Reviewing Wool Quality by Linda Hansen

Wool quality is at the very core of the “hand spinner” market. Understanding what defines it is important to fiber artists, of course, but even more so to those of us who are wool producers. The parameters can be a useful ruler to measure your own flock production and form management decisions, and perhaps even open the possibility of successfully showing your fleeces. Increased value to both producer and user is the ultimate goal.

Here is my list of top qualities, not necessarily in order of importance:

**Fineness** - The diameter of individual wool fibers. In colonial times the Blood System referred to the amount of Merino genetics in a wool sheep. It “morphed” into identifying the fineness of wool. That system was replaced by the Bradley Counts System which was more specific to the fleece. The counts range from 80’s to 38’s and are equal to the hanks of yarn (560 yards) that can be spun from one pound of clean wool. This system has in turn been somewhat replaced by the Micron System which offers even more detailed and accurate measurement, using 16 grades in total, based on an average fiber thickness measured by a laboratory micrometer. A micron is 1/25,400 of an inch, so an 80’s by the Bradley County System averages approximately 18 microns while a 36’s averages about 39 microns. These grading systems only address fiber diameter. Fineness isn’t everything, as many breeds produce lovely fleeces that are not “fine” but generally within a breed’s specifications (and aside from the intended use) the finer the fiber the better. There are several places that do micron testing: Yocom-McColl Labs (ymccoll@ix.netcom.com), Whittick Fiber Testing (dickwhittick@bellsouth.net), University of Nevada, Reno (hglmp@cabnr.unr.edu). Contact them to find out how to prepare samples, cost and what information the test yields.

**Staple length** – It’s pretty straight forward: less than 2” is nearly impossible to spin, more than 6” is nearly impossible to spin. Three to five inches is great. Very short staple is not only a spinning challenge; it tends to make a scratchier yarn because of the greater number of ends.

**Crimp** – the waves in a lock of yarn. This highly desirable characteristic relates directly to both fineness (more crimps per inch = finer wool) and elasticity (deeper crimps = more spring). Sometimes the “waves” are far enough apart in a Long Wool breed to form curls. Consistency of crimp throughout the fleece shows consistency of fineness and character.

**Cleanliness** - Obvious things apply here such as no paint or wax markers, no bits of twine or VM (vegetable matter – feed, seeds, stickers, etc.), clean shearing floor, good skirting. Coating sheep helps in cleanliness, but many breeds are difficult to coat without felting the fleece. Pasture care (removing tall weeds that have seed heads for example), correctly constructed feeders that don’t allow hay to fall into the fleece, and appropriate bedding in pens and barns can all keep fleece contamination to a minimum. Careful storage will prevent mildew/mold, moths and rodents.

**Strength** – Test by selecting a lock about the diameter of a pencil. Hold it at either end and pull to see if the fibers break. Listen for the “crackly” sound of fibers coming apart. It if comes apart in a sort of line across the lock, that is a break. If it comes apart more randomly that indicates a week fleece. It the tips come off, it’s called “tippy” (often because of weather damage). Then snap the lock (pull it sharply) near your ear. You should hear a “ping” that indicates a healthy lock. Select several locks from different areas. Just one small area of weak fiber might be skirted off. For obvious reasons a finer fleece shows weakness more easily than a coarse fiber under identical conditions. Good husbandry and nutrition is the key to producing a strong fleece. A sudden change in nutrition level, illness (particularly with fever), lambing, stress, can all produce a broken or weak fleece.

**Luster** – From dull to pearly sheen, this has little to do with the amount of lanolin. A high lanolin content appears as more of a “sparkle” than an over all luster. It has most to do with the diameter of the wool fiber, and the structure of each individual fiber. Wool with good luster will maintain it even after washing and dyeing. While commercial mills have not specifically sought high luster wool, hand spinners recognize its value.
Structure – Each breed produces a characteristic lock structure – block with blunt tips, long with waves, long and curling to a tapered tip. The entire fleece can be “dense” like a head of cauliflower or “open” with individual locks separating from each other. Structure should be consistent within a fleece.

Character - Different breeds exhibit different character in their fleeces. Fleeces that represent the standards of their breed do well in this department, and if a fleece is entered into its Breed division, the judge will expect the fleece character (and structure) to be representative of that breed.

Color - This is a somewhat subjective quality, but important nonetheless. And even in white fleeces, there is a variety from bright white to vanilla.

Weight/Yield – While this isn’t as important to hand spinners as to commercial mills, it contributes to the value of the fleece. Weight of the sheared fleece will be reduced by washing, picking and carding. How much depends on the amount of contaminants and lanolin in the fleece. The weight of the fleece after that process is the yield. The wool industry has developed average yield predictions for different breeds. The amount of wool returned after processing into roving or yarn will be less (possibly more than half) than the amount of raw wool you started with.

Handle/Hand – An illusive quality, but important all the same. Basically, wool should feel good when you take a handful of it. Silky, soft, creamy, satiny, buttery, warm, cool, strong are only some of the descriptors you might use to describe a good “hand”.

Consistency – Whether it’s crimp or another quality, consistency within one fleece makes it a dependable fiber for the user. For hand spinners, an inconsistent fleece can be separated out and sorted into like groups, but often then isn’t enough of any one group to be of much use. If you’re thinking of showing a fleece, very small area of dissimilar wool might be skirted off without reducing the fleece too much.

Problems - Yolky or cotted wool shows patches of chalky feeling or matted wool, either yellow or a bright white and are associated with stress, illness and sometimes genetics. Crossfibers are renegade fibers which run at right angle to the rest of the lock. These are no problem in processing, but have a strong tendency to cot or mat on the sheep. Kemp fiber shows up in locks as a hard white hair without crimp. These are brittle and don’t take dye well. Hair or britch/breech wool is common on the breech area (upper hind legs). Like kemp fiber, it is scratchy and coarse. Holding a wool lock up toward a light source and “cob webbing” it – spreading it thinly between your hands -- can reveal non-wool fibers.

An entire chain of excellence from sheep genetics, through handling and husbandry, to shearing and storage produces wool ready to be made into beautiful products. Understanding the qualities that make the wool excellent is just one link to that worthy goal.

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