



## **CANADIAN ALPACA INDUSTRY FIBRE HARVESTING CODE OF PRACTICE**



The Canadian Alpaca Breeders Association (CABA), the Canadian Camelid Fibre Co-op (CANCAM) and the Natural Fibre Centre & Testing Laboratory (NFC&TL) believe that an organized, progressive alpaca fibre industry is an important component in ensuring the ongoing viability of the Alpaca industry in Canada. Unified, quality management of the fibre being produced is essential if the alpaca fibre industry is to develop and prosper. The goal is continuous improvement in the quality of Alpaca fibre produced in Canada for national and international markets.

***The Canadian Alpaca Industry Fibre Harvesting Code of Practice*** (Code of Practice) is intended to provide clear guidelines to alpaca producers, shearing contractors, and shearing shed staff with regard to best practices for alpaca fibre shearing, clip preparation, and fibre sorting and grading standards for processing through the Canadian Camelid Fibre Co-op. By following these guidelines, growers can ensure that they obtain the maximum value for their clip each year by meeting the needs of the fibre processors and textile manufacturers.

In order to achieve maximum benefits a fleece must meet several criteria. Micron is simply one criteria...the other criteria in conjunction with micron must be Handle, Style and Character, Length, and Lack of Guard Hair. Uniformity within each of these characteristics is the ultimate goal of the breeder. Spinning problems are caused if there is any significant deviation in micron and length. Likewise, excessive short fibres create more noils causing a decrease in yarn yield and yarn quality. Guard hairs create prickly factor. Many problems can be eliminated through careful shearing, sorting, grading, and handling of fibre as it is harvested from the alpaca.

### **Objectives:**

- *To maximize the net return to the alpaca fibre producer*
- *To provide minimum standards for quality control from the alpaca fibre producer to the manufacturer*

In order to achieve these objectives, it is essential that each person involved in the preparation of a clip knows what is expected of them and what can be expected of others forming the team.

The ***Code of Practice*** is divided into the following sections:

- Section I: Responsibilities
- A. Producer Responsibilities
  - B. Shearer Responsibilities
  - C. Fibre Sorter Responsibilities
  - D. Fibre Grader/Classer Responsibilities
  - E. Fibre Liaison Officers

Section II:	Preparation
Section III:	Shearing
Section IV:	Fibre Grading Chart and Color Categories
Section V:	Skirting & Preparing a Show Fleece
Section VI:	Histograms
Section VII:	Glossary of Fibre Terms

## Section I: *Responsibilities*

***While good shearing will not improve the fleece of your alpaca, poor shearing can ruin it! Shearing should take place regularly every 12 months at the optimum time for the climate in your area.***

### A. **Producer's Responsibilities:**

- (a) Plan well to reduce stress to the animals and to the people!
- (b) Provide a shearing area large enough to accommodate several people, the animal to be shorn, a shearing table, a fibre sorting table, and fibre bags...to facilitate the smooth, continuous flow of work and essential communication between the Shearer and the Sorter.
- (c) It is essential to keep dry - any animals that are to be sheared. Shearing is best done under shelter to prevent problems with contamination, snow, rain, wind, and for the overall health and comfort of the shearing crew.
- (d) Provide adequate lighting, electrical outlets, and ventilation.
- (e) Clean the shearing area of all sources of contamination, including: polypropylene bags, twine, hay or other food sources, straw or other bedding materials, manure, gravel, sand, cigarette butts, toenail clippings, or any other objects that do not belong in alpaca fibre.
- (f) Organize an area close to the shearing area for preparing and holding animals prior to shearing. This area should be large enough so animals will not be crowded, provoked into spitting or subject to additional stresses.
- (g) Ensure that designated handlers are available to clean the alpacas prior to securing them on the shearing table.
- (h) These same handlers should secure the alpacas on the shearing table under the direction of the Shearer. The Shearer should not be expected to handle the alpacas and to shear.
- (i) If trimming nails and teeth, microchipping, or performing herd health procedures – arrange to do these procedures sometime prior to or after shearing. This will eliminate considerable stress during shearing days. Also, ***do not expect the shearer perform these procedures.*** The shearer's responsibility is to shear the animals.
- (j) Provide a person to clean the shearing table and floor after each alpaca is shorn.

### B. **Shearer's Responsibilities:**

- Arrive early on shearing day to confer with the producer regarding procedures, facility, setup, and to ensure adequate help is available and to meet the Fibre Sorter.
- Review the expectations of the producer: shearer, producer, and sorter should come to a mutual understanding of how the shearing day will progress.
- Determine prior to the start of the shearing day whether or not fleece side samples will be taken for testing and whether only one sample will be taken or if a sample will be taken from each side.

- Confer with the Fibre Sorter/Classer with respect to shearing procedures.
- Avoid second cuts. If second cuts should occur, remove them from the fleece and/or alert the Sorter immediately.
- Implement the best shearing practices and be familiar with current practices for shearing alpacas. Quality of end product usually dictates the shearing practice.
- Maintain the shearing equipment.
- Work as part of the shearing team.

**C. Fibre Sorter Responsibilities:**

- Confer with producer to determine the expected end result of the producer's fibre harvest. This may require a quick hands-on review of the fleeces on the alpacas within that specific herd. This could be done immediately prior to shearing or the day before.
- Understand the alpaca fibre end product possibilities for the current fibre harvest and discuss the options with the producer to maximize the return for the clip.
- Convey to the shearer the shearing procedure required to accomplish the results of the fibre harvest as requested by the producer.
- Sort the fibre according to color, length, and approximate grade
- Ensure Record Keeping is complete and accurate
- Supervise the entire shearing and sorting operation
- Ensure the safety of both animals and humans.
- Be professional. Maintain a relaxed, productive atmosphere.

**D. Fibre Grader/Classer Responsibilities:**

- Supervise the fibre grading and classing operation.
- Prevent fibre contamination during the grading/classing operation
- Be aware of and understand the possible product lines for the current fibre clip
- Prepare the fleece into color, average fibre diameter (grades) and length lines
- Ensure quality control
- Be cognizant of the different characteristics of Huacaya and Suri fibre and the optimum uses for each type of fibre
- Be completely versed with respect to the standards of a commercial fibre industry and with market trends
- Determine the classing lines for a particular clip and class the fibre e.g. long fibre, short fibre, rug fibre, sock fibre, blankets, fabric, fine knitting yarn or combined possibilities. Classing lines could change from year to year according to the quality of the fibre - determined by such variables as nutrition, drought, etc.
- Take responsibility for the decisions made for the clip for that particular year. This is usually done in agreement with the Canadian Camelid Fibre Co-op (CANCAM).
- When required, *provide feedback to the producers and processors with respect to the Classing criteria/observations for each particular clip to enable a positive learning experience.*

**E. Fibre Liaison Officer Responsibilities:**

- Provide information from CANCAM to the producers.
- Provide CANCAM with feedback from the producers.

- Set up fibre collection points within their regions.
- Arrange for shipment or transportation of the regional fibre clip to the Fibre Classing Facility that has been designated by the Canadian Camelid Fibre Co-op (CANCAM).
- Supervise the collection and transportation procedure.
- Assist producers with respect to fibre packaging procedures and completing the necessary paperwork.

## Section II: *Preparation*

Assemble the following supplies and equipment:

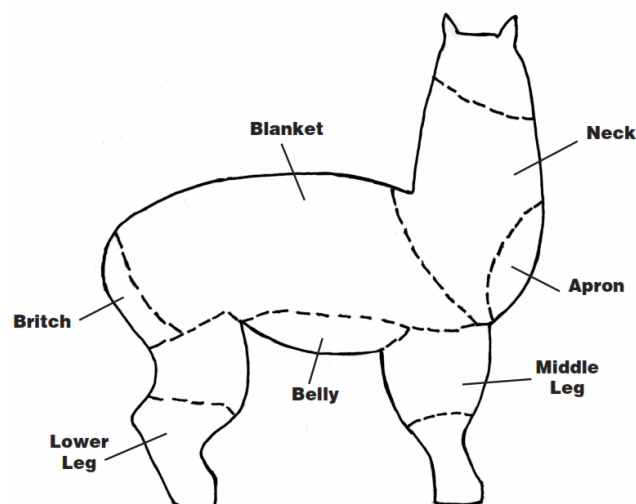
- Refreshments, patience, and a sense of humour
- Alpaca halters and lead lines
- Shop Vac or flicker tool to clean alpacas of dust and debris
- 1 shearer, 1 sorter, 3-4 helpers
- First Aid Kit
- Old towels & paper towels
- Brooms and/or Shop Vac to clean shearing area between animals
- Garbage cans or containers
- Boxes (pop can flats work very well) to carry fleece sections to the sorting table  
Weigh these containers and mark the weight on the side of each one so that the weight can be deducted from the weight of the fleece sections.
- Scales for weighing fleeces
- Ruler for measuring staple length
- Record sheets and pens for recording fleece data (*Section II(a): Sample Shearing Shed Fleece Record*)
- Small Ziploc bags and felt pens for collecting fibre samples
- Sorting Table: e.g. a 4' X 8' wire mesh covered table set up on saw horses or PVC pipe frame with additional pieces of PVC pipe for adjusting the height of the table for the Sorter
- ARI Color Chart
- Micron Fibre Board
- Grading Chart
- Clear plastic bags for collecting fleece according to color and grade. A separate bag should be used for each color of fibre, grade and length of fibre e.g. Bag #1 = Grade 1, White, Short (1.5 – 3.5 inches); Bag #2 = Grade 1, White, Long (3.5 – 6.0”), etc.
- Weigh the bags beforehand so that this weight can be deducted from the total weight once the bag has been filled.
- Felt Markers for labeling the bags
- Garbage cans or similar containers for collecting discarded fleece.

**Section II(a): Sample Shearing Shed Fleece Record**

<b>Alpaca #</b>		
S.Leg (GR____)	L.Leg (GR____)	Butt (GR____)
Blanket (GR____)	Neck (GR____)	Comments:
<b>Alpaca #</b>		
S.Leg (GR____)	L.Leg (GR____)	Butt (GR____)
Blanket (GR____)	Neck (GR____)	Comments:
<b>Alpaca #</b>		
S.Leg (GR____)	L.Leg (GR____)	Butt (GR____)
Blanket (GR____)	Neck (GR____)	Comments:
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**Section III: Shearing**

- Alpacas are to be shorn in colors.
- Start with white and progress into the darker colors.
- Clean the shearing table, sorting table, equipment and floors thoroughly between color changes in order to avoid color contamination.
- Sorting happens while the shearer is shearing the alpaca.
- **For commercial processing:** the fibre will be sheared off the alpaca in the following order:
  - (a) short (lower) leg: coarse fibre from the knee down to the toes and under the belly; include apron area if it consists of strong guard hair
  - (b) long (middle) leg: from just above the knee to the start of the Butt (britch) and skirting from the belly and into the apron. If the apron area is very much stronger than the long leg, then the apron fibre should be shorn with the short leg and discarded.
  - (c) Butt (Britch)
  - (d) Blanket (saddle) or prime fleece
  - (e) Neck
- *Since Alpaca fibre is not yet uniform across the entire usable fleece, shearing in this order ensures that the better quality fibre is not contaminated with coarse fibre and the micron spread for each grade of fibre is closely followed. This procedure allows producers to more readily identify the changes in fibre micron spread within a fleece. Experience, and the procedure used by individual farms, will dictate quality of end product.*
- Each section is sorted and graded as it comes off the shearing table
- Eliminate guard hair as much as possible. In addition, fibre stronger than 35 microns currently has no commercial value, therefore, it should not be sent to CANCEM.
- **For a show fleece:** the fibre will be sheared off the alpaca in the following order:
  - (a) short (lower) leg
  - (b) long (middle) leg
  - (c) Butt (britch) and Blanket (saddle) may be sheared together if they are similar in micron, staple characteristics and length... the sorter should also determine if the shoulder and any of the lower neck can be included.
  - (d) Neck



- Suri breeders are encouraged to shear their Suris before the fibre exceeds 175 mm (7inches), or the fleece will be overgrown and of no commercial value.

#### Section IV: Fibre Grading Chart and Color Categories

- *Alpaca fibre is graded into six standard grades, each grade identified according to micron range:*
- Grade #1 ..... < 20 microns..... UltraFine  
Grade #2 ..... 20 - 22.9..... SuperFine  
Grade #3 ..... 23.0 - 25.9..... Fine  
Grade #4 ..... 26.0 – 28.9..... Medium  
Grade #5 ..... 29.0 – 31.9..... Intermediate  
Grade #6 ..... 32.0 – 35.0..... Robust

\* *At this time, Alpaca fibre that is stronger than 35.0 microns, will not be accepted by CANCAM as product prototyping and product marketing needs in this micron range are still on-going.*

#### Basic Colors: Huacaya & Suri

1. WHITE: solid color, pure white
2. CREAM: off white
3. FAWN: LF, MF, DF
4. BROWN: solid color: LB, MB, DB
5. BLACK: solid color: True Black
6. BAY BLACK: solid color
7. GRAY: LSG, MSG, DSG
8. ROSE GRAY: LRG, MRG, DRG
9. MULTICOLOR: Pattern  
Pinto  
Fancy  
Appaloosa

#### For Commercial Processing:

- (1) Fleeces that are white with black fibres throughout will be placed in the Gray category.
- (2) Fleeces that are black with white fibres throughout will be placed in the Gray category.
- (3) Fleeces that are white with brown fibres or spots of color will be placed in the appropriate Fawn or Brown category.
- (4) Fleeces that are white with brown, gray and black fibres or spots throughout will be placed in the Rose Gray category.
- (5) Fleeces that appear black but have definite brown tips that do not break off due to weathering, will be placed in the Bay Black category.
- (6) Short fibre: 1.5 – 3.5 inches. Woolen processing method. (2005)
- (7) Long fibre: 3.5 – 6.0 inches. Worsted processing method. (2005)

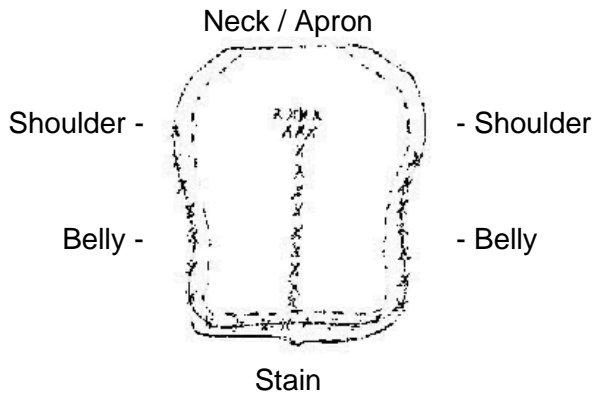
## Section V: *Skirting and Preparing a Show Fleece*

A fleece destined for Fleece Shows may be shorn off the animal as one piece or it may be shorn as two separate sides. This is left to the preference of the producer.

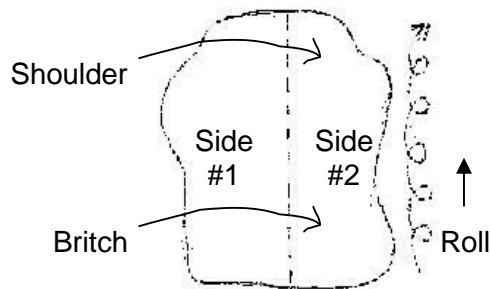
- (1) If the fleece is **shorn as one piece**:
  - Carefully carry the full fleece from the shearing table to the sorting table and flip the fleece onto the sorting table with the cut side up.
  - Immediately scan the fleece for any second cuts and remove the second cuts if any are present.
  - Gently lift the fleece in various sections and shake it to remove dirt and debris.
  - Use your color chart and confirm the color of the fleece. Note the color on the Fleece Show entry form and on your Shearing Shed Fleece Record.
  - Carefully turn the fleece so that the cut side is down on the sorting table and the uncut side is now facing upward.
  - Take a staple sample the size of a pencil from 3-6 random spots throughout the fleece and **test these staple samples for tenderness**. Perform this procedure before you do anything further to your fleece! If the staples are tender (several of the staples break in the middle), *it is wise not to enter that particular fleece in a Fleece Show*. “Tenderness” is a major fault in a Fleece Show. However, the fleece can still be used for commercial processing! Label the fleece as “tender” and place it in the appropriate color and grade category for commercial processing **under the short length (1.5” – 3.5”)**.
  - If the fleece does not show signs of tenderness, then proceed by subjectively scanning the entire fleece to spot any irregularities, such as:
    - (a) “hairy” sections
    - (b) a spot of a different color
    - (c) stains
    - (d) debris such as hay or other contaminants that do not belong in the fleece
    - (e) any sections that look considerably stronger in micron than the majority of the fleece**Remove** these irregularities being careful to only take out as much of the fleece portion as required to remove the irregularity. Do not remove excessive amounts of fleece or you will have over-skirted and lost fleece weight.
  - Final step: fold the fleece as per one of the methods described in *Section V(a): Skirting and Preparing a Fleece for Show*
  - Gently insert the folded fleece into a clear plastic bag. Complete the Show forms and insert them in the bag. Your fleece is now ready for competition. Good Luck!
  
- (2) If the fleece is **shorn as two separate sides**:
  - Carefully carry the side of fleece from the shearing table to the sorting table and flip the fleece onto the sorting table with the cut side up, then
  - proceed with the same routine as for full fleece. Set the fleece section aside, then
  - repeat the procedure for the second side of fleece.
  - Final step: fold the fleece as per *Section V(a): Skirting & Preparing a Fleece for Show – step #2*
  - Gently insert the folded fleece into a clear plastic bag. Complete the Show forms and insert them in the bag. Your fleece is now ready for competition. Good Luck!



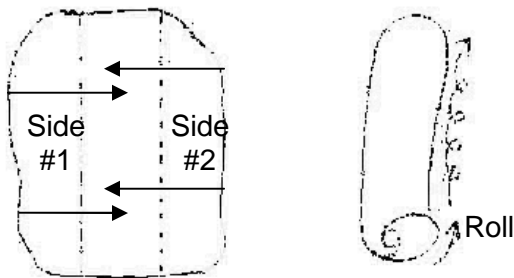
## Section V(a): Skirting & Preparing a Show Fleece



1. Remove the vegetation (x) and the stains (\*) from the areas of the fleece as illustrated.



2. Fold the fleece, with cut sides facing out, by placing Side #1 over Side #2. Roll as shown, OR



3. With uncut side facing up, roll the fleece in thirds. Fold the fleece into thirds by starting at the very outer edge of Side #1 and folding towards the middle; then at the very outer edge of Side #2 and folding towards the middle. Roll.

## Section VI: Histograms

### **Why test Alpaca fibre? To gain a national alpaca fibre quality advantage!**

- Valuable objective measurement for determining and implementing breeding programs
- Cost-effective process to determining and minimizing product variation
- Efficient tool for objectively determining fibre quality
- Effective guide for determining end-product suitability and blending properties
- Increase producer, processor, consumer knowledge

In South America, classing of fibre is accomplished through the employment of artisans using their tactile sensitivities. No objective measurement of fibre is utilized and subsequently product quality can change as visual appraisal is uncertain.

The competitive advantage for Canada must come from:

- (a) production of high quality fibre
- (b) consistent fibre harvesting practices
- (c) professional grower sorting, grading and classing of that fibre into predetermined manufacturing lines
- (d) objective fibre testing

The grower will much more accurately and quickly achieve quality fibre production through objective testing of fibre samples taken from each animal at each shearing from the age of 12 months onward. Breeding programs can be more accurately assessed and implemented through the understanding and use of fibre histograms.

Professional classing of the fibre lines to exact manufacturer and customer specifications must be accomplished through:

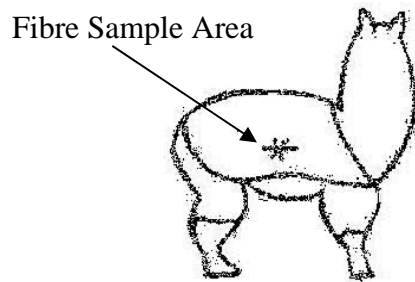
- (a) subjective measurement at the time of shearing and subsequent fibre shed sorting
- (b) objective measurement (OFDA100) of the fibre once it is in the fibre bales. This general information would also be fed back to the growers and would act as a benchmark for a national average.

These procedures will further ensure that high national alpaca fibre classing standards are developed which will further translate into the evolution of superior Canadian Alpaca products that will capture the attention of discerning markets.

Alpaca fibre is highly variable and grower fibre awareness along with skilful clip preparation is becoming essential for an industry to become profitable and sustainable through:

- (a) good marketing
- (b) determining the attributes of the fibre through objective testing thus removing uncertainty, and then
- (c) ensuring equity in the price being offered for the fibre
- (d) providing the processor with essential information for predictability of processing performance, end uses, blending capabilities, dyeing qualities, and therefore, processing price setting
- (e) providing the ability for the grower to compare prices between different growers, processors, manufacturers, and different countries for similar lines of fibre
- (f) assuring fibre buyers of consistent quality fibre or fibre products.

Alpaca fibre must be sampled from the same area on the Alpaca each time it is sent in for testing. That testing area is the mid-side. Each sample should be at least 25 grams (1 oz), in order for accurate testing to be performed by the fibre testing lab.



## Section VII: Glossary of Fibre Terms

**Apron (bib):** the chest area of an animal that may exhibit longer, highly medullated extra strong fibre.

**Aran (Afghan, Worsted) Yarn:** slightly heavier, bulkier (thicker) yarn than Sport Weight. Approximately 850 -1100 yards of yarn per pound. Knits at approximately 4-5 stitches per inch. Usually used for the beautiful Aran (or Irish Knit) bulky sweaters.

**Bird's Nest:** a small portion of the fleece that is found at the base of the neck which often becomes highly contaminated with hay or other feed materials. It may extend along the backline of the animal. It should be removed. Good compost material.

**Blanket (saddle):** prime quality fleece usually found from shoulder through midsection to base of tail, extending down past the halfway point on the sides of an animal. Edges of the blanket are characterized by a change in the grade of the fibre. This area of prime fleece may vary greatly in size, depending on the uniformity of the fleece on an animal.

**Britch:** lower thigh of rear legs.

**Bundling:** A grouping of microstaples that together form a large staple. The foundation of the microstaples is determined by the arrangement and density of the follicles in the skin. Bundling is said to be an indicator of a dense fleece, due to the evenness of follicle size and consistency of shape in the skin.

**Chalky:** Fleece exhibits dull/poor looking fibres. Possesses no brightness, sheen or luster. Chalky fleece should be avoided.

**Character:** Relates to the wave/crimp and crinkle within the staple relevant to breed type.

**Chunky (Craft, Rug) Yarn:** Number of plies vary according the requisites of the end product. Approximately 450-800 yards of yarn per pound. Used for hats, heavy throws, rugs, vests, heavy weight socks. Knits at approximately 2-3.5 stitches per inch.

**Classing:** the grading and sorting of fleeces into consistent groups or uniform lines of fibre based on recognized quality characteristics such as micron, colour, hand and staple length.

**Clean Fleece Weight:** Relates to the percentage of clean fleece (fibre) after removing all extraneous matter (dirt, grease, burrs, seeds)

**Clip:** the total amount of fibre harvested by a producer in one growing period (which is usually one year). Older animals or animals with slow rates of growth may be shorn after a growing period of two years. Fleece that is left on an animal for more than one year may deteriorate in quality due to more extensive contamination, tenderness, sun bleaching, tip and fibre damage and felting.

**Cobweb Weight Yarn:** the finest, lightest, spun yarn. Has the look and feel similar to a cobweb. Used for very lacy decorative items and garments. Can be approximately 8000 yards per pound.

**Co-efficient of Variation (CV):** Spread of fibre diameter variation throughout the fleece. Formula:  $SD/Mean\ Diameter \times 100$

**Color Contamination:** Occurs when colored fibres are present throughout a white fleece or white fibres are present throughout a black fleece.

**Comb:** a shearing handpiece attachment which helps guide the handpiece and provides a cutting surface.

**Comfort Factor:** The percentage of fibres within a fleece that are under 30 microns.

**Cotted:** fleece that is matted together. This causes problems in processing so the fleece must be opened.

**Crimp:** the degree of corrugation or regular wave found in locks of fibre. This can vary from an extremely tight crimp with many closely spaced corrugations to a lock that is completely straight with no wave or crimp whatsoever. *Fleeces with a high crimp factor produce excellent lightweight, bulky yarns. Fleeces with a lesser crimp factor produce excellent worsted yarns.* Each type of crimp displays elasticity.

**Crinkle:** is related to crimp and is used to describe the wavy characteristics of each individual fibre as opposed those characteristics of crimp found in all fibres aligned together uniformly in each lock.

**Curve:** The degree of curve in a fibre. A direct correlation to crimp. E.g. Curve reading of 40+ deg/mm represents excellent crimp in Alpaca Fibre.

**Curve Number:** The number of fibres in the sample measured for curve.

**Cutter:** sharpened tool which reciprocates back and forth on a comb to cut fibre during the shearing operation.

**Density:** The compactness of the individual fibres of a fleece.

**Felting:** The massing of fibres under heat, steam, agitation, and pressure to form a non-woven fabric. Irreversible. Felting will also occur within the fleece on the animal as a result of overgrown fleece due to irregular shearing practices.

**Fibre Curvature:** one of the main components of crimp. The lower the fibre curvature the lower the staple crimp frequency.

**Fineness:** the diameter of an individual fibre, often measured in microns with extremely precise laboratory instruments. Genetics, nutrition, health, stress and age may affect this measure and it can change dramatically from year to year.

**Guard Hair:** stiff, medullated (hollow) fibre which may be either short or long. Grows from the primary follicle and does not exhibit any noticeable twist or bend. A true hair fibre.

**Hand (handle):** a subjective tactile assessment of the *softness* or *feel* of the fibre. Not quite the same as fineness. Fine fibre may also feel dry or brittle or harsh and so would have a poor hand. Fibre with a poor hand may be downgraded to a coarser micron category.

**Huacaya:** a fleece type of alpaca that has fibre with crimp and/or crinkle, that tends to grow perpendicular to the body of the animal, giving the animal a rounded, fluffy silhouette.

**Impurities:** Relates to excessive vegetable matter, staining within the fleece, and/or any excessive tip damage.

**Kemp:** fibres are coarse, dead fibres, completely hollow and have a thin wall. They have limited flexibility and do not successfully accept dyes.

**Lace Weight Yarn:** slightly heavier than cobweb type yarn. Used for very fine lacey garments worn next to the skin as well as fine decorative items. Ranges from approximately 4500-8000 yards per pound. The number of plies depends upon the end product.

**Light Worsted Yarn:** yarn that is conducive to textiles. Light worsted can vary considerably in weight starting at approximately 1000 yards per pound. Until recently, wools and wool type fibres have produced light worsted yarns slightly heavier than cotton. This scenario is changing with the recent advent of “smart fibres” and more refined processing techniques.

**Lopi Style Yarn:** a chunky yarn similar to a 3-ply yarn, however, it is a thick single strand with only a slight twist to it. Terrific for those soft, heavier weight outdoor sweaters, sweater jackets, vests and some types of socks.

**Lustre:** The sheen or brightness of the fibre.

**Mean:** Average fibre diameter e.g. 20.2 microns

**Medullated Fibres:** Cells within the middle of the fibre (medulla/core) have collapsed and caused the fibre to become hollow. *Medulla of a medullated fibre can be fragmented, interrupted or continuous.* Medullated fibres take up less dye, causing them to stand out in the finished garment. The fibres are also weaker. This term is usually applied to the coarse guard hair of alpacas; however, alpacas also produce varying degrees of finer medullated or part medullated fibre which is not undesirable.

**Micron:** a unit of measurement of diameter equal to 1/1000 of a millimeter.

**Midside:** a point approximately midway between the front and rear legs and just lower than halfway down the side of an animal.

**Objective Measurement:** testing traits that can be measured objectively. Measurements will increase with age so the traits should be measured regularly at 12 months, 24 months, etc.

**Performance Records:** Collection and recording of objective and subjective measurements throughout the life of an animal.

**Ply:** A single strand of twisted fibre. Also called *Singles*.

**Plying:** Twisting two or more spun strands (*Singles*) together using a manual spinning wheel or a commercial spinning device e.g. 2-ply yarn = 2 strands of yarn twisted together.

**Progeny Testing:** the collection of performance records from an individual animal's progeny. This is the common method of comparing the progeny of several sires.

**Roving:** A slightly twisted sliver or roll of fibre produced during processing before it is spun into yarn.

**Second Cuts:** short, prickly fibres created when the fleece is cut twice. This can happen when the shears come away from the body of the animal leaving a ridge that gets cut twice. Any fleece ridges that do occur can be left on the animal and do grow out to a uniform look in several months time. Alternatively, the ridges can be cleaned off after the entire fleece has been removed from the shearing table.

**Shear Weight (fleece weight):** the weight of all usable fibre taken off an animal at shearing.

**Skirting:** The process of removing all debris and contamination from around the outer edges of the shorn fleece.

**Sock Weight Yarn (Fingering, Baby):** a fine yarn slightly heavier than lace weight. Approximately 1650-2300 yards per pound. Knits at approximately 7+ stitches per inch. Number of plies vary according to the requirements of the end product. Not necessarily used just for socks.

**Spinning Fineness (SpnF):** An estimate of the performance of the fibre sample if it is spun into yarn. Calculated by combining the measured mean diameter and the measured co-efficient of variation (CV). SpnF can be improved by either decreasing the mean fibre diameter or decreasing the CV.

**Sport Weight Yarn:** slightly heavier than Sock Weight Yarn. Sport Weight Yarn and Sock Weight Yarn are commonly confused. The end product dictates the weight of yarn to be used. Sport weight yarn runs approximately 1150-1600 yards per pound and knits at approximately 5-6 stitches per inch.

**Stain:** urine, dung or mud stain on a fleece, Stained fleece portions must be kept separate from other fleece parts.

**Standard Deviation (SD):** Fibre diameter variation within a staple.

**Staple:** a lock of fibre containing a number of individual fibres. Staple/lock structure can vary significantly *within* a type of animal such as Huacaya alpacas, as well as *between* types such as Huacaya alpacas and Suri alpacas.

**Staple Length:** the length of a staple or fibre measured from cut base to tip, without stretching.

Length		Huacaya	Suri*
Overlong	OL	Over 150 mm (6 inches)	Over 225 mm
Long	L	101-150mm (3.5"-6.0" )	151-225 mm
Medium	M		85-150 mm
Short	S	50-100mm(1.5"-3.5")	50-84 mm
Very Short	VS	Under 50 mm (2 inches)	

*\*Suri Staple Lengths will be reconsidered once the availability of Suri fibre in Canada has increased.*

**Style:** Relates to the twist/wave within the staple based on the most desired lock type for a particular breed. E.g. –

- Style 1: Fleece that shows a good uniform crimp along the length of the staple.
- Style 2: Crimp is not well defined along the length of the staple but there is crinkle in the individual fibres.
- Style 3: Fibre that has no wave formation in the staple or crinkle in the individual fibres. Essentially a straight fibre.

**Super Bulky (Roving) Weight Yarn:** can be a single strand or a plied yarn. Usually used for items such as saddle pads, rugs, heavy vests. Approximately 400-600 yards per pound. Knits at approximately 1.5-2.5 stitches per inch.

**Suri:** a fleece type of alpaca known for high lustre with fibre that has no crimp or crinkle, that tends to hang parallel to the body of the animal and that twists into pencil or rope-like locks/staples, giving the animal a slender, fluid silhouette. This term is sometimes applied to llamas with these fibre characteristics (also known as silky llamas).

**Tags:** bits of coarse, felted or short fibre from areas such as the topknot and lower legs. Usually not used for yarns but may work for felting. Good compost material.

**Tender:** fleece that breaks easily at one or more points along the length of the fibre. Often caused by some trauma, stress or health problem suffered by the animal at a time that correlates to the break points.

**Tensile Strength:** the force required to break a fibre staple of given thickness. Tensile strength is expressed in newtons/kilotex.

**Uniformity of Color:** Relates to the evenness and regularity of color throughout the entire fleece.

**Woolen Method of Processing:** fibres are aligned in criss-cross or random fashion. This allows air pockets between the fibres and results in a very soft, lofty yarn. This method is generally used to deal with shorter fibred fleeces. It is the preferred method of processing for creating bulky, light weight knitted garments and some woven items.

**Worsted Method of Processing:** all fibres aligned in one direction resulting in a more tightly spun, light weight yarn. This method is generally used to deal with long fibred fleeces. It is also the preferred method for spinning yarn to be used in woven fabrics.

***Yarn Weights:** please note that yarn weights may vary from one manufacturer to another and from one type of fibre to another. The definitions of yarn weights listed here apply to approximate weights only and are intended solely as a guideline.* The yarn weights can be as diverse as the manufacturers of the yarns and the fibres used to create the yarns. Learn the terminology used by your favorite manufacturer or processor. To ensure that a processor is creating the weight of yarn you desire, bring a sample of that particular yarn to the processor when submitting your raw fibre.