 38.4 | 1.51 | 18.4 |
| *39* | 21.3 | 0.84 | 47.1 | 39.6 | 1.56 | 37.1 | 1.46 | 21.0 |
| *41* | 23.2 | 0.91 | 41.0 | 40.2 | 1.58 | 37.5 | 1.48 | 14.7 |
| *43* | | | 46.8 | | | 38.9 | 1.53 | 19.2 |
| *44* | 23.1 | 0.91 | 44.2 | | | 38.0 | 1.50 | 16.9 |
| *51* | 22.9 | 0.90 | | | | 37.9 | 1.49 | 17.1 |
| *58* | 22.5 | 0.89 | 45.0 | 40.3 | 1.59 | 37.6 | 1.48 | 18.7 |
| *62* | 22.5 | 0.89 | | | | 37.9 | 1.49 | 18.7 |
| *75* | 22.8 | 0.90 | | | | 39.9 | 1.57 | 21.4 |
| *90* | 23.7 | 0.93 | 43.9 | 41.2 | 1.62 | 38.4 | 1.51 | 15.8 |
| *91* | 23.2 | 0.91 | 46.7 | | | 38.8 | 1.53 | 18.2 |
| *96* | 23.4 | 0.92 | 43.6 | | | 37.8 | 1.49 | 16.5 |
| *101* | 23.0 | 0.91 | 44.1 | | | 37.8 | 1.49 | 16.5 |
| *102* | 24.3 | 0.96 | 41.6 | 41.4 | 1.63 | 38.8 | 1.53 | 14.8 |
| *111* | 23.2 | 0.91 | 44.6 | | | 37.5 | 1.48 | 17.3 |
| *112* | 24.4 | 0.96 | 42.5 | | | 39.4 | 1.55 | 15.4 |
| *118* | 25.9 | 1.02 | 36.9 | 42.2 | 1.66 | 39.1 | 1.54 | 10.3 |
| *123* | 23.2 | 0.91 | 44.0 | | | 38.6 | 1.52 | 16.8 |
| *123-2* | 23.3 | 0.92 | 45.8 | | | 38.7 | 1.52 | 17.5 |
| *123-3* | 22.5 | 0.89 | 45.9 | | | 37.8 | 1.49 | 18.2 |
| *129* | 23.8 | 0.94 | 46.0 | | | 40.0 | 1.57 | 16.5 |
| *134* | 23.6 | 0.93 | | | | 38.1 | 1.50 | 16.1 |
| *139* | | | | | | 38.4 | 1.51 | 19.0 |
| *140* | | | | | | 38.6 | 1.52 | 17.5 |
| *142* | 22.9 | 0.90 | 46.2 | 40.6 | 1.60 | 38.3 | 1.51 | 19.3 |
| *143* | 23.0 | 0.91 | 50.4 | 42.4 | 1.67 | 39.3 | 1.55 | 21.3 |
| *148* | 23.6 | 0.93 | 43.4 | | | 38.5 | 1.52 | 15.8 |
| *148-2* | 23.3 | 0.92 | 44.5 | | | 38.3 | 1.51 | 15.9 |
| *154* | 24.9 | 0.98 | 40.1 | 41.0 | 1.61 | 38.4 | 1.51 | 12.9 |
| *158* | 22.9 | 0.90 | 47.5 | 39.7 | 1.56 | 36.9 | 1.45 | 20.1 |
| *161* | | | | | | | | 14.8 |
| *176* | 23.4 | 0.92 | 47.5 | 43.4 | 1.71 | 40.1 | 1.58 | 18.6 |
| *183* | 23.6 | 0.93 | 43.2 | | | 38.4 | 1.51 | 15.8 |
| *186* | 23.9 | 0.94 | 42.2 | 41.3 | 1.63 | 38.3 | 1.51 | 15.2 |
| *186-2* | 23.8 | 0.94 | 32.7 | | | 39.2 | 1.54 | 17.0 |
| *207* | 23.9 | 0.94 | 43.1 | | | 38.7 | 1.52 | 14.1 |
| *208* | 24.3 | 0.96 | 41.1 | | | 38.5 | 1.52 | 12.6 |
| *271* | 22.1 | 0.87 | 51.2 | 41.4 | 1.63 | 38.6 | 1.52 | 24.2 |

| AFIS L *(table is divided into 2 pages)* | | | | | | | | Length |
|---|---|---|---|---|---|---|---|---|
| Lab. | N | | | | | | | |
| | ML | | CV | 2.5 % | | 5% | | SFC |
| | mm | inch | % | mm | inch | mm | inch | % |
| *272* | 22.9 | 0.90 | 40.2 | 38.9 | 1.53 | 36.6 | 1.44 | 13.8 |
| Average | 23.2 | 0.913 | 44.45 | 40.8 | 1.606 | 38.25 | 1.506 | 17.33 |
| Median | 23.2 | 0.913 | 44.35 | 41.0 | 1.614 | 38.35 | 1.51 | 17.1 |
| StdDev | 0.95 | 0.037 | 4.0 | 1.29 | 0.051 | 0.86 | 0.034 | 3.06 |
| CV | 4.1 | 4.104 | 9.0 | 3.16 | 3.16 | 2.25 | 2.246 | 17.67 |
| Min | 21.2 | 0.83 | 32.7 | 38.4 | 1.51 | 36.0 | 1.42 | 10.3 |
| Max | 25.9 | 1.02 | 51.8 | 43.4 | 1.71 | 40.1 | 1.58 | 24.2 |
| n | 43 | 43 | 40 | 19 | 19 | 46 | 46 | 47 |

| AFIS L | *(table is divided into 2 pages)* | | | | | Length |
|---|---|---|---|---|---|---|
| Lab. | W | | | | | |
| | ML | | CV | UQL | | SFC |
| | mm | inch | % | mm | inch | % |
| *7* | 26.8 | 1.06 | 36.8 | 33.3 | 1.31 | 7.6 |
| *21* | 27.5 | 1.08 | 27.9 | 32.6 | 1.28 | 3.5 |
| *22* | 27.4 | 1.08 | 33.5 | 33.0 | 1.30 | 6.5 |
| *24* | 28.9 | 1.14 | 29.4 | 34.2 | 1.35 | 3.4 |
| *28* | 28.2 | 1.11 | | 35.7 | 1.41 | 2.5 |
| *31* | 26.5 | 1.04 | 31.5 | 31.6 | 1.24 | 6.0 |
| *32* | 27.3 | 1.07 | 33.7 | 33.0 | 1.30 | 5.8 |
| *32-2* | 27.2 | 1.07 | 33.3 | 33.1 | 1.30 | 6.1 |
| *32-3* | 27.2 | 1.07 | 32.4 | 32.7 | 1.29 | 5.2 |
| *39* | 26.0 | 1.02 | 33.1 | 31.6 | 1.24 | 6.8 |
| *41* | 27.0 | 1.06 | 31.8 | 32.5 | 1.28 | 4.9 |
| *43* | 27.9 | 1.10 | | 34.0 | 1.34 | 5.8 |
| *44* | 27.6 | 1.09 | 32.5 | 33.2 | 1.31 | 5.1 |
| *51* | (23.4) | (0.92) | (44.2) | 33.5 | 1.32 | 4.6 |
| *58* | 27.1 | 1.07 | 33.0 | 33.0 | 1.30 | 8.1 |
| *62* | 27.4 | 1.08 | | 33.4 | 1.31 | 5.4 |
| *75* | 28.9 | 1.14 | | 34.9 | 1.37 | 5.3 |
| *90* | 28.3 | 1.11 | 31.6 | 33.9 | 1.33 | 4.5 |
| *91* | 28.2 | 1.11 | 32.7 | 34.2 | 1.35 | 5.0 |
| *96* | 27.9 | 1.10 | 31.7 | 33.3 | 1.31 | 4.9 |
| *100* | 25.8 | 1.01 | | 34.0 | 1.34 | (13.3) |
| *101* | 27.5 | 1.08 | 31.8 | 33.1 | 1.30 | |
| *102* | 28.6 | 1.13 | 30.5 | 34.1 | 1.34 | 4.5 |
| *111* | 27.8 | 1.09 | 31.0 | 33.2 | 1.31 | 4.8 |
| *112* | 30.0 | 1.18 | 32.1 | 34.3 | 1.35 | 4.6 |
| *118* | 29.5 | 1.16 | 28.1 | 34.5 | 1.36 | 2.9 |
| *123* | 27.7 | 1.09 | 33.5 | 33.7 | 1.33 | 5.5 |
| *123-2* | 28.1 | 1.11 | 32.4 | 34.0 | 1.34 | 5.0 |
| *123-3* | 27.2 | 1.07 | 32.9 | 33.2 | 1.31 | 5.4 |
| *129* | 28.9 | 1.14 | 32.4 | 34.9 | 1.37 | 4.3 |
| *134* | 27.7 | 1.09 | | 33.3 | 1.31 | 5.0 |
| *139* | | | | 33.8 | 1.33 | |
| *140* | | | | 33.5 | 1.32 | 5.0 |
| *142* | 27.7 | 1.09 | 31.9 | 33.7 | 1.33 | 5.8 |
| *143* | 28.8 | 1.13 | 32.7 | 34.9 | 1.37 | 5.4 |
| *148* | 28.1 | 1.11 | 31.8 | 33.8 | 1.33 | 4.6 |
| *148-2* | 27.9 | 1.10 | 31.8 | 33.5 | 1.32 | 4.3 |
| *154* | 28.9 | 1.14 | 28.1 | 34.0 | 1.34 | 3.3 |
| *158* | 28.0 | 1.10 | 30.8 | 33.4 | 1.31 | 5.3 |
| *161* | | | | 35.6 | 1.40 | 4.0 |
| *176* | 28.7 | 1.13 | 33.2 | 34.5 | 1.36 | 5.1 |
| *183* | 27.9 | 1.10 | 32.7 | 33.5 | 1.32 | 4.9 |
| *186* | 28.2 | 1.11 | 31.1 | 33.6 | 1.32 | 4.6 |
| *186-2* | 28.6 | 1.13 | (47.2) | 33.6 | 1.32 | 4.8 |
| *207* | 28.3 | 1.11 | 31.7 | 33.8 | 1.33 | 3.8 |
| *208* | 28.4 | 1.12 | 30.6 | 33.8 | 1.33 | 3.4 |

| AFIS L | *(table is divided into 2 pages)* | | | | | Length |
|---|---|---|---|---|---|---|
| Lab. | W | | | | | |
| | ML | | CV | UQL | | SFC |
| | mm | inch | % | mm | inch | % |
| *271* | 27.7 | 1.09 | 34.9 | 33.8 | 1.33 | 7.4 |
| *272* | 26.7 | 1.05 | 30.5 | 31.8 | 1.25 | 4.3 |
| Average | 27.87 | 1.097 | 31.93 | 33.62 | 1.324 | 5.0 |
| Median | 27.92 | 1.099 | 31.9 | 33.6 | 1.323 | 5.0 |
| StdDev | 0.85 | 0.034 | 1.76 | 0.86 | 0.034 | 1.16 |
| CV | 3.07 | 3.068 | 5.51 | 2.54 | 2.544 | 23.13 |
| Min | 25.8 | 1.01 | 27.9 | 31.6 | 1.24 | 2.5 |
| Max | 30.0 | 1.18 | 36.8 | 35.7 | 1.41 | 8.1 |
| n | 44 | 44 | 37 | 48 | 48 | 45 |

| AFIS D / M | | | | | Diameter, Maturity |
|---|---|---|---|---|---|
| Lab. | D (N) µm | CV (D(N)) % | Fineness mtex | IFC % | Mat. Ratio |
| *22* | | | 160 | 6.0 | 0.94 |
| *24* | | | 177 | 4.1 | 1.01 |
| *28* | | | 165 | | 0.89 |
| *31* | | | 165 | 6.7 | 0.91 |
| *32* | | | 174 | 2.7 | 1.04 |
| *32-2* | | | 172 | 3.1 | 1.03 |
| *32-3* | | | 177 | 2.3 | 1.05 |
| *41* | 12.4 | | | | |
| *43* | | | 163 | 3.7 | 1.0 |
| *44* | | | 139 | 11.5 | 0.81 |
| *51* | | | 137 | 5.2 | 0.89 |
| *58* | | | 150 | 6.2 | 0.9 |
| *62* | | | 140 | 7.0 | 0.86 |
| *75* | | | 167 | 4.4 | 0.97 |
| *90* | | | 162 | 4.3 | 0.98 |
| *91* | | | 152 | 4.6 | 0.97 |
| *96* | | | 155 | 5.3 | 0.94 |
| *100* | | | 161 | | 0.89 |
| *101* | | | 154 | 5.0 | 0.96 |
| *102* | | | 153 | 7.2 | 0.93 |
| *111* | | | 169 | 5.0 | 0.98 |
| *112* | | | 185 | 2.0 | 1.08 |
| *118* | | | 165 | 3.8 | 0.99 |
| *123* | | | 160 | 5.7 | 0.96 |
| *123-2* | | | 149 | 6.4 | 0.93 |
| *123-3* | | | 157 | 4.8 | 0.96 |
| *134* | | | 157 | 4.2 | 0.97 |
| *139* | | | 151 | 5.2 | 0.94 |
| *140* | | | 156 | 5.0 | 0.95 |
| *143* | | | 166 | 4.2 | 0.98 |
| *148* | | | 172 | 3.2 | 1.02 |
| *148-2* | | | 168 | 4.5 | 0.99 |
| *154* | | | 146 | 8.2 | 0.91 |
| *158* | | | 151 | 5.4 | 0.91 |
| *161* | | | 159 | 4.4 | 0.98 |
| *176* | | | 156 | 10.5 | 0.92 |
| *183* | | | 165 | 3.6 | 0.98 |
| *186* | | | 155 | 6.9 | 0.89 |
| *186-2* | | | 149 | 6.5 | 0.9 |
| *207* | | | 153 | 6.2 | 0.92 |
| *208* | | | 154 | 6.9 | 0.92 |
| *271* | | | 144 | 9.8 | 0.83 |
| *272* | 9.9 | | | | |
| Average | | | 158.8 | 5.43 | 0.948 |
| Median | | | 157.0 | 5.0 | 0.95 |
| StdDev | | | 10.8 | 2.08 | 0.057 |
| CV | | | 6.8 | 38.27 | 6.048 |
| Min | | | 137 | 2.0 | 0.81 |
| Max | | | 185 | 11.5 | 1.08 |
| n | 2 | 0 | 41 | 39 | 41 |

| AFIS T | | | | Trash |
|---|---|---|---|---|
| Lab. | Mean Diam. µm | Total Trash Cnt/g | Dust Cnt/g | V. F. M. % |
| *21* | 194 | 1004 | 954 | 1.45 |
| *22* | 234 | 702 | 641 | 1.51 |
| *28* | | 366 | | |
| *31* | 270 | 557 | 492 | 1.83 |
| *32* | 215 | 729 | 684 | 1.27 |
| *32-2* | 234 | 772 | 708 | 1.52 |
| *32-3* | 248 | 599 | 545 | 1.45 |
| *43* | 237 | 803 | 732 | 1.74 |
| *51* | 257 | 867 | 778 | 2.24 |
| *58* | 234 | 1039 | 950 | 2.19 |
| *62* | 237 | 494 | 447 | 1.02 |
| *90* | 236 | 469 | 436 | 0.9 |
| *91* | 241 | 642 | 583 | 1.62 |
| *100* | | 1015 | | |
| *101* | 271 | 713 | 637 | 1.85 |
| *102* | | 1261 | 1166 | 2.16 |
| *111* | 280 | 497 | 432 | 1.26 |
| *112* | 239 | 1039 | 944 | 1.82 |
| *129* | 204 | 487 | 450 | 0.75 |
| *134* | 243 | 462 | 423 | 1.02 |
| *140* | 231 | 546 | 505 | 1.2 |
| *142* | 217 | 873 | 813 | 1.54 |
| *143* | 201 | 949 | 890 | 1.45 |
| *148* | 281 | 596 | 533 | 2.0 |
| *148-2* | 285 | 676 | 587 | 2.32 |
| *154* | 222 | 895 | 828 | 1.78 |
| *158* | 217 | 733 | 675 | 1.63 |
| *183* | | 952 | 881 | 2.05 |
| *186* | 224 | 1186 | 1093 | 2.3 |
| *186-2* | 238 | 952 | 872 | 2.34 |
| *207* | | 810 | 733 | 2.01 |
| *208* | | 799 | 724 | 1.83 |
| *272* | 206 | 557 | 523 | 0.79 |
| Average | 236.9 | 758.8 | 698.7 | 1.64 |
| Median | 236.0 | 733.0 | 684.0 | 1.63 |
| StdDev | 24.7 | 225.2 | 203.2 | 0.462 |
| CV | 10.4 | 29.7 | 29.1 | 28.141 |
| Min | 194 | 366 | 423 | 0.75 |
| Max | 285 | 1261 | 1166 | 2.34 |
| n | 27 | 33 | 31 | 31 |

**Lab No 43, 112, 148, 148-2, 158**

**Total Trash = sum of Trash count + Dust count**

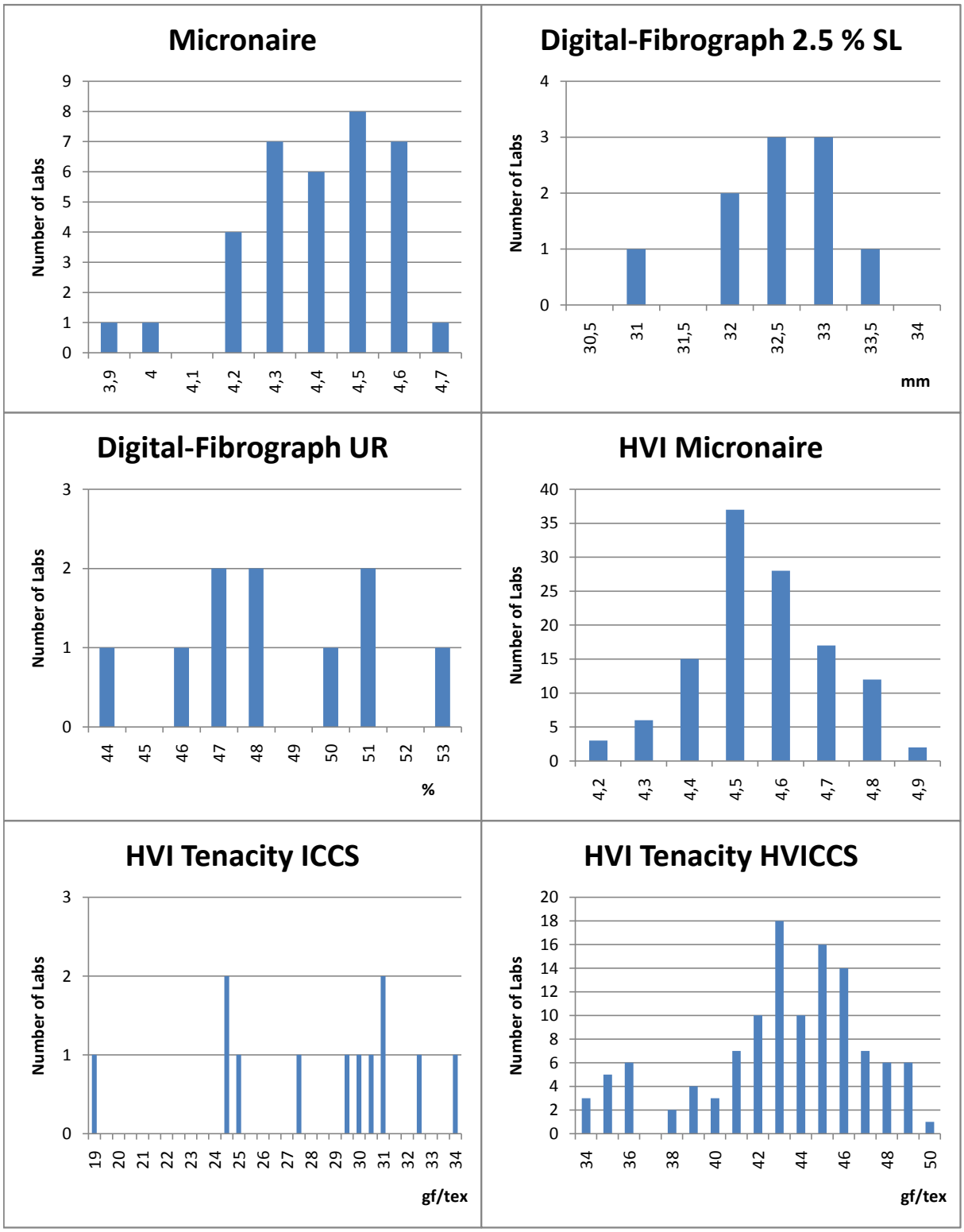
| AFIS N *(table is divided into 2 pages)* | | | | | Neps |
|---|---|---|---|---|---|
| Lab. | Total Neps | | SCN | | |
| | Mean Diameter µm | Cnt/g | Mean Diameter µm | Cnt/g | |
| *5* | | 184 | | | |
| *7* | 756 | 81 | | | |
| *21* | 672 | 103 | | | |
| *22* | 672 | 67 | 980 | 3 | |
| *24* | 685 | 70 | 1212 | 1 | |
| *27* | | 138 | | | |
| *28* | | 11 | | 6 | |
| *31* | 716 | 165 | 1174 | 10 | |
| *32* | 700 | 75 | 1005 | 7 | |
| *32-2* | 706 | 112 | 1195 | 6 | |
| *32-3* | 694 | 99 | 1119 | 9 | |
| *38* | 734 | 58 | | | |
| *39* | 597 | 50 | | | |
| *41* | 655 | 89 | | | |
| *43* | 711 | 100 | 1065 | 7 | |
| *44* | 669 | 75 | 1095 | 3 | |
| *51* | 709 | 126 | 1056 | 9 | |
| *58* | (880) | 115 | 975 | 3 | |
| *59* | 671 | 180 | 825 | 8 | |
| *62* | 710 | 100 | 1570 | 7 | |
| *75* | 683 | 80 | 908 | 3 | |
| *90* | 703 | 87 | 1496 | 5 | |
| *91* | 717 | 96 | 1388 | 6 | |
| *91-2* | 666 | 126 | | | |
| *96* | 626 | 56 | 1042 | 2 | |
| *100* | (519) | | | (235) | |
| *101* | 717 | 105 | 1111 | 7 | |
| *102* | 633 | 93 | 752 | 7 | |
| *109* | 616 | 72 | | | |
| *111* | 749 | 89 | 1287 | 13 | |
| *112* | 658 | 57 | 1425 | 2 | |
| *118* | 670 | 51 | 975 | 3 | |
| *123* | 662 | 116 | 1008 | 9 | |
| *123-2* | 659 | 100 | 905 | 6 | |
| *123-3* | 723 | 100 | 1246 | 8 | |
| *129* | 688 | 104 | 1152 | 5 | |
| *132* | 629 | 96 | | | |
| *134* | 644 | 76 | 802 | 3 | |
| *139* | 676 | 90 | 1158 | 4 | |
| *140* | 702 | 112 | 1209 | 4 | |
| *142* | 628 | 58 | | | |
| *143* | 646 | 87 | 963 | 3 | |
| *148* | 662 | 64 | 1115 | 3 | |
| *148-2* | 686 | 79 | 965 | 8 | |
| *148-3* | | 78 | | | |
| *154* | 693 | 71 | 1124 | 7 | |

| AFIS N | *(table is divided into 2 pages)* | | | Neps |
|---|---|---|---|---|
| Lab. | Total Neps | | SCN | |
| | Mean Diameter µm | Cnt/g | Mean Diameter µm | Cnt/g |
| *158* | 628 | 93 | 775 | 1 |
| *161* | 743 | 124 | 1147 | 15 |
| *176* | 704 | 95 | 1034 | 8 |
| *183* | 667 | 78 | 1064 | 2 |
| *186* | 711 | 111 | 1290 | 6 |
| *186-2* | 711 | 100 | 1049 | 7 |
| *207* | 727 | 115 | 1223 | 11 |
| *208* | 761 | 114 | 1469 | 13 |
| *271* | 667 | 98 | 1206 | 3 |
| *272* | 684 | 129 | | |
| Average | 683.9 | 94.5 | 1111.2 | 6.0 |
| Median | 684.5 | 95.0 | 1111.0 | 6.0 |
| StdDev | 37.5 | 30.9 | 190.1 | 3.3 |
| CV | 5.5 | 32.7 | 17.1 | 55.5 |
| Min | 597 | 11 | 752 | 1 |
| Max | 761 | 184 | 1570 | 15 |
| n | 50 | 55 | 41 | 42 |

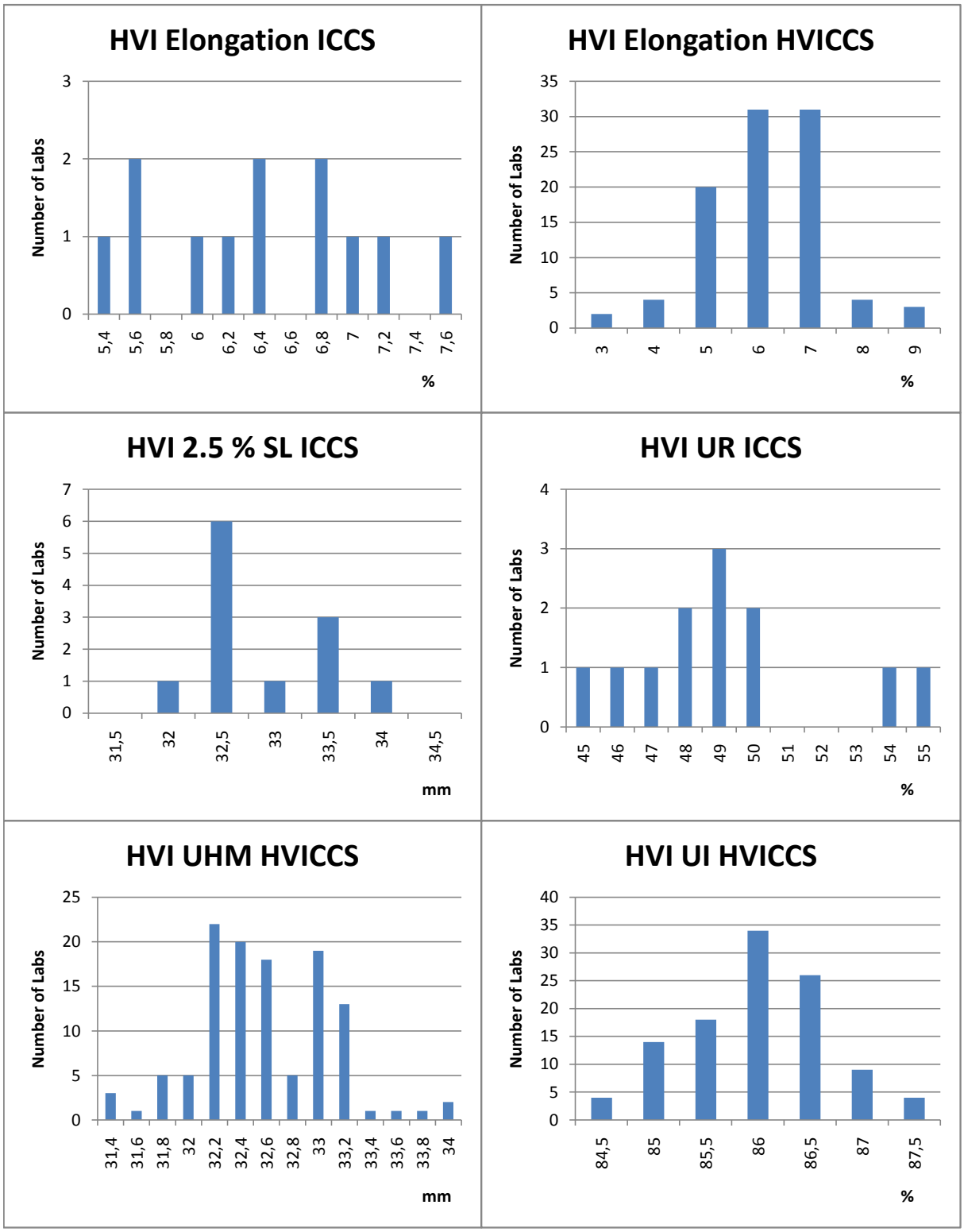
| aQura *(further information see page "Multiple Devices")* | | | | | | | Length, Neps |
|---|---|---|---|---|---|---|---|
| Lab. | Repetitions | 5.0 % L (n) | 50 % L (n) | SFC (n) <12.7 mm | SFC (w) <12.7 mm | Fibre Neps | SCN |
| | | mm | mm | % | % | Cnt/g | Cnt/g |
| *53* | 4 | 20.5 | | 6.1 | 15.9 | 52 | 7 |
| *116* | 4 | 19.9 | | 19.1 | 7.0 | 171 | 24 |
| *127* | 4 | 34.0 | | 21.9 | 9.4 | 85 | 7 |
| *213* | 5 | 33.7 | | 19.8 | 8.2 | 43 | 5 |
| *300* | 4 | 34.7 | | 16.2 | 6.3 | 100 | 20 |
| Average | | 28.57 | | 16.62 | 9.37 | 90.2 | 12.6 |
| Median | | 33.71 | | 19.11 | 8.19 | 85.0 | 7.0 |
| StdDev | | 7.64 | | 6.21 | 3.85 | 50.8 | 8.7 |
| CV | | 26.76 | | 37.36 | 41.11 | 56.4 | 69.3 |
| Min | | 19.9 | | 6.1 | 6.3 | 43 | 5 |
| Max | | 34.7 | | 21.9 | 15.9 | 171 | 24 |
| n | | 5 | 0 | 5 | 5 | 5 | 5 |

| Multiple Devices | | *(information not provided in the respective table)* | | | General |
|---|---|---|---|---|---|
| Lab. | Device | Manufacturer | Instrument | Std. Test Method | Repetitions |
| *8* | DigitalFibrograph | | F370 | | 16 |
| *32* | FMT | | WIRA | | 6 |
| *32-2* | FMT | | WIRA | | 6 |
| *32-3* | FMT | | WIRA | | 6 |
| *35* | DigitalFibrograph | | 730 | | 6 |
| *37* | FMT | | | | |
| *53* | aQura | Premier | | | 4 |
| *56* | Causticaire | | Micronaire | JIS | 2 |
| *58* | ALMeter | | | internal | 3 |
| *70* | GravFineness | | | ISO 1973-95 | 5 |
| *70* | FMT | | MK.1 | ASTMD3818-92 | 6 |
| *79* | GravFineness | | | RSTUz620-94 | |
| *85* | GravFineness | | | UNIENISO1973-98 | 5 |
| *85* | CombSorter | | Keisokki | UNI10170-94 | 1 |
| *85-2* | CombSorter | | Keisokki | UNI10170-94 | 1 |
| *85-2* | GravFineness | | | UNIENISO1973-98 | 5 |
| *85-3* | CombSorter | | Keisokki | UNI10170-94 | 1 |
| *85-3* | GravFineness | | | UNIENISO1973-98 | 5 |
| *85-4* | GravFineness | | | UNIENISO1973-98 | 5 |
| *92* | DigitalFibrograph | | DigiLen | ASTMD5332 | 6 |
| *92* | Causticaire | | Projection Scope | ASTMD1448 | 2 |
| *100* | DigitalFibrograph | | Fibrotest | ASTMD1447-07-12 | 12 |
| *100* | FMT | | WIRA | ASTMD3818-92 | 12 |
| *102* | DigitalFibrograph | | 530 | ICCS | 5 |
| *102* | FMT | | FMT 3 | ICCS | 2 |
| *112* | GravFineness | | | | 3 |
| *116* | DigitalFibrograph | | Bitra | | 5 |
| *116* | aQura | Premier | | | 4 |
| *126* | DigitalFibrograph | | 350 | ASTM | 3 |
| *127* | aQura | Premier | | | 4 |
| *129* | Causticaire | | Microscope | IS 236 | 4 |
| *131* | DigitalFibrograph | | 530 | ASTM | 6 |
| *131* | Causticaire | | Fibroscope | British | 1 |
| *132* | DigitalFibrograph | | Fibrotest | ASTMD1447 | 10 |
| *132* | ALMeter | Uster | AL100 | DIN 53806 | 5 |
| *143* | DigitalFibrograph | USTER | 330 | ABNTNBR13154-94 | 2 |
| *177* | Causticaire | | | DIN53943-4 | 3 |
| *177* | GravFineness | | | ASTMD1577-90 | 4 |
| *186* | FMT | SDL | | USDA | 6 |
| *193* | GravFineness | | | GB/T6100-07 | 2 |
| *213* | aQura | Premier | | | 5 |
| *300* | aQura | Premier | | ASTM | 4 |

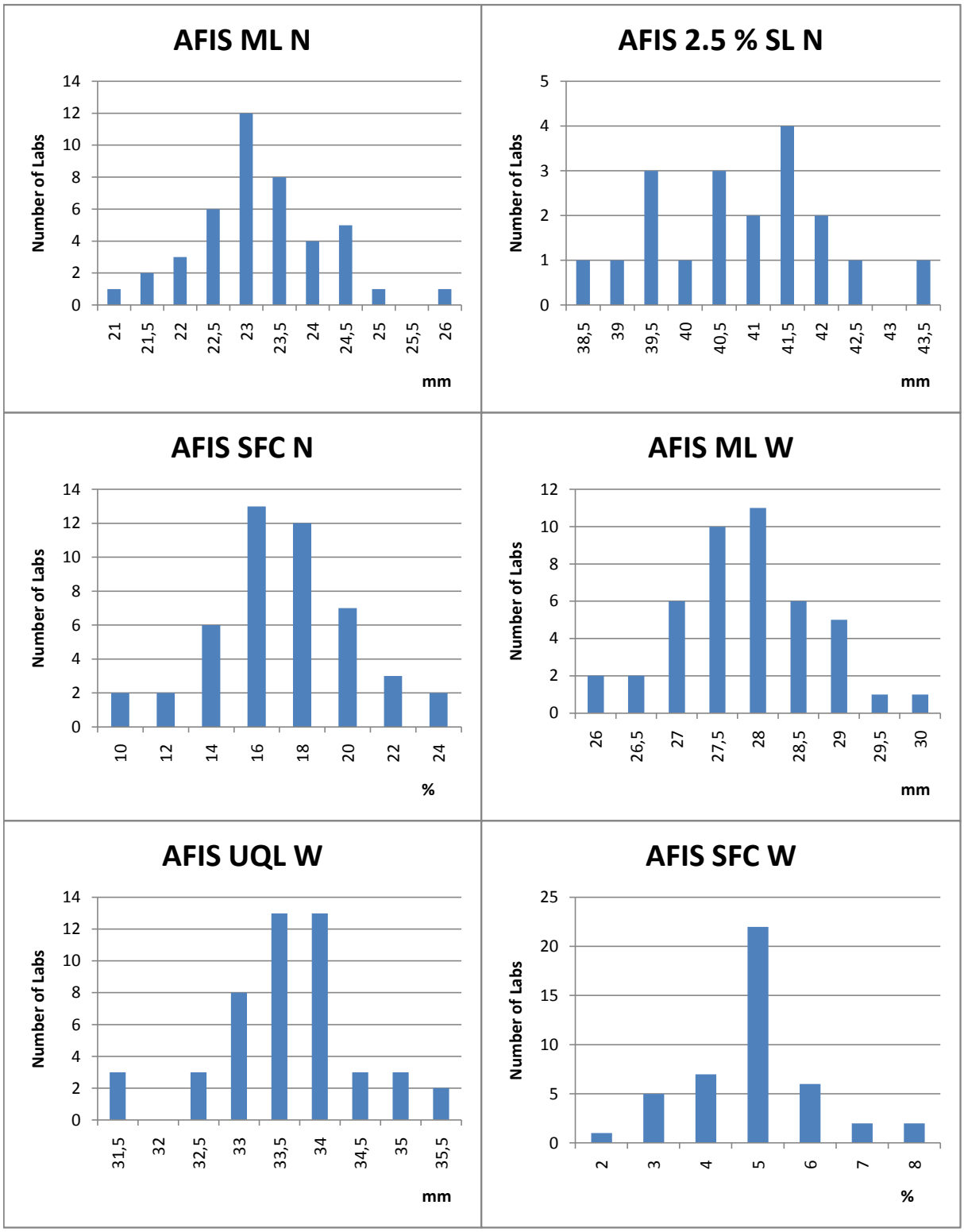
Graphics of selected round test data



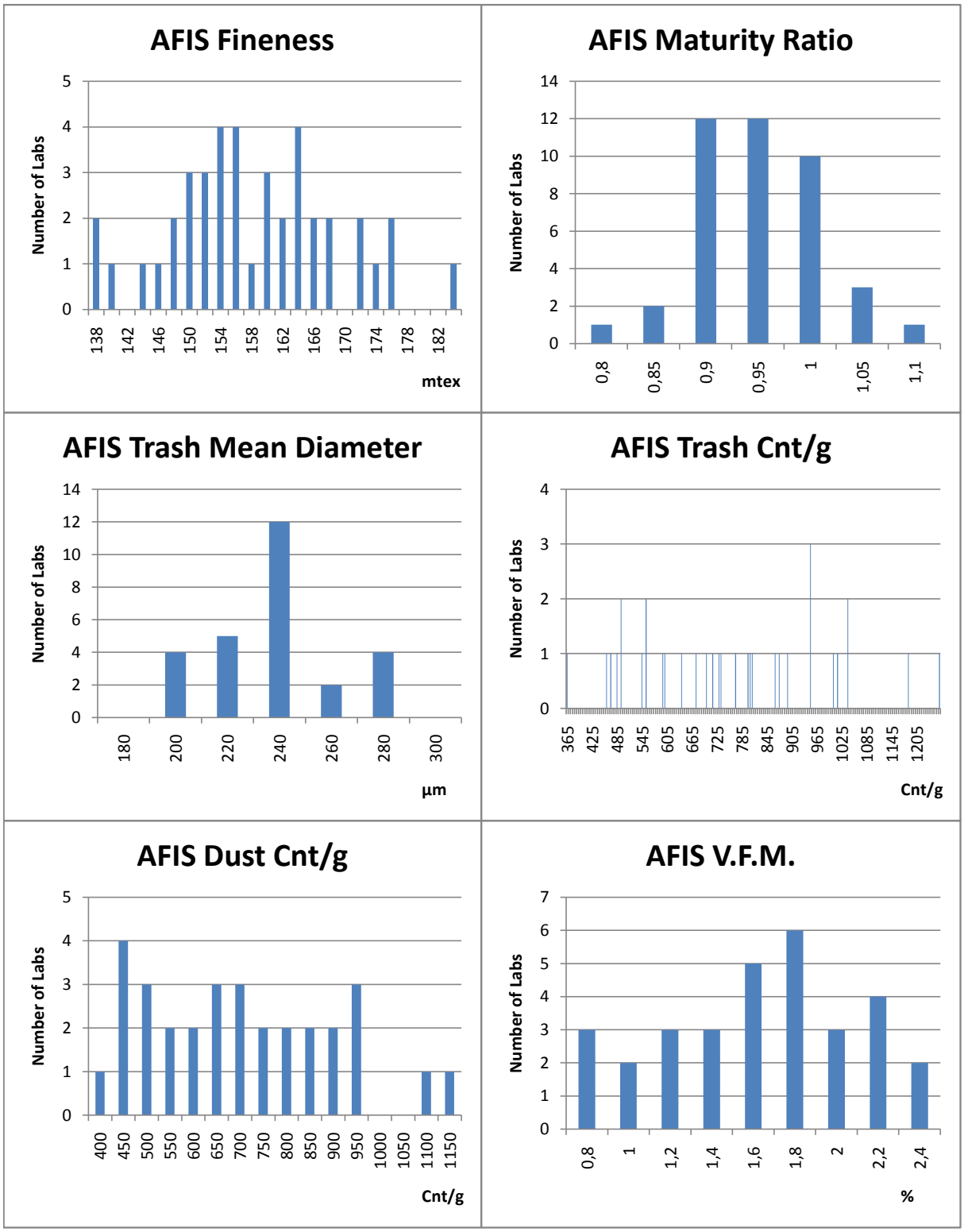
Graphics of selected round test data



# Graphics of selected round test data



Graphics of selected round test data



Graphics of selected round test data