



Guide to fibre analysis

Sample, ship, understand your results

Alpaca - llama - angora and cashmere goats - sheep



Why test your fibre?

Testing gives you objective measurements for each fleece. They help you make breeding decisions, year after year.

Select your breeding stock

Mean micron, standard deviation and comfort factor let you compare your animals on figures, and choose the breeding stock that improves the fineness and uniformity of your herd.

Follow each animal year on year

Fineness changes with age, nutrition and health. By sampling the same spot every year, you can follow how each fleece develops.

Sell

A test result is a concrete argument when presenting an animal, a fleece or a yarn to your buyers.

Sort fleeces

Knowing the micron of each fleece helps you build uniform lots before spinning.

To compare, keep the same reference points: same sampling area, same side, same type of analysis.

Our analyses

Five analyses, depending on what you want to know.

Prices and ordering at www.fibrelabandco.com.

Full fibre analysis

Full-staple measurement.

For each animal: mean micron, SD, CV, comfort factor, spinning fineness, curvature, length, histogram and along-staple profile.

Fineness class for the species.

PDF report.

To select, follow, sell.

Simple fibre analysis

The animal's name, its mean micron, its fineness class and the herd correction factor.

Results in your customer account, no PDF report.

To sort fleeces or take a first look.

Washed fibre analysis

Each sample is washed in the laboratory before measurement, with no correction factor, in Trim High OFF: every fibre is counted.

For the most accurate measurement per animal.

Yarn analysis

Mean micron, SD, CV, comfort factor, spinning fineness, curvature and fibre histogram of your yarn.

The report covers the qualities of the yarn only.

3-point uniformity analysis

Three samples from the same animal (shoulder, mid-side and hip) measured separately, with a report comparing the 3 areas.

One order = one animal and its 3 samples.

Our method

OFDA 2000 in staple mode

Your samples are measured on the OFDA 2000 in staple mode. Internal metrology control programme - in-house method derived from IWTO-47. The instrument scans the staple and measures fibre diameter along its whole length.

Greasy fibre and correction factor

Samples are measured greasy. For each herd, one sample is washed and measured again: the difference between greasy and washed fibre gives the correction factor applied to the whole batch.

Trim High ON, by default

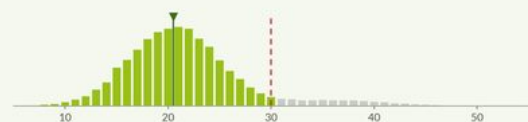
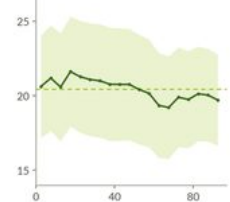
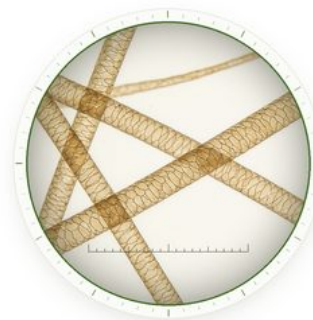
Fibres over 80 μm (very coarse guard hair) are left out: they would distort the mean and SD of the usable fleece.

Trim High OFF, expert option

Every measured fibre is counted, including guard hair. Useful to track guard hair in a bloodline or to compare with an older OFF report. If unsure, keep the default setting.

Quality checks

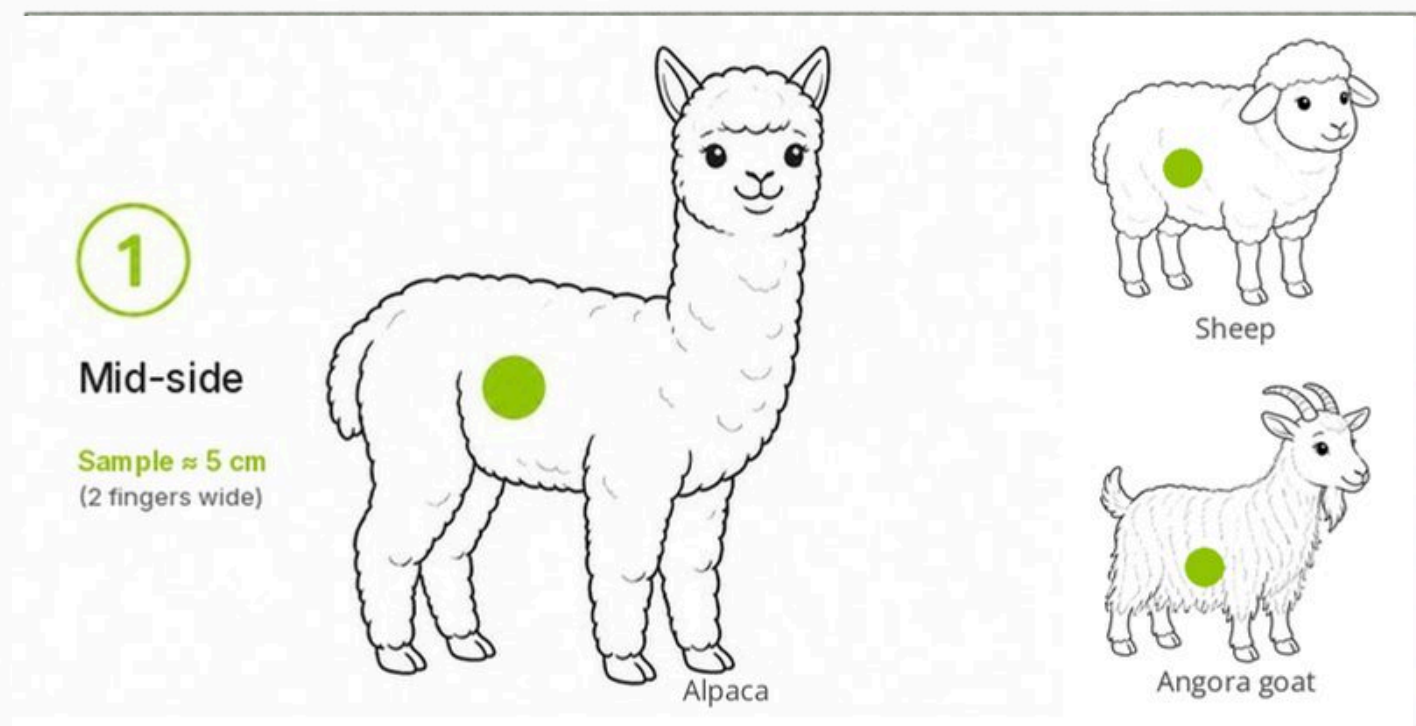
Daily instrument self-test and a reference staple with every batch. If a check falls outside the limits, testing is suspended.



New at Fibre Lab & Co

A report that explains itself, with advice

Our PDF reports now include a plain-language description for each animal and for the whole herd, with advice on next steps at every analysis: what stands out in the batch, which animals to retest, what to focus on in your breeding. Included at no extra cost; you can untick it when ordering.



How to sample

1. Where?

In the middle of the side (mid-side), halfway between the shoulder and the hip, halfway down the body. Always on the same side, in the same spot from one year to the next.

2. How much?

A small handful about 2 fingers wide, i.e. about 5 cm. No need to send a whole fleece.

3. How to cut?

Close to the skin, with clean scissors or shears, to keep the whole length of growth.

4. Before packing

The fibre must be fully dry.

Good to know

The mid-side is the reference area of the fleece.

To assess the whole fleece, choose the 3-point uniformity analysis.

Uniformity, washed fibre, yarn

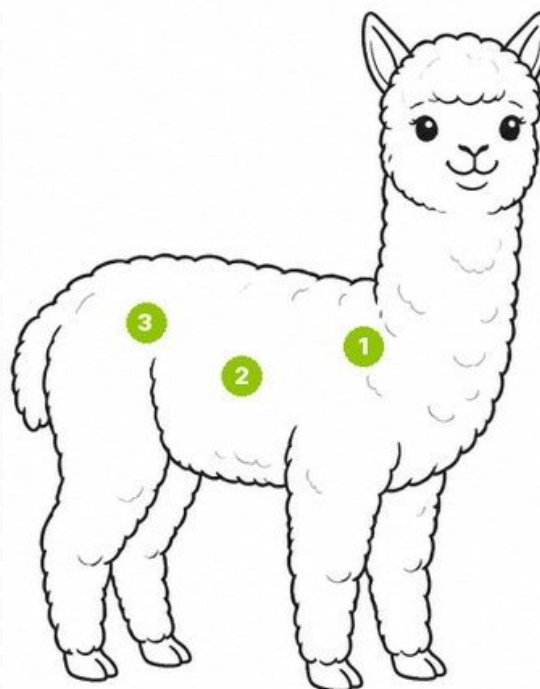


3-point uniformity analysis

- 1. Shoulder: on the front of the side, close to the shoulder.
- 2. Mid-side: in the middle of the side, the reference area.
- 3. Hip: rear area, around the pin-bone.



For each area, the same small handful of about 5 cm, cut close to the skin, completely dry, always on the same side. One paper bag per area, with the area written on it.



Washed fibre analysis

Send the fibre as it is, without washing it: washing is done in the laboratory, sample by sample.



Yarn analysis

About 1 metre of yarn, completely dry, in a paper envelope.
Note the yarn reference (name, lot or colour).

Packing your samples

DO	AVOID
 One paper envelope or bag per animal, and per area for the uniformity analysis.	 Sealed plastic bags.
 On each bag: animal name and number, herd, species, area if needed. For a yarn: its reference.	 Tape or staples, on the fibre or in the bag.
 The information sheet and the order form, with the order number.	 Several animals in the same bag.
 All the bags together in a large envelope or a parcel.	 Damp fibre.
	 Unnamed bags.

Why these instructions?

Paper: the sample adjusts to the temperature and humidity of the testing room. The OFDA 2000 corrects for both if the fibres are in the same conditions as the room at the time of testing: the results are accurate.

No staples: nobody gets hurt when opening it.
No tape: fibres do not stick to the tape when opened.
One labelled envelope per sample: animal's name or number, no mix-ups.

Shipping



Before sealing the parcel

Labelled paper bags, information sheet, order form with its number, all together in a large envelope or a parcel.



Turnaround

1 to 2 weeks after receipt,
up to 1 month during shearing season.



Your results

The PDF report is sent by e-mail and remains available in your customer account. For the simple analysis, results are in your customer account.



Sample return

By default, samples are not returned. To get them back, tick the "Return my samples" box when ordering (once per order).

Shipping address

Fibre Lab and Co. - Bertrand BUSIN

20 rue Jean Mermoz

59227 Saulzoir

France



Reading your results

The 21 indicators in your report

Identification

Sample, date of birth, sex, colour: the animal as given on your information form.

Diameter and distribution

Mean micron (μm): the average fibre diameter, i.e. fineness. It sets the fineness class.

SDD, standard deviation (μm): the spread of diameters around the mean. The lower, the more uniform the fleece. Look at it before the CV.

CVD (%): $100 \times \text{SD} / \text{mean micron}$. Useful between fleeces of the same micron.

CEM (μm): coarse edge. The coarsest 5% of fibres start at mean micron + CEM. The smaller, the better.

CF, comfort factor (%): the share of fibres of 30 μm or less. The higher, the less the fibre prickles.

%<15 μm : the share of fibres under 15 μm , the very fine fibres.

Along-staple profile (5 mm sections)

Fine From Tip (mm): the distance from the tip to the finest point of the staple, often a weak point.

MaxD and MinD (μm): the highest and lowest diameter along the staple.

BaseD (μm): the diameter on the skin side, the most recent growth.

SD Along (μm): the variation along the staple, over the growth period: season, feed, health.

SD Across (μm): the variation between fibres, without the along-staple effect.

Spinning, curvature, length

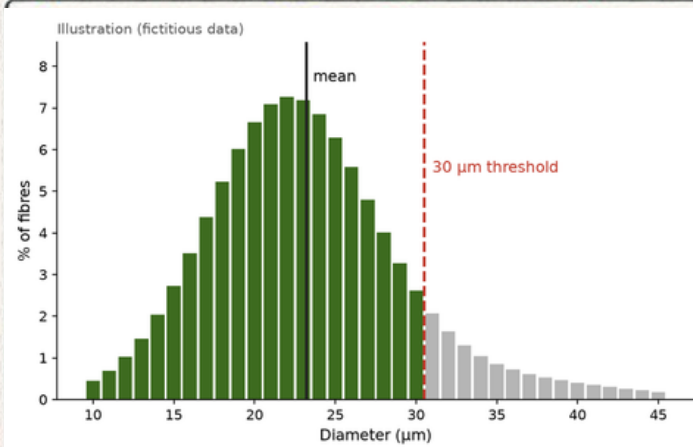
Spinning fineness, SpinF (μm): an estimate of yarn fineness that takes micron and CV into account.

Mean curvature and SDC ($^\circ/\text{mm}$): the crimp of the fibre and how regular it is. Compare huacaya with huacaya.

Staple length (mm): from tip to base, staple relaxed.

Number of fibres measured: the higher, the more reliable the figures.

Histogram, profile, settings



Histogram: each bar gives the % of fibres per 1 µm band. The vertical line marks the mean, the red dotted line the 30 µm threshold; grey bars are the fibres above it.

A tall, narrow curve means a uniform fleece; a long tail to the right, coarse fibres.

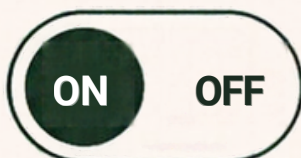


Along-staple profile: the diameter measured every 5 mm from tip to skin, so over the whole growth period. A dip shows a time when the fibre grew finer: stress, illness, nutrition, pregnancy. The report derives MaxD and MinD, BaseD (skin side) and Fine From Tip, the distance from the tip to the finest point, often a weak point. SD Along sums up the variation along the staple.



Correction factor: greasy fibre still contains grease (suint) and dust. For each herd, one sample is washed and measured again; the difference gives the factor applied to the whole batch.

There is none for the washed fibre analysis.



Trim High: in ON (default), fibres over 80 µm are left out of the calculation. In OFF, every fibre counts: the mean and SD may be higher. Always compare reports made with the same setting.



Three habits: read the SD before the CV; compare analyses of the same area and the same setting; follow your animals year on year.

Fineness classes by species

The class is given by the mean micron. The lower bound is included: an alpaca at 19.0 μm is classed Baby.

Alpaca	
Super Royal	under 16
Royal Baby	16 to under 19
Baby	19 to under 21
Fine	21 to under 25
Medium	25 to under 29
Strong	29 to under 32
Extra Strong	32 to under 37
Coarse	37 and over

Llama	
Baby	under 19
Superfine	19 to under 22
Fine	22 to under 25
Medium	25 to under 30
Coarse	30 and over

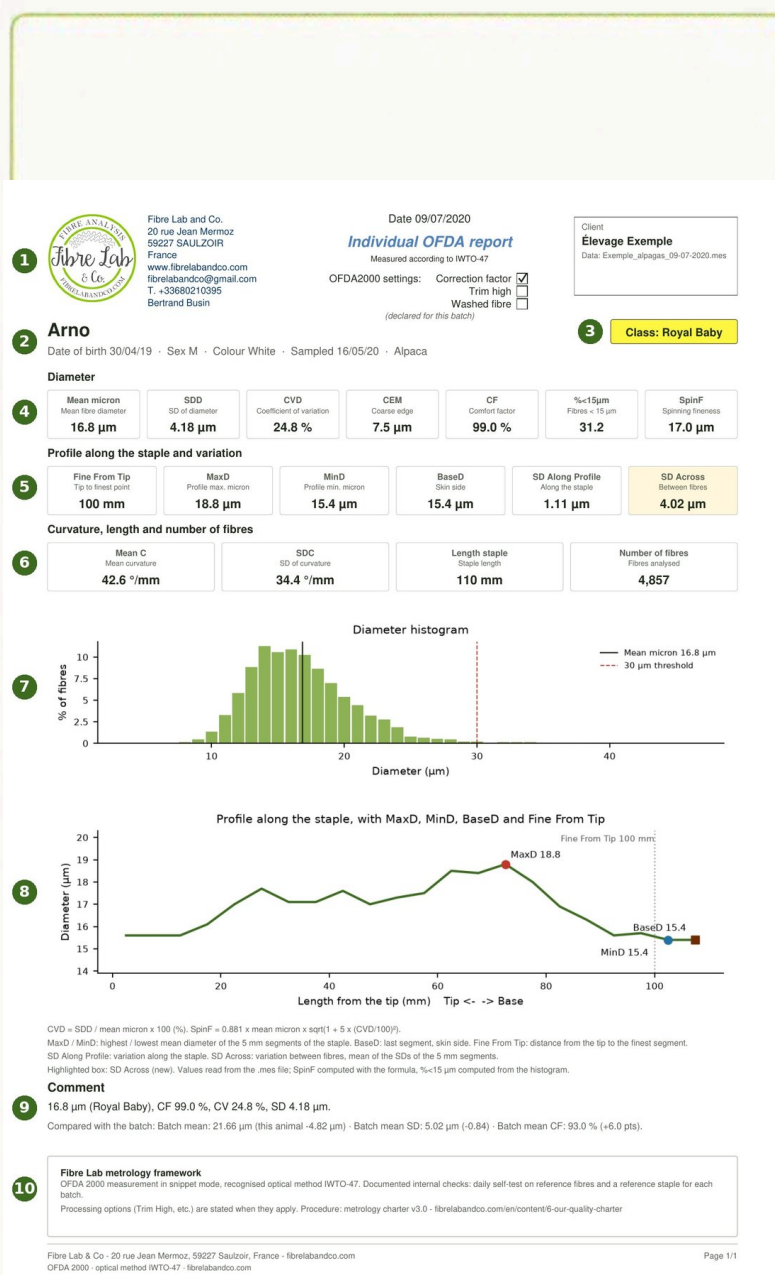
Angora goat (mohair), by age	
Kid	under 30
Yearling	30 to under 34
Adult	34 to under 39
Hair	39 and over

Cashmere goat	
Baby cashmere	under 15.5
Premium adult	15.5 to under 16.5
Standard adult	16.5 to under 19
Not cashmere	19 and over

Sheep (wool)	
Extra fine	under 20
Fine	20 to 24.9
Medium	25 to 29.9
Strong	30 to 34.9
Coarse	35 and over

- Mohair: the report also gives the USDA grade, from "Finer than 40s" (23.00 μm and under) to "Coarser than 18s" (over 43.00 μm).
- Cashmere: official definition checked criterion by criterion: mean of 19 μm or less, CV of 24% or less, fibres over 30 μm : 3% or less.
- Llama: double coat, dehairing matters to isolate the fine fibre.

Annotated report example



Example from a real batch, fictitious names

In this example: 16.8 µm, Royal Baby class for an alpaca (16 to 18 µm). SD 4.18 µm, CV 24.8%, SD Across 4.02 µm. Comfort 99.0%: 99.0% of fibres are 30 µm or less.

Your results on Fibre Herd

Fibre Herd (www.fibreherd.fr) is the online register for your animals. If you use it, your test results can go straight to the animal's record.



The FLID

The FLID (Fibre Herd Livestock ID) is the animal's unique and permanent identifier on Fibre Herd. It links its samples and analyses to its record.



Link each analysis to the right animal when ordering.



Find its results on its record, analysis after analysis.



Follow how it develops year on year.



Yarn analyses are not linked to an animal record. For the 3-point uniformity analysis, the comparison of areas is in the PDF report.



*Fibre*Herd



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Our quality charter

Every sample follows a written procedure,
identical from one batch to the next.

Results are neither adjusted nor rounded to suit
a selection goal.

Options (washing, correction factor, Trim High) are
shown on the report.

Your individual data are neither resold nor published.

Full charter: www.fibrelabandco.com/en/content/6-our-quality-charter