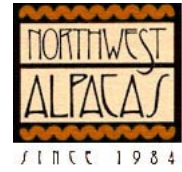




## **Interview With Leaders Of The Peruvian Alpaca Industries**

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By Cameron Holt



## Interview With Leaders Of The Peruvian Alpaca Industries

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CHARLES PATTHEYS

PROJECT DEVELOPMENT AND RESEARCH MANAGER - INCA TOPS GRUPO INCA

DEREK MICHELL

OPERATIONS MANAGER - MICHELL & CIA., AREQUIPA, PERU.

DR JULIO SUMAR

JUDGE - THIRD INTERNATIONAL FESTIVAL OF SOUTH AMERICAN CAMELIDS 1997 AND THE AUSTRALIAN NATIONAL SHOW 1998

Over recent years many comments have been made regarding processor requirements and requirements for alpaca production on the farm. Whilst in Peru for the 3rd International Festival of South American Camelids I was fortunate to be given some private time with Senor Derek Michell of Michell and Cia, Senor Charles Pattheys of Inca Tops and Dr Julio Sumar, Judge at the Festival (I also spoke to Dr. Sumar at the Australian 1998 National Show). During these times I took the opportunity to clarify some of the "much discussed" areas of fibre processing and selection points. To do this I posed a series of questions to the gentlemen who were most obliging and generous with their answers and time during such a busy period for them.

### QUESTIONS FOR PROCESSING INTERVIEWS

#### **Q1. What do you consider are the main (important) characteristics in Huacaya fleece that you require for processing this fibre?**

- A. CP Fineness - to make a yarn that is soft handling and free from the influence of medullation found in the stronger fibres that are harsher handling.  
Colour - we must try to avoid contamination of the odd colour that is different to the bulk.  
Length - it determines whether the fibre is processed on the worsted or woollen system.
- A. DM Micron- determines the quality of the products  
Length - determines the system on which it is to be processed (woollen or worsted)  
Colour - do not want contamination of other colours

#### **Q2. What characteristics do you consider that are of less importance than above?**

- A. CP Soundness -  
Lustre (sheen) not as lustrous as Suri  
Crimp
- A. DM Strength - it needs to have a certain strength otherwise there is breakage during processing.  
Sheen (brightness) - it determines the look of the finished garment. The fibres need to have life, not dead looking (chalky). These fibres do not dye the same.  
Crimp (crinkle) - aids in holding the fibres together during processing. A lot of the Peruvian fibre does not show good crimp in the staple but they do have some crinkle.

**Q3. What do you consider are the main (important) characteristics in Suri fleece that you require for processing this fibre?**

A. CP Fineness  
Length  
Handle which is influenced by medullated and coarse fibres

A. DM Lustre  
Silky and supple  
Fineness (micron)  
Colour  
Length  
No crimp in the staple - we want a light wave in preference to straight fibre. We need to artificially crimp the fibre as it comes out of the combing process.

**Q4. What characteristics do you consider that are of less importance than above?**

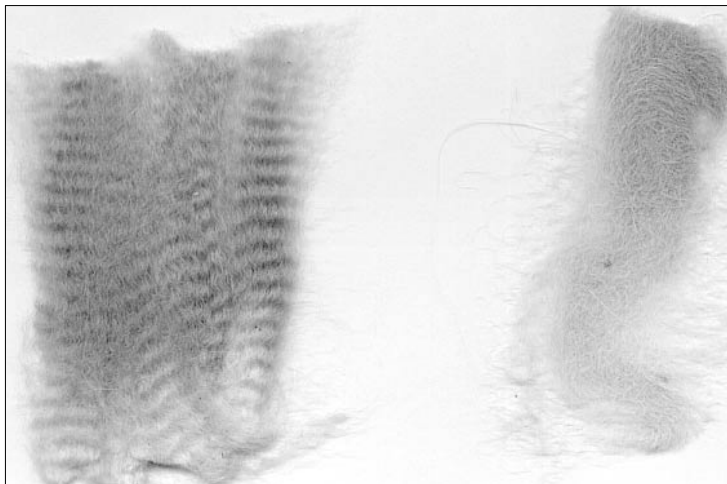
A. CP Lustre  
No crimp - we would like a wave in the fibre in preference to it being dead straight, when making short fibred top but straight fibre is KO for overcoats and cloths.

A DM See Q3.

**Q5. What importance, if any, is crimp (staple crimp/crinkle) in the processing of the Huacaya fibre?**

ACP. We prefer to have a more even crimp but can use a percentage of non crimped fibres in with the good crimp (staple crimp) (non crimped here refers to individual fibres being crimped - crinkle)  
We only tolerate up to 30% of these fibres in a batch.

ADM. Crimp is important to the Huacaya fleece and if I could I would like the staples to have a good crimped formation.



GOOD CRIMP

CRIMP (but has crinkle)

## Interview With Leaders Of The Peruvian Alpaca Industries

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**Q6. Would you purchase Huacaya fleece without crinkle (crimp in individual fibres)?**

ACP. Yes, but at a discount and would only put the fibre into a low quality line.

ADM. Would prefer the fibre with crimp but we have to take all the fibre. Those in-between fibres are split according to their best match to either Huacaya or Suri.

**Q7. Does a well defined crimp (in the staple) mean anything to you in Huacaya fleece?**

A. CP Yes - they appear softer.

A. DM As I mentioned earlier, would like crimp in the fleece but there is not enough crimped fleeces to sort for at the moment.

**Q8. If there was enough fibre available would you prefer to process good well-defined crimped fibres to those fibres that were plain (no crimp)?**

A. CP Yes - would prefer these wools if possible.

A DM Yes - we would sort for a well defined crimp if the quantity was available.

**Q9. In Suri fleece do you prefer the individual fibres to be straight or would you prefer a fibre with some wave (not crimp)?**

A. CP As mentioned earlier a wave is preferable but would still use straighter fibred types.

A DM As mentioned earlier, would prefer a light wave in preference to a straight fibre.

**Q10. What colour do you prefer to purchase?**

A. CP White as you can dye colours currently in fashion. There is generally an amount of light fawns found when we are purchasing white fibre.

A DM White - this colour can be dyed any colour you wish which makes it more easily sold to our clients. Coloured fibres can be affected by fashion trends.

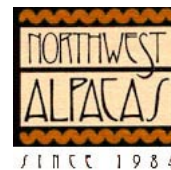
**Q11. What are your maximum and minimum lengths for processing worsted Huacaya fibre?**

A. CP A minimum of 50 mm and a maximum of 100 mm. We can take up to but no more than 15 - 20% of wools up to 200 mm in length.

A. DM We have our machines set for 25/6 micron, minimum 68 mm - maximum 74 average.

**Q12. What are your maximum and minimum lengths for processing worsted Suri fibre?**

A CP .A minimum of 50 mm and a maximum of 120 mm. We can tolerate up to 30% of fibres up to 200 mm.



## Interview With Leaders Of The Peruvian Alpaca Industries

A DM 25 - 26 microns minimum 70 mm - maximum 74 average (the very short and very long are removed).

### Q13. What is your maximum and minimum lengths for processing woollen Huacaya fibre?

A. CP A minimum of 18 mm and a maximum of 40 mm.

A. DM Minimum, 45 mm. Maximum, 55 mm.

### Q14. What is your maximum and minimum lengths for processing woollen Suri fibre?

A. CP We do not use these in the woollen system.

A. DM No woollen line made

### Q15. What is the maximum variation for micron you allow in your lines, e.g. 2 or 3 microns etc?

(a) Huacaya

(b) Suri

A. CP (a) Huacaya 2 - 3 microns

(b) Suri 3 - 4 microns

A. DM (a) 3/4 microns e.g. 24 - 28

(b) Similar to (a)

### Q16. What lines do you make for micron?

(a) Huacaya

(b) Suri

A. CP

<b>(a) Huacaya</b>	<b>Range</b>
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RB 22 - 23	19 - 24
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SF 24 - 26	23 - 28
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Hua 27 - 28	24 - 33
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Adult 30 - 33	29 - 34
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Coarse 33>	>33
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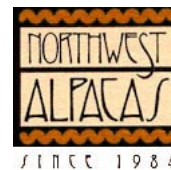
<b>(b) Suri</b>	<b>Range</b>
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RB 22 - 23	19 - 25
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SF 24 - 26	23 - 29
------------	---------

Ad 27 - 30	26 - 33
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Coarse Suri >30	goes in the Llama line
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A. DM Huacaya

<b>(a) Huacaya</b>	<b>Range</b>
Baby	21.5 - 22.5
Fine	25.5 - 26.5
Huarizo	30 - 32
Coarse	32 - 34

<b>(b) Suri</b>	<b>Range</b>
Baby	23
FS	26 - 27
Coarse	32>

**Q17. Is variance (co-efficient of variation) important in your classing of length?**

- A. CP Yes --we do not want to much short or over long in the main line.
- A. DM We do not want the lengths to vary too much in the line.

**Q18. Is variance (co efficient of variation) important to you when you class for micron?**

- A. CP Yes-- too big a dispersion of fibre type has to be put into a lower line.
- A. DM We remove those parts on the fleece that are too strong to be classed together.

**Q19. How important is sheen to you when classing a Huacaya fleece. Do you separate those flat, chalky fleeces?**

- A. CP The sheen or lustre is of secondary importance and we remove those chalky fleeces you talk about and place them in a lower line.
- A. DM Important but we do not make a special line for these fleeces - they are placed in a lower line.

**Q20. How important is lustre to you when classing a Suri fleece? Do you separate those flat, chalky fleeces?**

- A. CP Yes - lustre is important more so than in the Huacayas.
- A. DM The same applies as for the Huacaya. The Suri is easier to sort for lustre.

**Q21. Medullation (guard hair). Do you separate those parts of the fleeces that contain large quantities of guard hair?**

A. CP Yes - we separate heavy guard haired fleece and place the fleece in either the adult or coarse lines.

A. DM We try to remove as much of the medullation from the main fleece as possible.



COARSE MEDULLATED FIBRE THAT SHOULD BE REMOVED

**Q22. Do you consider guard hair a problem to you in**

- (a) Processing?
- (b) The finished garment?

A. CP (a) Yes - too much medullation would lower the overall yield so it is removed and placed in the lower lines as mentioned earlier.

(b) The medullated fibre makes the finished garment feel more prickly therefore affecting the handle of the garment.

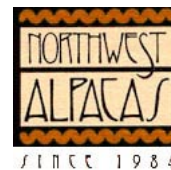
A. DM (a) Yes - it coarsens the yarn and makes it harder to spin.

(b) Fibres stick out affecting the handle of the garment and it takes away the lustre also.

**Q23. The in between fibre (Huasú - Chili). Where would you class it?**

A. CP We would place this in-between fibre into the Huarizo line.

A. DM The in-between fibre is classed to where it matches best.



## Interview With Leaders Of The Peruvian Alpaca Industries

### Q24. What approximately are the current buying prices in \$US for white fibre?

Baby  
Fine  
Medium  
Coarse

A. CP For volumes of 46 kilos (100lbs) packages

	<b>Solas</b>	<b>\$US</b>
White Baby	520	200
SF	480	184
H	410	157
A	380	146
C	250	96

A. DM

	<b>\$US</b>
White baby greasy	8.50 per lb
FS	5.00
MS	4.40
H	2.50
AG	2.00

### Q25. What is the most sought after colour?

A. CP Light fawn

A DM Light fawn, black, dark maroon.

### Q26. What are the main uses for these micron groups?

A. CP Finest (baby) 60 - 70 % used for knitting  
Super 50% knitting/weaving  
Adult - weaving

A. DM Baby - knitwear and weaving, suitings and brushed cloth  
FS - knitwear and weaving, suitings and brushed cloth  
AG - knitting yarn, blankets and blends

**Q27. If you could change one or two things in the Huacaya and Suri fleece what would they be?**

- A. CP No contamination of hair colour  
Improve the crimp  
Have no medullation in the fleece
- A. DM The fibre is heavy so would like it lighter if possible.  
Less medullation.  
Good sheen/lustre (no chalky fleeces).  
Improved crimp in Huacaya.

**Q28. Density or type of lock structure. Is there any importance to you in the fleece formation in**

- (a) Huacaya?  
(b) Suri?

- A. CP Yes - lock structure has an affect on the density of the fleece so therefore increases the weight enabling us to pay more to the grower. The dense fibred lock tends to have less medullation than those not so dense. This applies to both breeds.
- A. DM Yes - we would prefer the lock or staple to be dense in both the Huacaya and Suri.

**Q29. What do you consider is the main difference/problems associated with, processing Huacaya and Suri fibre?**

- A CP . The main difference is found when spinning the Suri because it is a fibre with few crimp contents and the control on the drawing sets gives, in a usual way of drawing, many irregularities. Therefore we must use a spray over the fibres on the top to give further cohesion and thus give a better control. As a result we obtain an even yarn.

As to the general differences between alpaca and wool combing and spinning, the fight against static electricity and the entanglement of fibres subsequently is one of the main problems we meet. This is why we run our machines for alpaca at very low rates (approximately half that for wool).

INTERVIEW WITH DR JULIO SUMAR  
JUDGE - THIRD INTERNATIONAL FESTIVAL OF SOUTH AMERICAN CAMELIDS 1997 AND 1998  
AUSTRALIAN NATIONAL SHOW



Dr Sumar & Cameron Holt)

**Q1. When selecting alpaca animals, what are the most important characteristics you select for in order of importance?**

- (a) Huacaya
- (b) Suri

A. (a) My most important characteristics are fineness (I reject animals 28 microns and above) and density. Other areas which are of equal importance are the character/crimp, length, uniformity, lack of guard hair and no dark fibres in the white fleece.

(b) In the Suri there is much less variation between animals and the important characteristics are fineness, density and lustre. The length is normally O.K. growing 10 - 16 centimetres per year. Suris have much less medullated fibre than the Huacayas.

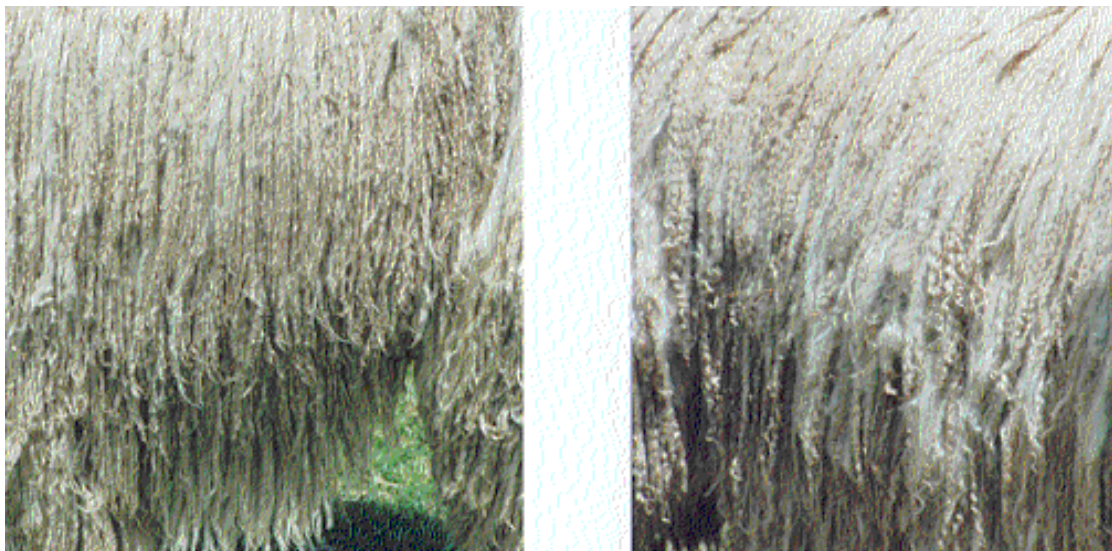
**Q2 (a) What importance do you place on crimp in the Huacaya?  
(b) Do you place any value on the definition and evenness of the crimp?**

A. (a) Crimp is very important in the Huacayas as I can use it to judge fineness of the fleece. (More crimps per inch equals finer micron).

(b) Yes, the better the definition of the crimp the more even in micron are the fibres in the staple.

**Q3. What lock type do you prefer on Suris and why?**

- A. I prefer the ringlet type (curls to the left) followed by those with twist and wave. The ringlet or twist and wave should start close to the skin although some start in the middle. I prefer the former.



**Q4. Density - how do you judge for this on**

**(a) Huacaya**

**(b) Suri**

**(c) Is it really important when selecting alpacas?**

- A. (a) To judge density on the Huacaya I do this by parting the staples and looking at the amount of skin, feeling the thickness of the fleece on the animal and weighing the fleece.
- (b) In the Suri I lift up the fleece from the bottom and feel the weight. I also squeeze by hand to feel the thickness of the lock as well as weighing the fleece.
- (c) Most definitely, as density adds to your fleece weight.

**Q5. (a) Do you consider sheen (brightness) in the Huacaya fleece to be desirable?**

(b) Do you cull those chalky fleeces or are they acceptable?

- A. (a) Sheen/brightness is preferred in the Huacaya fleece. Huacaya has brightness not lustre.
- (b) No, because there are very few alpacas in number, but prefer them to have brightness. Chalky fleeces are not desirable.

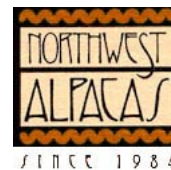
- Q6. (a) How important is lustre in the Suri fleece?  
(b) As mentioned earlier would you cull those chalky fleeces?
- A. (a) Most important as this is what the processors want. Suri should have more lustre than Huacaya.  
(b) Similar to the Huacaya.



GOOD LOCK TYPE AND LUSTRE



POOR LOCK STYLE AND DULL LUSTRE



## Interview With Leaders Of The Peruvian Alpaca Industries

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**Q7. Evenness of micron over the fleece - is this important when breeding alpacas?**

A. Yes, I prefer the fleece to have a similar micron all over the blanket area. I also want to see style in the apron of the suri.

**Q8. We know medullation is undesirable, what would you accept (where do you draw the line and reject animals)?**

A. Medullation is hard to visually assess. Depending on its micron, animals may be rejected. Heavy medullated animals are culled for slaughter.

**Q9. Do you consider luster or medullation as more important?**

A. Both are important. In the Huacaya, medullation over lustre and in the suri, lustre over medullation (Suri is more free of medullation than huacaya).

**Q10. When selecting alpacas, how much importance do you place on conformation compared to fleece?**

A. I place 70% on fleece and 30% on conformation. If you use this you will improve fleece quality quicker. Production is more important.

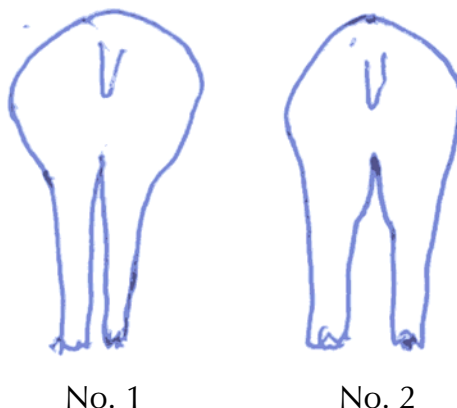
**Q11. How rigid are you regarding conformation? What would you tolerate and what would be a definite reject?**

A. I tolerate small faults and when selecting animals I only place 30% for conformation if the fleece is good. If the alpaca is too twisted in the leg I will reject them as most legs in Peru are O.K. I will reject any deformity.

**Q12. Following on from those comments, how much deviation will you tolerate in the front legs?**

A. Not too much attention unless excessive or a bad walk.

**Q13. Looking at the following drawing of the rear legs, do you have a problem with No 1 or are they both acceptable?**



A. I prefer the drawing No. 2. Your example in No. 1 is too narrow at the base.

**Q14. What coverage of fleece do you expect as a minimum in Huacaya and Suri?**

A. I prefer the fleece cover to be all over the legs and good coverage on the neck. I sometimes will tolerate some lighter cover on the back leg but want good cover on the front legs. It is most important to have length on the neck and top knot. I do not want wool in front of the eyes in adult animals. For the Suri I want a clean face and no wool on the muzzle.

**Q15. Do you think using scientific measurements is an aid when selecting alpacas and if so, why?**

A. Yes, measurement most definitely can help you as your eyes and fingers can make mistakes. I just take a sample and send it to the laboratory. It is an aid to your visual appraisal only.

**Q16. If there were one or two improvements on the Huacaya and Suri alpaca, what would they be?**

A. To give more fineness to the animals and reduce the guard hair on the apron, belly and sides.

**Q17. What do you think is the most desirable testicle size?**

A. We should select for bigger testicles as they have more sperm reserves and can serve more females in a day.

Minimum size no less than 4 cm in length in adult male (5 years) and 3 cm in width. In a 2 year old both testes should be in the scrotum sack and have around 2 - 2.5 cm in length and 1.5 cm in width. They should have the same size and consistency.

**Q18. At the National Show, Dr Sumar, we looked at four types of staple in the Huacaya fleece.**

1. A thick staple like a finger or large felt pen
2. A dense staple similar in width to a large pencil
3. A thin staple similar to a half pencil in thickness
4. A very thick solid staple with high lustre and large wide crimp (Huasu type)

**What importance do you place on the staple/lock shape during the evaluation of the fleece on the animal?**

- A. The first two lock types you speak of are acceptable. I do not like the thin locks as they do not have a lot of density. The fourth type you mention is seen as a cross type. There is a need for studies on the density and arrangements of the staple in relation to follicle formation

The Huacaya staple should open easily and have good character (crimp definition) and should be dense. The Suris should hang free and part easily with the ringlet/twist and wave starting on the skin. The lock should also be dense.

**Q19 When opening the fleece on an animal, do you have a particular area to look at first, and should it open in any special way?**

- A I like to inspect 10 cm down from the midline. The fleece should open without entanglement. It can either open like a book or it can be in individual bundles of staples, as long as fibres are formed in a dense group whether in thicker staples or pencil like staples but not too thin.



10CM DOWN FROM MIDLINE

## Interview With Leaders Of The Peruvian Alpaca Industries

### WHAT DOES THIS MEAN?

Having now read Dr. Sumar, Derek Michell and Charles Pattheys' comments, what do they mean to us?

Firstly, both processors place importance on soft handling yarns, which are as free as possible from medullation.

Softness comes from not only the fineness of the fibre, its scale structure, but also from freedom of medullation and coarse fibres. The coarse fibres are clearly shown in histograms and the uniformity of evenness shown with the C of V. Both processors remove the heavy medullated fibre and place this in the coarse lines. It was very noticeable during the judging at Arequipa last year the importance Dr Julio Sumar placed on freedom of medullation. Medullation clearly adds to the prickly factor, not only by micron but during spinning the medullated and coarse fibres are thrown to the outside of the yarn, thus compounding the prickly factor. Dr Sumar stated that in his experience, he found Suris to have less medullation than that of Huacayas. Recent research by the writer had a similar finding.

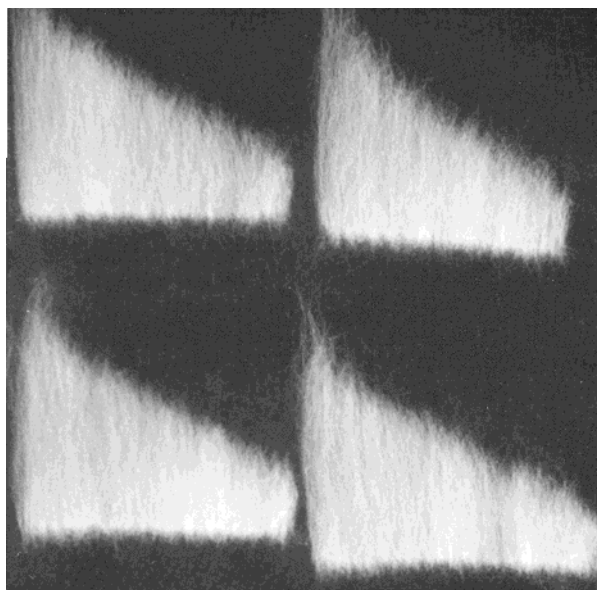
"The Suri results for medullation appear to be lower than that of similar microns for Huacayas."  
(Holt/scott 98)

Micron	Huacaya	Suri
20	12.9%	4.7%
26	36%	16%
36	60%	42.4%

Diameter/Medullation for Suri fibre had a correlation of .77. As the fibre became coarser in micron, there was an increase in medullation. " (Holt/Scott 1998)

Colour contamination was also of great importance. Odd colours different to the bulk caused problems to most colours, in particular the white line. The message is clear that we need to breed fleeces which are solid (except for greys/roans etc) and our fleece preparation standards are maintained at a high level. The breeding may take some time to achieve, but the cleanliness in the shearing shed can be done now.

Length of fibre was important too as with all animal fibres, this is what determines the method of processing. The Peruvian mill's lengths are shorter than those classed for in Australia and North America, which is understandable considering the levels of nutrition on which the animals graze. They set their machines for the length of fibre received. The machines could be altered if they were receiving longer fibre. You may notice that the settings between mills vary slightly.



VARIATION OF LENGTHS IN HUACAYA TOPS  
(PERUVIAN MILL)

Other areas of lesser importance were crimp and lustre. In the Huacaya both processors said they needed crimp in the individual fibres (crinkle). This helps hold the fibres together during processing. As mentioned by Derek Michell, not all Peruvian fibre has good crimp in the staple. Both gentlemen mentioned to me that they would prefer a well defined crimp. Definition of crimp is highly heritable and those already selecting for this trait will notice how repeatable this is. Dr. Sumar feels that the better the definition of the crimp the more even in micron are the fibres that are contained within the staple. If this, as some scientists suggest, makes a more uniform staple for micron which in turn gives you a lower spinning fineness/softer yarn, then this characteristic should be considered amongst the other main priorities you have selected in your breeding program. Dr. Sumar also uses the crimp to judge the fineness of the fleece. The writer has found with animals in Australia that this may not be a reliable method for identifying fineness of micron. In the sheep industry there are a number of strains of Merino which have similar crimp frequencies i.e. X number of crimps per inch. This is due to their varying genetic background e.g.

Saxon 64s count = 20 microns - Peppin 64s count = 21 microns  
South Australian strain 64s count = 22 micron

## Interview With Leaders Of The Peruvian Alpaca Industries

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This is more complicated when we compare one year old sheep with adult sheep as the above examples can vary from 18 microns to 22 microns for the same count number.

Mike Safley has identified alpacas with low crimp frequency and low microns in certain strains of alpacas. This has also been observed by the writer within some of the Peruvian animals imported Australia. Crimp measurements taken on early imports with questionable genetic background showed no relationship between micron and crimp frequency. If you stay within the same strain, you may be able to use crimp frequency in alpacas to approximate fineness, but age of the animal must be still taken into consideration.

### VARIOUS CRIMP SIZES, BLOODLINES AND MICRONS





The following charts, developed by Juan Villarroel and the writer, may give you some indication of the complexity of this assessment.

## Interview With Leaders Of The Peruvian Alpaca Industries

### ESTIMATION OF FINENESS BY BRADFORD QUALITY NUMBER

HOLT (1995)

HUACAYA (from Chile)

<b>ACTUAL MICRON</b>	<b>EQUIVALENT BRADFORD COUNT</b>	<b>ESTIMATED COUNT ON CRIMP SIZE</b>
22.3	60/64	56
26.9	56	58
30.8	50/46	58
22.5	60/64	60
29.2	54	58
34.4	46/44	58
32.2	46	54/46
36	40	56
21.1	64	60
24.1	60/58	46
28.6	54	no crimp
24.7	58	58
23.6	60/58	56
32.6	46	56/50
24.4	60/58	50
22.2	60/64	no crimp
18.4	74	58
24.2	60/58	50
28.5	54	56
35	44	46
20.4	70/64	60
25.1	58	58
23.2	60	58
21.9	60/64	58

NOTE: Age was not known in these figures and fibres appeared to be of mixed background. There appears to be no relationship between count and micron.

VILLARROEL (1959)

<b>ACTUAL MICRON</b>	<b>EQUIVALENT BRADFORD COUNT</b>	<b>APPRAISER NO 1 EST COUNT</b>	<b>APPRAISER NO 2 EST COUNT</b>
31.4	50/48	48	50/48
15.8	100	58	74
25.1	58/60	56	60
26.1	58	54	60/58
27	58/56	50	58/60
27.9	56	50	58
21.7	64/66	56	58/60
36.4	44/46	4+6	46/50
23.3	62	50	60
23.8	60/62	50	56/50
28.8	56	54	58
25.2	60/58	56	64/60
39.1	36/40	50	56/58
27	58/56	50	56
25.2	58/60	50	58
28.1	56	50	58

NOTE: This table shows a great discrepancy between appraisers but appraiser 2 does show signs of some relationship between crimp size and micron. No ages of animals are disclosed which make comparisons much harder.

With the Suri fleece, the processors wanted a straighter fibre than the Huacaya showing a slight wave in preference to a straight fibre as often found in plain fleeced Suris. With the Suri industries now growing it is important to identify the preferred type required by these processors. Dr. Sumar preferred the ringlet type of lock followed by a staple formation showing twist and wave. It is important to note that all Suri fleece types are used and during processing, a false crimping is applied to the top, to aid its adhesion during its various processes post combing. Lustre to the Suri was considered most important, and a good bloom/sheen in the Huacaya fleece. (The Huacaya was not to be as lustrous as the Suri). Chalky fleeces are not desirable and are placed in lower lines.

These “chalky” types are easily identified and it has been noticed by the writer that when white fleeces showing this fault are tested for medullation, they have a higher content than those with a good sheen (or lustre for the Suri). This chalky type does not take dye well and does not display that vibrant look that a fibre with “bloom” would have.

The lines which the processors class too were slightly different but close enough to say they are similar. The important thing for us is that they class fibre coarser than 30 micron as Huarizo or coarse. The message is clear, mate those animals with fibre coarser than 30 microns to finer males. I am aware that some of these coarse fibres with C of V's below 20 may handle well, but to the Peruvian processors this is not in the range for the fibre they market as alpaca.

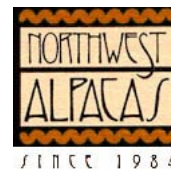


### CLASSING ALPACA IN PERU

It was interesting to see the response to what the processors and Dr. Sumar would change if they could. All mentioned less medullation, and the processors, improved crimp, with elimination of colour contamination and reduction of chalky fleeces, with one comment from Derek Michell- "the fibre is heavy so would like it lighter if possible." That is interesting as many people say alpaca fibre is lighter than wool due to its medullation. Interesting!!

In an article I wrote on Characteristics of alpaca, I demonstrated how (in the case of Huacaya) fibre with crimp makes a bulkier yarn than that of straighter fibre. This enables us to spin both types into similar thickness, with the crimped type (less fibres in cross section) being lighter (due to its bulk) than the straight fibre type. If Derek's wish for better crimped fibres and less medullation occurs, we may have a softer, lighter Huacaya yarn. This of course does not help the Suri fibre, which is not unlike mohair in its structure, which is considered a heavy fibre.

I hope that these interviews with leading personnel from the two well established alpaca processing mills in Peru and one of the worlds foremost alpaca judges answer some of the contentious myths. We must remember that to have a marketable product we must supply what our client wants, so it is therefore important to be aware of the fibre specifications required by not only the processors but the people constructing the final product.



## Interview With Leaders Of The Peruvian Alpaca Industries

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