

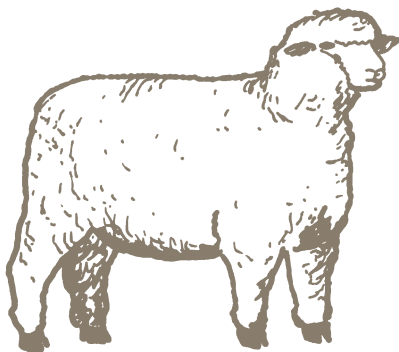
# PROCESSING WOOL *Fact Sheet*

*Shearing & grading*  
*Washing & scouring*  
*Blending & dyeing*  
*Carding*



**PRODUCING WOOL** For thousands of years sheep have been among the most efficient of all the domestic animals. Unlike cattle and swine, they thrive in the most extreme conditions of climate and habitat. Sheep graze easily on noxious weeds in the highest reaches of mountain vegetation where neither cattle nor elk nor deer choose to feed; thus they convert to protein for human use a whole variety of natural resources that would otherwise be wasted.

These conversions are, of course, wool—the perfect fiber for uncounted varieties of fabric, and lamb—the most tender and succulent of meats. Shear a sheep and spin its wool into yarn for a sweater or a skirt. Before you know it, the sheep has grown a new fleece and the cycle starts all over again. Wool is a renewable resource.



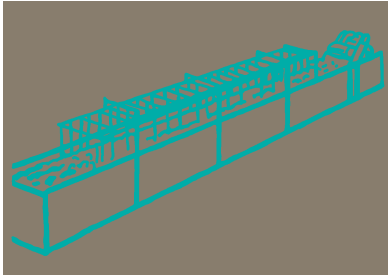
**SHEARING AND GRADING** The first step in processing wool takes place on the farm or ranch with shearing... usually in the springtime just before lambing. A skillful shearer, using fast electric hand clippers similar to enlarged barber's shears, can shear a sheep in about 5 minutes. He uses long, smooth strokes close to the skin in order to preserve the length of the fiber and hence the value of the fleece.

The shearer usually peels the fleece off in one piece. Then a worker rolls and ties it and stuffs it into a long bag with 19 or 39 other fleeces which together weigh from 200 to 400 pounds. He also marks the bag to identify its source (owner) before it goes to the warehouse.

Next come the buyers. They are the final judges of the value of the wool. Many times they take core samples of the bags of wool in order to measure fiber length, diameter, amounts of dirt, plastic, and vegetable matter. These factors can also be determined by experienced graders who make their judgments by visual inspection. The buyers bid on "the lot" based on the grade and/or the core samples of the wool.

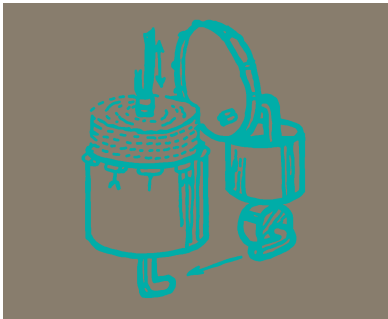
Fine and medium-fine wools of longer staple lengths (more than three inches) usually go to make light-weight worsted suit and dress fabrics. Coarser and shorter fibers, under three inches long, usually go into bulky sweater and carpet yarns.





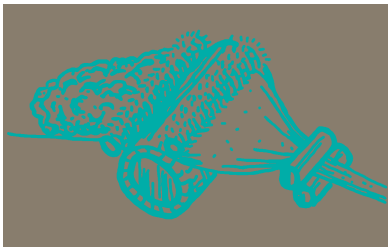
**WASHING AND SCOURING** The next step in the process is washing (scouring) the wool to remove grease (unrefined lanolin), vegetable matter and other impurities which gather in the wool from the range, feedlot, or shearing floor. A set of rakes moves the fleeces through a series of scouring tubs of soap and water. Impurities can weigh from 30 to 70 percent of a raw (unscoured) fleece. The first wash waters are warm—up to 140 degrees F—and the rinses are cold. Then squeeze rollers and a hot-air drying chamber bring the moisture content to the right level for the next step in processing.

The grease in wool is a wonder of its own... lanolin. It is separated from the wash water (oil and water don't mix), purified, and used in creams, soaps, cosmetics, and other products.



**BLENDING AND DYEING** Clean wools from several different batches or lots are often blended—mixed mechanically—at this stage. Blending unifies the slightly-different basic colors of raw wool, and also helps to standardize staple length and diameter for uniform quality.

Each wool fiber absorbs dyes so deeply that dyeing at any processing stage is equally effective and durable. Wool dyed immediately after it is scoured (washed) and blended is *stock-dyed*. Spin it into yarn first and then it's *yarn-dyed*. Weave it into a piece of fabric and then it is *piece-dyed*. To weave a patterned fabric, use either stock-dyed or yarn-dyed threads. Plain-colored fabrics are usually piece-dyed. And woolen fabrics can, of course, also be screen or roller printed in myriad colors and patterns.



**CARDING** The carding process passes the clean and dry wool through a system of wire rollers to straighten the fibers and remove any remaining vegetable matter. The rollers vary in diameter and turn at different speeds in order to form a thin web of aligned fibers. Smooth steel fingers then divide the web and roll the strands over onto one another to create narrow continuous ropes of fibers called "slivers."

If the batch of wool is of coarser fiber and shorter staple length (three inches or less), the machinery gently twists the slivers into ropelike strands called "roving," and winds the roving into balls ready for spinning into woolen yarns.

If the batch is of finer fiber and longer staple length (longer than three inches), the slivers usually go to the combing and drawing steps which prepare them for spinning into worsted yarn.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.  
6911 South Yosemite Street  
Centennial, CO 80112-1414  
(303) 771-3500 • Fax (303) 771-8200  
[www.sheepusa.org](http://www.sheepusa.org)