



## Sheep CRC Wool Industry Case Studies

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# 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.

The 'Comfort Meter' is currently undergoing commercial trialing to validate its performance.

"Think about it: we all like to touch and feel fabrics and garments before we buy them – but it is highly subjective and we really can't predict from the 'touch and feel' how different fibres, yarns and fabrics actually rate for their comfort next to our human skin."

– David Tester, Manager of the Australian Sheep CRC Next Generation Wool Quality Program.

## 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.

## Background

The knitwear market represents near 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: near 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.



Image courtesy of AWI.

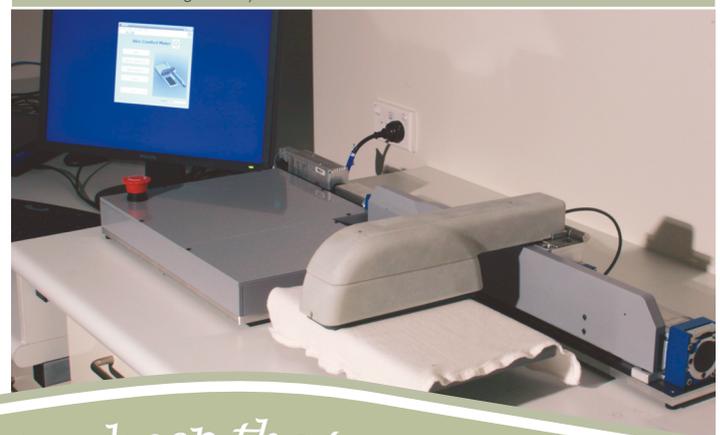
## Delivering measurable and predictable quality

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 Comfort Meter was developed by the Sheep CRC through a group of CSIRO researchers and essentially counts the number of coarse fibres protruding from a fabric. It works on the basis that as the number of protruding fibres increases, so too does the discomfort. The Comfort Meter's 'readings' are being compared with values from wearer trials.

The Comfort Meter. Image courtesy of CSIRO.



Transforming wool, meat and the sheep that produce them

These trials are carried out in The Garment Laboratory, a new state-of-the-art facility in Perth, Western Australia, which undertakes large scale testing of consumer apparel. The lab is operated by a team of experts in the WA Department of Agriculture and Food, who have devised protocols to accurately measure the consumer response to garments when worn in different conditions and for various activities. The Garment Laboratory has measured consumer responses to a large range of next-to-skin knitwear products and this information has been used to calibrate the Comfort Meter.

### Research results, so far...

There is already a very good predictive relationship between the comfort meter 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.

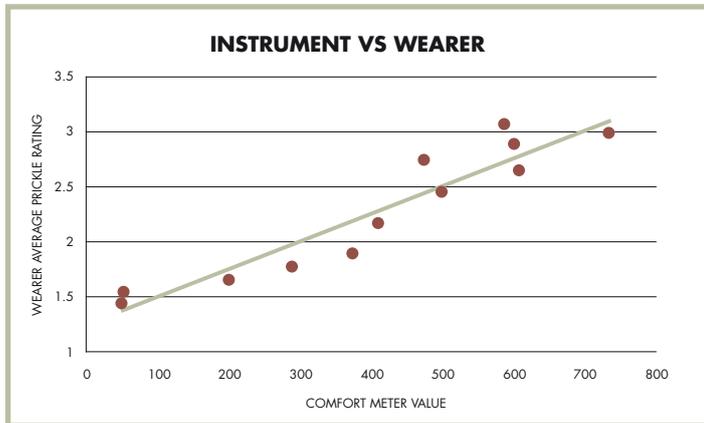


Image courtesy of AWI.



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.

The figure shows the strong linear relationship between the Comfort Meter 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.

### Commercialisation

The Sheep CRC will be undertaking commercial trials with key supply chain companies over the next 12 months using the equipment and research information for fabric development and quality assessment to confirm the relevance and value of the Comfort Meter.

### 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, 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/research/wool-quality.php>

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