International Committee on Cotton Testing Methods (ICCTM)

Progress Report 2010

Proceedings of the ICCTM Meeting in Bremen, March 23 – 24, 2010

Chairman: M.N. Vijayshankar, Recron, Malaysia

Vice Chairman: Axel Drieling, Faserinstitut Bremen e.V., Germany

Preface

The International Textile Manufacturers Federation (ITMF) is an international association for the world's textile industries, dedicated to keeping its world-wide membership constantly informed through surveys, studies and publications and through the organisation of annual conferences, participating in the evolution of the industries basic raw materials and their application, through specialised committees, with the overall objective of creating growth and prosperity in all aspects of industry.

The International Committee on Cotton Testing Methods (ICCTM) is a non-profit technical subcommittee of ITMF. The main function of the Committee is to encourage research and development for enhanced testing methods, to recognize suitable test methods, to identify reference test methods, to harmonize cotton testing results and to discuss testing related problems.

Introduction

Dr. Christian Schindler, Director General of the ITMF, welcomed the members and observers of the ITMF International Committee on Cotton Testing Methods in Bremen. About 40 people attended this year's meeting. He expressed his sincere thanks to the Fibre Institute Bremen (FIBRE) as well as the Bremen Cotton Exchange, that this meeting could take place again in Bremen, after starting in the 1980s. He welcomed also the members of the ITMF Spinners Committee as well as the observers from the ICAC. Afterwards the Chairman of ICCTM, Mr. Vijayshankar, opened this year's session.

Dr. Schindler presented the agenda of the meeting, this time having consecutive meetings instead of parallel meetings. No remarks or changes were requested. As the Coordinator of the Steering Committee, Dr. Terry Townsend presented the findings of the Steering Committee in their May 2009 meeting, which are included in the text below.

Interested parties are welcome to apply for membership by sending an email to ITMF (secretariat@itmf.org).

Task Forces, Chairs, and Steering Committee

The Chairmen, which were re-elected in 2010, are

- Mr. Vijay Shankar, Recron, Malaysia, as Chairman, and
- Mr. Axel Drieling, Fibre Institut Bremen e.V., Germany, as Vice Chairman

The Task Forces and their Coordinators are

- HVI: Mrs. Mona Qaud: Rieter, Winterthur, Switzerland, contact: mona.qaud@rieter.com
- Length: Mr. Axel Drieling, FIBRE, Bremen, Germany, contact: drieling@faserinstitut.de
- Stickiness: Dr. Jean-Paul Gourlot, CIRAD, Montpellier, France, contact: jean-paul.gourlot@cirad.fr
- Neps and Trash: Dr. Jonn Foulk, USDA ARS, Clemson, USA, contact: jonn.foulk@ars.usda.gov
- Colour: Dr. Malgorzata Matusiak, Institute of Textile Architecture, Lodz, Poland, contact: Malgorzata.matusiak@iw.lodz.pl
- Fineness and Maturity: Dr. Devron Thibodeaux resigned; as successor, Dr. Stuart Gordon from CSIRO, Belmont, Australia, was elected, contact: stuart.gordon@csiro.au

Figure 1: The Task Force Chairmen (from left to right): Jonn Foulk, Axel Drieling, Mona Qaud, Malgorzata Matusiak, Jean-Paul Gourlot.

Missing: Stuart Gordon

The Steering Committee comprises the following cotton / textile experts:

- Dr. Terry Townsend, ICAC, Washington, USA
- Mr. Andrew Macdonald, ITMF Spinners Committee, Brazil
- Mr. Darryl Earnest, USDA-AMS, Memphis, USA
- Mr. Jan Wellmann, Bremen Cotton Exchange, Bremen, Germany
- Mr. Christoph Färber, Trützschler, Germany

Mandates of the Committee

The Steering Committee proposed a list of mandates for the ICCTM, which are:

1. *Encourage research into the basic science needed to develop commercially useful tests.*
2. *Encourage the development of enhanced testing methods.*
3. *Recognition of instruments and testing methods that are able to perform within allowable tolerances, and that achieve a result that correlates with a reference method. (The Steering Committee recommends that the ICCTM no longer "approve" or "recommend" any instruments or methods, as these words imply a commercial and scientific endorsement that the ICCTM is not in a position to provide. Instead, ICCTM should "recognize" those instruments and methods that work or not.)*
4. *Identification of reference methods.*
5. *Harmonize cotton testing results by means of*
    a. *proposition and support for the international standardization of test methods*
    b. *development of guidelines for testing*
    c. *technical evaluations using world-wide round tests.*
6. *Discussion of problems related to testing of cotton fibre properties and their relations to cotton processing.*

The ITMF ICCTM activities are mainly targeted to the practical use of cotton testing for mill and research purposes. Specific measures on commercial standardization of instrument testing for the purpose of Instrument Classification of Cotton are addressed at the ICAC Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC).

The ICCTM acknowledged the new mandates.

Recognition of Instruments / Methods by the ICCTM

As it was decided that the ICCTM will no longer recommend any test methods, the Steering Committee discussed a possible recognition of test instruments / methods.

Principally the following 3 distinct areas for recognition are agreed upon:

- Testing for spinning mill purpose
- Instrument cotton classification
- Reference testing

For testing for spinning mill purpose, the Steering Committee presented the following procedure:

The ICCTM will no longer "approve" or "recommend" any instruments or test methods, as these words imply a commercial and scientific endorsement that the ICCTM is not in a position to provide. Instead, ICCTM will "recognize" those instruments and methods that are beneficial for the cotton value added chain.

The recognition is especially targeted on test methods for mill and research use. It does not cover reference test methods and does not cover the instrument classification of cotton. For both, specific criteria have to be applied.

For officially recognizing an instrument or test method, the inventor / instrument manufacturer has to provide information that allows the International Committee on Cotton Testing Methods (ICCTM) to assess its usefulness and benefits.

The recognition is divided into a prototype recognition, where it is not possible to deliver data from comparisons between instruments of the same type, and a full instrument or method recognition, which definitely needs additional results from instrument comparisons of multiple testing units.

The key criterion for the recognition of an instrument by the ICCTM is the performance of the test method, which implies

- *either the measurement of new cotton characteristics, which are important for cotton processing or for quality assessment of cotton and its products*
- *or better resolution / less uncertainty / less influences compared to existing methods,*
- *or a direct user benefit such as reduced operating time without reducing the resolution.*

As the different users (research, cotton production, trading, processing/spinning) have different performance criteria, the ICCTM does not provide fixed quantifiable criteria or a fixed format of the information, but demands sufficient information that allows the Committee members and the potential users to evaluate the instrument based on their own criteria.

Useful information to be delivered for a Prototype Recognition

- *Short description of the instrument and test procedure*
- *Key description of the usefulness of the test method*
- *Description of the result parameters and their definition*
- *Measured samples per time and amount of material needed*
- *Correlation to existing methods and/or reference methods*
- *Basic influences on the test result level*
- *Measurement resolution*
- *Repeatability based on one instrument*

Additional information to be delivered for a Method / Instrument Recognition

- *Sufficiently detailed test procedure*
- *Accuracy based on reference methods or widely accepted test methods*
- *Precision (repeatability and reproducibility) based on Round Trial results with sufficient instruments*
- *Measurement uncertainty compared to the necessities of the different users (processing, research)*
- *Laboratory based influences (operator, air conditioning)*
- *Maintenance (time, costs, service available)*

For recognition, it is necessary to send the information early in advance (at least 10 weeks) to the responsible Task Force Coordinator (or the ICCTM Chair or Vice Chair), so that the Task Force Coordinator may review it and prepare recommendations for the next ICCTM meeting.

Costs for the recognition have to be borne by the instrument manufacturer.

Finally the customer should, based on the information provided for the ICCTM recognition, be able to decide if a test method is valid for his application.

Andrew Macdonald explained that the aim should be to encourage new instruments to be developed. For this reason, in addition to marketed instruments also prototypes should be considered.

James Knowlton explained that for instrument classification other rules apply. This does not contradict to the recognition described here. For the instrument classification, USDA developed a standard procedure with fixed limits and evaluation material, published as ASTM D7410.

After a discussion it was decided that the ICCTM will follow this path and recognize test methods from this session on. During the discussion about the time frame, it was mentioned that the procedure should be tried out for a few instruments until the next meeting. Interest for a recognition was expressed by Premier Evolvics and Textechno.
Ralph Schulzé finally raised the question how to handle testing methods

- that are already long established in customer use,
- that were recommended by the ICCTM before changing from a recommendation to a recognition.

Besides the recognition for spinning mill purpose, it was agreed to proceed on recognitions for cotton classification and for reference testing.

Input from the CSITC Task Force

Andrew Macdonald reported about the activities in the ICAC Task Force on Commercial Standardization of Instrument Testing of Cotton (CSITC Task Force). The aim of the Task Force is to foster instrument testing as a basis for trading of cotton.

He noted that it is important for the textile industry understand the CSITC, its aims, and especially the CSITC Round Trials, as it ensures accurate results for their benefit.

The CSITC Round Trials currently include approx. 90 laboratories. These laboratories get an objective evaluation/rating of their performance as well as detailed analyses for improving accuracy. Whereas 80% of the participating laboratories are based in cotton production and classing, in spinning it is only 20%. Therefore Andrew Macdonald strongly recommended laboratories from textile mills to participate. Christian Schindler proposed to inform ITMF members by putting the Round Trial invitation letter on the ITMF website.

For the future development, participation in such an evaluation programme should be a requirement for all commercial testing.

Answering to Mr. Vijayshankar's remark that the fee for participation might be a constraint, Andrew Macdonald explained that the fee is only USD 600 per year, and is covering the sample dispatch, the evaluation and additional expertise.

Two presentations were given without a corresponding Task Force.

Laura Payet described a new mixing device for raw cotton fibres, able to blend 400 grams of material at a time. It compromises a drafting system with 4 pair cylinders. With the help of the blender the variability on lab results for major parameters was reduced, while the mean values remained unchanged. The aim is to be able to prepare even materials when needed, for example for round trial purposes. Laura proved the results of the homogenization in an internal analysis as well as in round trial.

This was followed by the information from Axel Drieling, FIBRE, who explained the changes within the Bremen Cotton Round Trials, as of 2009. Now it includes also the details of the testing device and the used standard test methods. Also more statistical details are given. Due to cost reasons, the number of tests had to be reduced to now 3 Round Robbins a year.

Report of the Task Force "HVI"
(Coordinator: Mrs. Mona Qaud, Rieter, Winterthur, Switzerland)

Within the HVI Task Force Mona Qaud gave a short update on the developments in this area. Uster Technologies has so far sold 2440 instruments; Premier Evolvics mentioned that they have 462 instruments out in the market. In China there are now almost 400 HVI instruments installed, and 50% of the Chinese crop is HVI tested in regional test centers.

The next presentation in the HVI Task Force was given by Dr. Guntram Kugler, Textechno. He presented a semi-manual Fibrotest instrument and shared first data from a cooperation with Dean Etheridge, Texas Tech University. Testing frequency is up to 30 tests per hour. The length distribution is measured optically with a laser based system; the mass of the beard is weighted. A full presentation was given at the conference.

James Knowlton, USDA AMS, Memphis, showed the developments within the ASTM standard work. Some items are being worked on, such as the revision of the Standard Test Method D5867 on HVI testing, but also WK27875 for the establishment of calibration cottons. With this, other countries will be able to produce their own standard materials in future (see also www.astm.org).

In his second presentation Mr. Knowlton explained that USDA now suggests using Upland calibration cottons for all Upland cottons, no matter on their ginning process. Pima cottons will have to be calibrated to the Short/Weak Upland and Long/Strong Pima. Due to this, the Short/Weak Pima is no longer provided by USDA. Latest software updates on HVI 1000 will state the used calibration cottons on the printout. Still there is no clear rule how to calibrate Upland samples with more than 1.25" or with more than 38 g/tex. For cotton selling contracts, the Task Force recommended to state the calibration to be used.

In a third presentation James Knowlton explained the use of calibration for reducing the effect of the humidity on test results. He pointed out that the calibration cottons will adjust their moisture to different levels of humidity in a similar way as the cottons to be tested, therefore adjusting the results to a valid property level. Stability of moisture conditions is more important than the level. Therefore laboratories should make sure that their level of humidity is stable and that frequent calibrations will cover changes in humidity. But as cotton may react differently, it is still important to maintain standard air condition. A moisture correction in the software should only be used, if there are frequent moisture changes.

It is planned to combine existing HVI User Guidelines and Standards into one single document for users.

Requests from testing instrument manufacturers or researchers for recognition of their instrumentation will be dealt with

The HVI Task Force will continue its work.

Report of the Task Force "Length"
(Coordinator: Mr. Axel Drieling, Fibre Institute Bremen, Germany)

The tasks of the Length Task Force planned for 2010 were:

- SFI calibration
- SFI reference
- Relative Short Fibre Content – follow up

In the first presentation, Anja Schleth from Uster presented the new software for HVI 1000, version 3.2.0.3, including the possibility for the Short Fibre Index Calibration. Calibration can only be done for Upland cottons, but stays valid after a second calibration with Pima cottons. SF calibration should not be done every time that L/S is calibrated, but only when mechanical changes have appeared. Additionally the new software doesn't include the option anymore to calibrate Pima SW/Pima LS, so that the customers will follow the findings of the Committee in 2008 that the Pima SW cotton shall not be used anymore.

James Knowlton from USDA AMS mentioned accordingly, that SFI results for calibration cottons will now be available for Upland cotton standards, but not for Pima standards. The results are based on a limit of 12.7mm, and referenced to AFIS, which itself was referenced to Suter-Webb Array in 1987. SFI results will not be printed on the standard boxes, but given on demand.

Based on this, the Committee decided to get more information about the effect of SFI calibration based on CSITC Round Trials.

Mr. Srinivasan stated that currently the Premier software does not include SFI calibration.

In his second presentation, James Knowlton showed, based on Leon Cui's work, different parameters for expressing the Short Fibre Content. One option is the Lower Half Mean Length LHML instead of the SFI, which seems to derive lower CV%, although it has good correlations to spinning behaviour. The Committee decided to follow up on the LHML.

Based on the comparison between measured SFI and calculated SFI, Hossein Ghorashi from Uster made a general statement, which should be kept in mind for the discussion: the Short Fibre Content of cotton is naturally having a high variation, so a low CV cannot be achieved based on the given small sample sizes when really measuring the SF-Content. In contrast, calculated SF-Contents have the possibility for lower CVs, but they may perhaps not reflect the truly given content.

Mr. Srinivasan from Premier reported that a parameter for the relative SF-Content has been installed in Premier aQura instruments. Case studies at customers now prove the usefulness for cotton processing. In another presentation he showed the good correlation between the aQura measured length distribution and an image analysis based method in different processing stations.

James Knowlton highlighted the history of the length conversion chart, explaining the difference between staple lengths and HVI results for Pima cottons. It has to be stated that the HVI results are linear and do not show different results for Upland and Pima cottons. HVI results and staple standards have been harmonized for length in the 1980s, but this was not done for Pima Staple Standards, so that for these a difference is given. Additionally it got clear that results given in 32nds of an inch are not directly calculated from instrument test results, but converted based on the manual classing conversion charts.

Topics for the next years are:

- SFI calibration follow-up: improvement of variability
- Investigations on LHML
- Investigations on a reference method
- Recognition of instruments, where already some possible candidates are given.

The Length Task Force will continue its work.

Report of the Task Force "Colour"

(Coordinator: Mrs. Malgorzata Matusiak, Institute of Textile Architecture, Lodz, Poland)

In the Colour Task Force different topics were discussed. They concerned two main areas:

- Colour measurement by HVI
- Application of spectrophotometer to cotton colour assessment

Axel Drieling from Fibre Institute Bremen presented the results of CSITC Round Trials for colour parameters. In the round trials 30 tests are done for each instrument, with approx. 80 participating instruments. From CSITC Round Trials 2007/1 to 2010/1 the values of interlaboratory variation for Rd were between 0.8 up to 1.6 (based on 30 tests). For + b (based on 30 tests) the standard deviation was 0.30- 0.68. It was stated that over the time variation increased for all participating laboratories.

Influence of trash on colour measurement was presented by Malgorzata Matusiak. In the investigation carried out in the frame of Laboratory Commission of Gdynia Cotton Association 20 cotton samples were measured by means of HVI both before and after manual trash removal. In all cases the value of reflectance was higher after trash removal than before. Correlation between the difference in trash content and the difference was r=0.8. Changes in yellowness were not distinct. In 70% of the cases an improvement of instrument measured colour grade was seen due to trash removal.

Results presented by James Knowlton confirmed above stated tendencies. At the USDA 8 samples were used, tested on a Master Xenon Trashmeter. Leaf was picked out manually in three steps. With this, the leaf grade changed by 1 or 2 leaf grades. Results were plotted in the Colour Chart – and resulted in different readings mainly for reflectance, up to 2.4 value points. The + b readings did not react on the trash removal.

Cotton colour classification is based on total sample colour including the trash particles. Presented results showed that quantifying the degree of colour change according to trash seems possible for biscuits, with approx. 2 Rd units increase per 1% decrease in trash area. A quantification for cotton samples is not as distinct.

A cotton colour assessment by spectrophotometer was presented by Malgorzata Matusiak. Spectrophotometer was applied to:

- Colour measurement and classification of white cotton of different origin
- Colour assessment of naturally coloured cotton: brown and green

For white cotton very strong correlations between L and Rd, as well as between b and +b were stated. On the basis of the experimental results regression equations were estimated. The equations enable calculation of the Rd and +b values on the basis of the results from the spectrophotometer: L and b. Agreement in the colour classing on the basis of the results from HVI and spectrophotometer was seen in most of the cases (53%), classification to neighbouring classes in 38%, and higher deviations for 9%. Therefore spectrophotometer can be applied for cotton colour assessment.

In a second presentation, Malgorzata Matusiak looked at the colour measurement on naturally coloured cottons. The lack of a method for colour assessment of naturally coloured cottons can be seen as one of the most important reasons of limited processing. Shades of colours go from yellow, ecru, to brown and red, even to chocolate brown. These types of cottons cannot be plotted in the regular Nickerson- Hunter Scale. Investigations of naturally coloured cottons from Greece, Turkey, Brazil, Bulgaria, US and Israel by spectrophotometer showed significant colour differences between brown and green cottons of different origin. One question to solve is, how to ensure colour stability and uniformity of textiles made of naturally coloured cotton.

It was concluded that the Colour Task Force will remain and the dyeability of cottons seemed to be the most important topic.

Report of the Task Force “Neps and Trash”
(Coordinator: Dr. Jonn Foulk, USDA-ARS, Clemson, USA)

In this presentation, James Knowlton mentioned the USDA work on instrumental trash detection for classification. HVI 1000 shows a major improvement in trash measurement reliability. Therefore USDA-AMS decided to refine the leaf grade charts with the 2010 crop, and replace classer leaf grade beginning with crop 2011. He continued to present a new cotton trash identification system developed by USDA-ARS. The aim is to distinguish between leaf, bark, stick and grass and provide the count and area of each. The ultimate goal is to achieve 100% instrument determination of bark/grass.

Jonn Foulk named Shirley Analyzer, HVI Trash Area and Count, and AFIS as the three currently used method for measuring cotton trash. USDA-ARS developed measurement methods based on UV/VIS/NIR instruments to predict the gravimetric trash content of cotton with R^2 values of 0.9 resp. 0.85 compared to the established methods. USDA is intending to continue the research for enhancing accuracy based on increased repetitions.

A presentation, prepared by Sun Pengzi and Cao Jipeng from the Eastern Liaoning University, was given by Jonn Foulk, giving results of a large study with AFIS. The study shows a large fluctuation of trash results. Reasons are the small sample size and the uneven distribution of trash in the cotton. This results in much more than 10 necessary repetitions for statistically assured results.

James Rodgers from USDA-ARS SRRC presented his developments in trash identification (hull, stem, leaf, seed coat) via UV-visible and NIR spectroscopy. The method was until now developed for pure trash extracts. FTNIR as well as UV-VIS show a good differentiation (98% resp. 84%). This was achieved by using smaller spectral regions.

Hossein Ghorashi mentioned that Uster is developing a mechanical trash measurement for HVI. Premier ART 2 already includes a gravimetrical measurement.

The Neps/Trash Task Force will continue its work.

Report of the Task Force "Fineness and Maturity"
(Coordinator: Dr. Stuart Gordon, CSIRO, Belmont, Australia)

Stewart Gordon started by thanking Dr. Devron Thibodeaux, who announced this retirement as Co-ordinator of the Fineness and Maturity Task Force prior to the meetings this year, on behalf of the International Committee on Cotton Testing Methods. Dr. Thibodeaux has led the Fineness and Maturity Task Force, or the Maturity Working Group as it was known before, since its inception here in the 1980s. In his time as Coordinator and as a researcher with the USDA Agricultural Research Service at the Southern Regional Center (SRRC) in New Orleans and lately with the Agricultural Research Service in Clemson South Carolina, Devron has stewarded the development of a reference method for measuring cotton fibre maturity. This laid the foundation of the subsequent development of a large reference set of international cottons with known maturity values by Dr. Eric Hequet of the Fiber and Biopolymer Research Institute in Lubbock, Texas,. These cottons are today being used to develop new instrument methods for measuring fibre fineness and maturity.

Stewart Gordon then presented his paper on the importance of measuring fibre fineness and maturity.

Furthermore, Stewart Gordon presented results on behalf of his colleagues at CSIRO in Australia on an extensive round trial conducted using an upgraded Cottonscan instrument. The Cottonscan is an instrument that measures fibre fineness or linear density directly, and in the upgraded version completes this measurement in ~1 minute. The trial consisted of five instruments located in three laboratories testing six cottons 10 times per day for four days. The results showed differences between the instruments, that amounted to +/- 4 mtex, or around +/- 2% on cotton average fineness. Higher variation was seen with coarser cotton.

Mark Brims of Cottonscope presented a brief history of wool fibre test instruments developed by his company and introduced two forms of the Cottonscope, which in one form is based on the CSIRO Siromat, an image analysis instrument for measuring cotton fibre maturity and the distribution of fibre maturity in a sample. The Siromat based version measures the maturity of a small sample of fibre snippets in around 25 seconds. Sample preparation is simplified compared with the Siromat and the inter-instrument variation has been improved. The instruments results correlate closely with values of Dr. Hequets maturity reference set.

In another form Mark Brims presented a Cottonscope instrument that could also measure, at the same time, the fibre fineness according to the technique used by the Cottonscan instrument. Fibre snippets are put into a water bowl, where they disperse and present randomly to a camera field of view. If the specimen is weighed before it is put in the bowl, a linear density measurement can be obtained along with the maturity average and distribution. The test time is similar to the Siromat version of the Cottonscope.

In the discussion on other instrument methods the Task Force noted the re-development of double compression airflow methods by instrument makers in India and China.

The Task Force members will continue to address the criteria set by the Committee so that instrument methods for fineness and maturity can be made available to classing and trading houses, and to spinning mills. The Task Force noted the issues and difficulties associated with describing immature and/or coarse cotton using the current Micronaire method.

Report of the Task Force "Stickiness"
(Coordinator: Dr. Jean-Paul Gourlot, CIRAD PERSYST, Montpellier, France)

The stickiness session started with an introduction by Jean-Paul Gourlot stating the challenges of the cotton textile industry: the goal is to remain competitive with synthetic fibres. Thus, solutions are implemented to maintain an acceptable level of profitability in the production by the reduction of production costs as well as of processing costs. But, as far as stickiness is concerned, this contamination in fibres induces at least a loss in quality up to disruptions during spinning and further processing steps; this is going the wrong direction as higher processing costs are observed in this situation at the same time yarn as quality may be altered. To overcome this problem, additional processing steps are sometimes used – further increasing processing costs – and/or discounts in raw prices materials are demanded in compensation. The vicious circle is then started to give a bad reputation to this cotton origin, inducing further automatic discounting on the raw material. All the cotton stakeholders – producers, ginners, traders, spinners as well as researcher – have to work jointly to solve this problem.

As a reminder, stickiness originates from various sources: vegetal parts, oil traces, waxes, plant sugars and insect sugars. The most important and problematic cause of stickiness is due to the entomological sugars from insects. Insect honeydew has become an important contaminant present in cotton. As said earlier, stickiness induces production and quality losses as sticky points remain in the material from fibres in the field to the textiles processes. We know that the behaviour of contaminated fibres during processing is highly dependent upon the quantity and the type of the main sugars present in fibres.

Various techniques may be used to estimate a possible contamination of fibres by honeydew. These techniques are more or less predictive of the stickiness potential of the fibres during their processing. These techniques may be categorized in four categories: chemical methods for measuring sugar contents, physical, mechanical and thermo-mechanical techniques (mostly measuring stickiness contamination). A bibliography on stickiness has been updated so that anyone can learn from the researches made on the topic since the 1960's to nowadays where we can observe a decrease in the number of publications in the recent years.

Dr. Eric Gozé, CIRAD, presented a document on how to use data obtained in case of counts of items such as number of neps, number of sticky points etc. He stated that the observation of repeatability of theses counts shows that standard deviations and CVs are not fixed quantities; rather they are a function of the mean. These apparently complex functions can be derived from simpler functions and models exist that allow better exploration of the collected data. He then proposed not to use CV as a single figure for the diagnostic of precision of measurements based on counts (neps, trash, seed cot fragments, sticky points, etc.).

The coordinator then presented a document on behalf of Dr. Amara and Harzallah, LPMT – ENSISA. The study was designed to measure the adhesion properties of individual sugars like sucrose, fructose and glucose and/or a combination of sugars in order to mimic the most problematic insect sugars onto steel support as we can find in the textile industry. Results of the so-called Tack-test shows that the adherence of honeydew decreases with water content, increases with speed of separation and is affected the most by surface characteristics and the type of sugar, alone or in a mix.

As additional information, we learn that:

- SYDEL, Montpellier France is manufacturing the SCT and H2SD,
- That SYDEL is currently working at a newer version of H2SD to reduce its cost both in terms of investment and processing costs,
- KOTITI, who presented a method 2 years ago, has prepared an ISO standard currently under national votes.

Future actions of the group:

- Study the means of proper conservation of reference materials such as stickiness reference materials,
- Study the possibility of calibrating stickiness testers,
- On demand from the Steering Committee, recognize the existing instruments,
- Try to link together the information provided by stickiness testers, the Tack method and the spinning test to insure a proper prediction of the observed phenomenon during spinning from the measuring methods.

The Stickiness Task Force will continue its work.

Closing Plenary Meeting and Final Remarks

The closing plenary meeting gave the possibility for the Task Force Coordinators to present their summaries. In each Task Force it was decided that the Task Force will continue its work for the next period. Important topics for the continued work were mentioned. The Committee saw no need for any additional Task Force at this time.

Dr. Christian Schindler thanked Dr. Devron Thibodeaux for his long and significant services to the Committee and welcomed the newly elected “Fineness and Maturity” Coordinator, Stuart Gordon.

The Committee Chairmen, the Steering Committee members and the other Task Force Coordinators were re-elected.

For financing the work of the Committee, Jean-Paul Gourlot suggested to apply for EU or CFC funding. This will be followed up.

For internal planning it was decided to have an in-between meeting for the Task Force Coordinators before the next Bremen Cotton Conference in 2012, preferably in connection to the ITMA Barcelona, which will take place from September 22 to 29, 2011.

The next full Committee meeting is planned to take place from March 20 to 21, 2012, again two days prior to the Bremen Conference. The Committee and its Chairmen will be happy to see all interested people at the next meeting in 2012.

With a closing remark, relating to the upcoming CSITC Task Force meeting in the afternoon, the meeting concluded. Christian Schindler thanked everyone for the fruitful discussions, the participants for their valid inputs, and the presenters for their important contributions.

Dr. Schindler thanked the Chair for preparing the meeting and the Task Force Coordinators for their efforts prior and during the meeting.

ITMF thanked the following sponsors of the ICCTM-website from the cotton and instrument machinery industry:

- Rieter
- Uster
- Premier
- Cotton Foundation

A. Drieling and M. Qaud