

Evaluating Wool On the Live Animal

by Paul E. Briggs

Evaluating the wool or fleece on the live animal is very difficult for many people. Most of us are used to looking at shorn fleeces with the flesh side out, compared to the weathered side out when evaluating the fleece of a live animal.

There are three times when you must evaluate a fleece on the live animal:

1. When purchasing replacement animals away from your ranch
2. When evaluating fleeces in your own breeding program
3. When you are an official sheep judge

First, evaluating a fleece is very important when selecting replacement rams and ewes away from your ranch. In most cases you will not be able to evaluate the fleece of the animal until after the animal is purchased and shorn.

Second, if you raise a wool breed of sheep you can save yourself time and energy by a pre-evaluation of your potential replacements before shearing. You can pick out your top-end animals and cull animals with obvious faults, thus spending more time evaluating fleeces from your top group.

Third, if you are a sheep judge, you must be knowledgeable about the breeds you are judging. It behooves you as a judge to know the wool scorecard standards adopted by the different breed associations.

Judging or evaluating fleeces in the show ring shouldn't be any different than evaluating fleeces at home, however, the animal has been fitted for the show ring and the fleece has been adulterated by trimming. Fitting will affect staple length, uniformity of staple length, yield, and even density, which makes it more difficult to compare fleeces.

The best time to evaluate a fleece on or off the animal is when they are yearlings with a full 12 month fleece. Fleece traits are highly repeatable; therefore, selections made at 16 months of age can be a good indicator of future wool production. Evaluating aged ewe fleeces is difficult because of the differences in the physiological state of the animals and its effect on wool production. Barren ewes will have better fleeces than ewes that have raised a lamb(s).

Now, to start analyzing the fleeces. Where do we start? First, let's pick out the areas on the animal's body to look at for evaluating the fleece. Looking at the animal from the side, draw an imaginary horizontal line halfway between the top line and underline of the animal (see Figure 1A). This should put your line at approximately the middle of the side.

Figure 1B shows three locations in which the fleece should be examined on the imaginary line. These three points are where you want to look at the fleece.

Point 1 is on the shoulder.

Point 2 is in the middle of the side just past the last rib.

Point 3 is on the face of the leg about the stifle or britch.

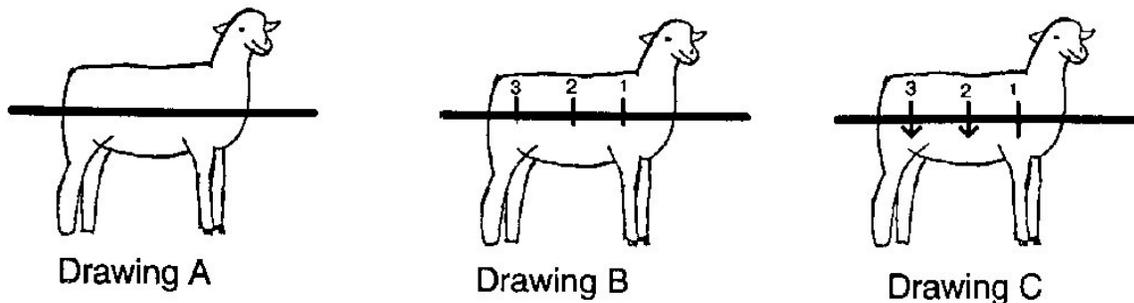


Figure 1 Fleece evaluation points on the live animal

Now, with both hands, make a wide split in the wool to look at the fleece, working from Point 1 to Point 3. We are looking at and estimating the following criteria: fiber diameter or grade; uniformity of fiber diameter; staple length; character; yield and density.

Fiber Diameter or Grade

You are going to compare the animal you're evaluating with the grade of wool that its breed should be producing. The average of the three points should correspond with the range of diameters or grades representative of the breed.

Uniformity of Fiber Diameter

Both breeds and individuals within a breed will vary in fiber diameter uniformity. Breeds such as the Merino and Rambouillet, for example, should be uniform from front to rear. On the other hand, Columbias and Targhees are not quite as uniform from front to rear. Fiber uniformity is very important and animals that vary more than 5 microns from shoulder to britch should not be kept as replacement stock. The finest fibers are found on the shoulder and the coarsest fibers are located on the britch.

One way to judge the uniformity of a fleece is to closely examine the number of crimps per inch. For example, if the staple on the shoulder has 11 crimps per inch and the britch has only 5 crimps per inch, there is a high probability that the fleece is not very uniform. This method is only used to compare fiber diameter uniformity within a fleece and not between fleeces.

Staple Length

Staple length and uniformity of length play a major role in determining the value of wool. Each grade of wool has a minimum length to be classified as staple, French combing or clothing wool.

Character

Character refers in general to the overall appearance of the fleece. This includes crimp, color, handle and lock formation. Crimp, the natural waviness of the wool fiber, is an important characteristic. Well crimped wools usually pass a high tensile strength. Wools lacking in crimp have a tendency to break during processing. Uniformity of the crimp throughout the length of the staple is very desirable and is a trait worth selecting. Color is very important, especially if white or pastel shades of fabrics are to be made. Bright wools are more valuable and take up dyes more uniformly than discolored wools.

Yield

Yield is the amount of clean wool that is obtained from grease wool after scouring and is expressed as a percentage. If all animals being evaluated have been run together since their last shearing the depth of dirt penetration and amount of yolk are a good indicator of yield.

Density

Density refers to the closeness or compactness of the fibers in a fleece. The more fibers per square inch, the denser the fleece. There are two ways to check for density on the live animal:

- 1) When you part the fleece the amount of skin exposed is an indicator of the fleece density or, in other words, the less skin you see, the denser the fleece.
- 2) The density can be evaluated by grabbing a handful of wool and squeezing it. By doing this at point 1, 2 and 3 as seen in Figure 1B, you'll be able to get a feeling for how dense the fleece is when compared to other animals' fleeces. Wool having a shorter staple length will feel denser, therefore you should consider this when comparing animals with different staple lengths.

Two other factors you should consider in evaluating fleeces on the animal are belly wool and kemp.

Belly Wool

Belly wool is wool that grows on the belly and is often uneven, tender, and shorter than wool from other parts of the body. Belly wool should be limited to the belly region. If belly wool is seen on the sides of the animal, it is a serious fault. When looking for belly wool, start at point 2 in Figure 1C and go down the fleece toward the belly until you see the belly wool and compare this point with where belly wool starts on other sheep.

Kemp

Kemp is an opaque fiber which lacks strength, elasticity and crimp. The fiber is medullated and considerably coarser than other fibers in the same staple. Kemp fibers do not readily absorb dyes, therefore, wools containing kemp are limited to their end use. If a fleece contains kemp it is most prevalent in the britch wool (Figure 1C, point 3). Kemp is acceptable on carpet wool breeds such as Scotch black faces and Drysdale. If kemp is found on a fine wool sheep the animal should be culled.

Briggs, Paul E., "The Marker", December 1995, pgs. 4-5.