

REAL MEASURES OF COMFORT FOR WOOL KNITWEAR



Australian wool-fibre researchers are steadily building the case for a world-first: using a special instrument to measure the next-to-skin comfort of wool.

Background

The knitwear market represents almost 60% of consumer expenditure on wool apparel, however, there are constraints to the growth of wool's market share as traditional wool knitwear suffers from real and perceived concerns with comfort: 2 in 5 consumers associate the word 'wool' with 'prickle or itch', yet there is no fabric specification system to address it.

To address these constraints, rigorous and reliable fabric and fibre specifications are required together with measuring devices for quality assurance. Australian researchers in the Sheep CRC are well on the way to delivering them.

Goal

The research program's ultimate goal is to take the market for casual, lightweight, next-to-skin products to new levels. Once we can guarantee comfort we can build on wool's position of being natural and sustainable, and its advantages in moisture, heat and odour management.



Image courtesy AWI

Delivering measurable and predictable quality

Information is everything in a supply-chain. Retailers and manufacturers will be able to specify a value for comfort in their buying orders; this in turn will generate specifications for wool types and processing procedures to meet these requirements.

The instrument

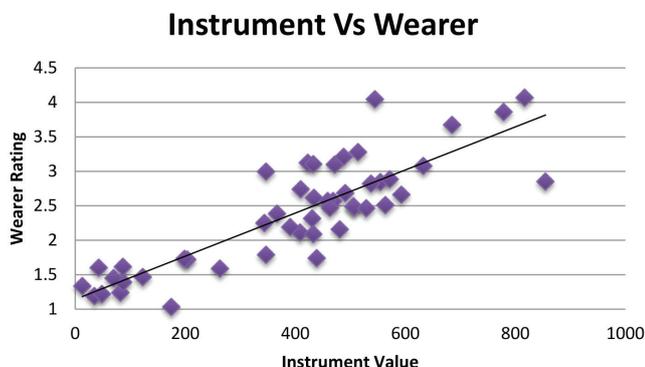
The Wool ComfortMeter™ was developed by the Sheep CRC through a group of CSIRO researchers and essentially counts the number of fibres protruding from a fabric that can cause discomfort. As the number of these fibres increases, so too does the discomfort. To relate the Wool ComfortMeter™ values to human sensation of comfort a series of wearer trials were run. These trials were carried out in "The Garment Laboratory" by a team of experts in the WA Department of Agriculture and Food. Their protocol enabled the accurate measurement of consumer responses to garments when worn in different conditions and for various activities. This information has been used to calibrate the ComfortMeter™.

Transforming wool, meat and the sheep that produce them

Research results, so far ...

There is already a very good predictive relationship between the ComfortMeter™ and results of the large scale wearer trials and as a greater range of garments and fabrics are tested, confidence in the instrument continues to increase.

The figure shows the strong linear relationship between the ComfortMeter™ value and the average response from wearers. The lower the wearer score the more comfortable the garment. Each value is an average of between 25 and 50 wearers.



A Garment Laboratory Technician is recording a participant's response to a garment whilst walking in a controlled environment. Image courtesy of the Garment Laboratory

Commercialisation

The Sheep CRC has completed training and demonstration trials with some of the world's largest knitwear manufacturers. These commercial trials will continue with key supply chain companies to confirm the relevance and value of the Wool ComfortMeter™ for use in product development and quality assurance. Full commercialisation and launch of the Wool ComfortMeter™ technology is expected to occur in 2013.

Circular knitting machine. Image courtesy of CSIRO



ABOUT THE SHEEP CRC

The Australian Sheep Industry Cooperative Research Centre (Sheep CRC) is a partnership of the country's key industry bodies working with researchers to turn innovations into successful new products, services and technologies.

The Sheep CRC's work involves a collaboration including Australian Wool Innovation (AWI), The Merino Company (TMC), Australian Wool Testing Authority (AWTA) and other Australian and overseas supply chain companies that provide products for testing and evaluation, technical expertise, and commercial focus.

More information is available via:

<http://www.sheepcrc.org.au/wool-quality.php>

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www.sheepcrc.org.au