

Fibre Testing Fact Sheet

A goal for most fibre producing animal breeders is to identify and produce genetics that result in large quantities of fine and uniform fibre. Annual fibre testing can assist producers in achieving this goal.

The most basic information that can be used by breeders is Fleece Weight. **Gross** Fleece Weight is a good indicator of the total amount of fibre produced by the animal. It is important that this is measured annually and scored in relation to the time it took to grow the fleece.

While important, using fleece weight alone is not a good measure of fibre production, as it does not address issues of fibre quality and fineness. Further, selection based strictly on fibre weight can be negatively correlated with improving fibre fineness. To address this issue, fibre sample analysis is required. A **2"x2" square fibre sample** should be collected midside on the animal and sent for testing.

Fibre Test Results

The four basic measurements reported on a fibre test are Fibre Diameter (Mean); Standard Deviation (SD); Coefficient of Variation (CV); and %> 30 microns (or Comfort factor).

1. Fibre Diameter (Mean) – the average fibre diameter within a test sample as measured in microns (1/1000th of a millimetre). Lower values indicate a finer fleece.
2. Standard Deviation (SD) – a measure of the variation of fibre diameter in a fleece sample. Smaller values indicate a more uniform fleece.
3. Coefficient of Variation (CV) – $CV = SD / \text{Mean}$ expressed as a percentage. Useful when comparing fleeces of similar Means and/or similar SD's.
4. Fibres > 30 Microns (%>30) – a measure of the % fibres over 30 microns in a sample, known as the prickle factor, also known as the Comfort Factor, expressed as $(100\% - \%>30)$

Additional available and recommended measurements are: Medullated Fibres on white animals; Staple Length (Mean); Fibre Length (Mean) and Curvature (Mean).

5. Medullated Fibres – a measure of the percentage of volume of medullated fibres in a given sample. Currently this measurement is only available on white or light coloured animals.
6. Staple Length (Mean) – the average relaxed staple length of the sample, this should also be scored in relation to the time it took to grow the fleece.
7. Fibre length (Mean) – the average stretched length of the staple, this should also be scored in relation to the time it took to grow the fleece.
8. Curvature (Mean) – is the degree of curvature per mm of fibre length. Higher curvature values indicate higher crimp frequency (crimps per cm).



Repeat testing of animals with each annual shearing, **using the same methods, measurements and laboratory**, is an extremely useful practice as we recognise that fibre characteristics change with age and management of the animal. This not only helps in terms of tracking production of individual animals, but also allows tracking of genetics for longevity of **the fibre qualities measured**.

The CLAA performance program provides reports indexing animals within your herd. These indexes are structured so that 100 is average and values greater than 100 are above average in your herd (eg.more fleece, finer fleece, more uniform fleece, less medullation).

By collecting and using fibre data and the CLAA performance reports in breeding and selection decisions it is possible to speed the pace of genetic progress in your herd.

Further Resources:

Natural Fibre Centre www.oldscollege.ca/schools/ocsi/NFC/index.htm

Yocom McColl Testing Laboratories Inc. www.ymccoll.com

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