Australian Government
Cotton Research and Development Corporation

TRAVEL & CONFERENCE REPORT

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number:

Project Title: ICCTM Meetings, 2011 ITMA and Textile Exchange Roundtable, Barcelona Spain

Project Commencement Date: 20th September 2011

Project Completion Date: 27th September 2011

Select Research Program: Value Chain Program

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Part 3 – Travel Report

(Maximum two pages)

1. A brief description of the purpose of the travel.

This report covers the trip to attend the Sustainable Textile Leaders Roundtable (held 22/9)**,** the ITMF ICCTM meeting (held 23/9) and the 2011 ITMA held September 22nd- 29th. The meetings and exhibits were held in Barcelona, Spain at Barcelona's Fira de Barcelona.

2. What were the:

a) major findings and outcomes

Sustainable Textile Leaders Roundtable

The Roundtable was organised by the Textile Exchange (TE) an organisation borne out the Organic Exchange, which had objectives of providing information to brands, retailers and consumers about ethical and sustainable agricultural production. The organisation was re-borne in 2009 after a strategic review that highlighted the 'need' for an "industry-wide arbiter, convenor, catalyst and market-maker for all sustainable textiles". There are many definitions of sustainable and there are lots of large, unfortunate numbers associated with textile waste, e.g. textile waste occupies nearly 5% of all landfill space; the average US citizen throws away nearly 30 kg of clothing every year; 20% of industrial fresh water pollution comes from textile treatment and dyeing; 10% of total global carbon impact is created by the global textile industry's demand for energy. The TE preferentially side with organic growers from developing nations, which fulfil many of their arguments for ethically produced and sold fibre. See www.textileexchange.org. TE representatives at the dialogue had heard of Australian BMP and we learnt in conversations afterwards that there was indeed some respect for the BMP initiative.

The Roundtable itself was an orchestrated Q&A session with a diversity of companies with TE memberships. There are over 150 companies and organisations worldwide with memberships in the TE. The companies involved in this Q&A session were Dystar (dyestuff co., UK), Fashion Life (publishing co., Italy), Invista (textile chemicals, USA), Patagonia (clothing retailer, USA), a vertically integrated spinning and knitting mill from India (supplier to Patagonia) and Tonello (dyebath manufacturer, Italy). This group of companies represented a range of waste and sustainable production issues and commentary. For the chemical and machinery manufacturers, the aim of their TE membership was to focus and change their strategic direction in light of growing consumer pressure for businesses to behave more sustainably in their sourcing, manufacture and servicing of their products. Patagonia has implemented formal audits of their supplier companies to ensure their products are produced in a sustainable way; Patagonia also seeks technical processes and pathways whereby worn Patagonian products can be returned to the store for recycling.

There are opportunities for Australian cotton in marketing BMP cotton and further investigating the processes, properties and pathways by which Australian cotton is processed for efficiencies and opportunities, by association, with a sustainable label, e.g. conservation of energy on farms and gins; new lower energy/water processing of cotton material; (renewable) cotton products to replace man-made fibre products, e.g. medical non-wovens, and (renewable) cotton-based composite structures.

ITMF International Committee on Cotton Testing Methods Meeting

ITMF ICCTM Task Force co-ordinators meet in the years between Bremen International Cotton Conferences (held every two years) to discuss progress in ICCTM's ongoing agenda of formalizing the recognition of new cotton test methods. The Committee is divided into five Task Forces; maturity and fineness, stickiness, dust/trash, fibre length and HVI.

Participation on the Committee and at the meetings is by invitation from the ITMF Director General who in turn takes recommendations from the Task Force Co-ordinator of each working group. Task Force meetings are held in succession with all committee members sitting in on and contributing to the discussions that stem from a series of presentations given by each Task Force. The agenda for the Barcelona meeting of the ITMF ICCTM is attached as Appendix 1.

Formalising requirements for recognition of new test instruments was discussed around a test application by Dr. Guntram Kugler of Textechno Hebert Stein GmbH & Co. for their Fibrotest instrument, which was written according to the prerequisites for recognition set down at the last ICCTM meeting in 2010 – see Appendix 2. A further list of 22 points was generated and agreed by Task Force members in discussion at this meeting around the Textechno application. The idea is for ICCTM members to 'peer' review applications for recognition and in this way provide any required feedback to the author(s).

For recognition the following (22) descriptions and points of evidence should be given in a proposal to the ICCTM:

1. General description of test method (background). Instrument description and target recognition, e.g. recognition as a full 'commercial' test method or as a 'prototype' test instrument or method.
2. Describe target users.
3. Function principle, e.g. the physical (or chemical) parameters measured, and their interpretation by the instrument.
4. Usefulness and benefits of the tested parameter, including information on the absolute values tested, other properties also tested, relevance of sample size and practicality of tests.
5. Application range of testing inc. range of values tested by method and the preparation of fibre.
6. Result parameters and definitions
    - Recognized parameters inc. standard definitions, e.g. ASTM defined
    - Other parameters inc. calculated values
    - Example of print-out (tables and graphs)
8. Testing procedure
    - Number of tests per sample
    - Sample preparation procedure
    - Conditions, e.g. standard temperature and humidity.
9. Test time per sample including sample preparation time.
10. Description of reference method and reference materials. Where were reference materials obtained and how are they used.
11. Relationship to (other) standard test methods.
12. Test result repeatability/reproducibility (full details). Ideally repeatability is tested over number of days (min. 15 days) on same material that is consistent in preparation but that represents the whole testing range of the test. The number of repetitions needs to be defined.

Reproducibility should be based on round trials of more than one sample (covering a range of the property in question) and involving preferably at least 5 instruments in different labs.

13. Comparison to reference method with discussion around deviations and influences on relationship.
14. Comparison of values determined in 12 with the results of round trials for similar properties tested by other methods.
15. Independency of above checks.
16. Description of external effects on certainty of test results, e.g. conditions, operators, sampling, cross-contamination, extreme values.
17. Maintenance required (daily, period).
18. Additional information.
19. Technical data on instrument, e.g. power supply, operating conditions
20. Contact for information (technical)
21. Responsible ITMF ICCTM Task Force Coordinator.
22. Additional information for peer reviewers.

The above descriptions and points were then discussed with the three instrument manufacturers (Textechno, Premier and Uster Technologies) visited after lunch. In general there was whole hearted agreement on each of the points. Mr Srdihar Varadaraj of Premier asked if a certificate of recognition could be provided; they stated this would carry a lot of weight with their customers. In brief conversation amongst the ICCTM it was decided that yes the ITMF could produce a certificate declaring the test had been recognised. Mr Hossein Ghorashi of Uster asked about how ICCTM would communicate recognised test methods to spinners, who represent a large segment of the instrument market. The ICCTM reply from Christian Schindler of the ITMF was that recognised instruments could be listed on the ITMF website with links to pages with further information.

Aside from discussion on recognition of test methods, conversations at the instrument manufacturer's booths centred on features of their new test instruments (a sales presentation). Textechno had a new single fibre tensile tester; Premier demonstrated their aQura and Uster said they had nothing particularly new although in the near future they would be introducing a brand new HVI unit (with further automation).

The other agenda items; next years Bremen meetings and the CSITC/USDA HVI Guide were also addressed. The new HVI Guide is being written to replace the existing older ITMF published HVI Guide and the USDA Guide. A final draft of the new guide (both in short and long form) will be put to the CSITC meeting in Bremen next year for approval. The Bremen ICCTM and CSITC Meetings have been scheduled for Tuesday March 20th and Wednesday March 21st respectively, with the Bremen Conference on the 22nd and 23rd.

Mr Axel Drieling, organizer of the Bremen Conference invited the Cottonscope team, along with Dr Jimmy Rodgers from the USDA's Southern Regional Research Center (SRRC), to give a joint paper/presentation to the Bremen Conference on Cottonscope.

ITMA 2011
ITMA 2011 ran from September 22nd through to the 29th at the Barcelona Gran Fira. The presentation attached as Appendix 3 gives a general overview of the exhibition. The exhibit space of 1,350 exhibitors covered more than 100,000 m^2. The themes and changes evident in manufacturers displaying at this ITMA were improved productivity (throughput, energy & space), reduced carbon and water footprints, (material) waste reduction and the (vertical) integration of companies.

One of the main areas of interest at this ITMA were the manufacturers of contamination sensing and removal systems for spinning mills and the question of whether these manufacturers would be prepared to adapt their technology for the high throughput of Australian saw gins. CSIRO has conducted tests showing large pieces of light yellow plastic (module wrap) can be seen against seed-cotton material moving at >15 m/s through gin ducting. Four of the leading manufacturers of these systems were visited; Loptex Italia s.r.l (Italy), Truetzschler GmbH & Co. (Germany), Jossi Systems AG (Switzerland) and Premier Evolvics pvt. Ltd. (India). Good conversations were had with each company. Loptex, Truetzschler and Premier have long associations with CMSE, having bought technologies and/or R&D from CMSE in the past. Loptex's contamination sensor was based on CSIRO's dark lock sorter patent and was the first of the sensor technologies on the market in the early 1990s. CSIRO will contact these companies separately with further information about material flow in gins.

A new category of exhibit at this ITMA was fibre and yarn producers, which in the past have had their own shows. A number of different fibre producing companies were represented including US cotton, wool (AWI and the IWS) and baste fibre companies. The exhibits in this section were smaller than those of the machinery manufacturers and away from the main spotlight. It will be interesting to see how this segment progresses at future ITMAs. That said, ITMA may present opportunities for Australian cotton (Cotton Australia and ACSA) to show its wares; particularly to the Central Asian buyers (India, Pakistan), who are well represented at these exhibitions, more so than Chinese buyers who wait for the Asian version (in China) in alternate years. The Asian ITMA will be held in Shanghai next year (June) (2012).

3. Detail the persons and institutions visited, giving full title, position details, location, duration of visit and purpose of visit to these people/places. (NB:- Please provide full names of institutions, not just acronyms.)

As described above.

4. a) Are there any potential areas worth following up as a result of the travel?

Areas that need to be followed up as a result of current project progress and visits to manufacturer's exhibits include:

Projects
- Adaptation of commercial contamination sensor systems to Australian cotton gins;
- Adaptation of CRC moisture sensor to textile processing;
- Pursuit of formal ITMF recognition of Cottonscope test method;
- Cottonscope paper for Bremen Conference in 2012;
- Application of Cottonspec to spinning and yarn testing systems (see Cottonspec business plan);
- Purchase of single fibre tester (@ 300K CHF), e.g. from Textechno.
- Processing of cotton stalks for fibre by Belgium baste fibre machinery manufacturers;

Other areas that are worth considering for industry:

Industry

- Notion of an Australian cotton exhibit at future ITMAs to highlight BMP and PCI-type initiatives;
- Green-washing of Australian cotton is required particularly for goods headed into the European markets (via China and India).

5. How do you intend to share the knowledge you have gained with other people in the cotton industry?

Knowledge gained from this trip will be shared directly via conversations and written reports/presentations to industry stakeholders.

6. Please list expenditure incurred. ***(Double click inside the table to enter the data)***

See budget in proposal – expenses funded 50:50 by CRDC and CSIRO.

Date	Description	Amount excl GST	GST	Total
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
				0.00
			TOTAL	**0.00**

Appendix 1 – Agenda for ICCTM Meeting in Barcelona, September 2011

International Committee on Cotton Testing Methods (ICCTM)

Agenda 2011

ICCTM Meeting in Barcelona, September 23, 2011

10:15-13:15 hrs:
Meeting at the Cematex Office & Lounge (Level 1, South Entrance)

Topics:

1) Recognition - requirements, old cirteria, new criteria (i.e. Textechno)
2) ICCTM Meeting 2012 in Bremen: topics and time frame
3) HVI guideline (USDA & CSITC)

13:15-14:00 hrs: Joint Lunch

14:00-15:00 hrs:	Visit of Textechno Booth (Hall 2, B 117)
15:30-17:00 hrs:	Visit of Premier Booth (Hall 2, C 171)
17:00-18:30 hrs:	Visit of Uster Booth (Hall 1, C 101)
20:00 hrs.:	Joint Dinner

Appendix 2 – Resolutions of the ICCTM regarding recognition of new test instruments/ methods – Bremen, March 2010

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.

Appendix 3 – PowerPoint Presentation on ITMA 2011

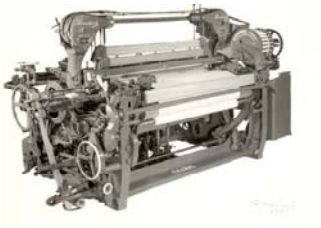
Products on exhibit

- **Spinning preparation**, man-made fibre production
- Winding, texturizing, twisting
- Web formation, bonding & finishing
- Weaving
- **Knitting**
- Embroidery
- **Braiding**
- Washing, bleaching, dyeing (printing), cutting, rolling
- Garment manufacture
- **Lab testing**
- Transport and logistics
- **Recycling**
- Software, data monitoring
- Dyestuffs
- Services
- **Research and education**
- Fibres and yarn

Appendix 3 – PowerPoint Presentation on ITMA 2011

Progress in 60 years

- 280 exhibitors in 1951 → 900 in 1967
  - **Weaving**; UK leading manufacturer, weft insertion
  - **Yarn**; chute feed card, first open-end, yarn evenness
  - **Knitting**; multi-feed circular knit, CAD, flat bed
- 1100 exhibitors in 1971
  - **Man-made fibre**; false twist, draw texturing
  - **Spinning**; open-end (40K → 80K), vortex
  - **Weaving**; flexible-rapier and jet
  - **Dyeing**; cost and energy efficiency
  - **Printing**; transfer printing



Progress in 60 years

- 1983 (Milan) & 1987 (Paris)
  - Application in electronics for automation
  - Emergence of Italian manufacturers (wool & cotton)
  - Evolutionary period
- Record shows 1991 → 1995 (1500), 1999
  - Emergence of **non-wovens**
  - **Spinning**; DREF, re-emergence of ring, vortex
  - **Weaving**; quick style changes
  - **Dyeing**; digital ink-jet print, elastane fabrics

Appendix 3 – PowerPoint Presentation on ITMA 2011

Exhibitors in 2011

- 1350 exhibitors
  - 320 Italy
  - 230 Germany & Austria
  - 85 China
  - 64 Switzerland
  - 53 UK
  - 35 France

Themes

- Productivity (throughput, space & energy)
- Water and carbon footprint
- Waste reduction (CO_2 emissions)
- Consolidation of companies
- Vertical integration of process

Appendix 3 – PowerPoint Presentation on ITMA 2011

For CMSE

- Fibre businesses
- Technical yarns
- Braiding technology (trixaial radial)
- Non-woven integration (bonding and glueing)
- Non-traditional weaving and knitting
- Instrumentation – contamination detection, single fibre testing, Cottonscope