



Fiber
Traits

by Kathy Peterson

Alpaca fleece, the king of all fleeces, combines a multitude of positive attributes into one fiber. Treasured by all who appreciate exquisite fibers, this fleece is found naturally in 22 distinct colors and can be blended to create an almost infinite range of natural colors. Add to that the strength and resiliency of the fiber, which do not diminish with fineness. Top off all of this with a cellular structure that produces a soft handle unmatched by most other specialty fibers, combined with high yield and ease of processing. Alpaca fleece: a dream fiber with exceptional attributes.

As with any fiber, quality can vary to extreme degrees among samples from different fleeces, requiring skillful observation and analysis to determine differences that may range from miniscule to blatantly obvious. Thus, the serious fiber producer, buyer or curator must develop a strict, measurable set of fiber evaluation skills. The following is a brief, high level description of traits of the ideal huacaya alpaca fiber.

Fiber Traits of the Ideal Huacaya Alpaca

Fineness

- Average Fiber Diameter expressed in Microns
- Measured by Histogram – Micron = 1/1000 mm
- Baby <22 micron (6% of alpaca fiber collected)
- Superfine 25-27 micron (50%+ alpaca collected)

Low Prickle Factor (comfort factor)

- % over 30 microns

% Predictability at age measured

- Follicle matures at approx 24 months.

Soft Handle

- Lower frequency of scale, longer scale, and smooth profile

Uniformity of AFD

- Low CV <20 (avg. = 24-25)
- High ratio of S/P fibers (secondary to primary)
- Range 5/1 to 16/1 (fine merino = 25/1 to 60/1 s/p)

Freedom of Medullation

- Low % medulated fibers

Brightness

- Smooth Scale, scale length, lower scale frequency
MSF 7-11, 3/10 micron scale height, 9 micron length.
- Fineness and brightness can be simultaneous goals.



Example of brightness.

Density

- High # follicles per sq. mm (40-42) (merino = 75)
- High % follicles producing fiber – nutrition 90 days pre and 120 days post birth.



Example of density.

Bundles

- Circular development of follicles
- Correlates to higher s/p ratios
- Can correlate to greater density, but not always

Crimp

- High frequency/low amplitude is correlated to fineness
- Deep crimp can decrease softness
- Crimp adds elasticity/memory to end product



Example of crimp and bundles.

Staple Length

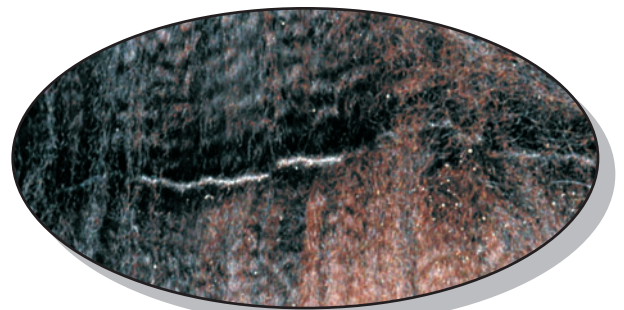
- At least 5 " per year - Increases yield

Tensile Strength

- Take for granted. Soundness is essential, durability is desirable.

Color

- Largest range of natural and variegated colors of all domestic livestock.
- Ideal fiber traits found in all colors.
- Dyes well – cuticle is porous.



Example of color.