



INTERNATIONAL COTTON ADVISORY COMMITTEE

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Minutes

Fifth Breakout Session: Modern Practices in Instrument Testing

Chair: Dr. Tasawar H Malik, Director Agricultural Research HQ, PCCC, Multan, Pakistan

Speakers:

Dr. Tanveer Hussain, Professor of Textile Engineering, Rector, National Textile University Faisalabad, Pakistan, "Modern trends in instrumental testing of clothing comfort."

Anthony G Muriithi, Fibre Crops Directorate, Agriculture and Food Authority KENYA, "Rebuilding African Cotton Sector's Poor Image: Modern Practices in Instrument Testing."

Modern Practices in Instrument Testing

Dr. Tanveer Hussain noted that there are three primary aspects of clothing comfort: tactile/sensorial (how it feels), thermo-physiological (breathability, warm or cool feeling, and moisture transfer), and psychological. Psychological aspects cannot be measured, but there are instruments for testing technical fabric properties. The Fabric Touch Tester measures how bendable (flexible) a fabric is, surface friction or roughness, compression and recovery, and thermal conductivity under both compression and recovery. The PHABROMETER tests hand value relative to a given fabric standard, stiffness and softness, smoothness, wrinkle recovery and drape behavior. A SiroFAST-1 compression meter measures fabric thickness at 2 grams/square cm and 100 grams/square cm and calculates compressibility. The SiroFAST-2 tests bendability of fabric, and the SiroFAST-3 tests fabric elongation under loads of 5/20/100 grams per cm of width. Other instruments test for tensile strength, bendability, compression, friction and roughness, fabric flexibility, air permeability, and moisture management. The Moisture Management Tester (MMT) tests wetting time, absorption rate, maximum wetted radius, spreading rate, and other measures. Additional instruments test water vapor permeability and resistance, thermal resistance, thermal conductivity thermal absorptivity, and heat retention.

Dr. Muriithi observed that much has been done to improve the quality of African cotton. However, African cotton no longer receives a premium on world markets and better measurement of quality would lead to enhanced prices.

He said that the use of High Volume Instrument systems for testing cotton quality involve much more than just buying a machine. HVI systems must be part of national classing systems with 100% bale sampling. When national HVI systems are implemented, marketing systems must be revised to provide quality premiums to growers and ginners in accordance with market results. Such marketing systems necessarily involve permanent bale IDs and national bale numbering systems to enable bale quality to be assigned accurately to gins and producer groups. Reliable, high speed internet connectivity is a must.

In response to detailed and pointed questioning from audience members, Dr. Hussain reported that, based on technical performance measurements, silk is the most comfortable fiber and polyester/cotton blends can enhance textile performance, especially concerning moisture wicking properties. He noted that it is virtually impossible for consumers to recognize fine gradations in fabric

performance, and that brand labels and claims of quality (such as thread count) are virtually useless as proxies for quality. He recommended that consumers rely on feel and intuition in determining whether they like a particular textile product.

Regarding textile and apparel products made from organic cotton fibers, Dr. Hussain reported that there is absolutely no physical difference between products made of conventional, including biotech, cotton and organic cotton. However, he reiterated that one aspect of comfort is psychological, and some consumers may feel better wearing organic cotton, even if there is no measurable difference in fiber properties.

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