

**THE PROVISION OF TESTING RELATED
INFORMATION**

CHAPTER 5.5

ANNEX B: USTER SERVICE TRAINING AT THE RTC-EAST

Project CFC/ICAC/33

**Commercial Standardization of
Instrument Testing of Cotton
with particular consideration of Africa**



This project is co-funded by the European Union
and the Common Fund for Commodities



USTER SERVICE TRAINING AT TANZANIA BUREAU OF STANDARDS

23-25 MARCH 2011

REPORT OF THE TRAINING

1.0 OPENING OF THE TRAINING.

The Uster Service Training was officially opened by Eng. Thomas Mnunguli-Head of Engineering Standards Department, Tanzania Bureau of Standards (TBS) on behalf of the Director General of TBS. He started by introducing himself followed by individual introduction of all participants.

The training was officially opened at 09h15 and attended by trainees from Tanzania (9), Uganda (1), Kenya (3), Sudan (1), Zimbabwe (2) and Mozambique (1). The resource persons Mr. Vernon Gray and Mr. Diren Becum were from Uster Technologies.

The list of the participants present is hereto attached in *Annex I*



A group photo of resource persons and trainees

2.0 BRIEF INTRODUCTION OF USTER TECHNOLOGIES.

The resource person Mr. Vernon Gray gave a brief introduction about USTER TECHNOLOGIES by saying Uster Technologies is the leading high-technology instrument manufacturer for quality measurement and certification for the textile industry. The full USTER® range provides testing and monitoring instruments, systems and services that allow optimization of quality through each individual stage of textile production.



3.0 BRIEF HISTORY OF COTTON CLASSING AND INSTRUMENT TESTING

Mr. Vernon Gray hinted that, the accurate verification of the raw material is the first step in quality management which is absolutely essential in a modern spinning mill in order to remain competitive in today's markets. USTER® *HVI 1000* is the standard used by the international cotton trade today; ensuring fibre quality agreements are met. These instruments are the choice for all the leading cotton classing organizations worldwide.

4.0 BRIEF OVERVIEW OF COTTON FIBRE DEVELOPMENT, HARVESTING AND GINNING PRACTICES

In his presentation, Mr. Vernon Gray sited on the following areas;

- Types of Cotton Grown in the World
 - Asiatic– Short (12.7 to 22.2 mm), Coarse (4.5 to 6.0 Micronaire), Weak (60 to 70psi).
 - Upland– Medium Length (19.1 to 31.8 mm), Fineness (4.0 to 5.0 Micronaire), and Strength (75 to 95 psi).
 - Extra Long Staple (ELS)– Long (31.8 to 38.1 mm), Fine (2.7 to 3.5 Micronaire), and Strong (95 to 115psi).

- Species of cotton.
- Influence of production and harvesting on quality.
- Genetic Vs Environmental influences.
- Structure, Chemistry and Chemical composition.
- Cotton fibre development.
- Cotton growing (Seed planting, Soil testing and Irrigation).
- Cotton harvesting (Hand and mechanical picking) as well as its advantages and disadvantages.
- The influence of ginning on fibre quality and types of gins (Saw and Roller gins).
- Bale pressing
- Manual classification based on grade and staple as well as its disadvantage.
- HVI classification based on 100% HVI test results and its advantage.
- Sample storage/conditioning.
- Impact of HVI measured fibre properties.

5.0 BRIEF OVERVIEW OF COTTON CLASSING AND SPINNING MILL NEEDS

In his presentation, Mr. Vernon Gray sited on the following areas;

- Spinning Mill Processes and the effect of fibre properties.
- Average fibre properties recommended for different cotton spinning systems.
- The impact of fibre properties.
- Fabric defects.
- Yarn defects.
- Spinning system comparisons.
- Yarn structure from different spinning system.
- Processes in the spinning mill.

6.0 USTER HVI MEASUREMENT PRINCIPLES, EXPLANATION OF TEST RESULTS.

- History of cotton classing.
- Measurement on cotton (Micronaire, Uniformity Index, Strength, Elongation, length, Maturity Index, SFI, Colour and Trash)
- Development of fibrogram.
- Comparison of Mean Length (ML) and Upper Half Mean Length (UHML).
- Comparison of Span and Mean Length (ML).
- Staple diagram.
- Comparison of fibrogram and staple diagram.
- Micronaire influences (Genetic and Environment).
- Relationship between Maturity and Micronaire.
- Measurement Principles of cotton colour and trash.

7.0 Uster HVI Calibration Principles

Mr. Vernon Gray explained the importance of calibration as well as following calibration principles. He insisted that, after calibration, the modules should be calibrated again whenever calibration standards are changed. Calibration should be performed for any of the following circumstances;

- According to a fixed schedule
- When the system has been repaired

- When instrument drifting is suspected

He stated that these calibration procedures do not require the use of a tool and no hardware adjustment is made to a specific electrical or mechanical module. Calibration cottons and the standard colour tiles supplied with the instrument must be used to calibrate and to check calibration.



8.0 Practical session at RTC East/Southern Africa laboratory

This training was not only theoretical based but also practical session was carried using HVI M1000M700 at RTC laboratory where participants were divided into two groups due to space limitations. In this practical session, the following areas were covered;

- Sample handling
- Instrument calibration and operation
- Review of test results
- Basic instrument maintenance and troubleshooting

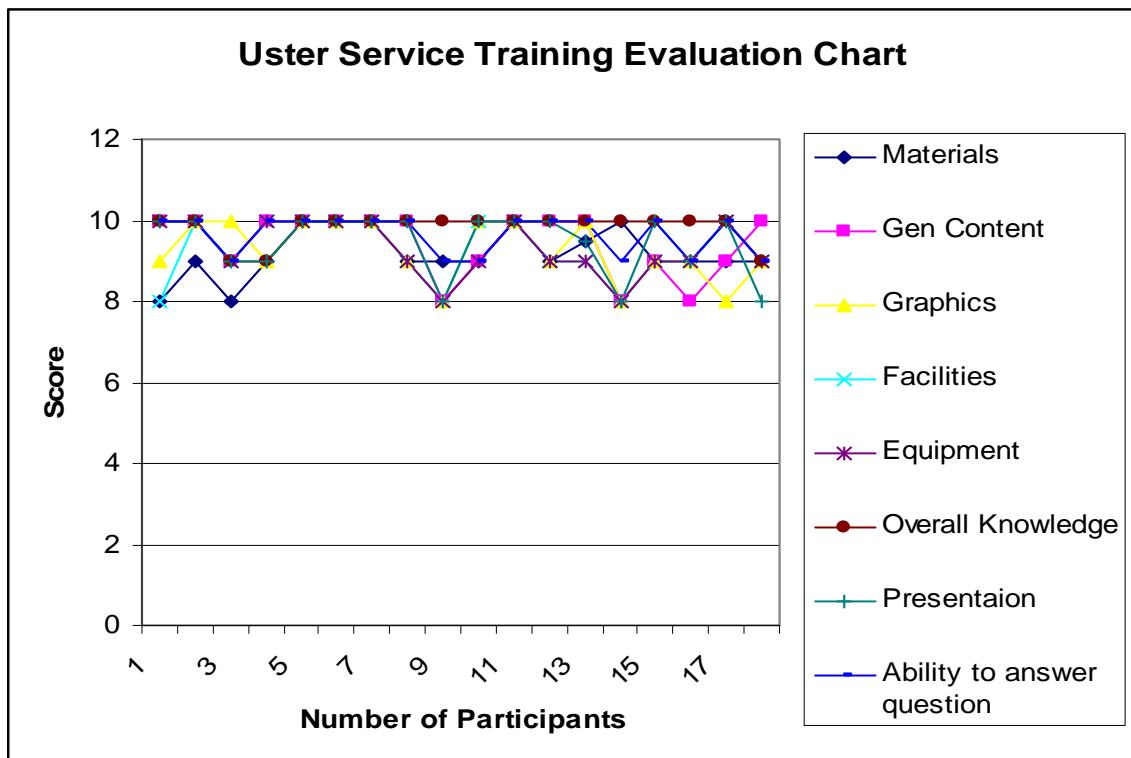


9.0 Uster Service training course evaluation

At the end of the training, participants were given evaluation form to evaluate the following aspects;

- 1) Training course: General content of the course, materials, manuals, graphics, training facilities and equipment available for training.
- 2) Instructors: Overall knowledge of the instrument, presentation of the topics and ability to answer questions.

NOTE: The scale was from 1 to 10 (10 being Best).



In addition to score marks, the following were comments/suggestions from participants with respect to training;

- Good coordination of the training was noted.
- Machine calibration and maintenance session was very impressing.
- Training time was not enough to capture all aspects especially theoretical part. It should be at least one week.
- More emphasis should be put on the practical application, data interpretation, trouble shooting and the new software applications.
- More training should be organized so as to ensure continuity and increase life time of Uster instruments as well as updating operators on the technology advancement.
- Visit organizations with Uster instruments so as to share experience with them on site.
- Another training to be organized so that participants will be given opportunity to explain the impact of this training.
- More time should be dedicated to factors influencing test results.
- The maintenance part was not detailed enough as trouble shooting.

10.0 Acknowledgement

We sincerely appreciate for the comprehensive knowledge we received from this training. We also express our appreciation to development partners, Common Fund for Commodities (CFC) and European Commission (EC) for their monetary support to training participants from regional laboratories. Furthermore, we thank the USTER TECHNOLOGIES for providing their resource persons Mr. Vernon Gray and Mr. Diren Beecum to come and share with us the huge knowledge they have in Uster instruments. Lastly, we thank Tanzania Bureau of Standards (TBS) for providing training facilities which made all participants felt comfortable.

The list of the participants attended the Uster Service Training conducted at RTC East/Southern Africa from 23-25 March 2011.

Name	Organisation	Email
Mr. Gervas Kaisi	RTC-East / TBS	kaisig@yahoo.com/gervas.kaisi@tbstz.org
Ms. Mariam Mbwana	RTC-East / TCB	mariamwazir@yahoo.com
Ms. Peares Shayo	TCB	shayo_peares@yahoo.com
Ms. Emily Mbagulle	TCB	emilem40@hotmail.com
Mr. James Sunga	TCB	jimsunga@yahoo.com
Mr. Tony Chibwana	WIS	tony.chibwana@yahoo.com
Mr. Terry Mthethwa	OLAM (Zimbabwe)	terry.mthethwa@olamnet.com
Mr. Badru K. Adiga	CDO	adigabadru@gmail.com
Mr. Harris Mwazighe	CoDA	harrymwasi@gmail.com
Mr. Alex K. Mungai	CoDA	Akmungai2002@yahoo.com
Mr. Ascensao Macumba	IAM	a.macumba@yahoo.com.br
Ms. Agatha Sanga	TCB	Agatha_sanga@yahoo.com
Ms. Violet Sebigabiro	TCB	viotesi@yahoo.com
Mr. Dominic Obiero	CoDA	
Mr. Daniel Majiri	COTTCO	dmajiri@cottco.co.zw
Ms. Shadia Mohamed	ARC	