



FLOWERDALE ESTATE ALPACAS

No alpaca should have two coats

Alpacas produce two coats - one of wool, the other of hair. Some animals have very much less hair than others. These are the animals we can use to begin eliminating that coarse, hair coat that characterises a primitive fleece. A primitive fleece is not always easy to spot. But, as a consumer, you'll soon know if your garment has come from one - by its 'prickle' factor. Anyone who has worn a cheap sheep's wool jumper against bare skin knows exactly how uncomfortable that feels. The test of quality for alpaca fleece is exactly the same.

However, there are other earlier clues. If you see an alpaca in fleece that resembles a laundry mop with thin straggly staples - rather untidy or shaggy looking - chances are you're looking at an alpaca with an advanced fleece.

The real story is to be found in the fibre follicles.

Primary follicles are part of the problem. In a primitive fleece, these follicles are extremely large. From them come medullated fibres - coarse, prickly hairs that need to be removed. These coarse fibres have other effects. Because they are shed seasonally, it is often the case that, on shearing, some very long fibres as well as very short regrowth tips are retained in the fleece. They adversely affect processing efficiency and the quality of the resultant fabric.

More importantly, these primary follicles inhibit the formation of secondary follicles. It is the number of secondary follicles on an alpaca which is crucial to the development of a dense, fine fleece. And a dense fine fleece makes the wonderfully light, warm and soft garments that are so delightful to feel against your skin - and which look so good made up into fashion garments. Not only that, they dye well, too.

Let's look more closely at an advanced fleece of a huacaya. Part the fleece and notice that it has a deep and even crimp. It has supersoft handling and gentle lustre. For the suri, there's an even higher lustre and there's a distinct coiling of the staples (rather than crimp). In both alpaca types, the advanced fleece is the result of high levels of secondary follicles.

Advanced fleece staples are long and about the thickness of knitting needles and within each staple it will be noticed that there are bundles of fibre that peel away into even smaller sections each about as thick as a matchstick. This means that the wool fibres have become so closely aligned that they form follicle groups which become the basic unit of fleece structure.

There's a type of skin associated with this secondary follicle development, known as 'soft rolling skin' - it means that there is more skin surface on an animal and more room for secondary follicles to develop and grow.

These secondary follicles certainly have a lot going for them. The more secondary follicles on an animal the more slender the follicles become. That means they not only produce more fibres for a denser, weightier fleece, they also produce finer fibres. They create an efficient growing pattern of parallel growth (avoiding tangling and 'cross-fibring') and uniform growth (to similar length). This, and the fact that secondary follicles are fast growing, allows crimp to become well defined and uniform.

When the alpaca fleece that has high weight, fineness, even staple length, smooth surfaced fibres, lustre, strength and elasticity, we know that this alpaca has plenty of secondary follicles and has an advanced fleece.



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Current research indicates that high secondary follicle development appears to be controlled by relatively few major development genes. Because of this it is likely that selective breeding of animals whose fleeces are high in secondary follicle development will produce rapid improvements in progeny quite rapidly. So how do you choose good fibre breeders?

First, look for the 'laundry mop' fleece surface.

Once you've spotted the right animal, feel its sides - the fleece will feel very soft and bouncy - good elasticity that's great for weaving. It's best to observe animals in short wool. Spiky fibres are easier to see. Expect to find spiky fibres but, in time and with selective breeding, they will be reduced, even eliminated. Remember to pay attention to the staple - well defined, boldly crimped and, as you examine it, peeling into fibre bundles. Even if desirable fleece characteristics are found only in the trunks of animals now, it's only a matter of time (and careful breeding) until they will spread to the neck, down the back legs - even, eventually, to the apron.

If quality is your aim, take care when selecting males. They will be needed for 'like to like' matings at the top of the range and for correction of more obviously two coated animals at the bottom. As progeny are produced, use your visual skills, by all means. But check, by measurement and analysis, all progeny of your chosen sires and dams. Proper use of breeding performance records for classing and mating is the key for genetic improvement.

What are the rewards?

Fibre fineness - fine wool that spins to higher counts and makes soft, lightweight garments.

Evenly sized fibres - fine now, but with the potential to become supersoft. Lowering the coefficient of variation (CV) of wool by five percent - without changing the average diameter - is equivalent to improving the spinning fineness of the fibre by one micron.

Evenly shaped fibres - smooth surfaced, cylindrical fibres that produce both softness and lustre. They dye to deeper, richer colours. The raw fleece lustre translates to the finished garment

Narrow, weakened fibre regions - minimised to ensure the fleece has high tensile strength, low wastage and very few short fibres.

Bold, deep crimp - for softness, ease of processing and the production of a garment with superb drape.

For Australia, these rewards mean a new fibre industry that will come as the result of intelligent, managed and selective alpaca breeding.



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