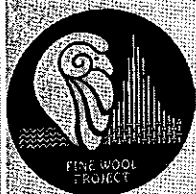


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Finewool Newsletter



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Fine-Wool Project

This is the first in a series of newsletters to be published every three months to inform readers of progress in the Fine Wool Project which is funded by the Wool Corporation and involves co-operating scientists from CSIRO's Divisions of Animal Production and Wool Technology.

This report contains information on the aims of the project and details of the sheep which have been gathered at Armidale to form the basis of the breeding programme.

Readers may be interested to know that the project is the major CSIRO exhibit at Armidale Wool Expo held on 19-21 April 1991 at Armidale Creeklands. Staff from both Divisions will be present to man (person?) the display and will be eager to explain the project to visitors. Please come and see us if you can.

From Dr Denise Stevens, CSIRO Division of Wool Technology

Central to this project is a thorough specification of the characteristics of 'fine and superfine' wools. These characteristics influence the price paid for these wools and may also determine how well they process and the quality and performance of the final products such as fine worsted and woollen fabrics, "cool wool", etc. The ultimate aim of the project is to replace mystique, with sound data and interpretation at all stages of the pipeline, from production to specification, processing and through to the finished product. This increased understanding should assist in maintaining or even improving the position of fine wools in the textile market place.

Technologies currently exist for the objective measurement of fibre diameter, diameter variability, staple length, strength and position of break, colour and yield. These measurements were developed primarily on coarser wool types and now their accuracy will be assessed for fine wools. Newer measurement techniques such as resistance to compression will also be evaluated.

In addition, research is underway at CSIRO Division of Wool Technology, to quantify the more subjective qualities of these wools, specifically style (or character) and handle. These qualities are considered by breeders and processors to be of much greater importance in fine wools than in medium and coarse wool types. To this end, a prototype "style" machine, using image analysis techniques, is being developed to extract visual information on crimp and staple characteristics as well as the damage caused by environmental factors such as dust, water and UV light.

CSIRO Division of Wool Technology has the facilities to process wool, under controlled conditions, from the raw state through to tops. Measurement of individual wool parameters will lead, not only to an understanding of how all these characteristics relate to each other, but also enable the processing performance of wools with known combinations of characteristics to be predicted and tested. To complete the picture, the subsequent performance of the yarns and fabrics produced from these tops can also be evaluated and related back to the raw wool measurements.

Genetic factors in style basis for Armidale trials

By ALAN DICK

NINE flocks of fine and superfine, wool sheep running near Armidale will provide the basis for research to establish the precise genetic and environmental factors that produce the fleeces that make the best cloth.

The flocks each represent different bloodlines and have been collected from well known breeders by the CSIRO Division of Animal Production at the AWC-owned research farm "Longford", near Armidale.

In a unique collaborative project with the Division of Wool Technology, based at Ryde in Sydney and supported by the Wool Research and Development Corporation, wool from the flocks will be tested for a wide range of characteristics, and some even processed right through to cloth.

Emphasis will be on assessing what is known in the trade as 'style'.

Manager of the program at Armidale, Dr Laurie Piper, said style included such things as number and evenness of crimps, shape, color, brightness, handle and the depth of dust penetration.

He said existing objective measurements used commercially for fibre diameter, yield, length and strength, were based on the requirements of medium wools which comprised the bulk of the Australian wool clip.

Style was relatively unimportant in the price paid for medium wools, but the finer the wool became the bigger the price premiums paid for better style.

He said information generated would be fed back to sheep breeders.

"The problem for the breeding industry is that it does not have the genetic parameters that they need to design breeding programs for fine and superfine wool sheep," he said.

Dr Piper stressed the project was not intended as a comparison between bloodlines, but only to identify the most desirable characteristics but also their processing qualities.

The flocks of - Hazeldean, Woodside, Merryville, Mirani, Europambela, Grathlyri, Hillcreston, Ledgerton and Wurrook (Vic) blood - represented a range of wool types and fibre diameters, and were supplied from major fine wool areas in the Northern Tablelands of NSW, the Mudgee and Yass districts and Victoria. A tenth flock was being sought from Tasmania.

Breeders will have continued involvement in the experiments,

and will supply rams in future to breed ewe replacements.

Dr Piper is now in the process of putting together the flocks of 200 ewes each, plus two medium wool flocks for comparison.

Wool production, growth and quality, and sheep production will be measured in the flocks running in the same environment, although later the project might include running some wether progeny in a different environment, to examine interactions between wool quality and nutrition.

Sheep at Armidale could also be run on native pasture then improved pasture, to simulate breaks in the season.



Fine wool grower and sheep classer, Owen Mitchell, selects sheep at Pat Coventry's "Lyndhurst" property, for a project by the CSIRO Division of Animal Production, Armidale, to assess a range of bloodline of fine and superfine wool sheep

Dr Piper said wool sent to Wool Technology at Ryde would be subjected to a full range of quality tests including testing on a new machine being developed where a range of style characteristics were measured in a single pass of a staple under a scanning camera system.

Principal research scientist at Ryde, Rob Rottenbury, said the work was aimed at wools 20 microns and finer.

He said these wools earned about 30pc of the total value of the Australian clip, but comprised only 10pc by volume. They had received little attention from researchers.

"The research task is to generate a large body of information to release to the Australian woolgrower," he said. "The challenge is to make it definitive."

Mr Rottenbury said that as well as using the new experimental equipment for measuring style, researchers would also use the CSIRO's new system of assess fabric qualities known as FA (Fabric Assurance by Simple Testing).

He said this system was already being adopted commercially by some overseas fabric manufacturers to predict how fabrics would perform when made into garments, and measured qualities of the finished cloth, such as drape and feel.

Research scientist, Kerry Hansford, who is helping in the project said one of the techniques would be to compare the performance of wools where all quality aspects were constant except the one being assessed.

Ms Hansford has just completed a PhD degree on the influence of nutrition and reproduction on the length and strength qualities of wool.

She said there already some evidence that 'handle' was related to fibre diameter and that evenness of crimp resulted in better processing qualities.

The work is only just starting, and only a few individual fleeces have been processed and measured so far, but will get under way in earnest in the middle of next year when the flocks have their first shearing.

(In: *The Land*, April 1991)