

AAFL FLEECE HANDLING MANUAL REVISED 1 Feb 2010

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INTRODUCTION: ALPACA FIBRE CONSIDERATIONS

Because selective breeding and recording has only been effective for a few generations, modern day alpacas show a wide variety of fleece types and characteristics. Because of this variation, great care is required at all stages of the fleece handling chain, especially at shearing and pre-classing, to maximise the potential of this unique fibre.

Each processor has slightly different specifications, even when making similar products. However every processor has two fundamental requirements: consistent, commercially viable *quantities*, and that the fibre they buy is even and accurate for micron and staple length to suit their requirements.

There are some important considerations for all alpaca owners in relation to fleece quality and value. Currently even the very best alpaca has some disadvantages compared to other natural fibres that need to be considered.

Guard Hair, which grows as coarser primary fibre, can be up to 20-30 microns broader than the fleece average. Guard hairs are fully medulated (hollow) fibres that are straight, have very poor dyeing properties and cause the 'prickle' factor in finished garments. These fibres are particularly noticeable on the apron and belly area on most animals, but can also be a problem across the whole fleece.

The **wide variation of micron** over the whole saddle area on nearly all alpacas results in most fleeces during classing having to be separated into at least two main fleece lines, because the finest part of the saddle - usually towards the middle - can be up to 10 microns finer than the fibre around the edges.

Lack of consistency in colour throughout some alpaca fleeces can be a major factor in limiting its end use. High quality/high value end users of fibre will not accept any colour contamination- especially important for white and black fleece lines.

These factors, along with the limited quantities available, present considerable challenges in providing consistent, commercially viable fleece lines - and the benefits gained from careful initial handling during and after shearing on the end product cannot be over-emphasised. There has been a noticeable improvement in the overall quality of alpaca fibre in recent years, and this, along with demand from processors and consumers for a better quality product has resulted in some fleece line specifications at AAFL changing and becoming tighter. All of this is done to ensure the goal of producing only the very best products from 'Australian Alpaca'.

FLEECE LIAISON OFFICERS AND COLLECTION POINTS

Each of the 14 Australian Alpaca Association regions has appointed a Fleece Liaison Officer (FLO). Their role is to pass on information from AAFL to the breeders in their region and to assist with collection and transport information. A contact list of the FLOs is available on the AAFL website or by contacting the AAFL Office.

To minimise shipping costs and to provide assistance to less experienced growers, each AAA region also has designated fleece collection points. Fleece can be dropped off at a collection point (after prior arrangements) to be combined into pressed bales with fleece from other growers. Your regional FLO can assist with enquiries regarding sorting, packaging and transport, and will provide details of your nearest collection point. He/she can also allot an AAFL Grower Number if fleece is being consigned for the first time.

FLEECE CONSIGNMENT AND INDIVIDUAL IDENTIFICATION FORMS

Each whole clip must contain a completed consignment form for identification. The form is available from the AAFL website under 'Growers' or by contacting your Region FLO. Especially for bales containing fleece from more than one grower, it's very important that every individual fleece bag has the correct Grower Number marked on it – usually by felt marker – clearly visible on the outside. Provided grower identification is shown there is now no requirement for an individual fleece bag identification slip. AAFL or your FLO can issue a new Grower Number if you don't have one.

*** If you do not have an ABN you must fill out a 'Statement by Supplier' form, available from the ATO or download from the AAFL Website or ATO website - form number 3346. Failure to do so will result in 46.5% withholding tax being deducted from your payment. * If you are registered for GST please ensure that your ABN is supplied on the grower consignment form.**

TRANSPORT

Most interstate and local transport companies charge by the bale or pallet space. Accordingly it costs the same amount for a 50kg bale as it would if the bale was 150kg. So to reduce transport costs it is preferable for growers to press as much weight into each wool pack as practically possible for their individual situation. (At present, AAFL is offering to pay inter-State transport costs by approved carriers for pressed bales weighing above 110 kg.)

Initiatives such as regional or group pressing days can significantly reduce transport costs for growers with small quantities. Regional Fleece Liaison Officers can usually advise about this, as well as providing information on transport options.

CLASSING FLEECE IN PERU

Slow deliveries to our Sunshine depot before Christmas 2009 forced a delay in the first shipment to Peru and classing will continue at Sunshine for the time being.

GROWER PRE-CLASSING

Pre-classing by growers at shearing time is very important. Both the quality of the end products and also the return received for the fibre is greatly affected by the standard of preparation at shearing and fleece handling afterward. Pre-classing (skirting fleeces) greatly reduces the possibility of fleeces being downgraded due to contamination from coarse/hairy skirtings. It must be remembered that the major fault with alpaca fibre currently is the presence of guard hair, so it's critical to reduce this presence at all stages.

Because of the variation in most alpaca fleeces, during AAFL classing most fleeces need to be separated into two or more grades. If un-skirted fleeces are received at AAFL, time that should be spent separating the fleece into the different grades to maximise grower payment and to improve the evenness of each fleece line, is instead spent on removing the low quality skirtings.

Wherever possible, novice growers should try to get experience of shearing at another property. Most experienced growers will appreciate the offer of assistance, and this will rapidly show how straightforward the following advice is in practice. Most important is thinking about and preparing the simple equipment needed – and discussing individual requirements with the shearer by telephone well in advance of shearing.

WHY AVOIDANCE OF FLEECE CONTAMINATION IS IMPORTANT

Ensuring that the quality of shorn fleece is not lowered by allowing it to come into contact with other coloured fibres, low quality hairy fibres or other contaminants such as vegetable matter, etc. is very important. Both the quality of the end products and also the price received for the fibre is greatly affected by the standard of preparation at shearing and fleece handling afterward. Taking care during shearing to ensure that hairy pieces, especially from the lower legs, belly, chest and head are separated from the prime fleece will greatly reduce the possibility of fleeces being downgraded due to contamination from coarse/hairy skirtings.

Remember that the major fault with alpaca fibre currently is the presence of guard hair, so it's critical to reduce this presence at all stages. Also, because of quality variation in most alpaca fleeces, during classing most of them need to be separated into at least two grades. So if fleeces are heavily contaminated before classing much of what otherwise may be of higher value can be heavily downgraded.

Wherever possible, novice growers should try to get experience of shearing at another property. Most experienced growers will appreciate the offer of assistance, and this will quickly show how

straightforward the following advice is in practice. Most important is thinking about and preparing the simple equipment needed – and discussing individual requirements with the shearer by telephone well in advance of shearing.

CONTAMINATION IN FIBRE

A major problem in all fibre industries is contamination of the fibre. The main contamination problems faced in the alpaca industry are:

- Coloured fibres in fleeces – eg: black/brown in white and white in black
- Contamination from packaging – *Fleeces should only be shipped in robust plastic bags or separated by newspaper in a wool pack.* Chaff/poly bags should never be used as they break down rapidly And if you are using supermarket bags for necks and pieces/skirtings please ensure they are free from any small PVC pieces.
- Foreign Objects – This can range from socks to pegs and even reading glasses and false nails!
- Baling Twine – *baling twine is impossible to remove once mixed with fibre*; a particular problem is the short cut twine ends where the bales are tied.
- Moths – Moth infested fibre must be thrown out to prevent infestation of otherwise clean fibre.
- Rodents – Due to quarantine requirements please do NOT send in fleece that is contaminated by rodents. Do NOT TIE ANY BAGS, simply fold ends in to avoid unpacking difficulty. (Pressed fleece bags will not spill.)

A NOTE ABOUT MIDSIDE SAMPLING TESTS

Midside fleece sampling is a very useful tool for monitoring individual animals over successive years (provided the sample is taken from the exact same spot each year). However, relying on this measurement is not effective for fibre classing for two reasons:

- Because midside sampling is a test from one point on the animal only, it does not give an accurate indication of the micron variation over the entire fleece area, or to any colour variation/contamination that may be present. (Note also that each test result has a certain range of accuracy tolerance associated with it depending on the sampling and testing procedure.)
- Most importantly midside samples do not provide an insight into the critical property that alpaca fibre possesses, and what sets it apart from other fibres – its **softness of handle**.

AAFL PRICING GRADES

AAFL fleece colour grades are set by the requirements of our customers for the products they make. These may differ from the AAA animal registration colours. These colour grades are subject to change as manufacturers modify their products or as new markets are found. Classing in Peru will be to internationally agreed criteria as detailed below, and the latest pricing schedule is on the AAFL Website under ‘Growers’.

POINTS TO NOTE IN ASSESSING FLEECE COLOUR FOR PROCESSING:

- *Some white fleeces contain individual brown or black fibres – these fleeces have to be graded as light fawn or grey
- *Black fleeces with brown or lighter tips have to be graded as dark brown – only true black fleeces can be graded as black
- *Grey fleece with any brown will be graded as Rose Grey
- *Because of the natural range of alpaca colours, some fleeces can vary between colour grades depending on the shade of the fleece
- *White fleeces grown in red soil areas may have to be graded as light fawn –this is due to the scouring process sometimes being unable to remove the red tipping.

SHEARING SMALL NUMBERS OF ALPACAS

With many Australian alpaca growers owning very few animals, it is understandable that the use of a shearing shed may not be possible or practical. However because these growers make up a large percentage of national annual fleece production they are very important to the supply of fleece to AAFL. *So Owners with very small numbers of animals are advised to :*

- Contact your nearest Fleece Liaison Officer (FLO) or AAFL for fleece collection point details and any further information you may need.
- Assemble sufficient plastic bags for the number of alpacas to be shorn. Strong garbage bags are suitable, but NO TIES please. Contact your FLO if in doubt.
- Ensure that your alpacas are kept in a clean paddock before shearing.
- If fleeces contain loose vegetable matter remove as much as possible in a minute or two. Some types of vegetable matter cannot be removed by hand i.e. burr and barley grass and should just be left as is.
- During the shearing of each alpaca, collect and bag all lower legs, bellies and aprons (these can be put together in supermarket shopping bags or similar) as soon as they are shorn. This is to prevent contamination of good neck and saddle fibre.
- Place each neck in a supermarket bag as it is shorn.
- The minimum requirement is to keep the main fleece free from contamination as it is being shorn, removing any obviously hairy pieces at that time. Then simply fold the fleece edge to edge then roll it up and place each fleece directly into its bag. Skirtings and any fleece pieces separated during shearing in smaller bags can be placed in the same bag as the belly, chest and legs, and with the neck in another bag these can all be placed in the top of the main fleece bag.
- *It's preferable, if possible, to remove any clumps of vegetable matter or "birds nest", usually found between the shoulders. Heavily contaminated pieces should be discarded.*
- Fold the fleece edge to edge (down the back line) with the cut side up.
- Roll up the folded fleece lengthways and place in plastic bag
- Always bag each fleece separately - or for large clips separate each fleece in pressed bales with newspaper. Place lower leg, belly and apron bag, and neck bag in with the appropriate fleece (provided fleece bags are used.) Alternatively, all pieces/skirtings (all colours EXCEPT WHITE can be placed together in bags). Keep necks and white pieces in separate bags.
- Correctly label each bag in felt pen with your Grower Number. (Keep any other markings smaller and separately lower on the bag to avoid confusing the classers, as they are to only record the Grower number.)
- Forward your clip to the collection point as soon as practicable. Avoid storing fleeces for prolonged periods to reduce the risk of infestation by vermin, moths, etc.

SHEARING LARGER NUMBERS OF ALPACAS

SHED SET-UP

- Erect a skirting table (if desired, and not necessary for fleece to be classed in Peru - which should now be assumed): slatted wood or steel mesh is best as it allows dirt and second cuts to fall through
- Prepare enough PVC/garbage bags for each fleece for all of the colours that are to be shorn (separate white, light fawn, brown, black, grey)
- Prepare enough bags for **Hairy Pieces**, (keep white separately, but all other colours of pieces/skirtings can be placed together)
- Prepare 1 bag for each **Neck**, (supermarket bag or similar)
- Prepare 1 bag for **Rubbish**, (all colours)
- Arrange enough PVC/garbage bags for the fleeces, ensuring each is marked with Grower Number

PRE SHEARING

- Remove all feedbags, chaff bags, garbage bags, bailing twine, wire or wire ties, string, staples or other possible contaminants from the shearing area.
- Assemble sufficient: PVC garbage/plastic bags for the number of colours to be shorn, wool packs (new or second hand – available from AA FL), bale fasteners, newspaper, supermarket bags and felt-tipped marker pens.
- Do not feed alpacas chaff or loose feed within 24 hours of shearing.
- Keep animals awaiting shearing in a cleaned paddock or yard.
- If fleeces contain loose vegetable matter, using a piece of 1¹/₂-inch poly pipe or palm brush, brush fleece downwards to remove dirt and loose particles from fleece (20-30 seconds only)
- Sweep floor of shearing area – NEVER use blowers as they will only spread loose fibres causing contamination

SHEARING

- Alpacas should be shorn in colour order – preferably lightest to darkest and youngest to oldest.
- Thoroughly sweep clean shearing area between animals.
- Keep lower legs, bellies and aprons away from saddle fibre during shearing – collect and place in appropriate bag as soon as they are shorn off.
- If weighing fleeces, it is best to do this before going onto the skirting table.
- Nail/teeth trimming and injections should preferably **not** be done at shearing time (some shearers will do these services after prior arrangement). If this cannot be avoided, be careful to ensure no contamination of shorn fleece occurs.

PRE-CLASSING

- **There is no need to pre-class fleece going to Peru. Simply remove all hairy pieces, especially in the lower leg, belly and apron areas and bag the neck separately.** So, only if it is desired to examine fleeces further before shipment or to prepare them for shows, etc: skirt fleeces before placing them in a bag (once fleeces are rolled up and bagged it is much harder to skirt.)
- If skirting for fleece showing, for example, lay fleeces out on the skirting table with the cut side down and remove any coarse/hairy fibre from the edges of the saddle. Also remove any clumps of vegetable matter or “bird’s nests”- usually found between the shoulders.
- Fold the fleece edge to edge to avoid contamination with any coarser edge fibre, then carefully roll before placing in fleece bag.

PACKAGING YOUR CLIP

- **Each Grower’s whole consignment must be shipped in a woolpack, or for smaller amounts, in a single large bag.**
- All necks packed in individual supermarket bags can be placed together in one large plastic/garbage bag, or alternatively each small neck bag and any pieces bags can be placed in its fleece bag.
- Multiple **fleeces of the same colour** can be placed in the same bag *provided they are separated by newspaper*.
- One fleece and its supermarket bags per plastic/garbage fleece bag.
- Individual supermarket bags do **NOT** need to be labelled.
- Ensure that each bag containing the main fleece is marked externally clearly with your Grower Number. (Do not now use individual bag identification slips.)

- *Ensure that each fleece bag is left open when placed in bale* (do not: knot, tie, staple, tape, wire, simply fold in the end of the bag).
- Do not use bags that are torn or brittle. **Never use chaff bags, woven poly bags or white bin liner bags that will disintegrate.**
- It is not necessary to include individual animal names or IAR numbers with fleeces. (If used, please place smaller and lower on each bag to avoid confusing the classers.)
- Only use wool bale fasteners to close the packs.
- Complete all boxes on Fleece Consignment Form, one form per whole clip.
- Ensure paperwork is placed at the top of the bale or consignment bag and that your Grower Number and name is legible on the outside of the bale.
- Please fill woolpacks up as much as practical to minimize the storage space needed at AAFL warehouse.
- **It is most important to ensure the consignment form is completed with all details required. Please print clearly. (Copies are available on the AAFL website under ‘Growers’)**

HUACAYA AND SURI GRADE DEFINITIONS:

HUACAYA

HUF Under 1% Veg Matter (VM). 80-120mm. Not tender. Very soft handle. Absolute min guard hair. Best style & character. Must be regular for length & micron. Under 18 micron. WHITE ONLY.

HR Under 1% Veg Matter (VM). 80-120mm. Not tender. Very soft handle. Min guard hair. Best style & character. Must be regular for length & micron. 18-20 micron.

HB Under 1% VM. 80-120mm. Not tender. Soft handle. Min guard hair. Good to best style & character. Must be regular for length & micron. 21 - 23 micron.

HM Under 1% VM. 80-150mm. Not tender. Min guard hair. Good style & character. Must be regular for length & micron. 24 - 27 micron.

HS Under 1% VM. 80-150mm. Not tender. Some guard hair allowed. Good to average style & character. Must be regular for length & micron. 28 - 33 micron.

HA Under 1% VM. 80-150mm. Not tender. Some guard hair allowed. Good to average style & character. Must be regular for length & micron. Over 34 micron.

HP D length 60-120mm. Under 1% VM. No excessive guard hair. Under 28 micron.

C length HB, HF, HS & HA. Under 1% VM. 60-80mm. Not tender. Some guard hair allowed. Good to average style & character.

VM VM. 80-150mm. Min guard hair. Up to 5%VM. Under 30 micron.

HH Hairy Pieces no extremely coarse or all guard hair, 60-120mm.

NCV - (No commercial value):

- Hairy pieces in all other colours.
- Fibre below 60mm in length.
- All guard hair and very coarse fibre.
- Cotted.
- Excessive VM or other contamination.
- Overgrown 150-250mm.

SURI

SB Under 1% VM. 90-150mm. Soft handle. Not tender. Min guard hair. Good to best style & character. Must be regular for length & micron. 20 -23 micron.

SM Under 1% VM. 90-150mm. Not tender. Min guard hair. Good style & character. Must be regular for length & micron. 24-27 micron.

SC Under 1% VM. 90-150mm. Not tender. Some guard hair allowed. Good to average style & character. Must be regular for length & micron. 28-33 micron.

SCC Under 1% VM. 90-150mm. Not tender. Some guard hair allowed. Good to average style & character. Over 34 micron

SSS Second Style 90-150mm. Under 1% VM. Not tender. Poor style and character. Lacking suri characteristics. Some guard hair allowed. Under 32 micron

SBP Short fleece & pieces 80-120mm. Under 1% VM. Some guard hair allowed. Under 32 micron.

VM Under 5% VM. 80-150mm. Min guard hair. Under 30 micron.

NCV (No commercial value):

- Hairy pieces in all other colours.
- Fibre below 60mm in length.
- All guard hair and very coarse fibre.
- Cotted.
- Excessive VM or other contamination.
- Overgrown 150-250mm

GLOSSARY OF TERMS

Apron – Fibre from the chest area of the alpaca.

AWTA – Australian Wool Testing Authority

Bag – Clear plastic, used to store fibre.

Bale – Wool pack that contains compressed fibre – usually weighing 110-180kg

Butt – A wool pack that is only partially filled with fibre.

Carding – A mechanical process which opens up the scoured fibre.

Classing – The preparation of fibre into consistent, saleable grades.

Clip – The result of one years shearing.

Co-efficient of variation (CV) – A statistical measure of the variability within a set of values - the higher the CV the more variability within the fibre sample.

Combing – A process that removes most short fibres and foreign matter, leaving the longer fibres lying parallel to each other.

Comfort Factor – The percentage of fibres finer than 30 micron.

Core Sampling – The process of taking a representative sample from a bale or group of bales to determine average micron, CV, yield and comfort factor.

Cotted – Fibre that has become partially felted or matted.

Crimp – The natural waviness of the fibre.

Fibre Diameter – The thickness of an individual fibre, measured in microns.

Good Pieces – Fibre that makes up the transition from good saddle to hairy pieces.

Greasy – Describes the fibre as it is from shearing until scouring.

Guard Hair/ Kemp – Primary fibres which are generally medulated and coarser than the majority of fibres. These fibres are straight (no crimp), very coarse, harsh in handle and possess very poor dyeing properties.

Hairy Pieces – Fibre that contains high levels of guard hairs (medulated fibres) – generally found around the outer edges of the shorn saddle, belly and apron areas.

Handle – The softness or feel of the fibre.

Lustre – A fibre characteristic determined by the amount of light reflected off the fibre a very important attribute in suri fibre and important in all good alpaca.

Pre-classing – Preparation of fibre at classing time, involves skirting and separation of lower quality fibre from prime fleece.

Saddle – The area over the alpaca's back and sides that generally produces the better quality fibre. With breeding improvement to extend higher quality fleece over more of the body, this larger proportion of fleece is sometimes called the 'blanket'.

Scouring – The process of washing the fibre to remove dirt, grease and other impurities.

Second Cuts – Short locks of fibre, the result of shearing an area that has previously been shorn.

Skirt – To remove lower quality fibre from around the better quality saddle fibre.

Staple – Term referring to the individual lock of shorn fibre.

Style/Character – A subjectively assessed characteristic of greasy fibre related to the crimp and staple definition.

Tender – Fibre that has a weak spot somewhere along the length of the staple - when put under reasonable pressure will break.

Top – A continuous strand of partially manufactured fibre. Fibre will have already been through the scouring, carding and combing processes.

Vegetable Matter (VM) –Term which describes plant matter found in fibre, such as seeds, sticks, burrs and chaff.

Yield - The amount of clean fibre derived from the greasy form after the scouring process.