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Brookings, South Dakota

Cooperative Extension Service

Livestock Specialist Section

PREPARATION AND MARKETING OF WOOL

J. A. Minyard¹ and Kenneth Leslie²

Wool provides an important source of income from the sheep flock. The contribution of wool to total flock income can vary widely depending on breed of sheep, climate, feed, management, price of wool and other factors. Under favorable conditions of production and prices, sale of wool may account for up to 40 per cent of the total returns from "wool sheep".

Although sheep numbers in South Dakota have declined each year since 1961, the state has maintained its relative importance as a wool producing state. In 1966 South Dakota ranked fifth in number of sheep and lambs shorn with 1,247,000 head. Production of shorn wool in South Dakota in 1966 totaled 11,091,000 pounds and was valued at \$6,211,000.

A change in selling price of 2 cents per pound for all South Dakota wool would alter the income from wool sales by more than \$200,000. This is a sizeable figure and represents substantial purchasing power for many individuals.

Value of the Wool Clip

There are several factors that affect the value of the wool clip. Some of these factors are subject to the control of the producer, others are not; but he can, through better breeding, feeding and management practices, improve the quality and value of wool produced. The following are factors that affect the value of the wool which management practices can influence.

Shrinkage - is the percentage loss in weight due to the scouring process. Shrinkage is a price factor and not a grade factor. You could compare its importance in marketing wool to dressing percentage in market cattle. Like dressing percentage in cattle, shrinkage is related to grade even though it is not a grade factor. The following table indicates the average shrinkage for each grade as reported from the Wyoming station. You will note that the coarser the grade, the lighter the shrink.

Table 1. Relationship of Shrinkage to Grade of Wool

<u>Grade</u>	<u>Average Shrinkage %</u>
Fine staple	65
Half-blood combing	62
Three-eighth blood combing	57
Quarter-blood combing	53
Low quarter-blood combing	50

These shrinkage estimates are presented as the average for Wyoming. Shrinkage varies considerably within the State of South Dakota. However, on the average it would be less than it is in Wyoming.

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Weight loss through the scouring process may be the result of both natural and foreign materials. In the raw state, grease wool contains the following types of impurities:

1. **Natural impurities** - which result from the glandular secretions. This includes the yolk and suint (perspiration). The yolk, a mixture of cholesterol and a number of other materials, appears to protect the fiber against the detrimental action of the weather.
2. **Acquired impurities** - which are picked up by the animal. They include such mineral impurities as dust, sand and dirt; vegetable materials consisting of straw, burs, twigs and grasses; and "dung". Some of the foreign materials (acquired impurities) that make up part of the shrinkage affect the value of wool more than their percentage weight factors in shrinkage indicates. For example: burs are not removed in the normal scouring process. Their removal requires using a mechanical process known as "bur picking", a chemical process known as "carbonizing" or both. The carbonizing process is quite expensive. It is common for this process to cost between 3 and 8 cents per pound of clean wool.
3. **Applied Impurities** - including such identifying substances as tars and paints and residues of dips and sprays. The kind and amount of paint brands present will affect the value of wool. Use of unscourable paints and excessive use of scourable paints a short time before shearing will require extra labor during the scouring process. In some cases this extra labor will be hand labor for removing the painted wool.

Length of staple - is the length of unstretched wool fibers. This is an important economic factor since it determines whether the wool will be considered as combing, French combing, or clothing wools. Length of staple is primarily related to nutrition and breeding practices. However, the skill and concern of the shearer may have an effect. Second cuts during shearing result in fibers being cut twice, and their value is thereby reduced.

Grade and uniformity of grade - grade is a classification of wool according to the diameter of the fiber. The grades of wool are: fine, half-blood, three-eighth-blood, quarter-blood, low quarter-blood and common and braid. These terms refer only to grade and fiber diameter and not to the breeding of the sheep. Uniformity of grade refers to the variation (or lack of variation) present within a fleece and between fleeces within a clip. Management has very little effect on grade. Uniformity of grade within a fleece is the result of good breeding. Certain management practices can affect the uniformity of fleeces within a wool sack.

Purity - refers to a fleece composed completely of white fibers. Examples of impurity includes presence of hair fibers, kemp, black fibers and vegetable fibers. Certain management practices will definitely affect the presence of vegetable fibers.

Produce and Market Quality Wool

One aim of every sheep producer should be to produce a "reputation" clip of wool. Production of a reputation clip is a continuing process. It does not happen over night. Many years of good sound judgment have gone into and are continuing to go into the outstanding clips.

Normally, wool is consigned, stored or sold outright. Regardless of how wool is sold, a grower should know: (1) grades in his clip and approximate percentage of each, (2) shrinkage, (3) market price.

Armed with this knowledge the seller is in a much better position to deal with the buyer.

1. Knowing the approximate percentage of each grade. Grade can be determined on the sheep prior to shearing by visual inspection. Most of the wool moves as original-bag wool. The individual clip sells at one price regardless of the different grades in the sack.

An ungraded clip can be sold on a clean basis with a core test for shrinkage, provided grower and buyer agree on percentage of grades present on clean-basis price of each grade. Example:

If clip contains 60 per cent by weight of one-half blood, 30 per cent three-eighth blood and 10 per cent quarter blood and the indicated prices assumed (clean wool basis):

60% one-half blood @ \$1.25/lb.	= \$0.75
30% three-eighth blood @ 1.17/lb.	= 0.35
10% quarter blood @ 1.10/lb.	= <u>0.11</u>

\$1.21 per pound clean basis

Core test of clip indicates 53 per cent shrinkage
 $\$1.21 \times (100-53) = 56.9$ cents per pound grease basis

2. Determining shrinkage. Core testing is replacing visual estimates of shrinkage because of the added accuracy. The following are facts you should know about core testing:

Core test before losing control of the clip.
Cost.

Not practical to core test on small clips.

There is still possibility for some error.

It is difficult to get an accurate core test on mixed (grades) clip of wool.

Core testing benefits the best wool producers the most.

3. Know the market. There is a weekly publication printed by the Agricultural Marketing Service which is free for the asking. For this weekly publication write to: Market News Branch, Agricultural Marketing Service, U. S. Department of Agriculture, 709 Appraisers Store Building, Boston 10, Mass.

Recommended Practices

1. Cull inferior and irregular wool producers. This practice can be considered more of a breeding practice than a management practice. However, if properly implemented, it will affect length of staple and uniformity of grade within a clip. Sheep with hairy breeches cannot be allowed in a flock which is attempting to produce quality wool. Culling black sheep from your flock could also improve the purity.

2. Sort sheep according to sex, maturity and grade of wool prior to shearing and package wool accordingly. This practice would be adaptable only to where flocks are large enough, approximately 300 or more head. Buck fleeces can usually be identified by their characteristic odor. They are usually lower yielding than corresponding ewe fleeces. It would be best to sack the buck fleeces separately and properly identify the sack as such. Wool from yearling ewes is usually lighter shrinking and longer of staple than ewe wool of the same breeding. Different grades of wool are used for different purposes. It would be a good idea to sort the ewe band into at least two groups based on grade, and shear and sack these fleeces separately. If the owner would sort into two groups he could cut the quarter and three-eighth blood into one group and the half blood and fine into another group. This would aid in improving the uniformity of grade within each sack. Fleeces from black faced sheep should not be sacked with those from white faced sheep since they are much more likely to contain black fibers. Black (marker) sheep within the flock are not recommended. If present, their fleeces should be kept separate.
3. Remove tags. Tags, dung covered locks of wool, may be removed by one of two methods. Sheep crutching is a common practice in Australia and is practiced by some in the United States. This involves shearing around the udder, inside the hind legs and around the anus prior to the actual shearing. This practice is quite often done before lambing where normal shearing does not take place until after lambing.

Tags may be removed by hand. This would be done by the man who ties the fleece. He should be instructed that this is an important practice and he should do a thorough job without excessive tearing apart of the fleece. Dont forget, tags or crutchings should be sacked separately and labeled as such.
4. Hire a skilled shearing crew that takes pride in a job well done. In order to maintain the quality of wool, the shearer must keep second cuts to a bare minimum. Care should also be exerted to see that the fleece is not torn apart, but left in one piece so that it may be easily tied.
5. Keep fleeces clean as possible. It is very important at shearing time to have a clean shearing floor and someone in charge of keeping it clean. Shearing on dirt floors should not be tolerated. Wood or concrete is recommended. The use of the tarpaulin would be acceptable. Care should be taken that the tarpaulin is large enough to prevent the wool from coming in contact with the dirt floor.
6. Tie fleeces neatly with paper twine. The recommended method of tying a fleece involves straightening out the fleece, flesh side down on a clean floor, folding the belly and leg wool in toward the center, leaving the width of the fleece approximately 16 to 20 inches wide. Start at the rump end and roll tightly toward the head end of the fleece. Using a piece of paper twine about 7 feet in length, wrap it around the fleece, pulling it snug and then cross wrap in the other direction pulling the ends together and tying in a knot that will not slip.

This method of tying makes a very attractive looking fleece. However, it must be recognized that it is slower than the most common method in which the wool tyer leaves the fleece flesh side up, reaching his arms around the outside, lifting up, bring the outside in toward the middle, then wrapping once and cross wrapping with paper twine and tying.

7. Use clean burlap bags for sacking and mark each bag identifying its contents. A clean burlap bag provides the wrapping for a package of wool. This does not add to the quality of the contents. However, it will add to the appearance of the clip when ready for market. Sacks made of some other materials could add to wool impurities. The normal burlap wool sack will hold 30 to 35 fleeces when properly tramped.
8. Keep wool dry. Wool takes up moisture very readily. Wet wool will mold in storage causing stain and deterioration of fiber strength. Therefore, it is important that sheep are dry when shorn and that the wool is stored in a dry place.
9. Use only scourable branding fluids. Sheep branding should be recommended only in areas where necessary and then using only a lanolin base paint which is guaranteed scourable by the manufacturer. Branding, only once a year, right after shearing with scourable paints will prove quite acceptable. Branding two or three times a year even with paints that are scourable may reduce the value of the wool. Excessive use of paints should never be allowed.

Some operators practice clipping paint brands with hand shears. Brands can be removed quite successfully using this method without shortening the staple length very much. This practice should not be necessary if branding is done only once a year following shearing and using a scourable branding paint.

10. Control sheep kids (ticks). Uncontrolled numbers of ticks will cause discoloration of grease wool. Their eggs and black excretion give wool a very unattractive appearance. A sheep man can best control ticks by either spraying or dipping with a recommended insecticide following shearing. Once a year treatment at that time should give very satisfactory control.
11. Control burs. A good sheep man exerts great effort to eradicate and control weeds such as cockleburs. It is impractical to attempt to remove burs from the fleece by hand. Complete eradication of these weeds is a must in improving the market value of the wool. Burry wool is often purchased at a 2 to 5 cent discount on a grease wool basis. If only a few fleeces are burry, be sure to sack these separately.
12. Do not pack dead wool, crutchings and eye clippings with shorn fleeces. These make up a small percentage of your total clip. Dont let their presence affect the price of your whole clip.

Advantages of Correctly Packaged Wool

There is no way at present to prove to a producer that following the recommended practices will pay direct dividends. It is quite certain, however, that a man who continually follows these practices will develop a reputation for producing quality wool and will probably be reimbursed for the extra effort and cost involved.

The primary reason that a producer should follow these practices is his responsibility for providing quality products which will aid in maintaining and expanding the market for American wool.

The quality of some of the more popular foreign wools is largely due to the owner's pride in producing good wool. Adoption of these recommended practices by South Dakota sheep producers should develop pride and a good reputation in all phases of sheep production.