AUSTRALIAN ALPACA

AUSTRALIAN ALPACA ASSOCIATION INC

AUSTRALIAN ALPACA FLEECE INDUSTRY

SHEARING SHED & PRE-CLASSING CODE OF PRACTICE 2006

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This Code of Practice has been prepared by Cameron Holt for the Australian Alpaca Association Inc, in consultation with THE ALPACA INDUSTRY FLEECE DEVELOPMENT GROUP, AAFL , ALPACA SHED SORTERS/CLASSERS and alpaca BREEDERS in Australia.

Its aim is to develop a self-regulatory approach to the shed preparation of fibre using a philosophy of a QUALITY MANAGEMENT approach. This code of practice is an integral part of the quality assurance standards required for the preparation of Australian alpaca fibre in the shearing shed.

INTRODUCTION
At the present stage of the industry, there remains a substantial sector of breeders whose herds display variety in colour and quality within their fibre harvest. Quality variation is a primary factor adding to the difficulty of preparation of fibre, particularly where numbers within herds are small (alpaca fleece has considerable variation between animals, differing parts of the fleece and within a single staple).

To become successful suppliers of alpaca fibre to the Woollen and Textile industry, breeders must take the initiative to learn how to properly harvest and prepare their fibre on the farm.

These guidelines are designed only for shearing shed fleece preparation.
They should be read in conjunction with instructions issued by brokers, classing houses, mills and craft organizations that plan to purchase the growers' fibre.

AIMS OF CLIP PREPARATION

- **Production of quality fibre**

- **To provide a textile fibre with a high degree of consistency which processors may use with confidence.**

- **To maximize the net financial return to Alpaca fibre producers**

This can be achieved by:
- **Breeders keeping abreast of preparation standards**

- **joint education ventures of the Australian Alpaca Association, Education Institutes and qualified training consultants**

- **regular ongoing workshops, field days, etc**

- **through the members magazine and newsletter**

Fibre characteristics, which are important in processing alpaca, are:

HUACAYA

- **Uniformity in fibre type**
- **Fineness / handle**
- **Colour integrity**
- **Length of staple**
- **Crimp structure**
- **Brightness**
- **Yield**
- **Lack of guard hair**
- **Tensile strength**

SURI

- **lustre**
- **Fineness / handle**
- **Colour integrity**
- **Length of staple**
- **Uniformity in fibre type**
- **Yield**
- **Lack of guard hair**
- **Tensile strength**

All of these characteristics can be manipulated through husbandry, breeding and management procedures.

- **FIBRE TYPE is determined by breed classification and genetic makeup.**
- **FIBRE FINENESS / HANDLE (diameter/micron) is primarily determined by genetic makeup but is also influenced by nutrition and health of the alpaca. ie. illness, stress etc.**
- **COLOUR is determined genetically. It is important to maintain colour consistency, particularly in pure colours such as white and black.**
- **LENGTH is influenced by genetics, nutrition and duration of fibre growth.**
- **YIELD is influenced by genetics, nutrition/health, climate and duration of fibre growth.**
- **MEDULLATION is determined genetically.**
- **CRIMP / LOCK STYLE is determined by breed (Suri / Huacaya) and correct selection for breeding/genetics**
- **TENSILE STRENGTH is influenced by health, nutrition and environmental factors such as climate.**

PRODUCER'S / GROWERS RESPONSIBILITIES

- to ensure the shearing shed is clean of all contaminants prior to shearing and that all equipment needed for shearing is in the shed

- to provide good lighting and adequate work space

- to provide adequate labour to enable correct preparation of the fibre

- to present the animals in a shearable condition

- to provide a safe and healthy workplace

SORTER'S (CLASSERS) RESPONSIBILITIES (on farm)

- to ensure that each fleece is carefully and correctly skirted (prepared)

- to ensure stain is removed, heavy vegetable matter removed, etc

- to ensure prevention of contamination to the alpaca fibre, particularly cross contamination of colours.

- to supervise shed staff who are assisting with the fleece preparation

OH&S STATEMENT

Refer to National and State OH&S policies.

www.workcover.nsw.gov.au

"Health & safety at work: Shearing"

"Ergonomics of sheephandling equipment for shearing and crutching"

www.workcover.vic.gov.au

"National inventory of practical OH&S guidance material – Shearing"

Australian Centre For Agricultural Health & Safety
University Of Sydney
Po box 256
Moree NSW 2400 (0267528210)

PRE - FIBRE HARVESTING

The preparation of the alpaca clip for sale is the culmination of the year's work. The fibre shorn reflects the "total environment" experienced throughout the growing period.

As shearing approaches, every effort should be made to protect the fibre from vegetation and environmental contamination. Such contamination will cause depreciation in the value of your fibre.

Prior to harvesting as the fibre goes through the shearing shed operation, two important operations take place.

1 SHEARING SHED DESIGN & SET- UP

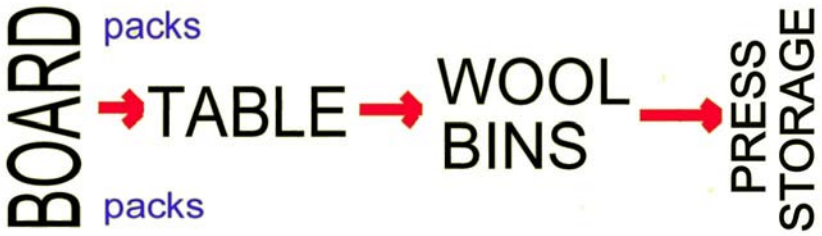
The shearing shed is a building constructed solely for the purpose of harvesting and sorting fibre in an efficient manner with minimal contamination. When these sheds are constructed consideration has to be given to a number of key factors. Currently for the alpaca breeders this would be

- location on the property
- overall design of the shed
- orientation
- ventilation
- equipment required in the shed during the shearing process
- off season use of the shed

There are many designs available that breeders can avail themselves of for the construction of such a shed. Consideration also has to be given to the animal holding yards out side and under cover. Either the shearing shed or the yards should contain a covered area where the alpacas can be placed the night before shearing so as to keep them dry.

The SET-UP of the shed must pay attention to the relationship of the shearing board where the animals are shorn to the fleece area where the preparation/sorting takes place.

A simplistic design is shown below to demonstrate this design.



One of the key requirements of this fleece area is, if possible, good natural light and, if this cannot be available, artificial fluorescent lighting with light that projects a natural white light.

While not everyone can erect a building devoted to fibre collection, consideration and care should be given to prepare the area where annual shearing will take place.

If a shearing shed is not available, choose an area under cover, where heat, strong drafts, rain or snow will not be a problem should the weather change during the course of shearing time. An area of your shed or a garage would be options providing there is **adequate space for both the shearer and crew to work** as well as space for record keeping and sorting of fleece as it comes off the alpaca.

The area must have,
appropriate flooring,
adequate lighting or the option to add additional lighting ,
cleaned of all contaminants before shearing begins.

Animals should not be shorn on gravel, dirt or grass etc. It is desirable to shear on a wood floor; if this is not possible then a tarpaulin that fibre will not adhere to should be used. **Poly tarps should not be used. There are a number of rubberised mats that would be suitable (fibre does not adhere to these).**

2. SHED OR SHEARING AREA PREPARATION

A discussion with your shearer should take place well in advance of shearing dates to determine the expectations of your shearer and also your expectations of him/her. Some shearers use a shearing table to work on rather than on the floor.
Your shearing area or shed must be spacious enough to adequately accommodate this equipment.

It is most efficient to sort and skirt fleece as it is taken off the animal. However, whether it is done at shearing time or a later date, a fleece-sorting table is an essential piece of equipment . This can be easily constructed. A 2.5 x 1.5 metre wood or metal frame covered with 2.2cm square plastic mesh will enable the fleece to be assessed, skirted and also allow second cuts to fall through to the floor. If your climate is very dry, metal mesh is recommended as plastic can gather a static charge, causing fleece to stick to the mesh. Frame height should be at waist level for the person sorting the fleece to reduce back strain.

The shearing shed or area must be clean of all contaminants such as bale twine, poly feed bags, cans and other metal objects and **all other animal fibre**. Floors should be swept clean of all feed, hay, and dirt etc., keeping in mind that floor, general area and shearing table surface should also be swept clean when there is a change in fleece colour of the animals being shorn. **Cross fibre contamination is of major concern to processors.**

The following maybe a useful checklist for your shearing process:

CHECKLIST FOR CONTAMINATION

- **Outside yards**
- **Pens inside shearing shed**
- **Shearing surface**
- **Fibre preparation area**
- **Fleece storage bags**

SAFETY CHECKLIST

- **No objects protruding which can cause injury to animals or humans**
- **Check for tripping hazards (eg: extension leads, ropes etc)**
- **FIRST AID KIT for both animals and humans!)**
- **PHONE and emergency phone numbers**

STAFF CHECKLIST

- **Shearers**
- **Fibre sorters**
- **Alpaca handlers**

CHECKLIST FOR GENERAL ITEMS

- **Fleece sorting/skirting table**
- **Scales for weighing fleece**
- **Bags for fleece – paper, clear plastic or perforated clear (long storage)**
- **Brooms and vacuum cleaner**
- **Recording book /Laptop computer**
- **Sample bags for fleece testing**
- **Tags for bags/ID slips for inside bag or indelible marker for plastic bags**

- **Ruler**
- **Colour chart and crimp (H) or lock style (S)charts**
- **Lamb boards to help pick up fleece that does not hang together**

3. PREPARATION OF THE ALPACA HERD FOR SHEARING

It is important to prepare the animals *before* the shearing process. This involves:

- No feeding chaff or loose hay within 24 hours of shearing. (pellets OK)

- Methods of cleaning each animal's fleece of surface contaminants (such as vegetable & mineral matter) just prior to shearing:-

  Use a piece of wooden dowell to flick the alpaca fleece from the base of the neck to the tail. This will help minimise dust, grit and vegetable throughout the fleece by creating a static effect to aid in removing the offending contaminants.
  The piece of dowell can be approx 300-400mm long and 20mm in diameter. A similar effect can be achieved by using a commercially available "wand" made from heavy-duty wire with a wood handle. There two different types available- one for huacayas and one for suris. A horse scraper, palm brush or a piece of poly pipe could also be used to help remove some burrs.

  Some breeders might decide to lightly blow out the fleece with a stock blower. Some breeders are using an industrial vacuum, such as a shop-vac. ***This in inexperienced hands, may cause problems to the structure of the fleece. It has been shown that incorrect blowing or vacuuming of the fleece breaks down the structure and integrity of the staple and locks of the alpaca fleece. When judging or classing a fleece the structure and integrity of the staple and locks is one of the key appraisal characteristics, along with micron, lustre etc.***
  CARE NEEDS TO BE TAKEN IF EITHER OF THESE OPERATIONS TAKES PLACE

- Keep animals in an area where recontamination will be kept to a minimum.

- Keeping animals dry before shearing **is ESSENTIAL** Watch for dew on cold mornings and over sweating in areas of high humidity.

- Drafting animals for colour will reduce cross-colour contamination. Shear pure white animals first moving progressively darker through cream, fawns, browns, greys and finally to black. An accurate listing of shearing candidates and colours will help to avoid confusion on shearing day.

- It is advisable to shear working males separately from females.

Shearing should be carried out at the optimum time, taking into account climate and other environmental conditions in your area (prior to possible fleece contamination from vegetable matter (i.e. grass seeds), **as well as reproductive functions of the herd. Fleece should be at its maximum growth for the year (12months).**

Care should be taken to avoid inclement weather or excessive heat. Alpacas can die from exposure many weeks after they have been shorn.

SHEARING OPERATION

Having prepared the shed for harvesting of the fibre and employed the required labour, shearing can commence.

Two important factors need to be addressed when shearing your alpacas

1. **Minimize stress on the animal.** The shearing process, just through its actions, will put some stress on the animals. Some will tolerate it better than others.
2. **Removing the fleece** in a manner, which does not damage the fleece or its value. Shearers should avoid second cuts and fleeces should have those second cuts, which remain, removed before packaging.

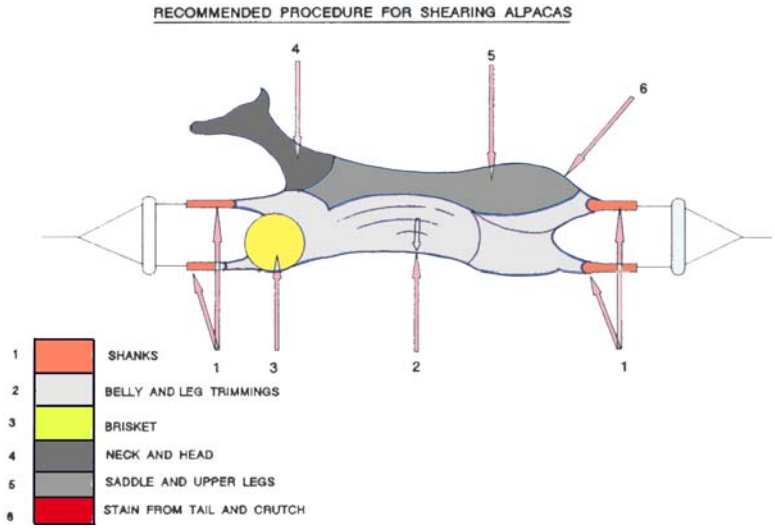
SHEARING

There are three basic methods for shearing.

a. The lying down or prostrate position using restraints,
b. the shearing table
c. and the standing position.

It is recommended that when shearing in the "lying down" or “table” position, the order of removal of the fleece should be sectionalised and kept separate, that is,

1. Lower leg (shanks)
2. Belly
3. Apron
4. Neck
5. Middle leg
6. Saddle/Blanket
7. All stains
8. Excessive vegetable matter



In the "standing" position it is recommended that the following order for removal be used;

1. Saddle/Blanket
2. Neck
3. Apron
4. Belly
5. Middle leg
6. Lower legs (shanks)

*It is advisable to use the standing position only with extremely quiet animals that are well halter trained – **the prostrate method is the more widely used.***

SHEARING STANDS (stations)

The first question you need to ask is how many shearers do I need? The answer to this is determined by your shearing shed design (amount of room) and the number of alpacas you have to shear. If you decide on one shearer, which is probably the answer to most breeders, you then have to decide whether you wish to have a second stand (station) that can be used to get an animal prepared for shearing whilst the shearer is shearing on the original stand. The benefits of this are that it reduces the downtime the shearer may have whilst changing animals over on the original stand and it also increases the opportunity for a higher number of alpacas to be shorn on that day. The downside of course is the need for extra staff in the shed.

The method of shearing, as mentioned earlier , is a decision between the owner and the shearer. It is the observation of the author that the lying down position is more successful from the point of view of fibre preparation and the minimising of risk to the animal and holders. In Australasia almost all alpacas are shorn in this position and this method is becoming more popular internationally. The lying down position may or may not include a shearing table.
It is possible to use a snow comb when shearing in the summer months, especially the white animals, to leave a short layer of fibre to protect the skin from sunburn.
There are special camelid or mohair combs available

SHED STAFF (Roustabouts)

Before organising your shed staff check with your shearer to ascertain if the shearer is bringing his own shed team. Subject to the response you will either need to add to the shearer's team or create your own shed staff. An example of shed staff you may require are:

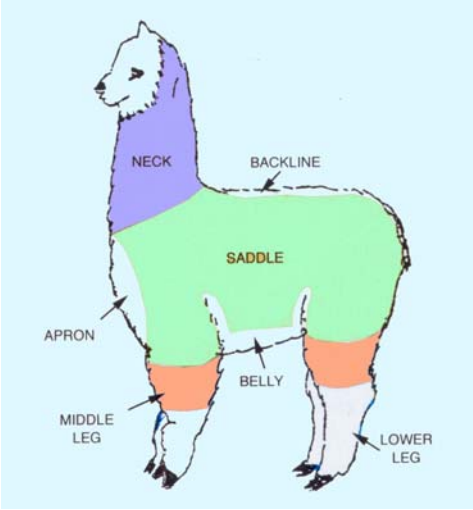
Alpaca handlers (wrangler)
Shed hand to pre sort offsorts on the shearing board
Broomie/general assistant (moving animals, assisting with preparing animals for the shearer)
Shed hand to skirt fleece on the table
General assistant for fleece weighing, sampling etc

The number of people required, as mentioned earlier, will be dependent on the number of alpacas being shorn on the day.

PREPARATION OF FIBRE

The aim of fibre preparation is to make lines of uniform grades of fibre or prepare a fleece ready for classing in a rehandling facility. As previously mentioned, it is most time efficient to complete the on-farm skirting, sorting and grading at the time of shearing.

<u>The various areas of the fleece are described as:</u>

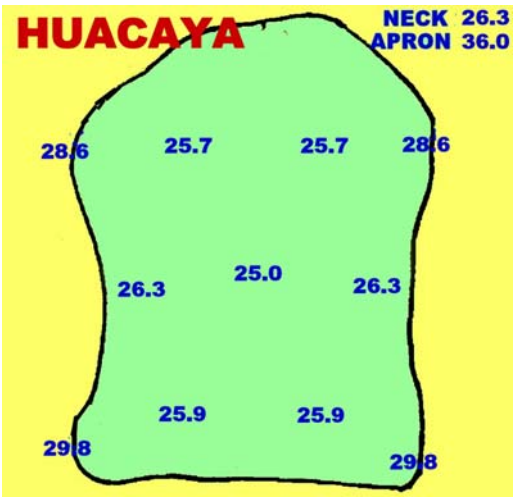


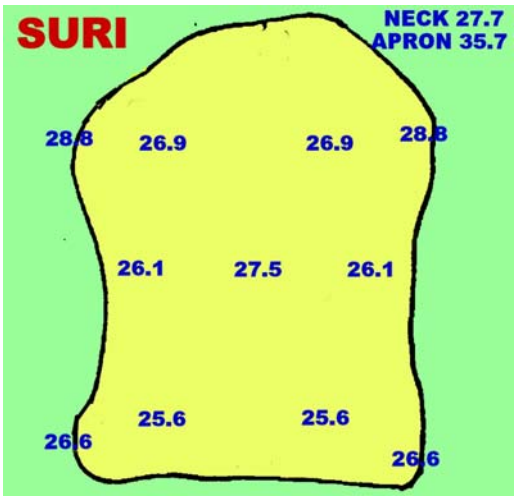
1. **LOWER LEG– coarse, mostly hair-like fibre**
2. **BELLY– if similar may blend with middle leg, but if coarse in appearance maybe be placed with the next line (the apron)**
3. **APRON – mostly highly medullated and coarse fibred. Always keep separate. Area may vary in size from animal to animal**
4. **NECK – the fleece on the neck is normally similar to the saddle but is short in length. It is the shortness of length, which requires it to be separated. In some cases some increases in coarse medullated fibres may be found in this area.**
5. **MIDDLE LEG – usually good, slightly stronger fibre but in some animals may be very strong and medullated in the britch area. Generally stronger in micron compared to the saddle/blanket. In good fleece animals, may be shorn with saddle area.**
6. **SADDLE OR PRIME BLANKET – this should be the balance of the fleece. May represent approximately 60% of the fleece but this figure is highly dependent to the overall evenness of the fleece. Some saddle/blanket areas may be 80% and some 40% of the total fleece cut.**
7. **STAINS – all urine, dung, water stains and mud.**
8. **VEGETABLE MATTER- excessive vegetable matter contamination.**

In Suri fleece, the middle leg and saddle/blanket appears more uniform, where in actual fact it is similar to Huacaya for variation (Holt/Scott 1998).

<u>NOTE</u>

It is important to remind breeders that alpaca fleece, whether suri or huacaya, does range considerably across the entire fleece. An example is shown below from research in both huacayas and suri.





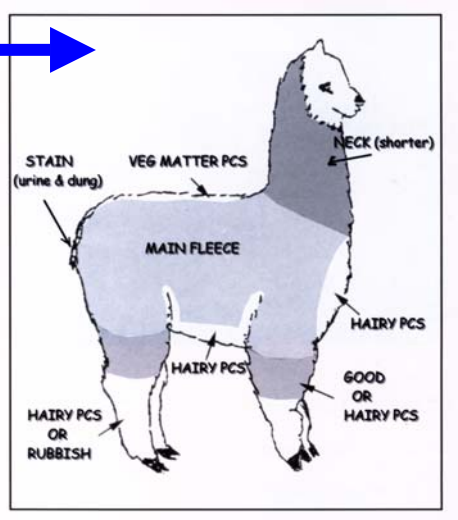
Based on research from Holt / Stapleton 1993, results indicated a variance over the research huacaya fleece of an average of 4.8 microns (excluding apron - 11 microns including apron). Research in 1997 by Holt / Scott on suris fleece indicated a average range of 3.2 microns (excluding apron – 10.1 microns including apron) over the tested herd.

SORTING

Sorting begins on the shearing board with the shed hand who is working in conjunction with the shearer. It is the job of the shed hand to remove the off-sorts (lower leg, belly, apron, neck and some of the middle leg) and place them in containers (or plastic bags) so as the fibre can be weighed if necessary and inspected by the fleece skirter (sorter) who is responsible for the overall preparation of the fleece. The sorter will allocate the fibre, once the total fleece is weighed, to various lines **subject to the advice they have received from the organization where the owner intends to sell or process the fibre**.

Constant brooming around the shearer and skirting table is most important to help avoid fibre cross contamination.

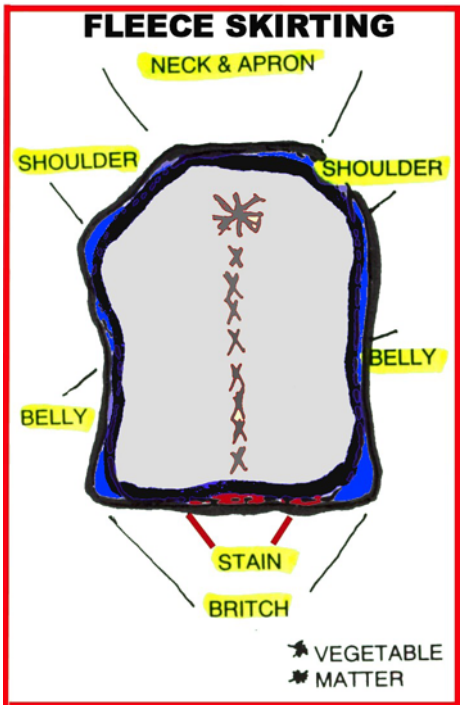
The diagram →



will give you an idea of the skirted fibre (off sorts) that you will encounter whilst carrying out the general shed preparation prior to being sent away for classing. Not all alpacas are the same so some deviation to the examples given will obviously take place, for example, where alpacas are grazed in areas that have burrs /heavy vegetable matter etc, pieces in general will most likely go into a vegetable matter pieces line (VMPCS). After a number of years shearing you will become used to this and readily identify these off sorts.

There will not be a great deal of difference between suri and huacaya in preparation protocol.

SKIRTING



HUACAYA & SURI FLEECE

1. FULL FLEECE

If time permits, when the saddle/blanket is shorn, it should be spread out on the skirting table **shorn side on the table (SHORN SIDE DOWN -** tip side up like you see on the alpaca) as illustrated in the diagram. Check for excessive variations and skirt off; ie. **Coarser fibre**, heavy medullation, short fibre, second cuts, stain and excessive vegetable matter in the back and base of the neck.


HEAVY "VM "IN BACKLINE

2. FLEECE SHORN IN HALVES

When the two halves of the saddle/blanket are shorn, it should be spread out on the skirting table in a mirror image to the other side, and use the same procedure to skirt as for the full fleece.

SKIRTING PROCESS

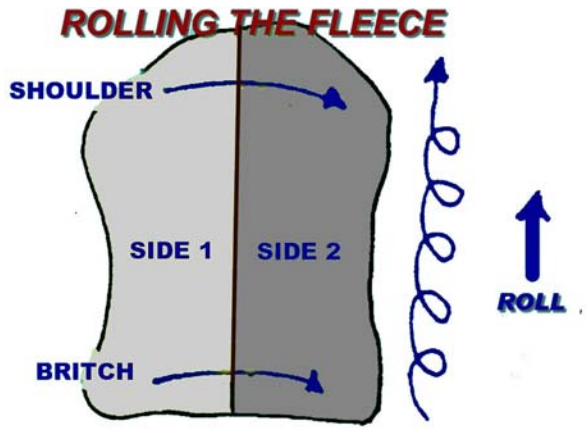
Using the above diagram as a guide, try to recognise the various parts of the fleece. Having established that you will know where to look for any neck, britch, stain etc. On the flank areas some medullation may appear as this area attaches to the belly region. Also up near the neck you might find apron fibre that will be more medullated. In the areas behind the front leg, in front of the back leg and down the back leg coarser and more medullated fibre may also be found. **Skirting is a learned process and after practice you will find it easier to carry out.**

Also look for a midside sample that may have been marked for removal (see later).

SORTING MULTI COLOURED FLEECE

Where multi coloured fleeces are shorn, the colour that is in the minority should be removed. **This would not be done if showing the fleece in a multi section of a fleece show**. In the case of some fawn fleeces, if the minority colour varies outside the current classing or showing standard tolerance, then remove only that area. **(refer to classing house guidelines)**

ROLLING THE FLEECE



HUACAYA

The fleece should then be folded and rolled into a bundle as shown. Fold side #1 over to side #2 and roll from the britch to the shoulder. This makes it easier to open for inspection.

SURI

Due to the fact that most suri fleeces are being shorn with two years' growth, and that these fleeces in general (due to their length) have some slight matting on the shorn end, it may be wise before rolling the fleece (after skirting) to turn the fleece over so that the tip side is on the outside.

If the fleece is free of entanglement it should be rolled in the normal manner.

FLEECE SHORN IN HALVES

As mentioned earlier, if the fleece is placed on the table as two halves together, roll the fleece as for a full fleece.

If the halves come to the skirting table individually, skirt the half fleece, fold it in half as shown above and roll in a similar manner. Place the two halves side by side in a plastic bag when finished.

Do not tie or bind the fleece in any manner, simply place in the storage bag or container.

SHEARING SHOULD TAKE PLACE EVERY 12 MONTHS

Some suri breeders may for show purposes shear every 2 years. This is not desirable for processing. Overlong fleece has a tendency to cot (mat - entangle).

SKIRTING AT A LATER DATE

If for whatever reason you decide not to skirt the fleece at time of shearing, you can store the fleeces and come back to them at your leisure.
To do this,

- Place the fleece as normal on the skirting table.
- Place paper over the top of the fleece and roll from britch to neck. The fleece will look like a big sausage and you now place this in a plastic bag.
- If you intend to store this fleece for some time you should use a perforated plastic bag to avoid moisture content.
- When it comes time to skirt the FULL fleece, simply place the sausage on the table and unroll it. You will have no fibre entanglement and the fleece should look just like it was when you first placed it on the table.

Failure to place paper (or similar) over the fleece for this type of storage will mean the fleece will become entangled within itself and inadequate skirting will take place. Contamination could take place also.

OPTION SOMETIMES USED BY BREEDERS WHEN SHEARING IN HALVES

When the saddle is shorn in two sections (halves) gently gather the fleece from the board / shearing- table and tuck underneath the shoulder & britch and place directly into a new or clean plastic bag. Repeat the same action when the alpaca is rolled over and shorn on the other side. The saddle/blanket will be able to be skirted correctly if removed gently from the bag when required and skirted.

HERD RECORDS

Once the fleece has been rolled, it is time to record the characteristics of the individual fleece. Good fleece production records are an invaluable tool in helping to make appropriate mating choices. Tracking the fibre harvest information on an annual basis will also begin to provide a view of the "big picture" of your herd fleece production capabilities after a few years. It is recommended that the following information be monitored:

- **Estimated fineness/handle**
- **Colour** – carefully checking each fleece, particularly whites and blacks, for random coloured fibres. Colour contamination in the pure colour fleeces will put them into a different colour category and they must not be packaged together with pure colours.
- **Length** of staple
- Notation on **crimp style** and consistency
- Degree of **medullation** – where on the body does it begin to increase
- **Total fleece weight**

- **MIDSIDE SAMPLE**- This sample (although scientifically biased) is a reasonable representative of the fleece considering it is a single site sample.

A sample 50mm X 50mm in size is drawn from the midside.

The sample can be taken at shearing time or directly from the animal prior to shearing. If the sample is taken during the shearing process the sample area must be identified on the animal either by a chalk mark or by placing an elastic band around staples in the midside area. This sample is then collected when the fleece is being skirted.

The sample is placed in a plastic bag with a tag showing the Alpaca's number. Refer to "testing lab" for instructions

Notation should also be taken on any faults the fleece may have.

Does the fleece exhibit any sheen or lustre or is it dull, is it overlong in length. Also do a flick test for soundness and strength of the staple. To do this, pull a staple from the fleece, which is approximately the thickness of pen or pencil. Grasp each end between your thumb and finger and pull to apply approximately 3 kg. (7lb) of pressure. This is not as much as you might think, it is generally enough to cause the crimp to disappear with some additional gentle pressure.

While maintaining the pressure, flick the middle of the staple with your middle or 3rd finger. If there is breakage, the fleece is tender and it will have difficulties withstanding the rigors of processing – This fleece should be kept aside.

If only an odd fibre breaks (you feel the fibre stretching but not breaking) then this fleece should be able to withstand normal processing tolerances and can be treated as a sound fleece.

If the staple entirely breaks with great ease across one area, this is a major stress break. Stress breaks indicate that the alpaca has undergone some form of stress. It is important to utilize this information and determine what may have caused this to happen within the course of the previous year of the alpaca's life – ie. stress, sickness, change in nutrition etc. If there are a number of alpacas exhibiting tender fleeces then you will need to identify when the stress took place (indicated by where the break is in the staple) and you may need to assess your husbandry practices during the growth of the fibre, particularly at the problem time.

Tender fleeces are not valueless, as some breeders believe. They have to be kept separate so they can be processed through a different manufacturing system. They certainly do not command anywhere near the value of a sound fleece, but still make satisfactory products.

When assessing the fibre use a contrasting background, eg, white on black and coloured on white, to clearly see the fibre characteristics.

BREEDERS should not do other husbandry tasks, such as trimming of nails, teeth etc, due to possible contamination of the fibre.

PACKAGING

Fleeces should be placed in clear plastic bags. The alpaca fleece when being sent for classing, should be packaged in the following groups.

- **Skirted fleece (Saddle/Blanket)**
- **Neck**
- **Good pieces**
- **Hairy pieces**

REMEMBER, BEFORE SHEARING STARTS REFER TO THE CLASSING HOUSE OR THE DESTINATION OF THE FLEECE FOR INSTRUCTIONS ON PACKAGING & GROUPING ETC

EXAMPLE (CLASSING HOUSE)

Fleeces up to a maximum of five can be placed in the one plastic bag provided they are separated by newspaper. ***NO POLYESTER, CHAFF BAGS OR SIMILAR SHOULD BE USED.***
Lines of neck, good pieces and hairy pieces should be made with a sub grouping of the following colours. White, light fawn, brown, black and grey.

All individual neck fibre from each animal should be placed in a plastic shopping bag and placed in a container according to the above indicated colours for neck fibre. The reason the neck fibre is placed in plastic bags is due to the variation of the length of the fibre.

The **good pieces and hairy pieces** are treated in a similar fashion. If the person responsible for the sorting is not confident making the separations then also place them in a plastic shopping bag and grade them as they think according to the above designated lines. Where the person is confident with their assessment, then the good pieces can be placed in those lines free from the plastic bag. (that does not include necks)

STORAGE

If your fleece is to be stored, use clear plastic bags, which can be closed to keep out pests such as bugs, moths and rodents. **Moth & pest prevention must be implemented**.
Store fleece in a dry area with good air circulation and check frequently for any infestations or mildew in humid climates. Clearly identify the contents of the bags or containers.

A conscientious approach to harvesting your Alpaca fibre will help to ensure that your product will maintain its highest value. With a little practice, the process will become very efficient and shipment of your fibre will become easier.

EXAMPLE FLEECE CONSIGNMENT FORM

EACH GROWER TO FILL ONE FORM OUT PER CLIP.

PLEASE PLACE FORM IN THE TOP OF YOUR BALE/BUTT/BAG.

PAYMENT TO BE MADE IN THE NAME OF:

……..

*ABN **(if applicable)**…….. Are you registered for GST? Y / N*

(NOTE: If you do not have an ABN you must fill out a 'Statement by Supplier' form, available from the ATO or download from the ATO website – form number 3346. Failure to do so will result in 48.5% withholding tax being deducted from your payment.)

Grower name……..
Address……..
P/Code…….. **Grower no** (if applicable)…….. **Phone** ……..

In submitting fleece to xxxxxxxxxxxxxxxx I accept that;

1. The fleece remains the growers responsibility until received at xxxxxxx.
2. The fleece will be classed to the current xxxxxxx classing lines.
3. The decision of the independent classer is final.

Growers signature
……Date……..

TOTAL NUMBER OF:

Bales	Butts	Bags	Wt: (weighed or approx KG	% of white	% of Huacaya	% of Suri

THIS SECTION TO BE GIVEN TO A COLLECTION POINT OR REP (If applicable)

XXXXX FLEECE CONSIGNMENT FORM

Grower name……..
Address……**Post code**……
Grower Number (If applicable)……..**Phone**……..**Date**……

Grower Signature……

Bales	Butts	Bags	Wt: (weighed or approx)	% of Huacaya	% of Suri

FLEECE BAG IDENTIFICATION SLIPS

Please fill out one slip per fleece or bag (maximum one colour per bag).

Growers Name……

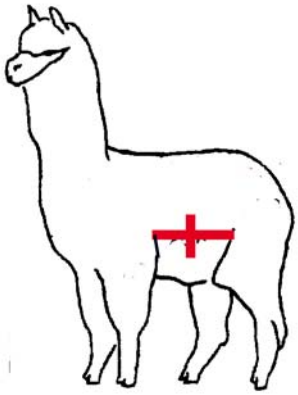
Grower no……..Phone……..Collection point……

Colour: …… **Description** flc nks pcs other ……..

TESTING / FLEECE MEASUREMENT

If measurement is required, and has not been taken from the alpaca prior to shearing, then the sample should be taken prior to rolling the fleece.

It is recommended that the following protocols be adopted.



MIDSIDE SAMPLE

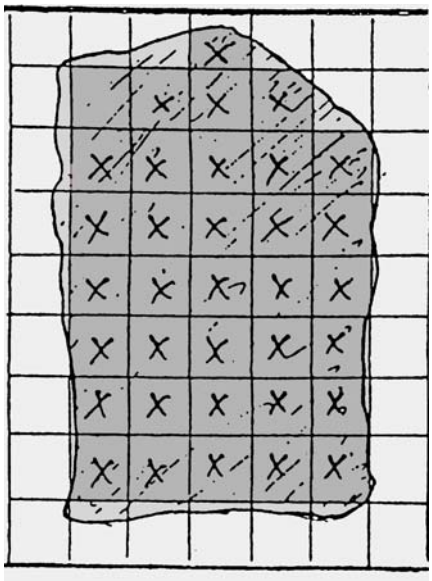
This sample (although scientifically biased) is a reasonable representative of the fleece considering it is a single site sample.

A sample 50mm x 50mm in size is drawn from the midside as shown.

The sample can be taken at shearing time or directly from the animal. If the sample is taken during the shearing process the sample area must be identified on the animal either by a chalk mark or by placing elastic around staples in the midside area. This sample is then collected when the fleece is being skirted.

The sample is placed in a plastic bag with a tag showing the Alpaca's number.

GRID SAMPLING



This is the most reliable method of sampling.

(a) Spread the fleece to be sampled evenly over table

(b) A grid made of 100mm x 100mm is placed over the whole fleece

(c) A staple (of equal size) is taken from each square more than 1/2 filled with fibre

(d) The staples are **placed together in one plastic bag** with a tag showing the animal number.

Depending on choice, either the midside or grid samples are securely packaged for dispatch to a recognised testing house.

The tags should show -

- **animal number**
- **age**
- **method of sampling (important)**
- **date of sampling**

NOTE

All testing must be put into context. Research by Holt and Stapleton 1993 showed that fleece on a huacaya alpaca indicated an **average difference of .77 microns** between the grid sample **(unskirted fleece)** and the midside sample **(on animal)**. The **mean magnitude of difference was .92 microns.** These indicated a **correlation between the two sites of .93.**

Later research in 2004 by Davison and Holt on a huacaya fleece, where comparisons were made between a grid sample **(skirted fleece)** and a midside sample **(on animal),** showed an **average difference of .4 microns** with a **mean magnitude of difference of .87**. This was the equivalent of a **correlation of .94**. Breeders must remember that on **some alpacas the fleece does vary considerably.**

FLEECE WEIGHING

The fleece weighing takes place during the shearing process in conjunction with midside or grid sampling.

The following areas should be weighed -

Saddle/Blanket) may be
Middle leg) together
Neck
Balance
Test sample

TOTAL kgs

The weights must be recorded against the animal's number.

These photographs will give you an example of fibre that may come from the above-mentioned areas.

STUD RECORDING

You should code the information to record the fleece characteristics for each animal**.**

e.g. H AW M 2 L

BREED	**H**	**(Huacaya)**
LENGTH	**A**	**(120-150mm)**
COLOUR	**W**	**(White)**
FINENESS/HANDLE		**M (Medium)**
CRIMP	**2**	**(Good Crimp)**
MEDULLATION	**L**	**(Light)**

<u>These lines should be used for your own recording in your stud.</u>

HUACAYA

FINENESS / HANDLE

<18 microns	H UF	Ultrafine
18.1-20 microns	H SF	Superfine
20.1-23 microns	H F	Fine
23.1 -26 microns	H M	Medium
26.1-30 microns	H S	Strong
30.1-34 microns	H X S	EX Strong
34.1 microns & stronger	H C	Coarse

LENGTH

5"- 6"	120-150mm	A
3"- 5"	80-120mm	B
2.4"- 3"	60-80mm	C
2"- 2.4"	50- 60mm	D

SURI

FINENESS / HANDLE

MICRONS	SURI	
below 20 microns	S SF	Superfine
20 - 23	S F	Fine
23.1 - 28	S M	Medium
28.1 –32	S S	Strong
32.1 - 34	S XS	Ex Strong
34.1 & stronger	S C	Coarse

LENGTH

LENGTH	INCHES	MM (SURI)
A	5 - 6	120 - 150
B	3 - 5	80 - 120
C	2.7 - 3	70 - 80
O/L	6 - 10	150 - 250

CRIMP (Huacaya)

CHARACTER RATING

The ratings for character definition are

1. **Excellent** – very evenly defined crimp with deep amplitude
2. **Good** – well defined and regular crimp formation
3. **Good/Average** – showing good to average crimp definition and regulation
4. **Average** – showing some crimp definition but not as regular as No 3
5. **Average/Poor** – little crimp definition or regulation visible
6. **Poor/Straight** – no crimp definition clearly visible

SURI FLEECE TYPES

Suri fibre is basically a straight fibre and is used like mohair for specialised fibre production. One of the main difficulties when processing Suri, (like Mohair), requires some twist in the sliver so it will not pull apart during the drawing process. This is due to the lack of cohesion when spinning caused by the low, smooth cuticle scale structure. Processors have suggested that they prefer a fibre with a slight wave in preference to a straight fibre. From a breeding perspective, Dr Julio Sumar would prefer the ringlet type followed by the lock with twist and wave.

Many variations of suri lock type exist. However, in Australia five types are commonly identified. These range from a tight ringlet, wave and twist ringlet (sometimes known as curled ringlet), corkscrew ringlet and large wave with broad lock. These three would be the most common of the five types with the other one being and a straight fibred lock.

1. The lock twists into tight ringlets almost to the skin.

2. The lock grows showing a small wave with twist. It also grows in a ringlet formation. The best locks will almost twist and wave to the skin.

3. The lock grows in a corkscrew like curl. It also grows in a ringlet formation. The lock can be small or large.

4. The large wave with the flattish broad lock is a much thicker looking lock than the above three. The thickness does not necessarily mean density.

5. The fibre grows straight showing no signs of ringlet, wave or curl.

REFERENCES

A.A.F.L. **info sheets (2005-6)**

Holt, C. **Introduction Alpaca Production, International School Of Fibres (July 2006)**

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THE ALPACA INDUSTRY FLEECE DEVELOPMENT GROUP