Fleece Analysis - Histograms

A histogram is a graph showing the distribution curve of fibre micron

Usually done using an OFDA test instrument

Either butt end or whole staple

Testing is an objective way to compare alpacas for fleece characteristics

Regular testing is the way to maintain a breeding programme based on fibre returns.

Fleece traits are highly heritable

Taking a Fibre Sample

Most common site for taking a fleece sample is the mid side, halfway down the body and halfway between the front and back legs

Best done at shearing

Take the sample as close to the skin as possible. Most fibre testers only require a sample the width of two fingers

For the bigger picture three samples can be taken, from the shoulder, mid side and hip

To learn how to assess fibre samples by eye, send half the sample to be tested retaining the other half. When the results come back you can learn what a particular micron looks like

Assessing Fibre Size - a rough guide

16m Barely visible

18m Individual fibres becoming hard to see

Around 20m Can easily see individual fibres but look small

Around 23m Very fine pencil line

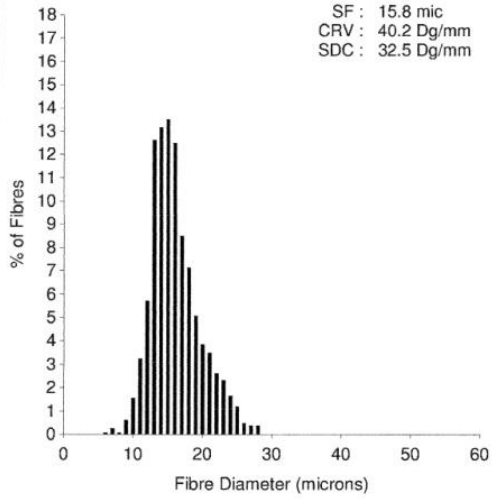
Over 25m View clearly and pick up easily

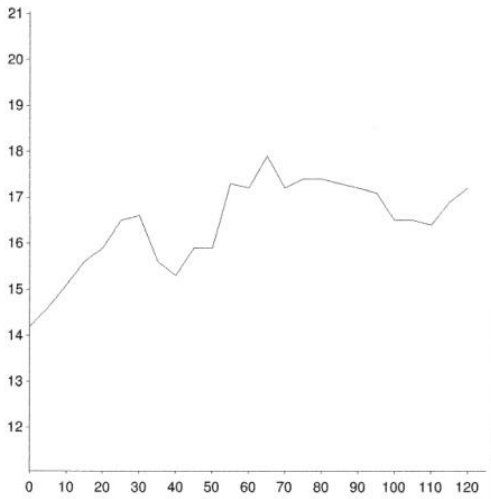
OFDA 2000 REPORT : SORTED BY TAG

Samples 05/07/2018 (Trim High On) (23Records)

EID :
EarTag : [redacted]
Micron : 16.1 mic
SD : 3.5 mic
CVD : 22.0 %
CEM : 7.5 mic
<15 : 37.2 %
CF : 100.0 %
SF : 15.8 mic
CRV : 40.2 Dg/mm
SDC : 32.5 Dg/mm

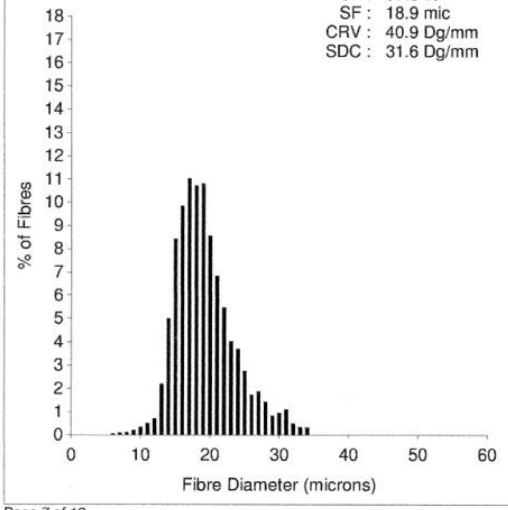
Staple Len : 125.0 mm
Min Mic : 14.2 mic
Max Mic : 17.9 mic
SD Along : 1.00 mic

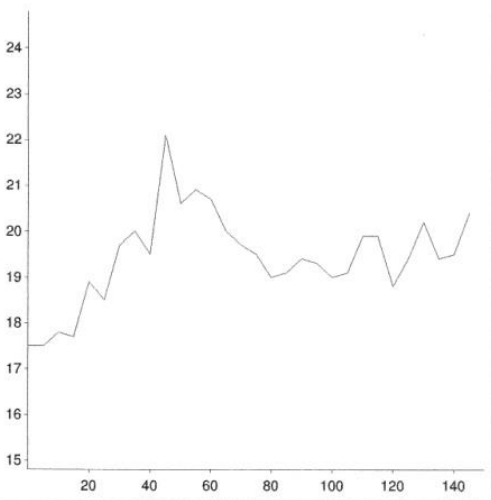




EID :
EarTag : [redacted]
Micron : 19.3 mic
SD : 4.3 mic
CVD : 22.2 %
CEM : 9.0 mic
<15 : 9.1 %
CF : 97.8 %
SF : 18.9 mic
CRV : 40.9 Dg/mm
SDC : 31.6 Dg/mm

Staple Len : 150.0 mm
Min Mic : 17.5 mic
Max Mic : 22.1 mic
SD Along : 1.00 mic





The Histogram - what does it mean?

Micron is the unit of measurement describing the fibre diameter 1/1,000,000m

SD Standard Deviation shows the spread of fibre microns around the mean. Important marker as it describes the uniformity across the fibre sample. Lower is better.

CVD Coefficient of Variation in Diameter is the standard deviation expressed as a % of the sample's average. Lower is better.

CEM Coarse Edge Mirror The range in microns covering the coarsest 5% of the sample.

>15% The percentage of fibres in a sample less than 15 microns

CF Comfort Factor Percentage of fibres that are equal to or less than 30 micron. A CF of 100% means there are no fibres over 30 microns

SF Spin fineness calculation using micron and CVD to predict spinning quality

CRV Fibre Curvature expressed in degrees/millimetre. Higher curvature is associated with higher crimp frequency

SDC Standard Deviation of Curvature is a measurement of the variability of CRV expressed in degrees/millimetre. This relates to crimp definition. The lower the SDC the more the crimps are similar that is the crimp is well defined. The higher the SDC relates to more variable crimp.

Staple Len Staple length expressed in millimetres

Min Mic The finest point along the staple in microns

Max Mic The broadest point along the staple in microns

SD Along Standard Deviation over time measured in microns

Valuable Traits

Soft handle = uniformity of <25m

Correct staple length >3inches

Uniformity of colour

Clip weight of skirted fleece

Correct skirting

Negative Traits

Poor handle and high primaries

Staple length > less than 3 inches

White fleeces with coloured fibres

Black fleeces with white fibres

Tender fibres

Poor skirting