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# CAMPBELL COUNTY WOOL JUDGING MANUAL



Wool production is an important part of Wyoming's economy. The wool industry is approximately worth \$36.4 million. The top wool producing states are Texas, Colorado, California, Utah, and Wyoming.

Knowledge of wool and wool production is vitally important to producers. People who constantly increase their knowledge of wool usually encounter fewer problems in marketing their product. They are better qualified to execute breeding and management programs through which they can improve both quality and production and, thereby, raise their net income.

There are approximately 20 popular breeds of sheep, with many less popular breeds and crossbreds, in the United States.

The wool produced by these sheep varies from very fine to extremely coarse and from 1 inch to 12 inches in length for a growing period of 12 months. For yarn to be uniform, the wool from which it is made must be uniform, particularly as to length and fineness. This wide variation in the wool produced, plus the need for uniform fiber, gives a basis for present-day grades of wool. These grades are arbitrary divisions made primarily according to fineness and length. Other priorities include soundness, purity, character, color and condition.

A wool grader considers all these points. Clean wool content, fineness, length of staple and strength are the main characteristics considered in arriving at the value of wool.

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## PREPARED BY

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# WYOMING STATE 4-H WOOL JUDGING CONTEST

## SCHEDULE

Friday, April 29<sup>th</sup>

- 4:30 p.m. Check-in (Mary Mead Classroom in UW Hansen Arena)
- 5:00 p.m. Orientation  
Wool Judging Contest begins  
(Wool Judging clinic for volunteers – UW Wool Lab)

The awards ceremony will take place at 1 pm on April 30<sup>th</sup> at the Animal Science Meat Lab on the University of Wyoming Campus (after the Meat Judging Contest). Lunch will be provided to those who are registered.

## CONTEST CLASSES & JUDGING

Judging classes for the contest will consist of the following categories:

6 Wool Classes (50 points per class):

*Wool Classes, Possible Points = 300*

6 Sets of Questions/answers on each of the placing classes (2 points per question)

*Questions, Possible Points = 300*

Grading Line (15 fleeces)

*Grading, Possible Points = 225*

Total possible points for the contest (all three categories) is 825

Contestants will be allowed 12 minutes for each judging class and 25 minutes for the Fleece Grading Line.

zScore will be used for scoring the contest. Any needed 4-H Wool Judging Placings & Questions sheets or Grading Line forms will be provided by the State 4-H Office. Judging participants are encouraged to take personal notes, but there will be no papers, notes, or reference guides allowed for the contest in any fashion.

### **4-H Wool Contest General Rules and Information**

**Commercial and Breed Classes and Questions** Contestants will place the four fleeces within a class and fleece-quality questions will be asked for each class. For questions it is important that contestants use only one number for each description. Officials have the option of giving credit for more than one answer if a particular description matches another fleece. The placing of the class is worth 50 points and the questions are worth 50 points as well.

**Fleece Evaluation of Grading Rail** Rotations for a 15 fleece rail will consist of categories for wool grade, length, and yield are found on page 5.

- a. Contestants will receive 5 points for each correct wool grade selected. If contestants select a wool grade that is one blood grade off, they will receive 2 points.
- b. Contestants will receive 5 points for each staple length category correctly answered. If a contestant misses the official, no points will be awarded.
- c. Contestants will be required to select an actual percentage yield. If a contestant is within 4% points above or below the official percentage yield, they receive full credit of 4 points. If the constant is within 8% points above or below the percentage yield, they receive 2 points. If they are more than 8 points above or below, they receive no points.

# CONTEST RULES & INFORMATION

## Contest Eligibility

- Contestants must be 4-H members in good standing in the county they are representing.
- There is no limit to the number of youth that can be entered in a contest.
- All ages are as of January 1 of the year in which the contest takes place. There are three age categories in which an individual may be eligible to compete: Junior (8-10 years old), Intermediate (11-13 years old), and Senior (14-18 years old)
- Contestants competing as individuals are eligible for all awards in their respective age category.
- Each county may enter as many senior (ages 14-18) and junior teams (ages 8-13) as they would like. A team consists of 3 or 4 designated members; the sum of the three high scores will determine the team score. Only contestants entered as a member of a county team are eligible for team awards.
- Contestant eligibility will be verified using the 4-H Plus software program. It is crucial that State 4-H Office has the most current information possible in order for this verification to take place.
- There are no restrictions on the number of years a 4-H member can compete as an individual or as a team member in a State 4-H Contest.
- It is the responsibility of each participating county to certify their contestants and evaluate their eligibility in accordance with these rules, regulations, and guidelines.

## Rules & Guidelines

- Contestants will not be permitted to talk during any portion of the contest.
- Contestants will not be allowed access to cell phones during any portion of the contest. Please make sure phones are taken care of before the contest orientation.
- Contestants may bring blank note-taking paper and a writing utensil into the contest
- Every reasonable effort will be made to fairly and correctly score the contestant's placing cards.
  - Cards without a placing mark will receive a score of zero.
  - Cards with multiple marks will receive the lowest score of those marked.
  - Cards with undetermined, illegible, or indiscriminate marks will receive a score of zero.

## Award Trips

Out-of-State Trips may be awarded to senior teams. The first place senior team will have the opportunity to choose an award trip. In the event multiple awards trips are offered, teams following first place (i.e. second, third, etc.) have the opportunity to choose from the remaining awards trips in their respective order. In the event a team member is unable to compete at a state contest due to circumstances beyond his/her control, eligibility for award trips will be determined by the State 4-H Office.

Contestants should note that if they have participated in post-secondary (i.e. college, jr. college, etc.) course work or be on a post-secondary team undergoing training in the subject area specifically related to the National 4-H Contest that they select to attend, they may be ineligible. Be sure to check eligibility prior to choosing award trip.

Financial support for award trips is determined by donations to the Wyoming State 4-H Foundation. See specific contest guidelines for more information regarding trips and donors.

Monetary donations are gladly accepted to provide financial support to youth in the form of awards, out-of-state trips, and competitions beyond the state level. If you, your family, your business, or someone you know are interested in supporting the Wyoming 4-H Program, please contact Steve Mack.

# CONTEST RULES & INFORMATION



## WYOMING 4-H WOOL JUDGING GUIDE WOOL GRADES & STAPLE LENGTH(in inches) TYPICAL YIELD RANGES (in %'s)

Grade	Staple	French Combing	Clothing	Typical Yield Range in %
Fine 64's & finer	> 3"	2-3"	< 2"	40-68
½ Blood 60's & 62's	> 3.25"	2.25-3.25"	< 2.25"	40-70
¾ Blood 56's & 58's	≥ 3.5"	---	< 3.50"	50-70
¼ Blood 50's & 54's	≥ 4"	---	< 4"	55-75
L ¼ Blood 48's & coarser	≥ 4"	---	< 4"	55-75

Note: this is a guide. It does not mean fleece yields may not fall beyond the typical ranges posted above .

Below is a blank graph. Make copies and PRACITCE!!! The chart above should be memorized!

	Fine	½ Blood	¾ Blood	¼ Blood	Low ¼ Blood
Staple					
French Combing					
Clothing					
Yield					



# WYOMING STATE 4-H WOOL JUDGING GRADING LINE

Contestant # \_\_\_\_\_

County: \_\_\_\_\_

Fleece Number	GRADE					LENGTH				YIELD			
	Fine Blood 64's & Finer	1/2 Blood 60's-62's	3/8 Blood 56's-58's	1/4 Blood 50's-54's	Low 1/4 Blood 48's & Coarser	Score	Staple	French Combing	Clothing	Score	%	Official	Score
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													

# Wyoming 4-H Wool Placing and Questions Class



Contestant Name: \_\_\_\_\_

Contestant County: \_\_\_\_\_

Contestant Number: \_\_\_\_\_

List the number of the fleece which best matches:

Fleece with the <i>most</i> pounds of clean wool?	
Fleece with the <i>least</i> pounds of clean wool?	
<i>Heaviest</i> grease fleece weight?	
<i>Lightest</i> grease fleece weight?	
<i>Highest</i> yielding fleece?	
<i>Lowest</i> yielding fleece?	
<i>Finest</i> fleece?	
<i>Coarsest</i> fleece?	
<i>Longest</i> stapled fleece?	
<i>Shortest</i> stapled fleece?	
Fleece with the <i>most</i> character? <small>(color, crimp, &amp; condition)</small>	
Fleece with the <i>most</i> vegetable matter?	
Fleece with the <i>weakest</i> fiber strength?	

Circle your placing:	
A	1234
B	1243
C	1324
D	1342
E	1423
F	1432
G	2134
H	2143
I	2314
J	2341
K	2413
L	2431
M	3124
N	3142
O	3214
P	3241
Q	3412
R	3421
S	4123
T	4132
U	4213
V	4231
W	4312
X	4321



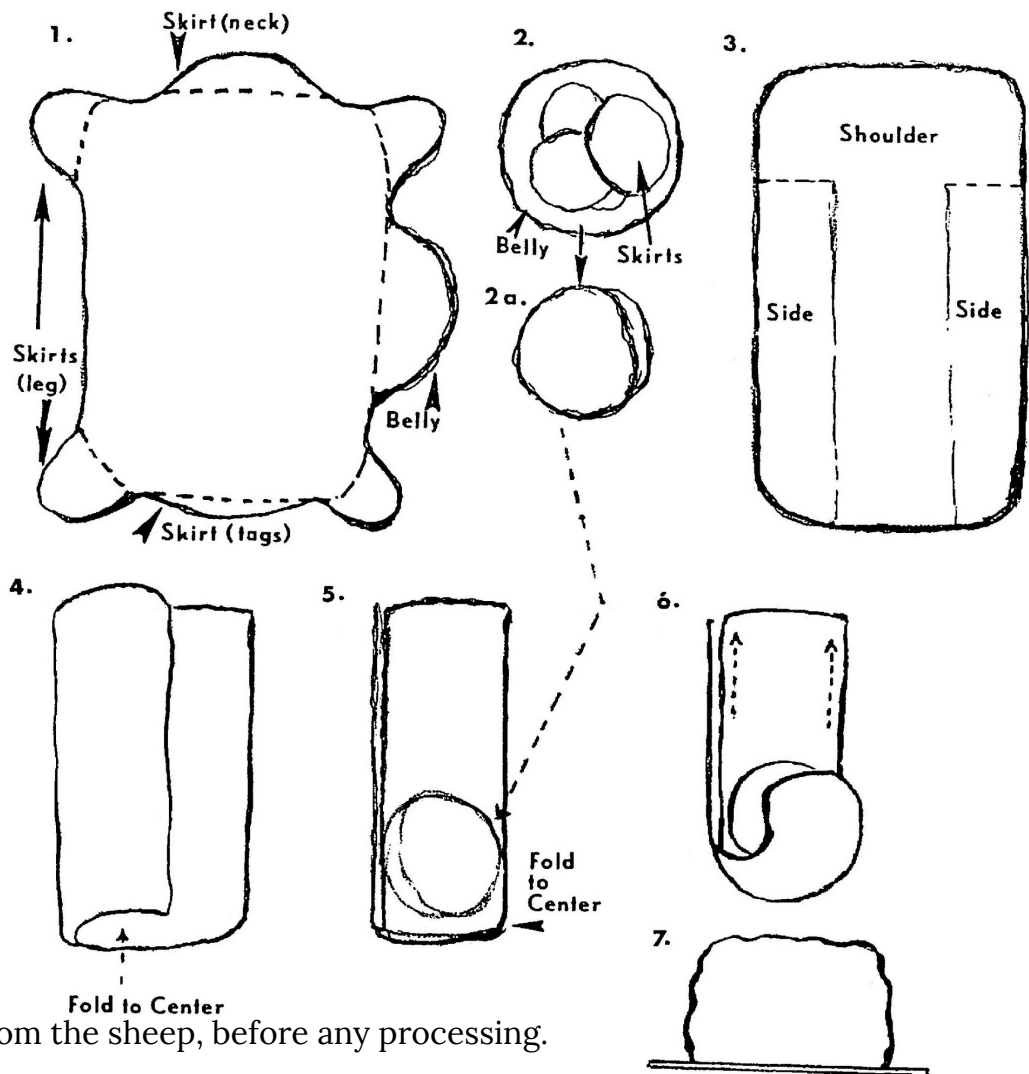
October 2021

# WOOL PROCESSING

Sheep shearing is the process by which the woolen fleece of a sheep is cut off. Typically, each adult sheep is shorn once each year. Sheep are normally shorn prior to lambing in the warmer months.

The graphic on the right shows grease wool and how they are prepared for the competition.

Below is a diagram for how wool is processed. Fleeces go through a mill and after a variety of processes are transformed from Grease Wool to a Top.

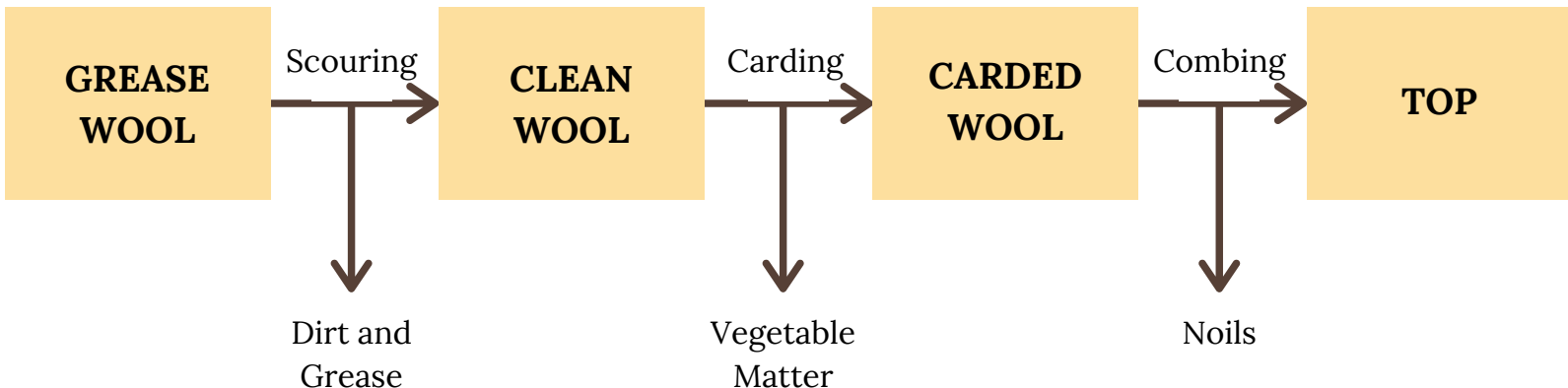


**Grease Wool-** Wool that is shorn from the sheep, before any processing.

**Scouring-** Removal of impurities and grease from the wool. “Washing the wool”

**Carding-** Disentangles and separates scoured wool fibers.

**Combing-** A process in which long fibers are laid relatively parallel and short fibers (noil) are removed.





# WOOL SHEEP BREEDS

Each breed of sheep normally produces specific grades of wool. The following table shows some of the common wool and dual-purpose breeds found in Wyoming and the grades acceptable for each.

Common Sheep Breeds in the United States	Delaine- Merino										
	Rambouillet										
	Targhee										
	Columbia										
	Corriedale, Montedale, Southdown										
	Dorset										
	Strophshire, Hampshire, Suffolk										
American Blood System	Fine			1/2 Blood		3/8 Blood		1/4 Blood		Low 1/4 Blood	
Spinning Count	80's	70's	64's	62's	60's	58's	56's	54's	50's	48's	46's
Micron Diameter System	17.70-19.14	19.15-20.59	20.60-22.04	22.05-23.49	23.50-24.94	24.95-26.39	26.40-27.84	27.85-29.29	29.30-30.99	31.00-32.69	32.70-34.39

The fine-wooled Merino was derived from man's first efforts to improve the fiber of his flock. While several cultures have influenced Merino, it was the Spanish who first exploited the potential of the fine wool industry and controlled this valuable, "golden" resource. The "C" type or Delaine has become the most practical.

Delaine Merino is of medium size. Their neck is short but sometimes has a dewlap of one or two folds. No other wool can compare with the wool of the Merino in its color, uniformity, strength, density, and fineness.

Mature Body Weight

-Ram: 175-235 lbs

-Ewe: 125-180 lbs

Blood System: Fine

Grease Fleece Weight: 9-14 lbs

Yield: 45-55%

Staple Length: 2 1/2 - 4 in

## MERINO



# WOOL SHEEP BREEDS

The Rambouillet breed originates from the Spanish Merino. The Spanish government was so protective of their Merino flock that any exportation was forbidden. In 1786, the king of Spain sent 366 Merinos to Rambouillet, France as a gift to his cousin Louis. With the crumble of the Spanish empire, the Rambouillet Merinos found their way throughout the globe.

Attractive, bright, uniform, dense fleece of high yielding, long staple, fine wool. Cream to white in color. Free from objectionable fibers. Forehead covered, but not woolled sufficiently around eyes to obstruct vision. The fleece should be as dense as possible and should be uniform in grade over body.

Mature Body Weight

-Ram: 250-300 lbs

-Ewe: 200-275 lbs

Blood System: Fine- ½

Grease Fleece Weight: 8-18 lbs

Yield: 35-55%

Staple Length: >4 ½ in



## RAMBOUILLET

In 1926 by the U.S. Sheep Experiment Station, Dubois, Idaho began the foundation of the Targhee breeding from Rambouillet x Lincoln x Corriedale cross-bred ewes to and Rambouillet rams. Many sheepman felt that the ideal sheep would be ¾ fine wool and ¼ long-wool.

The Targhee is thick, deep-bodied, free from skin folds, white faced with wool on the legs, and adaptable to varied climate and forage conditions. They produce good market lambs, and yield a dense, medium-wool fleece with good staple length. Fleeces should be dense, uniform, and attractive in character.

Mature Body Weight

-Ram: 200-300 lbs

-Ewe: 140-200 lbs

Blood System: ½ blood

Grease Fleece Weight: 10-22 lbs

Yield: 50-55%

Staple Length: >3-5 in



## TARGHEE

# WOOL SHEEP BREEDS

Columbia sheep were developed by the United States Department of Agriculture as a true breeding type to replace cross breeding on the range. In 1912, Lincoln rams of the long wool breeds were crossed with high quality Rambouillet ewes to produce large ewes yielding more pounds of wool and more pounds of lamb.

Columbias are large with white faces and wool on the legs and are known as a dual purpose breed. They yield dense, long staple fleeces, with uniform fiber quality from shoulder to thigh and carrying with uniformity to underline with heavy yield of clean wool.

Mature Body Weight

-Ram: 250-350 lbs

-Ewe: 150-250 lbs

Blood System:  $\frac{1}{2}$ - $\frac{1}{4}$

Grease Fleece Weight: 10-16 pounds

Yield: 45-55%

Staple: 3.5-5 inches

## COLUMBIA



Corriedale originate from New Zealand from English Lincoln and Leister x Merino crosses in the 1860s. The breed was imported into the U.S. in 1914 to begin a search for a new dual purpose sheep at the Experiment Station in Laramie, Wyoming. Is considered to be the second most numerous breed worldwide.

The Corriedale was developed in an effort to establish a true dual purpose breed, combining the best traits of the wool breeds and the meat breeds. The result producing both a dense, uniform fleece with pronounced character, and a good, high quality carcass.

Mature Body Weight

-Ram: 175-275 lbs

-Ewe: 130-180 lbs

Blood System:  $\frac{1}{4}$ - $\frac{1}{2}$

Grease Fleece Weight: 10-17 pounds

Yield: 50-60%

Staple: 3  $\frac{1}{2}$ -6 inches

## CORRIEDALE



# WOOL JUDGING: GRADING LINE

The 4-H judging has two sections of evaluating wool. One section is the grading line.

**Grading-** Fiber diameter.

**Length-** Staple, French Combing, Clothing.

**Yield-** The amount of clean wool in a fleece.

## Scoring the Grading Line

### Grade

Correct Grade = 5 points

1 grade off = 2 points

>1 grade off = 0 points

### Length

Correct= 5 points

Incorrect= 0 points

### Yield

+/- 4% of correct yield = 5 points

+/- 8% of correct yield = 2 points

> 8% of correct yield = 0 points



## WYOMING STATE 4-H WOOL JUDGING GRADING LINE

Contestant # \_\_\_\_\_

County: \_\_\_\_\_

Fleece Number	GRADE					Score	LENGTH			Score	YIELD		
	Fine Blood 64's & Finer	1/2 Blood 60's-62's	3/8 Blood 56's-58's	1/4 Blood 50's-54's	Low 1/4 Blood 48's & Coarser		Staple	French Combing	Clothing		%	Official	Score
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													

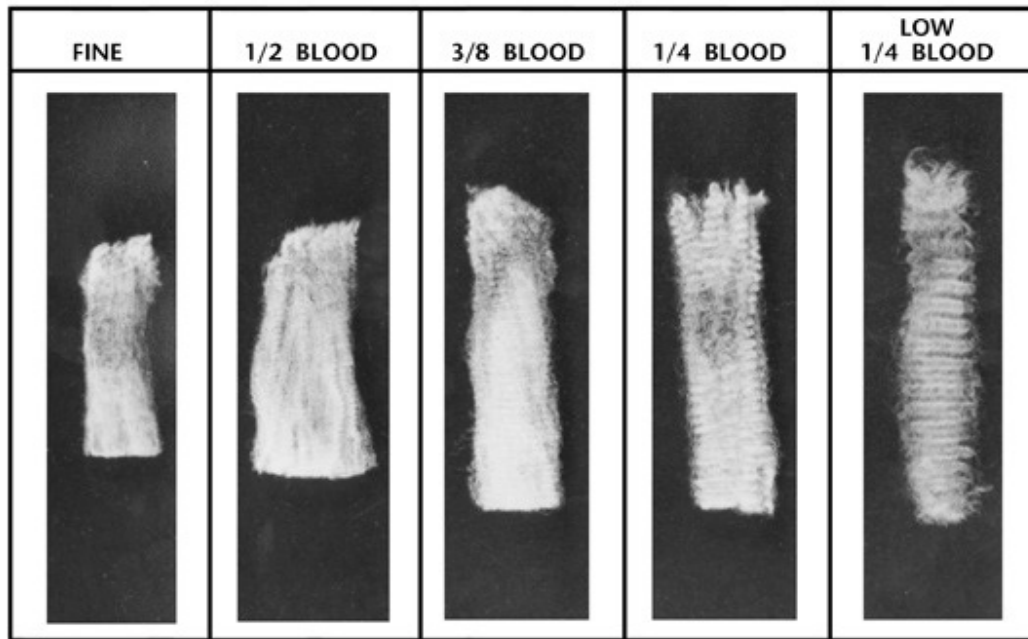
# GRADING

There are three major grading systems in the wool industry. Each grade is utilized for a different purpose, from fabrics to carpets. Therefore, each grade has a different price value.

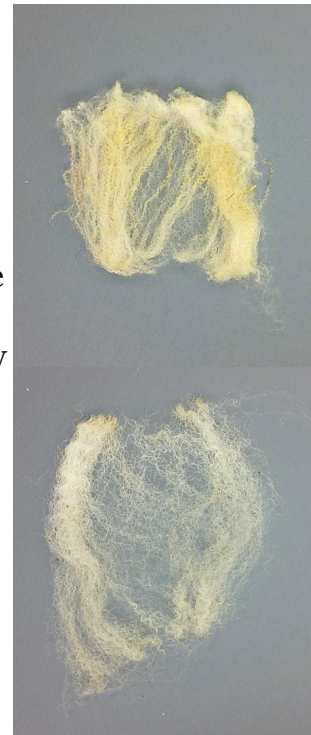
**American Blood System-** There are five Blood Grades of wool according to fineness: fine, 1/2 blood, 3/8 blood, 1/4 blood, and low 1/4 blood. Each grade is determined by diameter of the fiber. These are only names of grades and do not indicate the breed of the sheep.

**Spinning Count-** Refers to the number of “hanks” of yarn, each 560 yards long, that can be spun from one pound of wool top. This system is more exact, as each term refers to a narrow range of fineness.

**Micron Diameter System-** Newest and most accurate. The micron is 1/25,400 of an inch.



The top  
image is fine  
The bottom  
image is Low  
1/4



Wyoming 4-H Utilizes the American Blood System. In order to become an expert, practice is key. Here are some ways to help narrow down grades when beginning wool judging

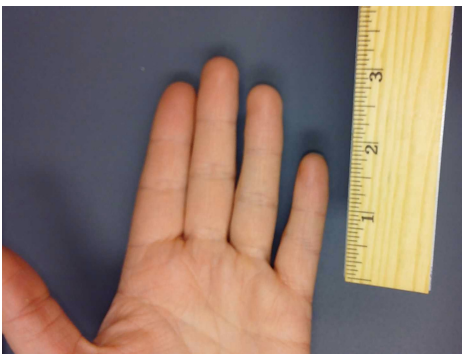
- Softness vs Courseness- A fleece that is soft to the touch is usually on the fine- 1/2 blood side. One that is course to the touch is closer to the 3/8 and 1/4 blood.
- Spread apart a lock- Take locks of a fleece and spread it apart with a dark background. On a fleece that is finer, the fibers will disappear more than a fleece that is courser
- Look at fiber diameter and crimp

As you continue on, you will begin to correlate the size of fiber diameter to the different blood grades. Crimp- The natural curl or waviness in the wool fiber. Fine wool usually has more crimp per inch than coarse wool.

# LENGTH

Length of wool is extremely important to both the manufacturer and the producer. Various lengths are used to make different types of fabrics or products. The length of staple is measured from the base to the tip of the unstretched fiber. There are three main grades according to length: Clothing, French Combing, and Staple.

- **Clothing wools** are the short-stapled wools within a grade that are too short to be combed and are used in the woolen system of manufacturing.
- **French combing wools** are medium length and may be combed on the French combs.
- **Staple wools** are the longest wools and are suitable for combing on the Noble combs.



The recommended practice is to determine the length of a finger and then use it to estimate the length of a wool lock. Never stretch the wool when measuring. Uniformity of length is just as important as uniformity of grade.

Uniformity of length is just as important as uniformity of grade. Therefore, you should examine wool from several different areas of the fleece.



## Different Types of Wastes

When evaluating a fleece, look for these types of defects. These effect the value of the fleece. The primary causes of waste are tenderness and breaks. You test for these conditions by pulling the lock from each end. Remember to check the tips.

**Tenderness-** when you pull both ends and the wool fibers separate easily, leaving ragged ends, they are most likely tender.

**Break-** wool fibers which are all weak in one specific region of the lock at every location within a fleece. Breaks result from stress such as sickness, lambing difficulties, or severe storms. The length of a fleece with a break is determined by estimating the length of the longest portion left.

Another factor causing waste is second cuts. This is usually not very important in wool judging, but is a serious problem to producers. It is caused when a shearer, cutting the wool fibers two or more times.

Purity refers to kemp and black fibers, both of which cut down greatly on the value of wool. A large amount of kemp increases the loss through breakage and uneven dyeing while black fiber limits the use of the wool to the manufacture of dark-colored fabrics.



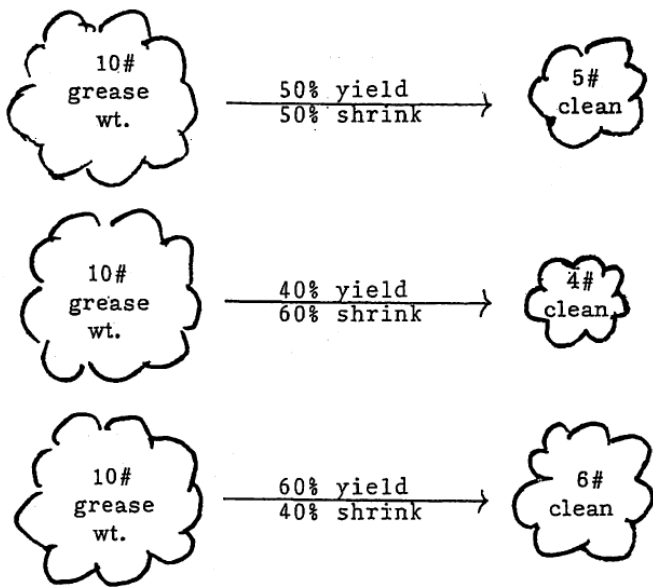
# YIELD

“Yield” is the amount of clean wool left after scouring, expressed as a percentage of the original weight. The most important factor in wool judging is estimating pounds of clean wool. Think of this in two ways: Grease weight or clean weight. Of the two, clean is the most important. All wool is sold on a clean basis whether by grease weight price or clean weight price.

- Grease fleece weight is the weight of the fleece before it is washed and cleaned.
- Total pounds of clean wool is the weight of the fleece X yield
- Don't get these two confused – a higher yielding fleece can be lighter weighing

Yield or shrinkage is used to determine what the grease price will be. If wool decreases from 10 pounds to five pounds when scoured (washed), both yield and shrinkage are 50 percent.

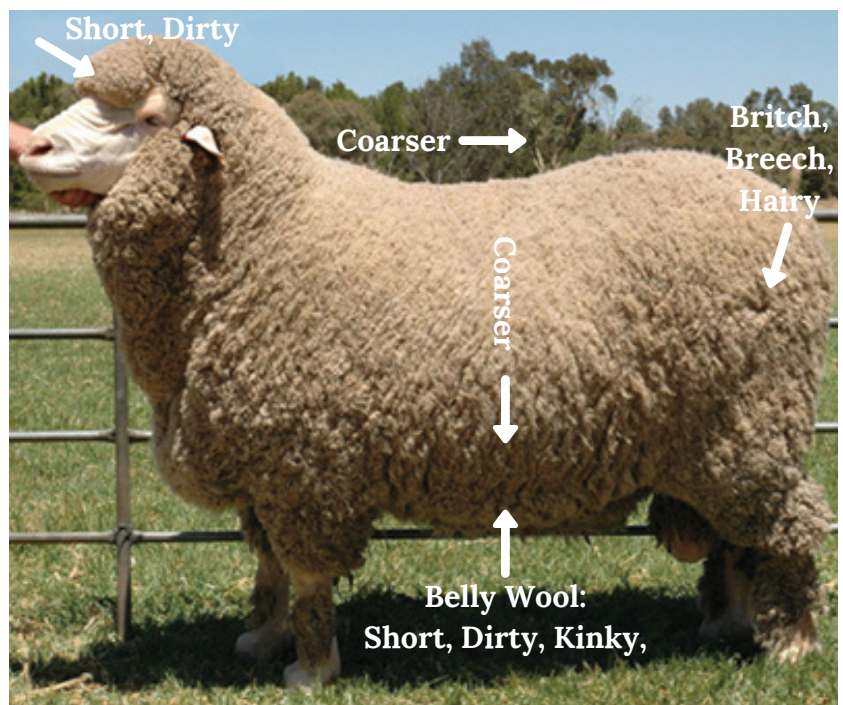
Shrinkage is caused by wool grease, dirt, sand, water and vegetable matter such as hay, straw, and burrs. Because of these factors it is easy to understand why shrinkage of wools varies considerably.



Fortunately, each blood grade has a range in which it will usually yield: finer grade means lower yielding and coarser grade means higher yielding.

The best method of estimating yield is by lifting the fleece. If the fleece is extremely heavy for its size, it will have low yield. If the fleece is extremely light for its size, it will have a high yield. You should look for helpful clues such as excessive grease content, depth of dirt penetration, type of dirt, and staple length. Soils are heavy and cause the fleece to shrink more than corral dust which is mostly vegetable matter.

When fleeces contain more than one grade of wool, the grader places the fleece in the grade pile representing the majority of fineness and length. Therefore, each fleece has to be examined in several places. When you judge sheep or a fleece, look for uniformity of fiber diameter. Upon close inspection, you will find that the fineness of the wool fibers from the shoulder is different from the back. Wool from the breech (hind leg) is usually the coarsest.



# WOOL JUDGING: CLASSES



## WYOMING 4-H WOOL PLACING AND QUESTIONS SHEET

CONTESTANT NUMBER: \_\_\_\_\_

CONTESTANT NAME: \_\_\_\_\_

CLASS NUMBER: \_\_\_\_\_

CLASS NAME: \_\_\_\_\_

### Instructions for Questions:

List the number of the fleece which best matches the fleece description.

Longest Stapled Fleece	
Shortest Stapled Fleece	
Fleece Most Uniform in Staple Length	
Finest Fleece in the Class	
Coarsest Fleece in the Class	
Most Uniform Fleece in Grade (Fiber diameter)	
Heaviest Grease Fleece Weight	
Lightest Grease Fleece Weight	
Fleece with the Most Pounds of Clean Wool	
Fleece with the Least Pounds of Clean Wool	
Highest Yielding Fleece	
Lowest Yielding Fleece	
Fleece with the Most Character (Color, Crimp & Condition)	
Fleece with the Most Vegetable Matter	
Fleece with the Most Stained Wool	
Fleece with the Least Fiber Strength	

Questions Scoring: 50 total points possible

Deduct 2 points for each incorrect answer

Questions Score \_\_\_\_\_

Circle your placing	
A	1234
B	1243
C	1324
D	1342
E	1423
F	1432
G	2134
H	2143
I	2314
J	2341
K	2413
L	2431
M	3124
N	3142
O	3214
P	3241
Q	3412
R	3421
S	4123
T	4132
U	4213
V	4231
W	4312
X	4321

UNIVERSITY  
OF WYOMING

Updated December 2018

Two types of wool classes are judged-commercial & breed.

- Classes consist of four fleeces.
- Fleeces will be in order on the table from left to right.
- Question Sheets are required for all classes.
- After placing the class, mark only one number for each category. The officials may mark multiples for the questions: For example, they may mark a single fleece as the “heaviest grease weight” in the class, the contestant is either correct or wrong. On the other hand, if the official marks two or three similar fleeces for a question, the contestant will be given credit for making one of those fleeces.



**Character** refers to the general appearance of a fleece. This includes crimp, condition, and color.

Crimp is the natural waviness of the fibers. It is one of the first qualities usually seen by the eye.

Crimp is important for breed character. Fine wool has the most crimp per inch while common and braid have the fewest. Many people associate crimp with grade.

**Condition** refers to the feel of wool. Does it feel soft or does it feel harsh and "wiry"? Rule of thumb is that a soft fleece gives a soft fabric and is worth more.

**Color** is very important, primarily for accurate dyeing of wool. The most desirable color is white.

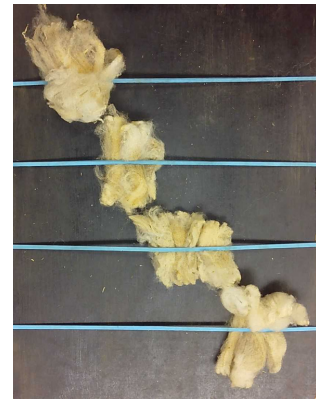
This permits wool to be made into light colored fabrics. Fleece with stained wool must be discounted. You should separate tags at shearing and sack separately.

**Uniformity** defines the variation in grade and length within a fleece.



# CLASSES

1. Longest Stapled Fleece	Longest Overall Average
2. Shortest Stapled Fleece	Shortest Overall Average
3. Fleece Most Uniform in Staple Length	Most Samples the Same Length
4. Fleece Most Uniform in Grade (Fiber Diameter)	Most Samples the Same Grade
5. Finest Fleece in the Class	Most Samples of Finest Wool
6. Coarsest Fleece in the class	Most Samples of Coarsest Wool
7. Heaviest Grease Fleece Weight	Fleece that Weighs the Most
8. Lightest Grease Fleece Weight	Fleece that Weights the Least
9. Fleece with the Most Pounds of Clean Wool	Fleece with the Highest Clean Wool to Staple Length Ratio
10. Fleece with the Least Pounds of Clean Wool	Fleece with the Lowest Clean Wool to Staple Length Ratio
11. Highest Yielding Fleece	Highest Yield Like the Rail
12. Lowest Yielding Fleece	Lowest Yield Like the Rail
13. Fleece with the Most Character (Color, Crimp, Condition)	Whitest, Nicest, Prettiest. Probably One of the Top Two Fleeces
14. Fleece with the Most Vegetable Matter	Most Hay, Straw, Grass, & Burns
15. Fleece with the Most Stained Wool	Paint, Manure, Urine Stains
16. Fleece with the Least Fiber Strength	Weakest Breaks or Most Tender



A commercial class usually has fine, 1/2, 3/8, and 1/4 Blood classes. When you look at a commercial class, you should place the fleece that is worth the most money because of quality and quantity at the top. A fleece of improper grade is rejected and placed last. Watch for a break as it may change the length classification.

Breed classes are judged with genetic qualities in mind. Quantity is still first in importance, but a little more emphasis is directed toward quality. If a break is found in a breed class, it is ignored because it is not a genetic factor. The grade has to be acceptable for the breed.

- Put your name & contestant number on the paper.
- Stand back and look at the fleeces.
- List fleeces on back of paper.
  - Biggest to Smallest
  - Cleanest to Dirtiest
  - Heaviest to Lightest
  - Highest to Lowest Yield
- Take samples from each fleece, find your own space.
- Layout samples. Answer questions 1-6 and 16.
- Answer questions 7-12 off the back of sheet.
  - When placing the class, questions 7, 9, & 11 should be your 1<sup>st</sup> or 2<sup>nd</sup> place fleece. Questions 8, 10, & 12 should be your 3<sup>rd</sup> or 4<sup>th</sup> place fleece.
- Go back to fleeces to visually answer questions 13, 14, & 15 and confirm any questions.
- Place the class based on these questions. Ex:

Size	2	3	1	4
Cleanest	3	2	1	4
Weight	3	2	1	4
Yield	3	2	4	1

Official is 3-2-1-4 with cuts of 4-6-2

# CLASSES

## COMMERCIAL

To be placed on the basis of greatest return to the producer.

- Pounds of clean wool: The first two determining factors in placing a class is weight and the percentage of clean wool yield. The more pounds of wool there is in a fleece the more valuable the fleece is to the manufacture.
- Staple length: The next determining factor is length of staple. The longer the staple is, a greater profit would be returned to the manufacturer and grower alike. In addition, staples would need to be pulled from all areas of the fleece.
- Uniformity of grade: A uniform fleece makes uniform yarn and requires little to none sorting.
- Character: A combination of several properties influencing the appearance and handling qualities of a fleece
- Strength: Fiber strength is a most definitely desired quality for commercial classes. Lack of fiber strength will result in the loss of revenue.
- Purity: The presence of kemp fibers is undesirable. Black or other colored fibers is a serious matter.

1. Weight (lbs)
2. Yield (% clean wool)
3. Staple length
4. Uniformity in Grade & Length
5. Character
6. Strength

## BREED

The primary difference in emphasis between a commercial class and a breeding class are that strength and vegetable matter content are influenced by environment rather than heredity and thus are disregarded in a breeding class and a little more attention is given to character and purity. The following are considered:

- Pounds of clean wool: the last to be looked at whereas it is the percentage of the clean wool is solely due to the environment the breed is in. Weight of a fleece is a highly heritable trait, that is likely to be passed on to its' offspring. The value at which weight is expressed is by the pounds of wool in the fleece.
- Staple length: The length of staple is the next most heritable trait. Generally, longer the staple the better the fleece is.
- Uniformity of grade: Uniformity in grade and length within a fleece the grade of a fleece should be representative of the breed.
- Character: With the breed classes crimp, fiber diameter, and condition should be representation of its' breed.
- Purity: Medullated, kemp and colored fibers are very undesirable in a class of whiteface breed fleeces.
- Density: Indicative of more pounds of clean wool.

1. Weight (lbs)
2. Staple length
3. Uniformity in Grade & Length
4. Character
5. Yield (% clean wool)

# REASONS

The form used in giving reasons is similar to that used for livestock. Truth and complete descriptions are the two most important items to consider in giving a good set of reasons. Reasons should be given in a clear and distinct voice in a confident manner. Below is a template you can use when making notes on a class. Delivery should not be more than 2 1/2 minutes. Speak in present tense.

It is preferable to start discussion of a pair of fleeces with the most important reason or reasons expressed in a general manner. Itemize in later statements, for example: I placed 1 over 4, because it will yield more pounds of clean wool since it is a heavier, higher yielding fleece that contains less dirt. In addition, it is more uniform in grade.

Wt.	Yield	Clean	Fine	Length	Bulk	B/W	Uniformity		Char.
		Wool					Grade	Length	

Class Name \_\_\_\_\_

\_\_\_\_\_

Analysis \_\_\_\_\_

\_\_\_\_\_/\_\_\_\_\_ Grant \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_/\_\_\_\_\_ Grant \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_/\_\_\_\_\_ Grant \_\_\_\_\_

Bottom \_\_\_\_\_

## Grants

- I admit/realize
- Yes
- Clearly
- Definitely
- Without a doubt

## Criticisms

- However
- Unfortunately

## Transitions

- Still
- None the less
- Starting with the more market-oriented fleece
- Starting with the more industry acceptable fleece

# REASON TERMINOLOGY

## Grade and Fiber Diameter

- Exhibits a smaller/larger fiber diameter
- Finer(est)/Coarser(est) in its grade/fiber diameter
- Fleece with a higher/lower spinning count
- Finer/Finest grading fleece
- Coarser/Coarsest grading fleece
- Slightly finer/coarser in its grade/fiber diameter
- Similar in grade/fiber diameter
- A more uniform grading fleece.
- More uniform in fiber diameter.
- Coarser fleece that has a hairy Britch.
- Lacks uniformity of grade

## Staple Length

- Offers/Shows more/less extension to its staple length
- Longer/Longest stapled (shorter/shortest)
- Shows an obvious advantage/disadvantage in staple length
- Fleece that exhibits a longer/shorter staple length
- Fleece more/less uniform in staple length
- Fleece that –contain more staple length wool
- Similar in staple length
- Trait high in heritability and thud important to the breeder

## Fiber Strength & Weakness

- Stronger/weaker in its fiber strength
- Tender
- Exhibits a definite break
- Fleece with fewer second cuts
- Stronger fibered, less wastey fleece.
- Tender fleece that will be excessively wastey.
- Sound fleece with greater strength of fiber.

## Yield and Shrinkage

- Higher/Highest in its percent yield
- Lower/Lowest in its percent yield
- Higher/Highest shrinking fleece
- Lower/Lowest shrinking fleece
- Cleaner fleece containing less dirt and foreign matter
- Lacks the yield to compete
- Tighter in its lock formation allowing for less dirt penetration
- More open fleece with greater dirt penetration
- Fleece containing more pounds of clean wool.
- Lighter conditioned fleece that contains less dirt and vegetable matter
- Greasy low-yielding fleece
- Contains more vegetable matter and will be a more wastey fleece.

## Character and Handle

- Better character
- Softer/Coarser handling
- Softer/Coarser to the touch
- More attractive fleece
- More even and distinct crimp
- Brighter whiter fleece with fewer stains
- Bolder crimp
- More uniform color
- Well-grown fleece of superior handle and character
- Whiter more lustrous fleece
- Contains kemp or black fibers.

## Pounds/GFW/Product

- Heaviest/Lightest
- Heavier/Heaviest in its grease fleece weight
- Lighter/Lightest in its grease fleece weight
- Is inferior/superior in its clean wool production/grease fleece weight
- Lacks/Possesses the grease fleece weight/clean wool production to compete
- Produce more/less pounds of usable produce

# EXAMPLE REASONS

## Commercial Wool Reasons

I place this class of fine commercial fleeces 1-2-3-4.

I started with 1, as it was the heaviest, longest stapled, finest fleece in the class. In addition, it was more uniform in grade and length and would return more dollars and cents to the commercial producer as well as the manufacturer. I grant 2 was higher in its percent yield and more distinct in crimp from tip to base but was lighter weighing and coarser in grade so it is second.

In my middle pair of two similar weight fleeces I prefer 2 over 3. 2 was a higher yielding, brighter whiter, longer stapled fleece that was more uniform in length and grade thus being more advantageous to the manufacturer. Yes, 3 was finer grading and more distinct in its crimp but it was lower in its percent yield and shorter staple so it's third.

Nevertheless, I preferred 3 in the top of my bottom pair because it was heavier, finer grading, more uniform in length and grade and would scour more total pounds of clean wool. Furthermore, 3 displayed a tighter more distinct crimp. Yes 4, was longer staple and higher in its percent yield but it was the smallest lightest more variable in length and grade and would be the least economical to the commercial producer so it is last.

## Breeding Fleece Reasons

I placed the class of Rambouillet breed fleeces 1-2-3-4.

In my top pair of similar weight fleeces, I preferred 1 over 2 because 1 was the longest staple, finest grading, brightest whitest fleece that was more uniform in length and grade and higher in its percent yield, traits highly heritable and indicative to the Rambouillet breed. I grant 2 had a tighter, more distinct crimp, but it lacked the breed character so it is second.

However, I preferred 2 in the top of my middle pair of lower yielding fleeces as it was a heavier, bulkier, long stapled, finer grading fleece that was more distinct in its crimp from tip to base thus being more beneficial to the Rambouillet producer. I realize 3 was more uniform in grade.

In my bottom pair, I preferred 3 over 4 because 3 was heavier, bulkier fleece that was more uniform in length as well as having a more distinct crimp from tip to base. Yes, 4 was a finer, longer stapled fleece that had the highest percent yield but it was pounds light, lacked uniformity and had no definition of crimp therefore would be the least desirable to the Rambouillet producer so it is last.

## Commercial Terms

- Exhibits the least/most economic value
- Will be more versatile in its manufacturing options
- Generate more revenue when sold on a pounds clean basis
- Will receive/demand more incentives within the wool market
- More sought after in today's wool market
- Will offer more appeal to the buyer
- Will generate more revenue when sold on a pound per capita basis
- More/most; less/least economically beneficial fleece to both the producer and the manufacturer
- The least/most profitable fleece in the class

## Breed Terms

- More desired by the Ram/Col/Corr breeder
- A more genetically beneficial fleece
- Least genetically beneficial fleece in the class that will be the least desired by the Ram/Col/Corr breed flock
- Processes a higher breed value
- It best combines the three highly heritable traits and exhibits the greatest genetic potential
- A more genetically beneficial fleece to the Ram/Col/Corr breeder flock
- Contained the greatest/least amount or the most/more/less belly wool/offsorts

# DEFINITIONS

**Apparel Wool:** Wool suitable for manufacture into apparel fabrics.

**Belly Wool:** Wool which grows on the belly of the sheep. It is usually shorter, coarser, and weaker than the rest of the fleece and characterized by a typical prominent crimp.

**Black Wool:** Any wool that is black, brown, or grey. Black sheep are used in large flocks as “markers.” Fibers from fleeces can contaminate white fleeces at shearing if not handled properly.

**Break:** The fleece is weak fibered due to environmental factors, nutrition status of the sheep and stress factors (lambing). There is a definite separation of fibers within each lock.

**Britch Wool:** Coarsest wool in the fleece, on the twist and lower thigh area. Often could be hair like that cannot absorb dye.

**Buck Fleeces:** Fleeces shorn from rams, usually longer and coarser than wool from ewes of the same breed, has characteristic ram odor.

**Character:** Term which refers to all those characteristics which make wool attractive. Mainly color, crimp and condition.

**Clip:** Wool or Mohair produced by one flock of sheep or Angora Goats.

**Clothing Wool:** Wool that is too short to be combed. Used mainly in the manufacture of woolen and felts.

**Combing:** A process in which long fibers are laid relatively parallel and short fibers (noil) are removed.

**Condition:** The softness of the fleece due to fiber and grease content.

**Crimp:** Natural curl or waviness of the fiber.

**Crossbred:** The offspring from mating a ram and ewe of different breeds.

**Crutchings:** Wool removed from around the dock and/or udder of the sheep before the regular shearing.

**Density:** The number of fibers grown on a given area of the skin of the sheep. The more fibers, the greater the density.

**Felting:** Wool fibers interlock when agitated in warm, moist conditions. This property results in wool fabrics that “shrink” when washed in machines if not treated to resist felting.

**Fine:** An American grade of wool originally applied to fleeces of pure merino breeding, presently used to describe fleeces of 64’s or finer spinning counts.

**Fleece:** Wool or mohair produced by one sheep or Angora goat at one shearing.

**French Combing:** An intermediate length grade describing wool that is long enough to comb on the French comb, but too short to comb on the Noble comb.

**Grade:** Refers to diameter of a wool fiber. Wools of like grade and yield are combined for use by top markers and mills.

**Grease Wool:** Wool as it is shorn from the sheep, before any processing.

**Handle:** A term referring to the actual feel of the wool. Wool with good “handle” is a fleece with softness and pleasing to the touch. Whereas harsh “handling” refers to the fleece is wiry and course.

# DEFINITIONS

**Hank:** 560 yards-unit of wool yarn wound on a reel.

**Kemp:** Opaque, hair-like fiber which is brittle and chalky white. It is a serious defect.

**Lamb's Wool:** Wool shorn from lambs usually shorter and softer than wool from the same breeds of a mature sheep. Usually has the non-shorn tip characteristic on a lock.

**Lanolin:** Wool grease. This substance, sometimes called "yolk" is a secretion from the sebaceous glands of sheep. It collects in the wool and serves as conditioner to prevent excessive drying of the wool.

**Lock:** A small, approximately finger size, bit of wool that tends to stay together when shorn from the sheep.

**Luster:** Shininess of the fiber or its ability to reflect light.

**Micron:** A trade term meaning micrometers (10-6 meters) used to describe the fineness of the wool fibers. Description of the grade.

**Noils:** Short fibers removed in the combing process. These short pieces could be second cuts, tender wool, or breaking wool.

**Purity:** Freedom from off-type fibers, such as hair, kemp and colored fibers.

**Scouring:** The process of washing fleeces to remove impurities and grease.

**Shearing:** Removing wool from sheep.

**Second Cuts:** Short pieces of wool shorn twice during a single shearing. Undesirable as wool will be lost during the manufacturing process.

**Shrinkage:** The loss in weight of a fleece during the removal of grease and foreign matter. Used to refer the estimating percentage of wool that is lost.

**Skirting:** A procedure where bellies, britches, stained pieces, neck wool, etc. are removed from the fleece and packed separately.

**Sorting:** Breaking up individual fleeces into various grades determined by their fineness and length.

**Spinning Count:** A British term used to describe the fineness of wool fibers. Refers to the number of hanks of yarn that can be spun from one pound of clean wool.

**Stained Wool:** Wool that has been discolored to that it will not wash white in scouring process. This may be due to urine, yolk, phenothiazine or other factors.

**Staple:** (1) Length classification of wool, (2) Lock, and (3) Individual fibers.

**Tags:** Heavy dung locks of urine stained wool.

**Tender Wool:** Wool that is weak or may break anywhere along the length of the fiber due to poor nutrition or sickness.

**Vegetable Matter:** Any material, such as hay or burrs, that appears in the wool and is removed in processing.

**Waste:** Wool fibers, usually short, lost in the various steps of processing grease wool into fabric.

**Yield:** the amount of clean wool that is derived from grease wool in the scouring process.

# NOTES