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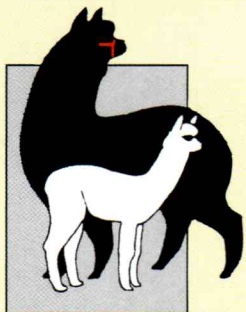
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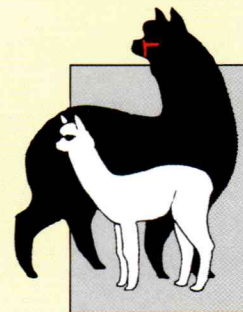
2000 National Alpaca Industry Conference Advance News



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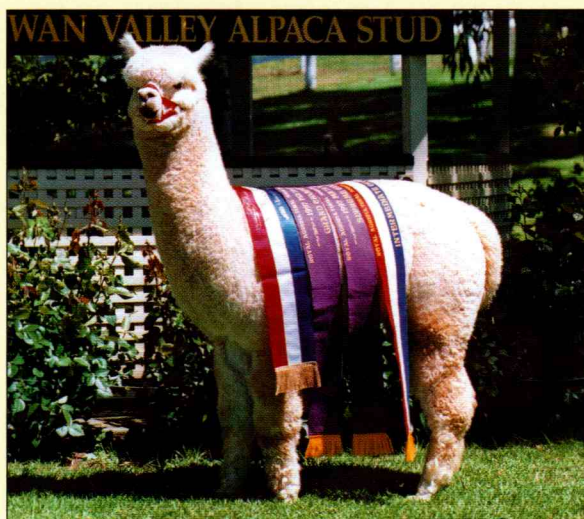


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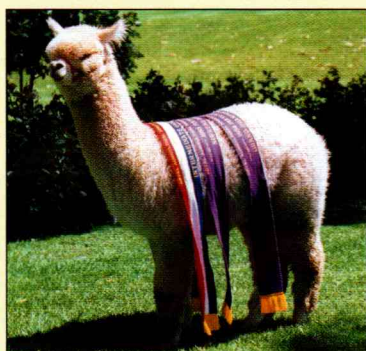
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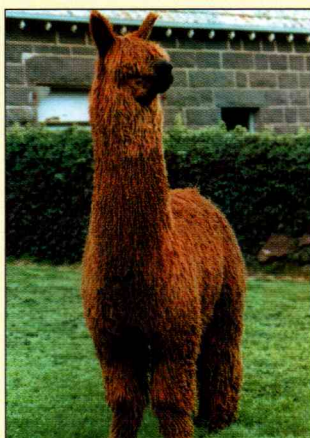
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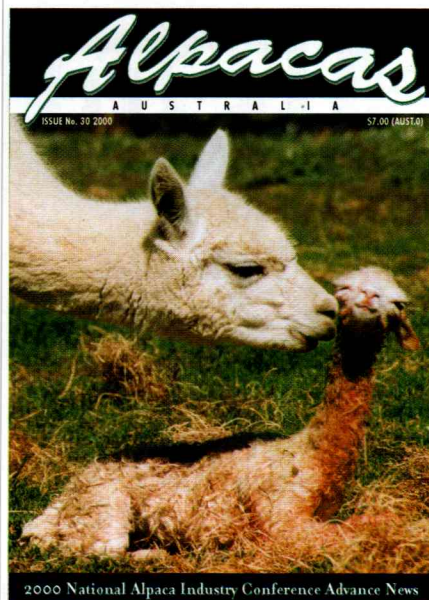
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A message from the President

As we move into the 21st century, we need to take stock of what the future holds for both our Association and for the alpaca industry in general.

There is no doubt that the times ahead will be challenging, require some proactive, lateral thinking and an ongoing enthusiasm from each and every one of us.

The Ralph Report: implications for the industry

An area of immediate concern is the implementation of the Ralph Report as part of the Federal Government's drive to achieve broad taxation reform.

Its impact on fledgling primary industries with long lead time characteristics, such as the alpaca industry, could appreciably slow down our consistent and determined growth.

We are in the enviable position of participating in an industry that has not suffered from the 'boom and bust' syndrome so characteristic of many emerging primary industries. The careful and conservative management of previous National Committees has given us a secure and fundamentally sound foundation upon which to continue to grow with confidence.

The Ralph Report seeks to limit the influence of 'off farm' income in the development of individual alpaca businesses.

By not allowing expense claims against off farm income during the long lead time inherent in establishing a viable and economically sustainable alpaca business, the wholesale acceptance of the Report by the Government could well cause a contraction in animal sales and the injection of investment dollars in our industry.

The National Committee has placed a high priority on influencing Government in its deliberations and implementation of the Ralph Report.

An exciting opportunity for us to create a regional marketing niche in the world alpaca industry is ours for the taking!

Regional marketing opportunity

For too long we have ignored our New Zealand colleagues across the Tasman.

New Zealand and Australia form the premier breeders and suppliers of the world's best quality animal fibres. No-one beats us in the production of true-to-type wool nor comes within coo-ee of our production techniques. We are, to put it bluntly, simply the best!

In the rapidly developing global market, we are in a unique position to take advantage of real and sustained growth by our animal production history and our reputation for quality and quantity animal fibre production. I believe we need to harness this expertise and skill to project Australasia as the premier alpaca producing region of the world.

We need to expand our thinking and activity to join forces with our New Zealand colleagues to develop and market a unique animal and fibre to challenge other producing countries on the world stage.

We need to identify our resources, our expertise and our skills to develop the best, most reliable breeding animals producing fleece to die for, if we are to achieve market leadership and an economically sustainable industry.

To not pursue this direction will do a huge disservice to ourselves, our animals and our country.

I firmly believe that our long term future lies in Australia and New Zealand working together as one – rather than as two competing countries – in a world market that will require strength and alliances that can withstand overseas competition at whatever level.

Our Association has an opportunity to take firm control over its destiny with some imaginative and global thinking and action.

The future belongs to those who plan for it. Your National Committee is planning for the future. Do you want to come along for the ride? I hope so.

Ian Watt

Rosemount wins Qld Tourist Award

Already an owner of agisted alpacas some eight years ago, George Rose had plans to develop the property he, and wife Loy, had just purchased on O'Reilly's plateau in the World Heritage Lamington National Park, in south east Queensland. Raising alpacas would make an excellent 'retirement alternative', George believed.

This was a good area to build an alpaca farm and the strategic location of the land also offered tourism potential.

A happy combination of talents – George's business acumen and Loy's creative flair – proved to be extremely effective.

The Roses built Rosemount Alpaca Stud and Barn from the ground up, first establishing their alpaca herd and then creating the Rainforest Gallery. This houses exquisite Australian and imported alpaca products as well as Australian art and craft (including some of Loy's own work; she is a talented potter). When it was decided to add the Rainforest café, daughter Kylie joined the team as its manager.

The views from Rosemount Alpacas and the Rainforest café are breathtaking and the property's location near Canungra on Lamington National Park Road is adjacent to the route taken by some 300,000 tourists who visit the National Park every year.

Nevertheless, it has taken a great deal of planning and hard work to establish the Rainforest Gallery and Alpaca Barn as a 'must see' attraction. Only quite recently did George and Loy employ staff to help with the workload and give them relief from their seven day working week.

Their efforts were officially recognised when the Rainforest Gallery and Alpaca Barn received the 1999 Queensland Tourist Award for Tourism Retailing, and was named among the finalists for the national tourism awards. George and Loy travelled to the Brisbane Convention Centre where they accepted their award with more than a little pride.

Not that they are resting on their laurels. This dynamic



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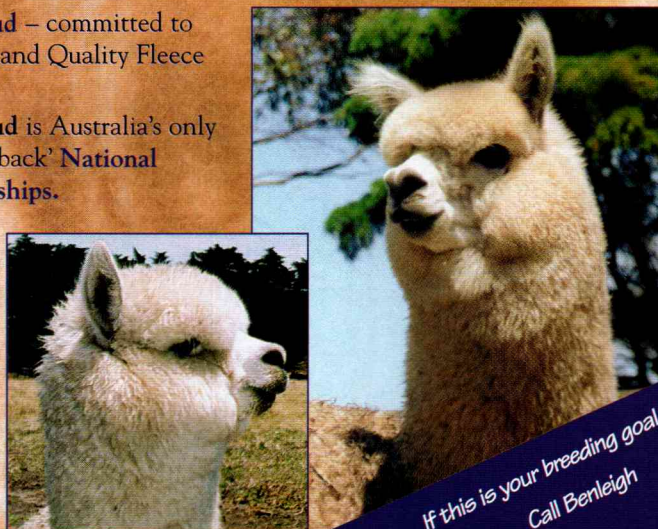
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duo has recently purchased Longford, a 2,500 acre sheep and cattle property near Armidale on the New England Tableland. Previously a CSIRO research station, Longford is destined to become the site of further expansion for George and Loy. With Dr Jim Watts as consultant, they are busily planning the development of two SRS® herds: commercial alpacas and superfine Merinos.

Does this mean the end of Rosemount Alpaca Stud and the Rainforest Gallery? Not on your nellie! Experienced alpaca breeders Fred and Lesley Ross will manage the Canungra part of the Rose's operation, while George and Loy put their apparently boundless energy into developing the new project.

Then, of course, there is participation in an artificial insemination and embryo transfer program, not to mention investigating product development and production at the Elite Fibre mill in Victoria.

And this is what George calls 'retirement'...



NEOBA New England Alpaca Fest 2000 20 & 21 May

New England Alpaca Owners & Breeders Association is a non-profit organisation representing a large group of New England Alpaca Breeders. Their annual Spring Alpaca Fest will be held in Topsfield, Massachusetts at the Topsfield Fair Grounds. Visitors will be treated to a great show.

Apart from alpacas, there will be free seminars and demonstrations, obstacle course and an alpaca store with garments, fleece and yarn.

Anyone interested in finding out more should call 0011 1 860 668 1762.

Wool Fibre Processing

Peter Lamb, CSIRO Wool

Technology, Geelong, Victoria

SUMMARY

The two major processing routes for turning raw wool fibre into yarn are presented. These are also the standard routes for alpaca. Some of the differences in the routes used for cotton and synthetics are briefly outlined and how blends with other fibres are usually made. Yarns are turned into fabric via knitting or weaving. The methods of colouration, shrinkproofing and finishing are summarised. Trends and costs in wool processing are examined for possible implications for alpaca.



Figure 1: Wool fibres

INTRODUCTION

Alpaca is a keratin hair fibre just like wool with a slightly different scale structure (Figs. 1 & 2). It has less crimp than Merino wool, a length more similar to coarse or carpet wool breeds, and appears to have a more slippery surface. It is thus quite amenable to being processed on wool processing machinery. Over 70% of apparel wool is processed on the worsted system, most of the remainder, including shorter wools and the short fibre waste from the worsted system, is processed on the woollen system. The worsted system relies on carding attachments and combing to remove vegetable matter (VM) whereas the woollen system uses carbonising.

PROCESSING ROUTES

The common steps at the start of both processing routes are blending and scouring. Blending can be done before or after scouring but the underlying aim is to produce a lot of sufficient size that will give a uniform product at a minimum price. The aim is not to use only the best (e.g. fleece) wool but the cheapest mix that will satisfy the performance requirements and customer specifications. Scouring, at its simplest is the

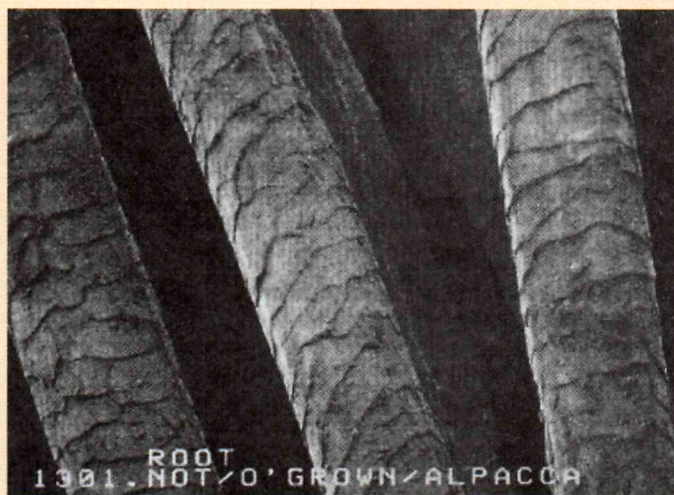


Figure 2: Alpaca fibres

washing of wool in warm water and detergent under alkaline conditions (or by solvent) followed by drying. The aim is to remove the dirt, suint (body salts) and grease while felting or entangling the wool as little as possible. A key demand today is environmental friendliness and sustainability and there has been a change in outlook whereby the so-called waste products (dirt and suint) are now seen as a useful by-product (fertiliser). This can be achieved by such techniques as Sirolan CF, a chemical flocculant system which has been installed at a Geelong alpaca processing mill (Elite Fibre). Some differences between alpaca and wool are that alpaca has lower grease levels, tends to have higher dirt levels (from the dust-rolling) and the suint is sodium rather than potassium salts.

Worsted

The first step in both worsted and woollen systems is carding. The worsted card is shorter and runs at higher speeds. It also has burr beaters running against special wire clothed cylinders called morels. The wire holds the wool while the vegetable matter, particularly burrs, is flicked off. The main aim of the card is to remove the entanglement caused by scouring and it does this by first adding lubricant and then using the tooth-and-claw action of wire (metal saw-teeth) clothed cylinders rotating at different speeds. In general, alpaca is less entangled than wool after scouring and the need for carding is less demanding.

After carding there are normally three passages of gilling in which the fibres are pulled through coarse metal-pinned combs. These steps straighten and align the fibres of the card web prior to combing. French or rectilinear combing is now the universal method. A short beard of Fibres is multiply combed by a pinned cylinder then the tip of the beard is gripped and the trailing end of the fibres is pulled through a fine top comb. The resulting tufts are overlaid like shingles in order to reconstruct the sliver. The comb is highly effective at removing the remaining VM, short fibre and entanglements (neps) which are collectively called noil.

Two more gilling steps follow combing in order to remove the layered effect introduced by combing. On the second step the sliver is wound under tension into a cylindrical package called top. Top is sold world-wide as the input material for worsted spinning. About 30% of the Australian clip is scoured in Australia before export and another 15% (approx.) is taken through to top. The key specifications of top relate to the mean fibre diameter (micron) and mean fibre length (Hauteur) and the amount of contamination and additives. There are only two worsted spinners in Australia of significant size and a substantial quantity of wool yarn and most wool garments are imported.

The first steps in spinning are called drawing. These are three to seven gillings in which the weight (linear density) of the sliver is progressively reduced by using a draft higher than the number of doublings (i.e. number of input slivers). The sliver is then drafted under the control of soft rollers and/or rubber aprons on a machine called a finisher or rover. The output roving is consolidated by twist (flyer-rover) or rubbing otherwise the sliver is inclined to draft apart when pulled off the packages. Because alpaca fibres are more slippery it is sometimes necessary to use different lubricants or add a small amount of twist in the gilled slivers. It is also important that the settings on each machine are adjusted to cope with the longer average fibre length.

The rovings are mounted on the creel of the spinning frame. Here they are drafted by a factor of about 18 to 20, under the control of aprons, down to strands with as few as an average 35 fibres in the yarn cross-section. Twist is then inserted by rotating the receiving package (bobbin) at high speed while the yarn passes down through a loop of metal (traveller) that is free to slide round a ring. Each turn of twist put into the forming yarn requires a full rotation of the yarn package. It is the twist that gives the yarn its strength and a fine yarn will typically have between 500 and 1000 turns or twists per metre and be spun at a spindle speed of up to about 10,000 rpm. As a result the rate of yarn production is very low – as low as 100 kg/spindle/year for fine yarns and up to 5000 spindles are needed to match the output of a single drawing line. This is why spinning is so expensive and the rate of breakage in spinning so critical as each break must be mended. Typically a maximum of 50 ends-down per thousand spindle hours is allowed or about one break per 40 km of yarn.

The finer the yarn – that is, the lower the yarn linear density (g/km or tex) – the finer must be the fibres, otherwise there will be too few fibres in the cross-section. Only the average number of fibres can be controlled, not when each one starts. As a result the number of fibres is governed by the laws of statistics and if the average number is too small then too often there will be insufficient fibres present for the yarn to hold together.

After spinning the yarns may be steamed to reduce their tendency to snarl before being wound on to larger packages while detecting and removing thick and thin places and, more recently, coloured faults. If the yarn is destined for weaving it will then normally be two-folded on a ring or two-for-one twister. In this operation two yarns are twisted about each other, usually in the opposite direction to the original twist. This has the effect of greatly increasing the binding in of fibres so that they can undergo the rubbing and stresses of

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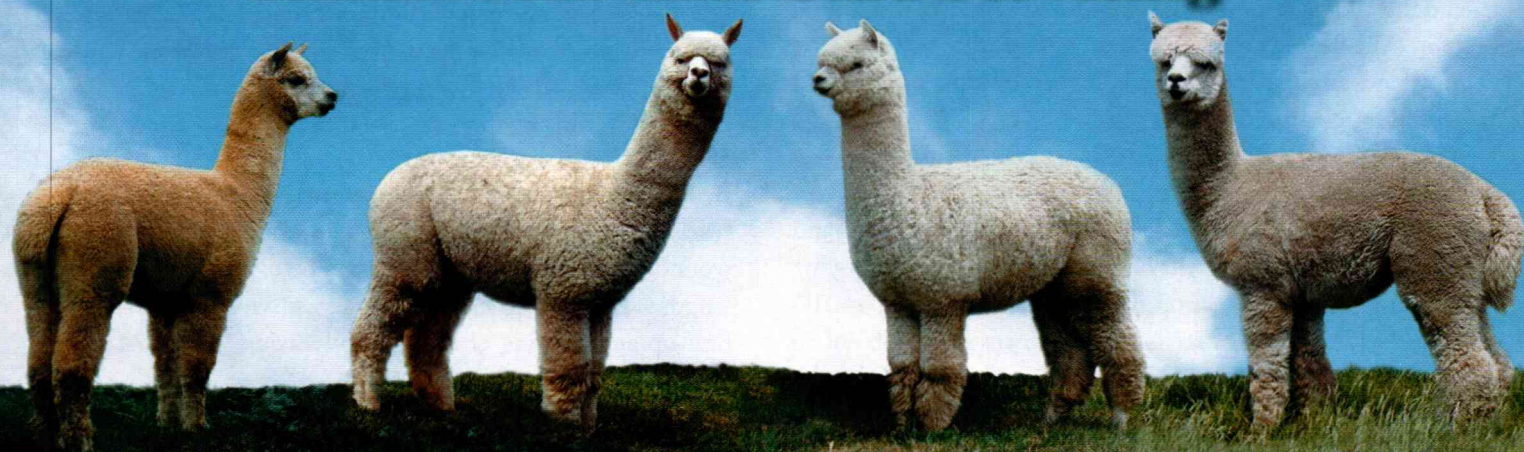
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weaving. Knitting is a more gentle process and singles yarns are sometimes knitted, although this can lead to spirality. The yarn can be two-folded or a number of yarns plied (twisted) together.

Woollen

The woollen card is typically twice as long as the worsted card with an intermediate layering operation to produce a more uniform web. At the end of the card the web is split by tapes into a number of narrow webs which are consolidated by rubbing into slubbings. These slubbings are taken directly to the spinning frame where they are drafted by a factor of about 1.3 and twisted into a yarn. The woollen system is thus much more compact and is set up to handle shorter and less aligned fibres. The key problem is that a halving in the weight of the slubbings halves the production of the card and so fine yarns become very expensive to produce. The worsted yarn is leaner and stronger and can be made finer. The woollen yarn is hairier and coarser but can be made using cheaper input material.

The woollen process has no combing so wools destined for the woollen system are referred to as carding wools and those for the worsted system as combing wools. The woollen system does not have the comb to remove VM, so where VM is a problem the wools are carbonised. After scouring the wool is treated with sulphuric acid, dried and crushed. The acid carbonises any cellulose. Sometimes the process is used on fabrics and is called piece-carbonising.

Cotton

Cotton is a shorter, finer fibre than wool. It is ginned instead of scoured. Ginning gets rid of a lot of the contaminants and entanglement but a simple carding is still required.

Material for finer yarns is also combed. The stages are analogous to worsted processing but the machinery is designed for much shorter fibre and usually runs at higher speeds. There is also the alternative to ring spinning of rotor or OE (open-end) spinning. Here the fibres are individualised and fired into a rotor (bowl) rotating at speeds of over 120,000 rpm. The fibres are then swept out of the bowl by the forming yarn end. The much higher production leads to significantly reduced costs.

Wool can be spun on this system provided there are very few fibres longer than the rotor circumference and the wool is very clean. This means that stretch-broken or cut top is used and additional clean steps may be required. The underlying problem, however, is that the resultant yarns require 80 to 100 fibres in the yarn cross-section and are considered inferior to

ring-spun worsted yarns. Cotton and short wool can be blended such as in the 70:30 cotton / wool product Colana® or wool denim, both of which are normally spun on the cotton ring system.

The major difficulty with such products is usually in the dyeing.

Synthetics

Synthetics are extruded as continuous filaments. In order to be intimately blended with wool they must first be turned into staple fibres. The process is called tow-to-top. The synthetic fibre is cut or broken to the required length and usually stretched and heat treated to give it crimp because crimp gives yarn bulk. The synthetic top can then be blended with wool in the desired ratio in gilling and/or combing. The main processing difficulties usually relate to the difference in response to moisture, lubricants and static charging behaviour. Synthetics can be produced at a range of fibre diameters and it is normal practice to use a synthetic finer than the wool. Recently, very fine synthetics, known as microfibres, have become popular. These are usually less than about 1.3d.tex or have a mean diameter of about 11µm.

Continuous filament synthetics can also be 'blended' with wool at the spinning frame by introducing a strand (usually a multifilament) behind the front roller, or in plying, or in a method called wrap spinning where a continuous filament is wrapped around an untwisted wool core. A synthetic yarn or filament can also be fed in alongside the wool yarn during the knitting process.

FABRIC FORMATION

Knitting

The knitting process is the same for wool as for other yarns, although the number of needles per inch (gauge) is matched to the thickness of the yarn and hence weight of fabric. The yarn is normally waxed in winding to reduce its friction with the needles. The two major knitting routes for apparel are circular knitting when a tube of fabric is produced and flat-bed knitting where it is easier to alter the pattern and number of stitches so that a fully shaped garment can be produced.

Weaving

Before weaving there is a step called warping or beaming where equal lengths of the required number of warp yarns are wound on to a cylinder or beam. These yarns become the lengthways or warp yarns that must survive the oscillating beat-up and rubbing of the reed in weaving. The cross-ways

or weft yarns only have to be strong enough to survive high-speed insertion. It is therefore becoming quite common to use singles yarns in the weft. Because of its intermittent nature, weaving is a much slower process than continuous circular knitting. However, the fabric is more rigid and less easily damaged.

CHEMICAL TREATMENTS

Dyeing

In the worsted system, dyeing is carried out on top, yarn, fabric or garment. Quick response to customer demand is made easier by leaving the dyeing as late as possible. However, piece-dyeing necessarily leads to plain shades and it is difficult to get as even a colouration in yarn-dyeing as can be achieved by top dyeing. Top dyeing also enables several colours to be blended in the one yarn. Consequently, all the stages of dyeing are available and used. For the woollen system colouration tends to be carried out on the loose stock as there is no top stage.

Reproducibility and uniformity of colour and colour fastness are important quality attributes of dyeing. For pastel

shades the colour of the substrate (i.e. the undyed wool) affects the resultant shade. For whites and pastels it is also essential to have negligible numbers of dark fibres. One company would reject golf trousers if more than two dark fibres were detected. Obtaining different colour in fabrics by using different colour wools can be a nightmare for mass-production. A consistent supply of each colour must be available and it must be of the correct quality for the desired yarn. It should also be colour-fast to washing and this is reportedly a problem with black alpaca fibre. Most topmakers will not let coloured wool into their mills as a small portion will get left behind on machines such as the card and reappear as dark-fibre contamination in later white lots.

Shrinkproofing

All animal fibres with a scale structure will have a tendency to felt and shrink when washed and agitated. The problem is more severe with open knits as the fibres are freer to move and for finer fibres. The standard method of overcoming this behaviour is to damage the scale structure and change the surface properties by application of a degradative treatment (usually chlorination) followed by the application of a



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polymer. The polymer may smooth the fibre surface or bind neighbouring fibres to each other or both. With changes in lifestyle and the demand for easy-care, which tends to mean machine-washability, wool knitwear products need to have some form of shrinkproofing or shrink-resist treatment. The process is normally carried out on top but may also be carried out on the sliver in a spinning mill or on fabric or garments. Shrinkproofing treatments tend to reduce the tendency of a fabric to pill as does a tighter fabric construction.

Finishing

Finishing is the use of a series of physical and chemical processes to enhance the properties of fabrics to meet customer requirements. This may be to improve fabric handle or appearance or to control dimensional properties or to add a function finish such as shrink-resistance or water-proofing. The processes are many and varied and can have a very significant impact on the aesthetic and tactile properties such as softness.

COSTS

The current tariff for commission topmaking is from \$1.50 to about \$2.50 per kg of top and noil for large lots depending on wool fineness. The cost for worsted spinning (including winding and two-folding) varies rapidly with the fineness of the yarn but is probably between \$5 and \$12 for most yarns. Weaving and finishing can be nearly as expensive as spinning. Weaving is more capital intensive than spinning and has the same sort of requirements on yarn breaks of no more than one in 40 to 50 km of yarn.

The cost of spinning far exceeds topmaking and the spinner is concerned to guarantee performance. This is done by tight specifications on quality parameters, particularly fibre diameter, fibre length and VM and nep counts. Contamination will not always be seen until the fabric is dyed. A claim will then be made against the spinner who will claim against the topmaker, who cannot claim against anyone because of the blending.

TRENDS IN WOOL PROCESSING

There has been a substantial shift of topmaking to grower countries, particularly Australia, South Africa and Uruguay, and to developing countries, notably China, India and Korea. This trend seems to have been driven by environmental concerns and to avoid shipping 30% to 40% by weight of dirt and grease. Spinning and weaving have moved substantially to low labour cost countries in Asia and Eastern Europe including Turkey. It was claimed recently that 95% of spinning and weaving by

German companies was now done outside Germany. The only processing step that has proved somewhat resistant to relocation is dyeing where quality control is crucial. There is also the exception of spinning and weaving of superfine wool in which Italy and Japan are still the largest processors, although the amount of such wool being processed in India and China is growing rapidly.

In all industries there has been a strong move to just-in-time and in some retail organisations, such as Marks and Spencer, a pilot order is made and further orders are made on the basis of electronic monitoring of sales with a very quick response required. Such a quick response is impossible to achieve with the very long wool pipeline and requires someone in the chain, typically at yarn stage, to carry stocks.

Recent developments in textile machinery have been towards increasing speeds, increasing automation and on-line quality control. For example, loom speeds have increased by a factor of 3 to 5 over the last 40 years. The demand is therefore on reliable quality (freedom from faults) and increased performance (strength) of yarns. For cotton, a fully-automated mill from bale to packaged yarn has been demonstrated.

There has been a trend to increasingly blend wool with synthetics such as Lycra, polyester, acrylic and nylon and also with cotton and other natural fibres. Since such blends can improve performance and customer appeal they are likely to increase.

ALPACA PROCESSING IN AUSTRALIA

Australian topmakers are the equal of topmakers elsewhere and can compete on a global basis. However, a typical modern wool topmaking plant with one modern scouring line can process 5 million kg of wool per year. This would more than look after the entire Australian alpaca clip for the foreseeable future. There are two small specialty fibre topmakers in Geelong who process alpaca and there are understood to be several small woollen mills that process alpaca.

The key to cost-effective topmaking in Australia would seem to be the adoption of standard preparation procedures that will lend themselves to efficient sorting and handling. For wool, classing is done on farm but the fibre properties in a flock of Merinos is much more uniform than it would appear to be for alpacas and coloured wool is kept separate. The fibre properties of each sale lot, particularly mean diameter, are measured before sale or processing and it would be rare to blend wools differing in mean diameter by more than about 3 to 4 μm .

Any alpaca spinning operation in Australia should have access to top and yarn dyeing and have established links to



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fabric and garment manufacturers. It seems likely that woven fabrics will primarily consist of blends both to reduce costs and to enhance performance. Knitwear is more likely to use pure alpaca fibre and the customer is likely to demand easy-care properties and resistance to fuzzing and pilling, so that a shrinkproofing, or at least shrink-resist, operation will be of commercial advantage.

FURTHER READING

An extensive review of the art of topmaking and details about each of the processing steps and recent technological developments can be found in the papers of Reference 1. An up-to-date review of the finishing of wool fabrics can be found in reference 2.

ACKNOWLEDGEMENTS

The opinions expressed in this paper are the author's but he has drawn on the work of many colleagues which has been

supported by the Australian woolgrower and government through CSIRO and AWRAP.

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- 1 Proceedings of Top-Tech '96 Symposium, CSIRO Division of Wool Technology, Geelong, Australia, November, 1996.
- 2 Finishing and Wool Fabric Properties, edited by P.R. Brady, CSIRO Wool Technology, Geelong, Australia, 1997.

[ED This paper is reprinted with the kind permission of the author, Dr Peter Lamb. Presented at a conference conducted in November 1998 by CSIRO Animal Production and Australian Alpaca Fibre Marketing Organisation (AAFMO), the paper appeared in the proceedings of the conference, *Fibre Science and Technology: Lessons from the Wool Industry*.]



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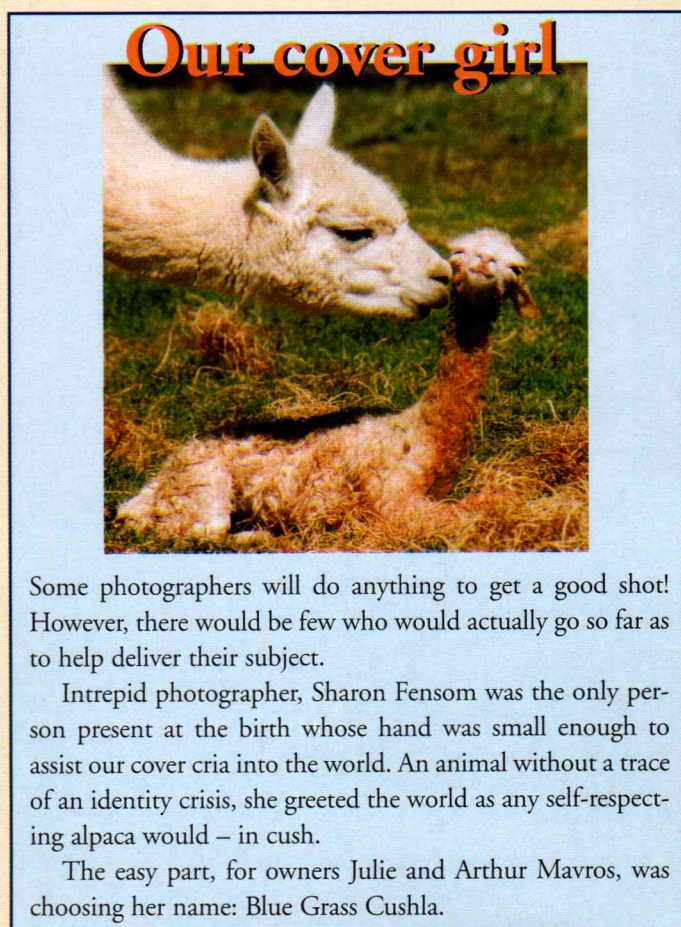
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Our cover girl

Some photographers will do anything to get a good shot! However, there would be few who would actually go so far as to help deliver their subject.


Intrepid photographer, Sharon Fensom was the only person present at the birth whose hand was small enough to assist our cover cria into the world. An animal without a trace of an identity crisis, she greeted the world as any self-respecting alpaca would – in cush.

The easy part, for owners Julie and Arthur Mavros, was choosing her name: Blue Grass Cushla.



The Alpaca Event of the Millenium

VI International Festival of
South American Camelids
Peru's Top Halter Class Show
(alpacas and llamas), judging
clinics, demonstrations of
traditional husbandry, vicuña
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OCTOBER
AREQUIPA - PERU

ALPACA FIESTA 2000...

Arequipa, Peru

23-29 October 2000

.....
By Francis E.B. Rainsford

International de Comercio S.A. – Peru

President, Alpaca Fiesta Promotions Committee

ALPACA FIESTA 2000 – proudly billed as ‘the alpaca event of the millenium’ – incorporates the VI International Festival of South American Camelids. It will bring together breeders of alpacas and llamas, as well as industrialists, merchants and academics from around the world.

The fiesta will provide a focus for participation and discussion in all aspects of the alpaca and llama business – from the raising of the animals to the manufacture of finished goods for the consumer

market and, thus, will be of interest to all people connected with alpaca and llama hair in whatever form. Early interest already indicates that this event is set to surpass the success attained by the III International Festival which was held in Arequipa in 1997.

The event is being organised collaboratively by the International Alpaca Association (IAA), Peruvian Ministry of Agriculture (CONACS) and the Peruvian Society of Registered Alpacas (SPAR).

AREQUIPA

Located some 1,000 kms (600 miles) south of Lima, Arequipa is Peru’s second largest city after the capital with a population of just under a million people.

The city is situated some 2,300 metres above sea level (7,000 feet) and is constructed from white volcanic stone (‘sillar’). Its buildings, with their distinctive colonial Spanish architecture, reflect an all year round sunny climate.

The fiesta takes place during the Southern Hemisphere’s springtime and the first-time visitor to Southern Peru can expect plenty of unbroken sunshine with daytime temperatures of 25° C and 12° C at night.

FURTHER INFORMATION

For further information and updates to the program, please contact:

Sandra Carbajal,
International Alpaca Association
Ph: 51 54 22344;
Fax: 51 54 21752
email: aia@lared.net.pe

Or visit the IAA’s website:

<http://www.aia.org.pe>



FIESTA EVENTS

The fiesta will feature more than one thousand of Peru's best alpacas and llamas shown together in Arequipa's premier Convention Centre, Cerro Juli.

The programme will include:

- Peru's top Halter Class Show (alpacas and llamas);
- animal clinics and technical demonstrations of alpaca husbandry;
- a visit to a Vicuña Chaccu (round-up);
- an International Fashion Show, mill visits;
- a selection of seminars, lectures and workshops on camelid related topics;
- cocktail reception and formal lunch and/or dinner;
- cultural exhibitions of Peru's heritage and folkloric events;
- an International Alpaca Association Assembly (IAA members only).

In addition there will be stalls at the showground selling promotional and alpaca products.



...something for everyone!

breeder profile

GEOFF AND KATE FYSH

Geoff and Kate Fysh have been part of the alpaca industry for five years. Their stud, Ronneby Park, is located in Western Australia at Gidgegannup.

In 1992, Geoff and Kate decided it was time to reassess their lifestyle and economic situation. They were 'sick of investment performance' and had decided to move from Tasmania to Western Australia. Eventually, they planned to buy a farm.

According to Geoff, they investigated 'all sorts of obscure things' as possibilities for farming. But Geoff leant towards livestock. He had spent time on family members' farms as a youngster, sheep mustering and generally helping out.

Friends visiting from interstate came up with an interesting suggestion. Why not look at alpacas?

Having settled in a leafy hill suburb of Perth, Geoff and Kate started a leisurely search for a farm. This would need

to be a careful choice: something that would suit them, their young teenagers, Stuart and Peta, and suit alpacas.

There had been a lot of investigation before a decision to invest in alpacas had been made. Slightly worrying was an enquiry to the Department of Agriculture – they didn't know about alpacas. But contact with the Australian Alpaca Association was infinitely more rewarding. Geoff and Kate spoke with breeders, looked at animals and loaded up with as much information as they could find.

Geoff also went back to university with the intention to finish an English Degree. However, studying unrelated subjects such as Wool Biology and Ecology were met with warnings by the English Faculty to get back on track. It was at this point that Geoff decided to change tracks altogether and work towards building an alpaca business full time.



Geoff & Kate Fysh wool classing & pressing – one of the services offered to other breeders.

Their first animals were a female with cria at foot, which they agisted.

'We tried to de-emotionalise when we bought our first alpacas,' Geoff explains. 'We were confident in our own judgement. But, like most new owners, it didn't stop us from buying from the heart – at least, our first female proved to be a good breeder.'

'Since then, we've totally revised our views, are much more objective and changed our breeding program.'

After three years, 'trying to get a feel' for the right place, they decided on Gidgegannup. It was ideal from all points of view, with a convenient location just 20 minutes from the airport, 35 minutes from Perth and only 40 minutes from the wheat belt.

They found a real estate agent, an ex-farmer, who specialised in rural properties. Endowed with the patience of a saint, the agent took Geoff and Kate to see many properties which enabled them to develop an accurate picture of what would suit them.

In the intervening years, Geoff embarked on his first 'hands on' experience with alpacas, assisting the owners of a stud with mobile matings and other tasks.

As a result of coming into contact with a number of studs and breeders, Geoff found that many were not full time

farmers, and there was 'an obvious need for breeders to be provided with services'. A large part of the Fysh's business plan was developed as the result of Geoff's observation.

One day, the call they'd been waiting for came through. 'I think I've found your property. It's not on the market yet, but it will be and I'll make sure you get first refusal.'

'Ah, yes!' was Geoff's comment when he and Kate went out with their agent to inspect the farm. 'This is it.'

What was to become Ronneby Park was no palace but 'a basic sheep grazing property,' according to Geoff, 'where we could start from scratch.'

As soon as they moved on to the farm their alpacas were retrieved from agistment and brought 'home'.

Now for getting the farm into shape. This called for some detailed plans.

Geoff obtained an enlarged aerial photograph of the new property. With an acetate sheet over the top, the photograph became the working plan that they still use. Armed with felt pens, Geoff and Kate drew in the changes they wanted to make and features they wanted to add. If they didn't like what they'd drawn, they would merely wipe it off and start again. They drew in, and then constructed, new fences, lane ways, shade areas and many other facilities. Later came irrigation and a few thousand trees.

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Windsong Valley Snow Legend SW

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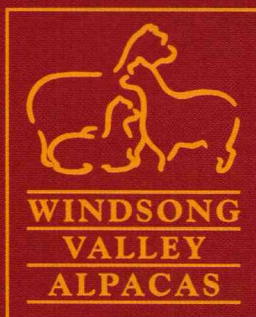
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It was then, Geoff says, that he found out what 'serious' farming was all about. 'I'd never been responsible for the bottom line before.'

Today at Ronneby Park, a visitor will see anything from 50 to 100 alpacas happily wandering around their allotted paddocks.

'The perception is that we're one of the big ones! But they're not ours – except for about half a dozen which are the basis of our future herd!' says Geoff.

Animals on agistment are the most visible result of Geoff's realisation that W.A. breeders were not adequately serviced.

'Whenever we find a need, we try to fill it, just like the wool sorting and pressing service we introduced this year' says Geoff. And that policy has ensured that Ronneby Park hums with a myriad of service-related activities.

Husbandry is in high demand (teeth, toes and vaccinations) as is Geoff's animal transport service the only exclusively alpaca service in Western Australia. In small writing along the side of the purpose-built float is: *The Gidgegannup Gigolo Mobile Mating Service*. 'It's the most effective advertising we've got,' says Geoff, quickly pointing out that the phrase relates only to the alpacas.

A JD free zone, Western Australia employs a Way Bill system which is unique to the State. It applies to all livestock except horses and is essentially a recording system of animal transportation all over the state a useful control, according to Geoff.

'Because we have to keep records under the Way Bill legislation, I can tell you what alpaca went where any time over the past three years,' he comments. 'In essence, the system allows us to track the movements of all alpacas in the state, if we need to.'

The farm is also a storehouse for many materials that breeders may need from time to time.

Supplies of frozen plasma are always available and deliveries are made across Australia. Geoff and a local vet collect blood from super-vaccinated wethers. Geoff extracts the plasma from a large centrifuge installed in the corner of the shearing shed. He encourages anyone who is expecting a cria to keep their own supply in the freezer. 'You'd be amazed at how many emergency calls I get that could have been avoided with forward planning,' says Geoff.

Also on hand is colostrum: in powdered form from a local manufacturer and frozen from vaccinated goats.

Geoff also does regular feed runs, stocking his vehicle from his on farm supply of commercially blended alpaca mix.

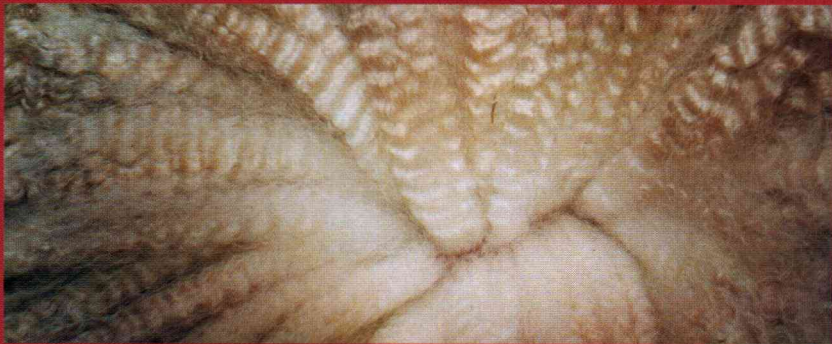
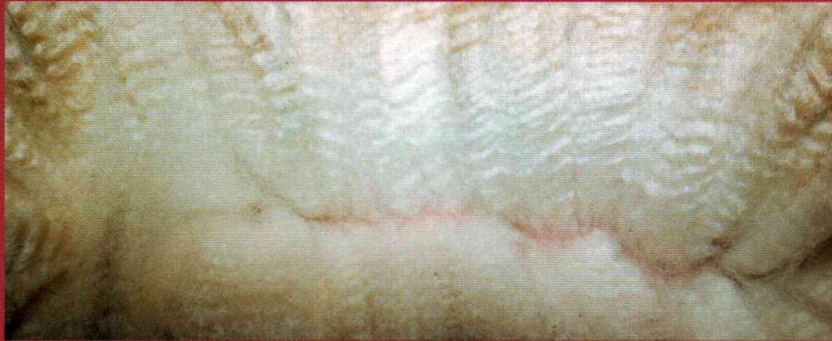
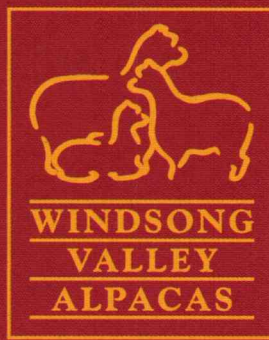
Taking advantage of the farm's central location, Geoff acts as a selling agent for small breeders. For buyers, Ronneby Park is a 'one-stop shop' where a selection of animals for sale can be viewed. For the vendors, the likelihood of sales is increased by the extra exposure of their animals in an accessible area.

Keeping up with such a range of activities has now reached the point where it is difficult for Geoff to manage. Kate, who is a Health and Safety Adviser, has been working outside the farm with an airline company. They are optimistic that later this year, she will begin working full time at the farm.

According to Geoff, not only will this enable him to organise his time more effectively, it will also enable both of them to get to more field days and other activities that have sometimes been forgone due to lack of time.



Geoff Fysh preparing alpaca blood plasma for other breeders and vets.



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'Stuart is a great source of extra muscle power and Peta, being a natural farm kid, has excellent animal sense. It's a wonderful family business,' says Geoff.

Geoff was elected to the AAA Committee last year and heads the subcommittee for Education and Training.

He believes education is one of the fundamental building blocks in any alpaca enterprise. Creating a uniform and consistent system for learning about all aspects of the industry that is available to the whole membership is one of Geoff's main objectives. He can call upon knowledge gained through extensive contact with breeders to ensure that the information going out to breeders via the Association is relevant and in keeping with industry aims.

Geoff is optimistic, enthusiastic – and sometimes frustrated – about the future of the industry.

Especially during the past two years, he has noticed heightened interest from traditional farmers, many of whom, he comments, are 'going down the gurgler'.

That's where the frustration creeps in.

'There's a market for small (say 100) herd lots of wethers and the industry can't supply the numbers of a consistent quality to them! They're all individuals.'

On the other hand, Geoff waxes lyrical about the progress the Australian alpaca industry has made over the past decade.

'Australian breeders have outclassed themselves by producing alpacas that are poles apart, quality-wise, from what we started with. The possibilities for the future are very exciting.'

While not prescriptive about a time-frame, he believes that commercial viability will be achieved when animal numbers reach between three and five hundred thousand.

'As yet,' he remarks, 'many in the industry have not made the mindshift necessary to plan for the transition from breeding to commercial fibre production. I guess there is a little naivety among some breeders who seem to have assumed that the prime focus of the industry will remain on stud animals forever.'

'But then, commercial realities always dictate what happens,' he says. 'There are certainly good prospects for both stud operators and commercial farmers. But only the very best breeders will be able to command premium prices for stud stock.'

'Look at sheep, cattle, pigs, goats and you'll see a stud industry and a commercial industry. A lot of successful livestock enterprises incorporate stud and commercial on one property. Long term, alpacas will be no different.'

'There will be a gradual reduction in the prices of commercial animals. It's a necessary and inevitable process and

people need to build it into their business plans if that's where they think they are headed.'

'I guess that this will cause some difficulties. But then, only relatively few years ago, you'd pay between three and four thousand dollars for a wether and, slowly, the market dried up. Now you pay a much more realistic price of between three and five hundred and they are selling well. The sellers have met the market. So the process has already started.'

'If breeders take into account the value of cria produced by their females then any shortfall in selling prices is probably quite absorbable. Additionally, as larger numbers of less expensive animals become available for purchase, there are some definite advantages.'

'First, increased numbers of available animals allow more choice to the buyer – a great help in maintaining consistent breeding programs.'

'Secondly, lower prices will enable more people to enter the industry and those who look to commercial farming will be able to build up their herds for far less investment.'

'Thirdly, of course, alpacas will become an even more attractive investment, appealing to a broader range of people.'

'By now, our cottage industry image should be long gone. We have AAFMO and the Alpaca Co-op buying our fibre and Elite Fibre Mill in Victoria processing alpaca. The emergence of this kind of infrastructure has really boosted our credibility. And there's no doubt that we can't meet the demand for fibre – frustrating in one sense, but encouraging in another.'

At Ronneby Park, it's early days as far as Geoff and Kate's own small herd is concerned. But they're in no hurry.

'Our aim is to breed for quality fibre that's everything processors require.' And, if that takes time, so be it – the Fyshs are in for the long haul.

Geoff's latest project is a little different – being a political exercise. Part of the tax reform legislation passed last year means that primary producers with less than \$20,000 turnover should not be able to claim primary production losses as a tax deduction against other income.

For many alpaca breeders who are not yet at the stage where they can sell off some of their livestock, this could be a great disincentive – as it would to many potential investors. However, it will still be possible to quarantine losses against future profits made by an alpaca enterprise.

By the time you read this, Geoff will have politely but firmly put it to his Federal MP that the alpaca industry, with its relatively long lead-time before returns can be expected, should be given special consideration.

Added to this, there are implications for the rural communities that benefit as the number of alpaca farms increase throughout Australia.

New faces at Pinjarra

by Angela Preuss, Chia Park Alpacas

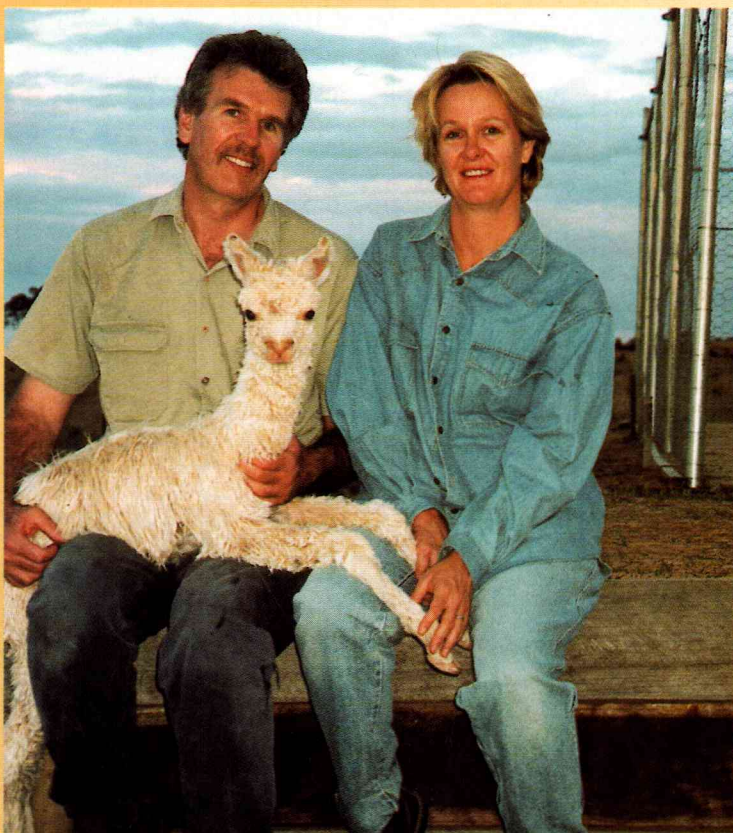
Pinjarra Alpaca Stud, breeders of coloured suris, has added some new faces to the team – ours! In February, my husband Ian and I joined Sandi Keane and herd manager Wendy Beer to help run Pinjarra. Moving from Wagga Wagga, we are now living at picturesque Pinjarra, while Sandi has purchased a beautiful small property nearby on the Howqua River.

Sandi, who is a well-known pioneer of the alpaca industry and a suri specialist, has been active in every phase of the Australian industry and has been breeding champion show stock for nine years. Her coloured suri program began in 1995 with the import of the first Peruvian suris from the USA and has established itself quickly and with outstanding results!

Understandably, in recent times, Sandi has found it increasingly difficult to keep up with the never-ending demands of all the different facets of running a growing stud. She needed to devote more time out to consulting with clients, promotional work, showing animals, sourcing stud males, arranging sales etc. Sandi also longed for more time to bring to fruition all the exciting plans and ideas she has for Pinjarra.

Well, providence certainly stepped in, when over a cuppa, we were sharing with Sandi our dream of raising alpacas full time. (We are long time clients of Sandi's and totally committed to raising coloured suris.) The solution suddenly dawned on us all! We had always loved everything about Pinjarra: the scenery, the tranquillity, the lifestyle and seeing alpacas (as well as wombats) everywhere. And there was Sandi who never had enough hours in the day to fit in everything that she wanted to do. Why hadn't we thought of joining forces before? What a wonderful way to propel Pinjarra, Chia Park and our precious coloured suris into the new millennium, with the injection of new manpower and the combination of skills, experience and resources.

We entered the alpaca industry a few years ago when, after a trip to Pinjarra, I spent my entire inheritance on alpacas. Friends thought I was crazy!



Ian & Angela Preuss with a suri cria.



Sandi Keane at Pinjarra.

'They will be a fad like emus, you know!' But we've never regretted my decision for a moment.

Ian grew up on a farm near Wagga Wagga, N.S.W. and undertook a diploma of Applied Science/Agriculture at Wagga Agricultural College. He then trained to be an agriculture/science teacher at Charles Sturt University. In contrast, I grew up in Sydney and trained to be a physical education teacher. We met while teaching at Corowa High School. After a few years teaching, Ian yearned to be self-employed and back on the land. Since then, we have owned and operated two successful retail businesses (a newsagency in Holbrook and then Healthy Life stores in Wagga) and have always combined these with farming.

Our children, Christopher (16) and Hayley (15), are

settling into their new environment and attending Luther College at Croydon.

As many of you who have visited Pinjarra would know, it is a place that kids could explore forever! Pinjarra includes 100 acres of wildlife habitat and is home to a diversity of native animals, including over 100 identified species of birds.

As our special interest is coloured suris, Pinjarra is definitely the right place to be! We had an excellent year with our alpacas in 1999, with great results in the spring show circuit. As well, all four of our suris entered in the National Show were awarded a ribbon (one First, two Seconds and a Third).

We have two working suri males to complement the elite line up of suri stud males already standing at Pinjarra.

Our most recent acquisition, ILR Helado, is an American import and son of the well known American sire of Champions, 'Benedicto'. We co-own Helado with Paul and Fran Haslin of Elysion Alpacas, Canyonleigh and they are looking forward to standing him at stud at Pinjarra. At four years of age, Helado was awarded Reserve Champion at two of last year's Spring shows against much younger males still on their first fleece!

Our other stud male, Chia Park Champagne Lad, a rare fawn suri, is now ready to work. Champagne Lad, who is co-owned with Mark and Maree Hornery of Macusani Alpacas, Parkes, gained Second place at the 1998 National Show and Third place at the 1999 National.

In December 1999, we sold the highest price animal at Wesfarmers Dalgety's Albury-Wodonga Alpaca Auction. Tahara Midas, a light fawn suri male was sold to Bill, Annette and Tracey Robbins of Traron Alpacas for \$26,000. Bill Robbins, one of Australia's leading judges, was extremely pleased with his purchase and, like many breeders, can see the enormous benefits from incorporating suris into their breeding program.

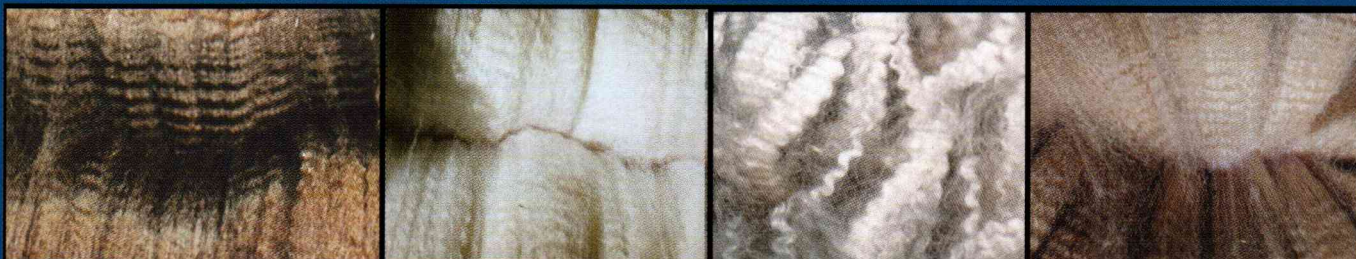
We'd love to welcome fellow breeders at Pinjarra, which is situated in the famous 'Man From Snowy River' country. Spoil yourselves! Take a break to explore one of the most scenic parts of Victoria and drop in for a visit.



Pinjarra homestead property.



View from Pinjarra.



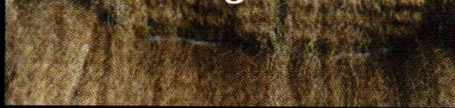
Summerhill Sundance



Park View Raven



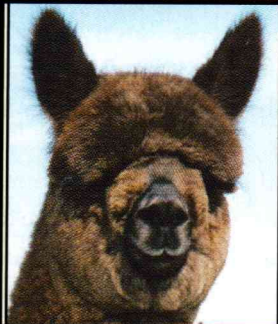
Somerset Cognac Gold



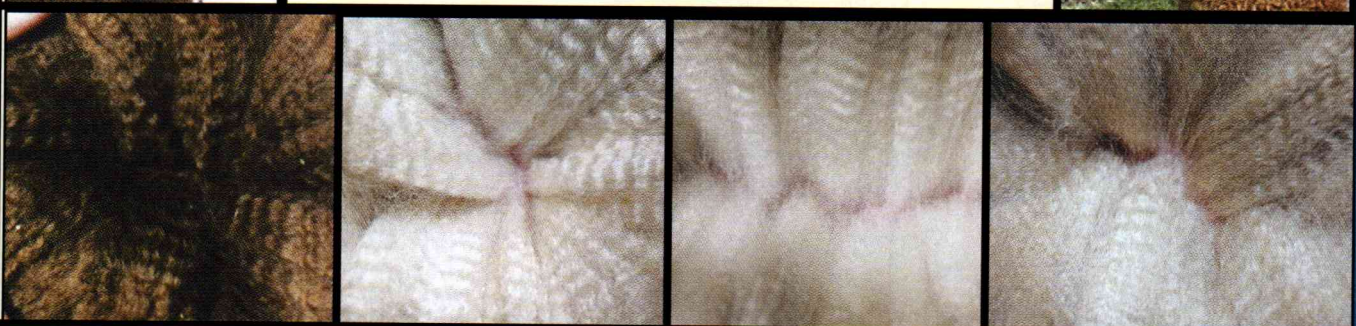
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AF88689



Suri – not just coats any more

Based on an interview with Beatriz Canedo Patiño
by Stephanie Pope of The Australian Suri Company.

Beatriz Canedo Patiño is the President and Senior Designer of BCP Alpaca Designs SRL in La Paz, Bolivia. She is, arguably, the world's leading alpaca designer. Beatriz is the only designer in the world to work exclusively with alpaca and to offer a complete collection made of this luxurious cloth.

'After years of studying fashion design in Paris and an intensive period of training at the side of famous couturiers, Beatriz first introduced the world to the superlative qualities of alpaca in New York in 1987. Here she established her own fashion house, Royal Alpaca Inc., in the world's centre of fashion, the famous 7th Avenue, and soon became known as the "Heroine of Alpaca"'. (*The New York Times*).

Due to the strong demand for her Haute Couture and Couture, as well as her desire to personally select the fibres and fabrics of this traditional material of the Andes, Beatriz Canedo Patiño decided to transfer her operations to her homeland, Bolivia, in 1994. With this move, the design and manufacturing company BCP Alpaca Designs SRL was inaugurated.

Now with 20 years of experience as a fashion designer, Beatriz is a masterful fashion creator in her profession. The simplicity and versatility of her uniquely creative designs have given her international recognition. Her products have earned her several awards such as 'The Golden Thimble Award' and 'The Gold Plate' (for the best export quality product of Bolivia).

Among her clients she is honoured to mention His Holiness, John Paul II, for whom she created a long cape in baby alpaca. She is also proud to mention Queen Sophia of Spain, Mr and Mrs Clinton, Mr and Mrs Jacques Chirac, Queen Silvia of Sweden, several Latin American Presidents and their First Ladies and many other prominent clientele.

BCP Alpaca Designs SRL specialises in designing and manufacturing men's and women's tailoring lines, such as coats, suits, capes and accessories. Its aim is to upgrade the recognition of camelid fibres in the world as an ecological, luxurious, rich, soft and durable fibre. Today, the company is a leading Bolivian business, establishing credibility of 'Made in Bolivia' in the international market via exports to Europe, North America and the Far East.

Earlier last year, I had the pleasure of interviewing Beatriz. She was very candid and open about her views on alpaca fibre and on suri in particular. She began by explaining the superb characteristics of the fibre that make it so easy to market.

'The alpaca cloth, known as 'the other gold of the Incas' by the Spanish conquistadors, is also called 'nature's miracle cloth'. The elegant appearance of this rich fabric is striking: it is velvety soft to the touch, silky and highly lustrous, as well as being particularly light. These qualities are complemented by the fabric's extreme durability. The unique alpaca cloth retains its superior look throughout the years, the fibre being naturally restorative. With minimal care and soft brushing the cloth fibres regain their original beauty year after year. In addition, alpaca is water-repellent because of the fibre's natural lanolin content. Finally, alpaca is insulating and has outstanding thermostatic qualities. It keeps the wearer cool in the summer and warm in the winter, allowing the body to breathe.'

Beatriz uses several lines of alpaca cloth for various products and finishes. 'Baby alpaca is woven from the fine fleeces of the yearling baby alpacas and creates a fabric that distinguishes itself for its softness and lightness of texture. The rich fabric is tailored into ladies' suits, blazers, skirts and pants. Plush alpaca uses fine huacaya fleeces blended with lambswool to create more casual and sporty coats or blazers. Suri alpaca is the finest and most elegant material. It has a particularly sensual feel and appears almost luminous. It is used for manufacturing luxurious coats, capes and blazers. Doubleface alpaca is versatile and can be made into capes, coats and wraps.'

In addition to these fabrics, Beatriz is constantly experimenting with blends. However, she will only blend with natural fibres such as lambswool or silk, according to the season. All combinations work beautifully since other fibres give body and resistance to alpaca, as well as considerably lowering the price of textiles considerably. She has created silk alpaca and her new apacot. This a trademark blend of baby alpaca and pima cotton created especially for her spring and summer collections. Both of these fabrics are used for light garments such as dresses.

One of the best qualities of alpaca is the full range of natural colours. Beatriz personally prefers the natural colours, but uses both natural and dyed fibres in her collections. Both groups are just beautiful and depend on the demand of the consumer. Natural colours will always be in demand and prices are the same as dyed colour. However, the fibre loses a bit of its softness by being dyed.





As suri fibre is my personal favourite, we moved on to the more specific uses and traits of the suri fibre. BCP Alpaca Designs uses suri in about half of its products. Suri is more costly than huacaya and, therefore, is reserved for their better lines. The primary use for suri fibre is coats. But Beatriz also uses suri in blazers, hats, scarves, capes, bed-spreads, quilts and sports jackets.

Softness, luxuriousness and sensuality are the best traits of the suri fibre. They must be exploited in the products that are created using suri. When compared with cashmere or mothair, Beatriz gushes, 'I love cashmere, but suri has certain qualities that make it finer than cashmere. It has beautiful sheen; it's very durable and very light'. Cashmere can lose its lustre after a couple of years, whereas suri retains it for decades. The consumer also prefers alpaca to mohair because of the status and richness of the fibre.

Although it is a richer fibre, suri is also known among spinners as being very difficult to work with. Beatriz admits that her frustrations occur in the sewing. Since suri has hairs, it must be treated like velvet and, at the same time, because of its softness, it needs to be treated like silk. Therefore, it sometimes slides or sponges in the manufacturing process, which is difficult to control.

In Bolivia, she employs excellent tailors and maintains the luxury of finishing her pieces by hand. (In New York, everything is done with overlocking machines.)

'It is cheaper to produce the garments in Bolivia and maintain the quality. Nowadays, everything is about quality and good prices.'

As we well know, the finished product is worth the extra effort.

Fashions are always changing and a good designer creates products that satisfy the current trends. For now, ecology is definitely 'in', and so, therefore, are the natural colours. Suri is

becoming known as the 'green fur'. It is the only natural fibre used for fur that does not require an animal to be slaughtered. Beatriz mandates that only sheared wool can be used in her designs, thus eschewing the South American practice of slaughtering alpacas for their hides.

Fashion colours vary season to season. Designers must stay updated with the tendencies of colour put out by Italy.

This year, for instance, plum colours are the fashion. Her current fall/winter collection uses neutral colours such as vicuna, sand and mahogany and vibrant colours: Titan red, Bordeaux, teal green, gold and plum. Classical basics such as black, navy blue and Marengo help tie the palette together.

BCP Alpaca Designs presented us with their complete collection ranging from women's to men's wear and included their latest innovation, BCP Kids.

Those of us who were at the 1998 National Show and Sale will remember her fantastic collection that included the entire range.

The collection was marked by the sophistication, grace and timeless elegance that defined the 1940s with an added touch of contemporary flair.

'What I am trying to do here as far as the designing is concerned is to create a beautiful piece, but at the same time it has to be a practical piece. You want a coat that will not only look good, but that will protect you. It has to be very functional'

The classical style of her designs also lends credit to the longevity of the alpaca fibre. In her own words, 'Alpaca is forever'.

Finally, I asked Beatriz what we as breeders could do to enhance the quality of alpaca fibre. Her answer gave me some food for thought. 'Be well aware of nutrition. Natural foods give a much better sheen and softness to the fibre.'

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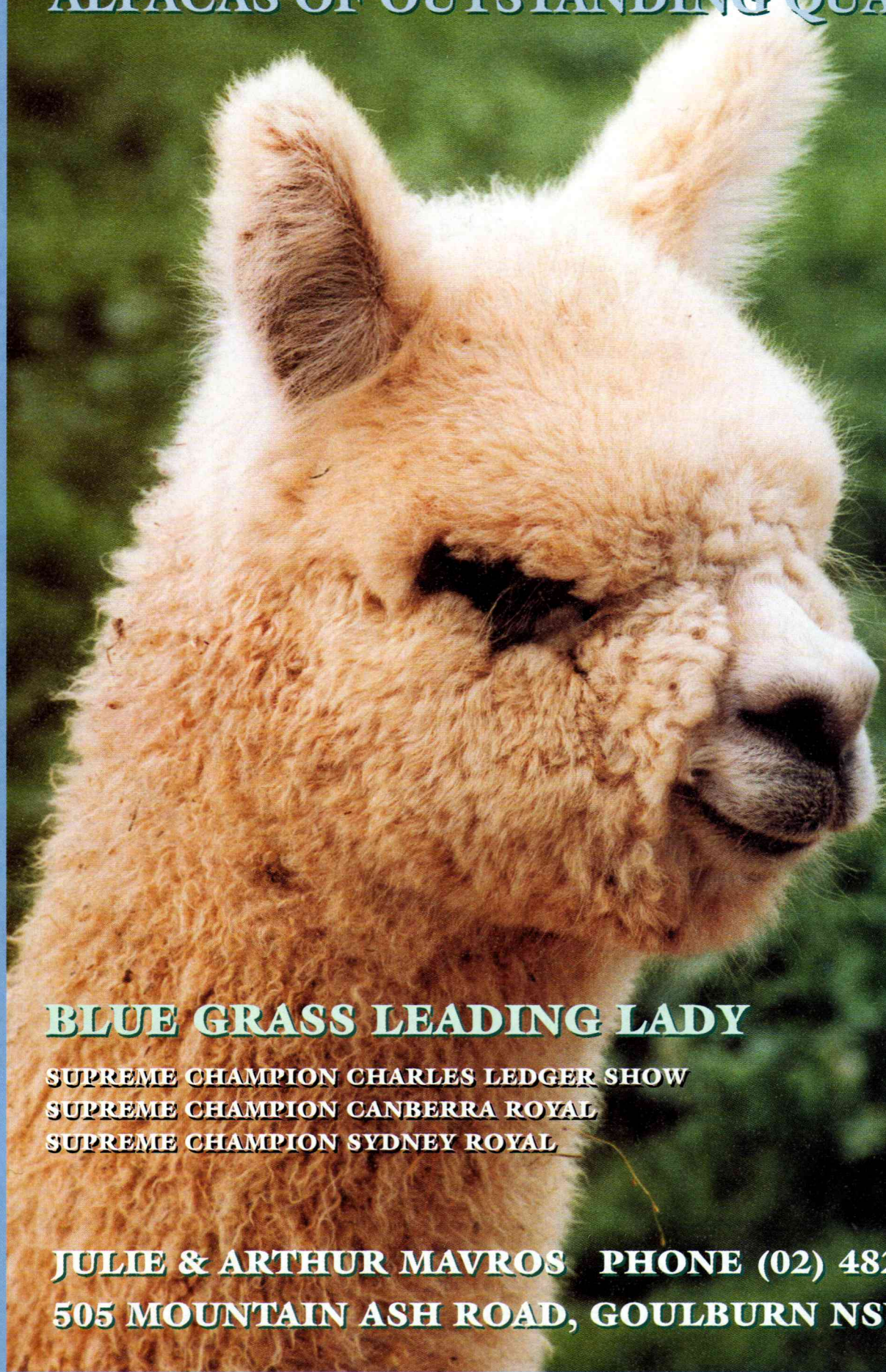
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The Australian Alpaca

National Conference – Canberra ACT 25-27 August, 2000

Hosted by the Southern NSW Region, the National Alpaca Industry Conference will offer a variety of information for new and experienced breeders alike.

Taking the future as their theme, presenters will cover a range of topics, including: desirable fibre characteristics for processors and manufacturers; breeding for quality fibre; research and development; and business planning, including taxation issues.

Other highlights will include poster presentations and a photography competition.

The format of the Conference will allow maximum flexibility with sessions divided into two streams: introductory and advanced. This will allow participants to choose sessions that correlate with their levels of experience and knowledge.

The conference format has been designed for maximum interest and interaction. Each 90-minute session will be hosted by a panel of presenters and will allow 30 minutes for questions and general discussion.

For the first time, the Association will hold its Annual General Meeting immediately before the Conference. To be followed by an Ordinary General Meeting, it will commence at 1.00 pm on Friday 25 August.

The traditional welcoming cocktail party on Friday at

6.30 pm marks the beginning of the Conference allowing participants to catch up with friends and slide into Conference mode in the most pleasant manner.

For those who are able to stay on after the Conference, an interesting range of tours will be available, including visits to local alpaca studs.

And staying on is very worthwhile, if you have the time. Canberra is a unique community that's well worth exploring. It has gained an enviable reputation for fine food, excellent wines and warm hospitality. Located on the edge of the Australian Alps, it's a picturesque area blending city life with country charm. You'll be impressed by the bush and lake corridors – where millions of trees flourish. According to the locals, one of Canberra's best kept secrets is that it is Australia's 'bush capital' – and it's waiting for you to explore.

Members will receive more detailed Conference news by mail – including accommodation options (plenty to cater to everyone's budget!). Southern NSW Region offers you a warm invitation to the first AAA Industry Conference of the new century – where you will discover the likely characteristics of 'The Australian Alpaca Beyond 2000'.

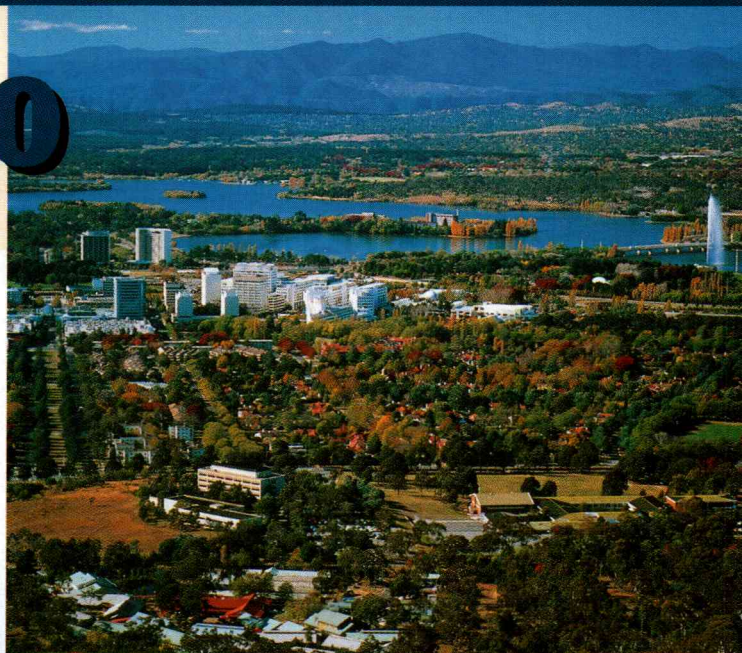


Beyond 2000

In 1924, the 'Hostel Canberra' opened its doors to the public. Designed as a showpiece by Commonwealth Architect, John Smith Murdoch, the hostel was constructed in the Prairie style, evoking the serene and welcome atmosphere of a country estate. Its prime role was to provide suitable accommodation to parliamentarians and distinguished visitors to the capital.

When a ban on the sale of alcohol was lifted, the hostel became 'Hotel Canberra'. Until its closure in 1974, it played host to some of the most famous (and infamous) characters in Australian political history. Known as 'the second Parliament House', it was the home of Mr and Mrs Scullin during the depression; the scene of intense lobbying when two resident independents held the fate of Arthur Fadden's government in their hands; and the meeting place for plotters and schemers of all political persuasions during its lively 50 year existence.

In 1988, the hotel reopened under the management of Hyatt International. The original section of the hotel remains intact, faithfully restored to its Art Deco grace and charm, while extensive expansion and renovation provide visitors to the national capital with truly luxurious accommodation.

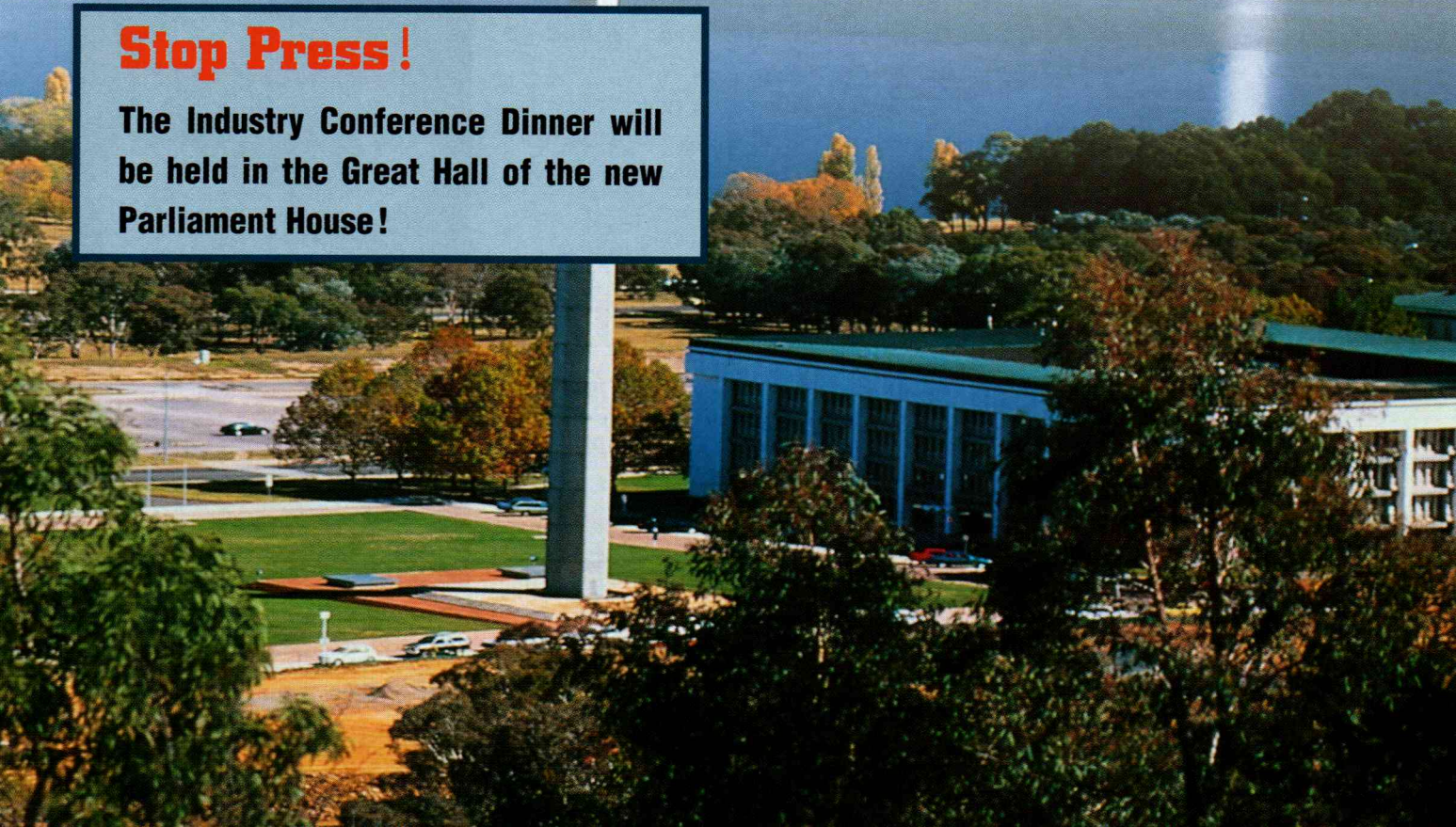


The charm of this 'home away from home' surrounded by landscaped lawns and gardens is complemented by superb conference facilities. The AAA will use three 'cabaret style' conference rooms each with seating capacity for 100 – allowing maximum interaction between speakers and audience. Surrounding the conference area are a gallery and atrium which will house trade displays and provide informal meeting areas.

Located in the heartland of our nation's seat of government, between Lake Burley Griffin and the new Parliament House, the Hyatt Hotel, Canberra is a living example of how our links to our past guide our path. There could not be a more appropriate venue for the first AAA conference of the new century.

Stop Press!

The Industry Conference Dinner will be held in the Great Hall of the new Parliament House!





Successful sales don't just happen!

by Wendy Billington

We could not sit back and expect to survive without re-establishing ourselves as a 'must visit' priority.

After we moved to Kenilworth in the Yass district in January last year, we became aware that visitors were not as likely to drop in as they used to be. After all, we were now further from Sydney – from where, it seemed, many of the buyers of alpaca were coming.

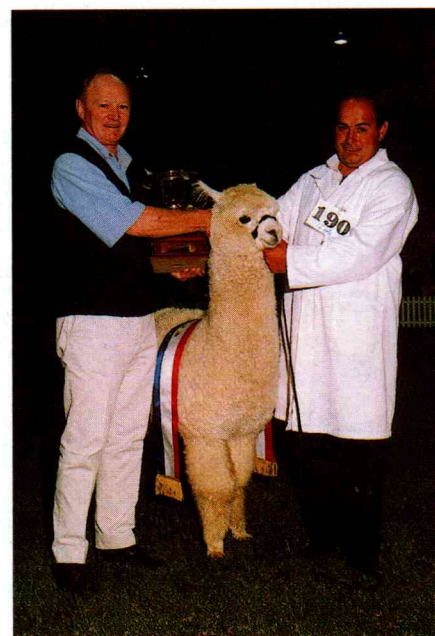
The locals thought of us as a novelty. To convert traditional sheep farmers to alpacas was going to be a slow process and not something that would be of benefit to us in the short term.

Although Cedar House has a reputable and well-known name, we could not sit back and expect to survive without re-establishing ourselves as a 'must visit' priority on new and established breeders' lists.

After spending some time considering how to accomplish this, we decided to hold a sale of Cedar House bred huacaya and suri alpacas.

THE PROMOTIONAL STRATEGY

It would be an annual event, conducted on our farm, and would be held in November after the run of Spring shows in New South Wales. These shows would provide excellent opportunity to promote our sale and to show off some of the sale animals. We settled on Sunday 21 November, two weeks after the AAA National Classic Show & Sale at Tamworth.



Success at Tamworth. Cedar House took out Champion Junior Male in the Huacaya section. Peter Sultan accepts the trophy from Chic Wilson, Noosa Alpaca Stud.

A great deal of careful planning went into this aspect of our promotion. We considered that the prospects for a successful sale would be greatly enhanced if wins were made by sale stock at shows leading up to the sale. I think this was proven beyond doubt – and I believe there would have been no point in attempting to mount such an undertaking without our being in the show ring, exposing the quality of what we were offering and getting results on the board.

Consequently, we selected some superior alpacas and took them to four shows over the two months before our sale. We won many championships with the twelve animals we showed which were in the sale. We also had winners with two of our males, Cedar House Woolmaker and Cedar House Taboo, which were very effective in representing the quality of our stock. Of the animals we offered for sale, Cedar House White Lady, Cedar House Ringmaster, Cedar House Snowbelle and Cedar House Lord of the Ring were all show winners.

This strategy not only drew the people to our farm in November but had the added advantage of carrying animals of more average grades through the sale with good results.

(We were advised by our local auctioneer to have drawcard animals as well as some more average alpacas scattered throughout the sale, thereby giving a broad range of people a chance to buy.)

We began our promotion campaign four months in advance with advertisements and editorial in several magazines and local papers. As we gained success with our showing of sale animals, we supplied editorial to publicise our wins.

About four weeks before the sale, we mailed our clients and all breeders within a three-hour drive of Cedar House, to advise them of the top quality males on offer.

We also produced a detailed catalogue which we posted to those responding to our advertising and distributed at the last show held before our sale.

SETTING UP THE VENUE

The whole facility was undercover and the animals looked perfect in our huge, 150-year-old woolshed where they were penned, ready for pre-sale inspection. Each wooden pen held five animals that were able to be accessed by prospective buyers through a sliding wooden gate. Another aspect of our preparation was to have the shed lit with specialised lighting that made looking at fleeces easy.

The auction area was a very large pavilion structure, once a ballroom, that we had relocated from an old house on the property. This adjoined the shed. We hired the tiered seating, which tucked neatly under the roofline, from the local show society for a modest fee.

The auction ring itself was small and intimate, allowing



In the woolshed on sale day: Peter Sultan and Wendy Billington.

people to almost touch each animal as it was paraded on halter. Except for the show animals, all the others were halter-trained and groomed in just ten days! This was a mighty task, involving hours and hours of work for Christine and I, with Pete coming in to give the final instructions (orders, more likely!).

We chose local selling agents as we wanted an honest, unbiased auction that was a true reflection of the marketplace, allowing buyers to feel that they got a good deal. Apart from mispronouncing a few names and referring to some animals as ‘fillies’, John Atkins, our auctioneer, did a good job.



The auction crew. From Left: Guest auctioneer, John Atkins from Albury, Peter Sultan (Cedar House), Dal Hanrahan, principal, F.L. Kelly & Co (auction agents), Wendy Billington (Cedar House), and Philip White, Co-Principal, F.L. Kelly & Co.

SALE DAY

We had just over 200 people attend our sale day in pouring rain. Many were existing breeders; equally as many were newcomers.

Our undercover facilities were just perfect and the smell of 150 years of merino in the woolshed added to the atmosphere as people gathered to study and discuss the animals on offer. We received extremely positive comments about the quality and presentation of the stock.



Getting underway, Wendy Billington introduces the sale.



In the sale ring, Cedar House Majestic, paraded by Peter Sultan.

RESULTS

We offered 27 females and retained only three; our nine wethers sold like hotcakes and we sold three of the six males offered. Four new breeders purchased animals which was very encouraging.

Some of the highlights included 50 per cent joint ownerships of Cedar House Ringmaster and of the young suri, Cedar House Lord of the Ring. Each sold for \$50,000 with Cedar House Ringmaster to our long-time clients, Peter and Janet Sutherland of Somersby.

Cedar House Aristotle was the subject of spirited bidding, with Kerry Dwyer, Duwirri Downs Alpacas of Ballalaba, outstaying competitors to the tune of \$23,000.

Peter and Janet Sutherland also purchased the top-priced female, Cedar House White Lady (by Cedar House Peruvian Ayaviri) for \$25,500, while Paul Cramley of Seaforth paid \$25,000 for Cedar House Tango (by Cedar House Ice Man).

We also auctioned a service to Cedar House Braveheart. Patricia Bova from Sydney was successful with a bid of \$2,400.

Our gross takings were \$375,000.

LOOKING AHEAD

A sale like this takes an enormous amount of planning and organisation and a certain amount of capital. Our advertising budget for this first sale was around \$25,000 and it will be similar for our second on 19 November this year.

We have established this as a calendar event, in the belief that, provided we offer the market what it wants, the sale will always be successful.

Our plan is to have something different about our sale each year so that it becomes a day of enjoyment, learning and excitement.

We are also planning to allocate a section of our sale to our clients so that they can sell their very best alpacas – but the sale will only offer alpacas bred from our bloodlines.

We're looking forward to the challenge of organising our 2000 sale (even the preparation of twelve alpacas for the four shows in the lead up!). Our aim is to offer an honest, market oriented sale that's rewarding and beneficial for those who attend.

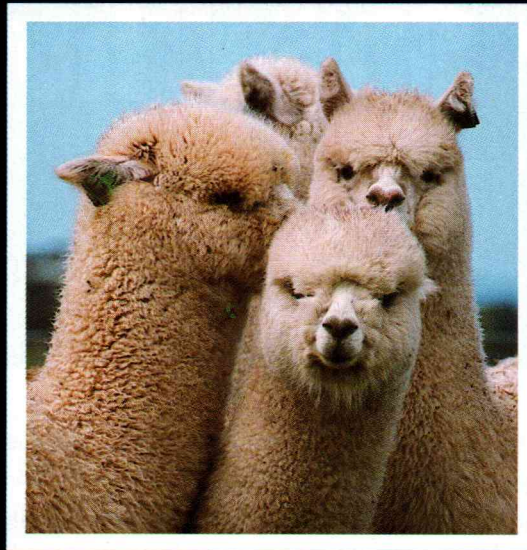
June issue *Alpacas Australia*

ELITE FIBRE MILL – some changes and developments at Geelong.

Interview by Stephanie Pope with INCALPACA FASHION DESIGNER, MARIA BRAVO.

We're also going to look at ALPACA TWINS. Normally very rare, but occurring now quite frequently in Australia. We'll meet the newest set (fawn females) and check the progress of other alpaca twins born over the past 18 months.

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Local alpaca studs take Berry Show honours

by Matt Ridley

A spectacular start to the 112th Berry Show (South Coast NSW), on Friday 4th February saw alpacas leading the Grand Parade in 35+° heat. This show was dominated by local breeders Illawarra Alpacas, Tahara Alpacas and Mirrabook Alpacas who scooped the pool under the close scrutiny of judge, Judith Street.

When the Supreme Champion ribbon was finally placed around the neck of Illawarra Titan, it marked the

culmination of a memorable day for Illawarra Alpacas. This rising two-year-old son of Peruvian Jolimont The Don had earlier taken out the fourth Championship ribbon for the Cambewarra stud, which dominated the huacaya section of the show.

Celia Cook, co-proprietor of Illawarra Alpacas with Harriet and Dr Ian Davison, represented the stud on the day, with her partners in Canada. Commenting that she was



Illawarra Titan, sashed as Supreme Champion, with (from left): Celia Cook (Illawarra Alpacas), Pauline Nelson (Paddington Alpacas, Sponsor Supreme Trophy) and Show Judge, Judith Street.

'completely blown away', Celia was quickly on to the phone to North America.

'We've had success at shows before, but this is really special. To top it all off, The Don took out the Sires' Progeny and I see that as really being the ultimate,' she said. 'That's what we are all aiming at – consistent, good quality and dense, fine fibre. We are determined to show that we can breed fine fibre in this region.'

Judge Judith Street echoed these sentiments when she later commented favourably on the overall standard.

'There were seven or eight animals here which could be shown at the top level with plenty of confidence. And Illawarra Titan has it all: an outstanding frame carrying excellent all-round fleece.'

Illawarra Titan is the home-grown son of Chilean-bred dam Illawarra Rhapsody. Celia is now aiming at Canberra and Sydney with Titan and she has high hopes.

While Illawarra Titan had the Supreme Champion ribbon, the day belonged as much to Jolimont The Don, which also sired Class Champions Illawarra U-Reka (Junior Male), Illawarra Titillate (Intermediate Female) and Janannie Park Solero, Janannie Park's winner of Champion Intermediate Male. Yet another winner, Champion Senior Female, Illawarra Tsarina, by Illawarra Donatello, is three months pregnant to The Jolimont Don. The Champion Huacaya Fleece was taken



Judith Street, Alpaca judge at Berry Show held 4 February this year.

out by Mirrabook Alpacas' Inca Prince, a son of that successful sire.

Earlier in the day, Di Marshall's Tahara Alpacas of Berry had similarly dominated the Suri classes, taking five blue ribbons, the Champion Suri Fleece and the Supreme Champion Suri trophy with Tahara Moonlight Mist, a white son of Peruvian Arabis.

First time participants, Ann and Barry Parkes of Marshal Mount-based Wirrawatha Alpacas tasted immediate success with their Coolaroo-bred Snowy, an impressive 20-month grey-roan, in the Wether Class.

Bova Alpacas' Cloud Valley Angelica, the white daughter of Jolimont Tomasso, was Champion Junior Female in one of the better represented classes of the show.

For Jeanette and Keith Hollingworth's Alpacandes Alpacas, the long journey from Galston was made worthwhile when Purumbete Inti's white son, Alpacandes Bond was Reserve Champion Senior Male, drawing favourable comment from Judge Street.

Show organisers looked back on a tiring day with plenty of satisfaction, as over 60 entries in fleece and animal classes had demonstrated the strength of the region's burgeoning alpaca industry. The experienced Judith Street summed it up when later interviewed: 'There's plenty of enthusiasm in the area, which is great, but the people who run the industry here also know exactly what they're doing and where they're heading.'

[Ed: The Berry Show was conducted under the auspices of the Berry Agricultural Society.]

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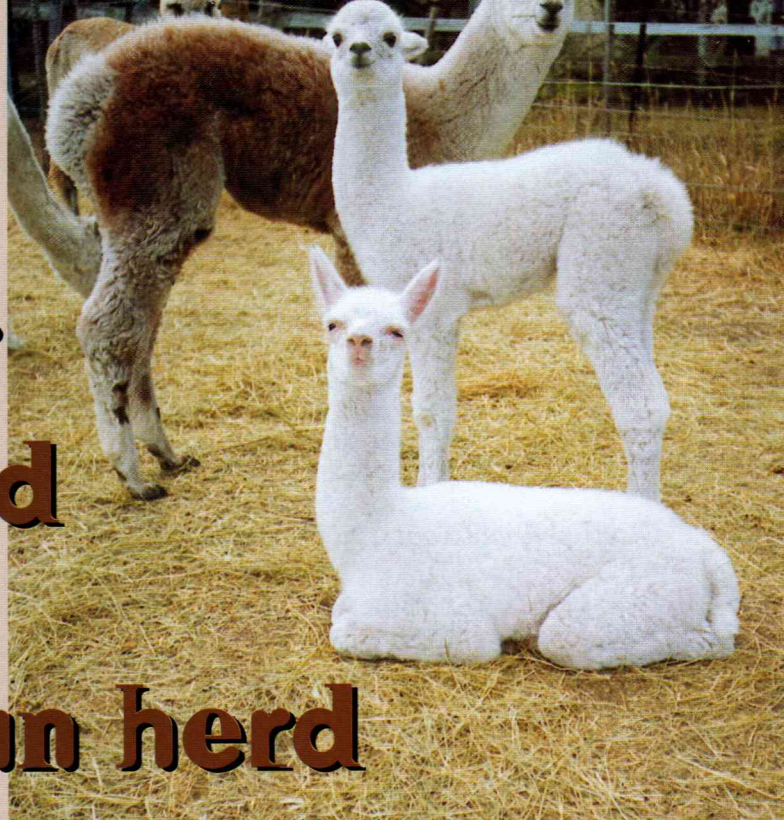
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TALCA ALPACAS

Christine and Nick Veltjens

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The status of white and red alpacas in the Australian herd



Above: A near-albino cria in cush. Note the way it is squinting against the light; and the much whiter fleece than the dark-nosed white cria behind.

.....
By Elizabeth Paul,
B.App.Sci., (App.Biology) R.M.I.T.,
Cert.Animal Technology, F.I.T.

INTRODUCTION

White fleece or fur is generally a less viable option for a wild animal than coloured fur since a white animal is more visible both as a predator and as a prey species.

Albino white, where the eyesight is affected by the loss of pigment in the retinas, is even less of an option and very few natural albinos survive for long in the wild.

Even if they are able to find enough food, albinos may be rejected by their group, or unable to find a mate, since patterns of colour are extremely important as recognition or sexual signals.

However, in extreme environments such as the Arctic, white fur has a much stronger survival advantage. Arctic seal pups born on the ice floes may be white to protect them from being easily seen by polar bears; the pups moult to a dark coat by the time they are able to swim. Arctic hares and foxes moult between pure white fur in winter and mottled brown and white fur in summer to increase their survival chances in changing backgrounds. The underfur of many animals is also white; this may represent a saving of

energy for the animal as regards pigment production.

Since the domestication of animals by humans began, white animals in a dark herd would have been very useful as markers. They may also have had superstitious significance; the colour white has religious significance in many cultures today.

In a farming or a laboratory situation, white fleece or fur is less of a disadvantage to the animal and, on a purely practical level, it can be dyed any colour without interference from the natural pigments.

White fleece may be produced by a number of genes operating on different points of the pigment production pathways. These may include white-spotting genes; dominant whites; recessive whites and diluting genes (Searle, A.G.). To further investigate this aspect, the progeny results of Tables 4-7 inclusive (Paul, E.) were combined and re-presented in Table 8.

DISCUSSION OF RESULTS OF TABLE 8

White x white matings produced approximately 62% white progeny and

Author's Note

This study is the third article in this series and is a direct continuation of 'The status of grey alpacas in the Australian herd', first published in issue no. 29 of Alpacas Australia. The last table of results in that article was Table 7; the first table of results in this article is therefore Table 8.

37% coloured progeny. Of this 37%, solid colours accounted for 22%, white/coloured progeny for 13.6% and grey progeny for 2% of the total.

White x white/coloured matings produced the next highest proportion of white progeny, at 33% of total progeny, and the highest proportion of white/coloured progeny of all mating groups at 36% of total progeny.

White/coloured x white/coloured matings produced 53% solid colour progeny; 26% white/coloured progeny and 21% white progeny.

Solid colour x white/coloured matings produced 20% white/coloured progeny and approximately 7% white progeny, while solid colour x solid colour matings produced less than 3% each of white and white/coloured progeny.

Grey x grey matings also produced less than 3% each of these progeny types.

Summary

Both white and white/coloured progeny were more likely to be produced from matings where at least one of the parents was either white or white/coloured.

Both progeny phenotypes occurred in low proportions from matings involving only solid colour and/or grey parents.

For all white x colour matings, more coloured progeny were produced than white progeny, irrespective of whether the coloured parent was solid coloured, white/coloured or grey.

It would appear that white and white-spotting genes are closely associated in alpacas. Some 'white' alpacas may be mega white-spotted animals carrying colour genes.

Red and brown

As the colour of wild vicunas and guanacos appears to be orange-red or reddish fawn (Franklin, W.L.), it is surprising how often they are referred

Table 8: Combined progeny results of Tables 4-7 (Paul,E.) inclusive

Progeny Phenotypes	Solid Col	White/Col	Greys	White	TOTALS
Parent Phenotypes:					
White x White	440	276	45	1261	2022
% all colours of total	21.7	13.6	2.2	62.4	
White x White/Colour	93	112	4	104	313
% all colours of total	29.7	35.8	1.3	33.2	
White/Colour x Greys	48	15	13	35	111
% all colours of total	43.2	13.5	11.7	31.5	
White x Greys	234	30	116	160	540
% all colours of total	43.3	5.6	21.5	29.6	
White/Colour x White/Colour	18	9	0	7	34
% all colours of total	53	26.4	0	20.6	
White x Solid Colour	1704	241	240	569	2754
% all colours of total	62	8.8	8.7	20.7	
Solid Colour x Greys	795	31	362	141	1329
% all colours of total	60	2.3	27.2	10.6	
Solid Colour x White/Colour	434	120	10	40	604
% all colours of total	71.8	20	1.7	6.6	
Solid Colour x Solid Colour	5875	151	106	173	6305
% all colours of total	93.2	2.4	1.7	2.7	
Greys x Greys	179	3	326	14	522
% all colours of total	34.3	0.6	62.4	2.7	
Total Progeny	9820	988	1222	2504	14,534
% all colours of total	67.7	6.8	8.4	17.2	

to in the literature as being brown. If there is no difference between red and brown colours, there would not appear to be any need to distinguish between them when breeding or registering alpacas.

From personal observations, a red (fawn) alpaca is one shade of red (fawn) all over (possibly with lighter underparts), but generally similar to a chestnut horse.

A brown alpaca appears to have not

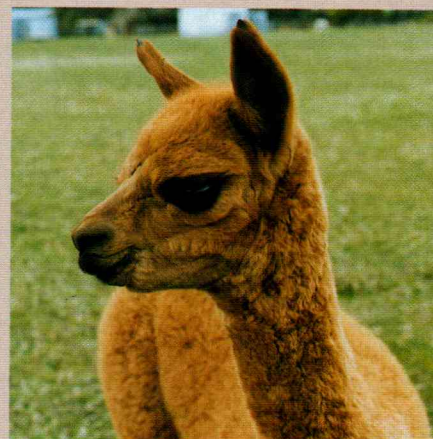
only a darker shade of brown fleece but also black (or very darkest brown points, giving it the appearance of a bay horse).

If red fleece colour is different from brown fleece colour, then matings involving red parents should produce different progeny colour results from matings involving brown parents.

The results in Table 9 were drawn from Table 2 (Paul, E.) in issue 28 of Alpacas Australia.



Mid-Brown with black points.



A rich red cria.

Table 9: Comparison of progeny from mating Red and Brown parents

Progeny Phenotypes	Brown	Black	Red	White	TOTALS
Parent Phenotypes:					
Red x Red	263	20	989	97	1369
% all colours of total	19.2	1.5	72.2	7.1	
Brown x Red	1083	121	874	88	2166
% all colours of total	50	5.6	40.4	4.1	
Brown x Brown	683	123	149	34	1989
% all colours of total	69	12.4	15.1	3.4	
Red x White	400	86	631	376	1493
% all colours of total	26.8	5.8	42.3	25.2	
Brown x White	572	133	359	270	1334
% all colours of total	43	10	27	20.2	
Red x Black	345	115	116	49	625
% all colours of total	55.2	18.4	18.6	7.8	
Brown x Black	888	672	45	95	1700
% all colours of total	52.2	39.5	2.6	5.6	
Black x Black	245	1747	22	49	2063
% all colours of total	11.9	84.7	1.1	2.4	

DISCUSSION OF RESULTS OF TABLE 9

Red progeny were produced in highest proportions from red x red and red x white matings.

Brown x red matings produced all progeny colours in proportions between those of red x red and those of brown x brown matings. The proportion of black progeny produced was 12.4% for brown x brown matings; 5.6 % for brown x red matings and less than 2% for red x red matings.

Red x white matings produced approximately 42% red progeny and 27% brown progeny, whereas brown x white matings produced 43% brown progeny and 27% red progeny.

Red x black matings produced 55% brown progeny and 18.5% each of red and black progeny.

Brown x black matings produced 52% brown progeny; 40% black progeny and less than 3% red progeny

Black x black matings (included for comparison) produced 12% brown progeny and 1% red progeny.

The inclusion of at least one red parent increased the proportion of white progeny produced, while the inclusion of at least one brown parent

increased the proportion of black progeny produced.

Thus, on the basis of the progeny colour results, it appears that red colour is separate from brown/black colour and is not simply a dilute form of brown.

It is also likely that red colour is affected by different diluting genes from those which operate on brown/black pigment. In other species, this is called a 'chinchilla' gene. It dilutes red/yellow pigment to fawn, biscuit, cream or near-white, with the animals retaining dark eyes and noses (Searle, A.G.). This may account for some alpacas being born fawn and turning white with maturity. A diluted red alpaca with white-spotting genes would also be indistinguishable from a white alpaca.

In the model originally proposed by the author, red and black colour genes were assumed to have an additive effect in producing brown fleece colour. While this may not be valid for all brown fleece, the red x black mating results are very suggestive of this effect.

In the modified model, the B gene becomes a dominant brown allele, with black being the recessive bb allele. The R gene stands as representing full colour as in a D (diluting) gene for brown/black pigment; or full colour as in a C (chinchilla) gene for red/yellow pigment.



A rare 'appaloosa' cria, born white with tan spots. Sire: SLF.



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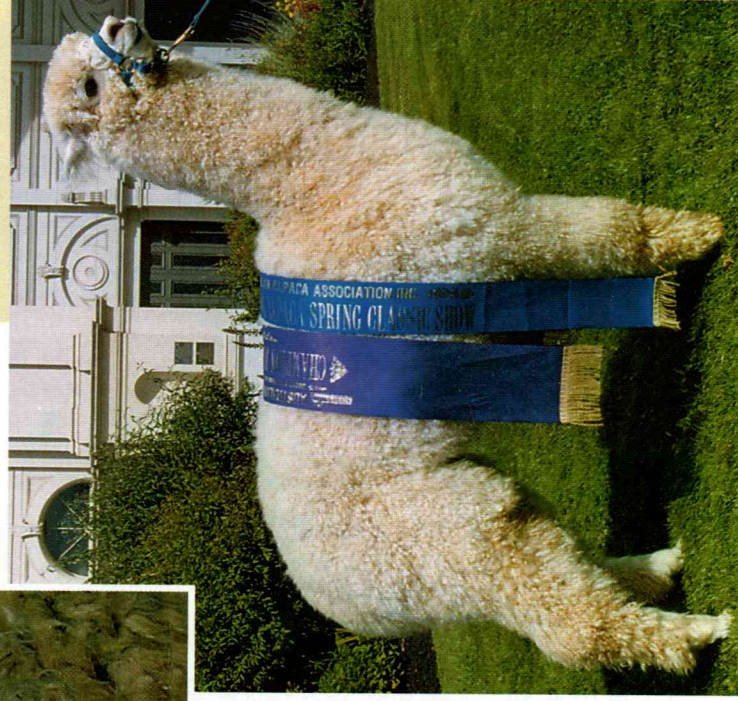
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CONCLUSIONS

The following conclusions have been drawn from the results of all three studies.

1. Coloured fleece types in alpacas appear *to dominate* over white fleece types.
2. Brown fleece colour appears *to be dominant* over black fleece colour.
3. Grey fleece colour generally appears to be a combination of recessive diluting genes operating on brown/black pigment, minor white-spotting genes producing the characteristic white face and feet of grey alpacas.
4. Red fleece colour appears to be a separate colour from brown/black colour.
5. White and white-spotting genes appear to be closely associated in alpacas. White alpacas may be a mix of different genotypes, rather than one clear genotype.

Types of 'white' which may be present include:

- a. diluted red (chinchilla) alpacas with or without white-spotting genes;
- b. mega white-spotted alpacas carrying colour genes;
(these two types may account for some of the dark-eyed, dark-nosed whites);
- c. possible near-albino genotypes with permanent pink skin and white fleece;
- d. blue-eyed white;
- e. dominant white genotypes.

This mix of genotypes may account for some of the 37% of coloured progeny born so far from white x white matings in the Australian alpaca herd.

Further research on the results in successive Herd Books will be continuing.

Disclaimer

The author's opinions and conclusions are based solely on personal research and interpretation of the mating results present in the Australian Alpaca Association Herd Books, Vols. 1-6 inclusive.

The author is not responsible for any breeding or other decision taken by any other person in relation to these opinions or interpretations.



By nine months old, this cria had darkened all over to a greyed fawn colour, but still has the tan spots clearly visible.



*Blue-eyed, dark-nosed white dam with dark-eyed, pink-skinned white cria.
Sire: Dark-eyed solid white.*

The First Australian 'New Millennium' cria?

Laying claim to fame is Amanda Clymo of Acacia Alpacas, who asks, 'Is Milly the first Australian cria to be born in the new millennium?'

(We could argue that we haven't yet reached the new millennium, but there's no argument we've moved into a new century.)

Milly was discovered, still wet and not yet on her feet, at 4 am on New Year's Day by the Clymos, as they arrived home.

This photograph, taken at daybreak, is aptly labelled 'The Morning After'. By that time, 'she felt rather as we did,' according to Amanda. And so say all of us!



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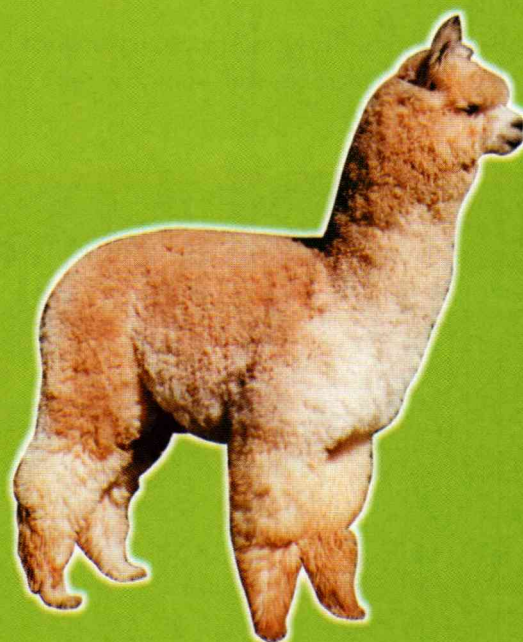


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pictured: Merrandale's Wyona Golden Nougat
Now standing ay Young, Southern NSW.

'THE COMPLETE PACKAGE' FROM SYDNEY

The complete package!' said alpaca Judge, Wendy Billington in awarding the Supreme Champion ribbon to Atalaya Angelique who, at just eight months, was the youngest of the finalists. 'Good head, squareness, excellent lower leg coverage and a density equal to that of any of the older animals,' she added, to the delight of The Gorge Alpacas' Julie Bird, who had travelled from Sydney for the day to compete at the Kangaroo Valley Show.

Owned by The Gorge's clients, Trish and David Anderson of Sydney, the solid white daughter of Jolimont Massimo and the Peruvian import Jolimont Alosia, Atalaya Angelique had earlier taken out the Junior Female title, but Julie was genuinely surprised at the result in a very competitive final which also featured Berry Supreme Champion, Illawarra Titan.

The Gorge Alpacas brought three animals to Kangaroo Valley 'mainly for the experience', according to Julie, but the Championship ribbon made the trek from Arcadia worthwhile.

Cambewarra stud, Illawarra Alpacas, represented by Celia Cook, had another successful show, with a Supreme

Champion Fleece (Illawarra Uphoria) and Championships in the Junior and Senior Male and Senior Female categories, as well as the Sires' Progeny title with the consistently well-performed Jolimont The Don.

With over 60 alpaca and fleece entries, the show was certainly representative of a wide spread of breeders in NSW, with visitors from north of Sydney and the Southern Highlands as well as the local entrants. Amongst those locals, Dianne Marshall's Tahara Alpacas of Berry and Jack Hollinger's Bella Vista Alpacas of Coolangatta took out honours in the suri classes.

Chief Steward, Pauline Nelson must have been pleased with Judge Wendy Billington's later comments on the much improved standard in the region over recent years, particularly regarding the higher quality of the fleeces. Wendy, proprietor of one of Australia's leading breeding establishments, Cedar House in Yass, has the credentials to speak with authority. She concluded a very warm Kangaroo Valley Saturday with much optimism and plenty of encouraging comments.

Alpaca breeders were in the midst of a very busy schedule, with the Canberra and Robertson shows ahead of them.

Everything's the same... except the name



Observant souls may have already noticed that the name PTW Desktop & Design no longer appears as part of editorial and advertising contact points.

PTW worked in tandem with another company, Price & Payne Advertising during the last months of 1999. The relationship was cemented as at 1 January, 2000 when the two organisations merged, resulting in the formation of a new company, kage group pty ltd.

For AAA members wanting to advertise in Alpacas Australia, submit articles or pass on information, nothing has changed. Jennifer Davis and I are on the job, as usual. Same address and telephone – even the old email address still works. Of course, if you want to be up with the latest, you should email carol@kage.com.au (or jennifer, similarly). But, if you call us and are answered by someone saying 'kage group...' DON'T HANG UP! It's really us! (Ed.)

Processing of alpaca fibre in Australia

Niall Finn, Lucy Vuckovic, Susan Miller
CSIRO Textile & Fibre Technology

There is some debate within the Australian alpaca industry as to the relative merits of processing fibre domestically or simply exporting raw fibre for processing overseas. Some in the industry believe that the expertise is not available in Australia to convert alpaca fibre into quality goods while others think that domestic processing provides vital linkages that help growers improve their product to meet the needs of processors and so increase its desirability and value. The authors are of the opinion that domestic processing is good for the industry as a whole and that the requisite expertise exists in Australia. There is room to improve the quality of the Australian clip, through breeding, animal husbandry and in clip preparation prior to sale.

Historically the biggest early stage processor of alpaca fibre in Australia was Woolshed Yarns. The company was established in 1976 and since then has been processing worsted yarns for weaving and knitting as well as other trades. Since the operations shifted to Broadford in 1989, Woolshed Yarns have been successfully producing 100% alpaca tops [pre-spinning sliver stage] and 100% alpaca yarns and wool/alpaca blend yarns for the local market. In the last two years a new company, Elite Fibre, has entered the processing market specialising in alpaca and other more exotic natural fibres. They are now the major alpaca processor in Australia, taking raw fibre through to yarn.

The research project described here emphasises the importance of fibre quality in the production of quality fabrics. The research was conducted at CSIRO Textile & Fibre Technology in Geelong by two technical staff members who were undertaking diploma studies at RMIT University, Susan Miller and Lucy Vuckovic. Their project, entitled 'A Comparison of Processing Alpaca, Wool and their Blends', aimed to investigate the problems of processing alpaca fibre on the wool worsted system. The Alpaca Co-operative donated 50kgs of 25µm greasy alpaca fibre for the work. The fibre

provided was not of good quality. It is probably not typical of the current Australian alpaca clip but such fibre may have been common at that time (1996).

Alpaca fibre differs from wool in a number of respects. These differences require adjustments to machinery and processing procedures compared to those used for wool. The changes are required to maximise the efficiency of processing while retaining alpaca's distinctive characteristics. It is common to blend alpaca with wool of the same average micron but in this work it was thought worthwhile to investigate the effect of wool micron by blending with two finer wools, 21µm and 18µm.

The worsted process has many steps designed to clean the fibre, remove vegetable matter and fibre entanglements and to align the fibres in a parallel manner prior to spinning. The high level of fibre parallelism the worsted system provides, gives a smooth yarn suitable for woven suiting fabrics or fine knitwear with a sleek finish and good stitch definition.

The worsted process is outlined in Figure 1. The scouring step washes away grease, dirt and suint with warm water and detergent and light agitation. At this stage it is important to provide good cleaning while avoiding excessive fibre entanglement that will cause fibre breakage in later processing. Following scouring and drying, the fibre is opened and blended and lubricant and water is applied prior to carding. The lubricant and water help to reduce fibre breakage and problems with static electricity in later processes.

In the worsted carding process the card employs rollers clothed in finely toothed wire running at different speeds. The fibre is distributed between the rollers and eventually feeds to the output of the card as a continuous web. The roller to roller action separates the tufts into individual fibres then recombines them as a web that is condensed into a sliver, a rope like structure that is coiled into large cans. At this stage a lot of vegetable matter is also removed by the card's action.

The research project... emphasises the importance of fibre quality in the production of quality fabrics.

The slivers from the card are then fed into machines called gills. Usually eight or ten slivers at a time are fed together into the gill, providing a blending function. The slivers are 'drawn' so that the output sliver is finer than the inputs and travels much faster. The slivers are drawn through moving pin beds to align the fibres in a parallel fashion. At this gilling stage slivers of different fibres can be blended together. After two or three stages of gilling, the slivers are presented to the comb. Up to 24 ends are presented at once. The combing machine combs the leading tufts or beards of the sliver with a circular, rotating comb. The ends of the tufts are then combed by drawing them through a fine 'top comb'. The tufts are overlaid on the previous tufts to form a new sliver, which has almost all the residual vegetable matter (VM), fibre entanglements (neps) and short fibre removed. Combs are usually set to remove fibre shorter than around 34mm to provide good spinning performance and yarn quality.

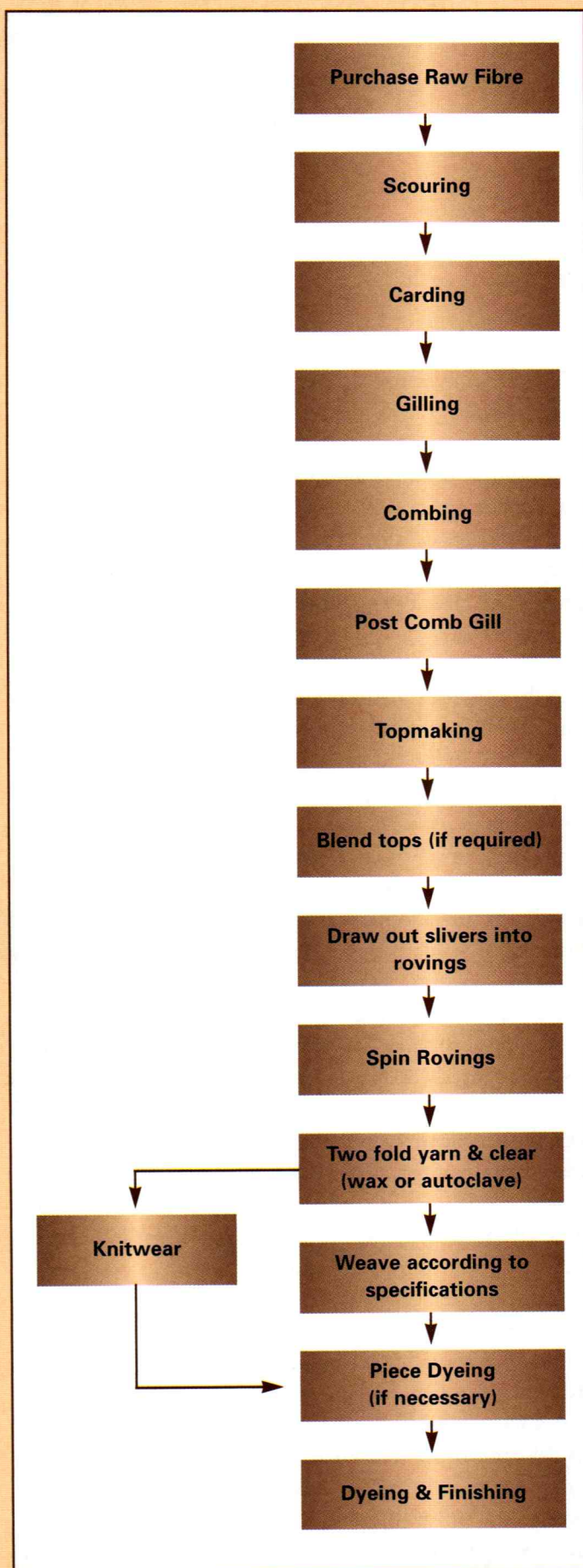
After combing, several more gilling stages take place to provide slivers of uniform density along their length. The product at this stage can be rolled into balls called 'tops'. This is the stage at which the 'top makers' process is ended and he will sell these tops to spinners, or in the case of vertical companies, pass them on to the spinning department.

The tops are then drawn finer in further gilling steps and finally passed through the roving machine which rubs the now fine slivers into cohesive individual 'rovings'. This is the stage prior to spinning. The rovings are then presented to the spinning frame where final drafting brings the sliver density down to the desired final thickness and twist is inserted to form a yarn. The twist level (turns per metre) is higher in yarns intended for weaving than for knitting. Spinning is a low productivity and highly labour intensive process and so the efficiency of running is crucial at this stage. The fibre and roving quality are thus of paramount importance to the cost effectiveness of conversion of fibre to yarn. The yarns at this stage are called singles and are often then plied together in twos or threes for knitting or weaving. The plied yarn has different characteristics that are desirable for weaving and knitting.

For knitting, a two-fold yarn is used to provide a balanced yarn, one that is twist neutral and will not make a garment twist when it is washed, a fault known as spirality. For weaving, the yarns are plied or two-folded to bind in the surface fibres because weaving is highly abrasive to the yarn surface and normal singles yarns cannot survive it without become very 'hairy' and breaking.

CSIRO and The Woolmark Company have developed a process called Solospun™ that provides the surface fibres of singles yarns with the necessary security to allow weaving without being plied. Because it greatly reduces yarn hairiness it was thought Solospun™ might be useful in the processing

Figure 1: Processing flow chart



of alpaca fibre because the first yarns spun in these experiments suffered from high hairiness.

The alpaca fibre was processed in 3 lots: one pure alpaca fibre, one blended 50:50 with 18µm wool and one blended 50:50 with 21µm wool. These lots were compared with two pure wool lots, one of each type.

From the tops produced, a variety of yarns were spun. Yarn count is measured in terms of weight per unit length or length per unit weight. Many different systems of units are used around the world in the textile industry. At CSIRO 'Tex' is used, which is grams per kilometre of yarn. In some companies 'metric count' is used, designated by Nm. Nm=1000/Tex and Tex=1000/Nm so conversion is simple. Many other systems are used globally, many based on old imperial weights and measures.

The twist of the yarn is described in turns per metre (tpm). However, the same turns per metre in yarns of different thickness or count produces different effects. The thicker yarn is more tightly bound up for the same turns per metre. For this reason, a 'twist factor' is also used to take account of this effect. Yarns with the same twist factor will have approximately the same hardness, regardless of count. Many types of twist factors or twist multipliers are used in the textile industry, a standard one is the metric twist factor, $\alpha_m = \text{tpm} \sqrt{\text{Nm}}$.

Table 1 below shows the range of yarns spun for these experiments. A metric twist factor of $\alpha_m = 70$ is appropriate for a singles yarn that will be two-ply for knitting.

Table 1: Yarn Characteristics

Blend	Yarn Count Nm	Twist TPM	Twist Factor α_m
Alpaca	34	408	70
		524	90
50:50 Alpaca + 18µm wool	54	516	70
		663	90
50:50 Alpaca + 21µm wool	40	442	70
		568	90
18µm wool	63	555	70
		714	90
21µm wool	47	482	70
		620	90

The twist factor used in plying the weaving yarns was $\alpha_m = 120$ and for knitting the plying twist was 55% of the singles twist, for twist balance.

Because the first yarns spun had very high hairiness, the researchers thought that it would be interesting to see if the



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Solospun™ technology would give any improvement. They therefore split the lots into two and spun half of each lot with Solospun™ and half of each lot using conventional ring spinning. Solospun™ is usually used to make singles yarns that are then woven directly and so are spun at twice the count of an equivalent yarn that is destined to be plied. However for the purposes of this study the yarns were still spun at the finer count and two-folded and the effect on hairiness and processing performance noted. All the Solospun™ yarns were much less hairy than the normal yarns and the pure alpaca Solospun™ yarn was slightly stronger than the normal yarn.

The yarns produced were woven or knitted as appropriate and their performances recorded. The fabrics produced were dyed and finished as normal. The quality of the knitted samples was judged by a team of assessors for softness. It was found that the handle or softness of the fabrics improved with decreasing average fibre micron of the blends used. Thus the fabric assessed to have the most desirable handle was that spun using the blend with 18µm wool, followed by the blend with 21µm wool then the pure alpaca. Both pure wool fabrics were preferred to the alpaca and the blends because of their finer fibres.

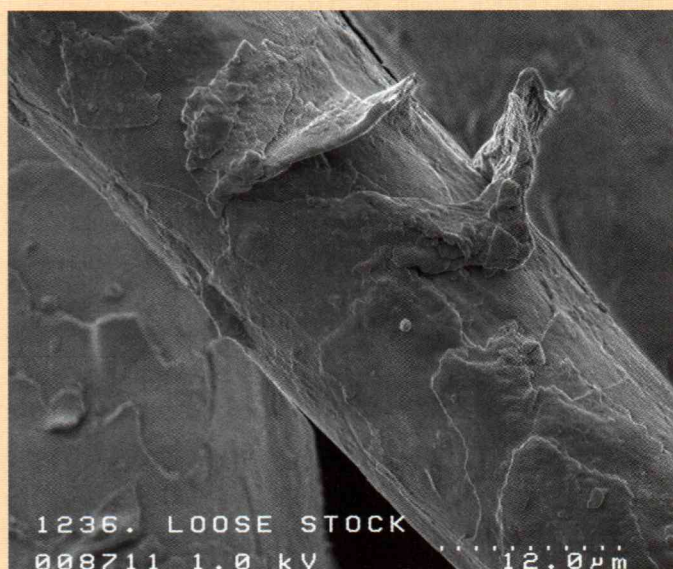
The biggest difference between the wool and the alpaca fabrics was the colour after dyeing. It was thought that this was due to the higher medullated fibre content of the alpaca fabrics as some fibres appeared not to take up any dye at all.

Maintaining adequate moisture content and excessive fibre length were the most prevalent problems in processing. The alpaca fibre appeared to dry out more rapidly than wool, especially if fibre was left for a time on an idle machine. Low moisture content results in static electricity problems. This causes fibres to stick to rollers in machines causing it to build up into laps and causing sliver breaks and stoppages. The researchers recommend the frequent application of water through sprays during carding and gilling steps.

The excessive length was due to the fibre being overgrown. It caused problems right through processing and contributed to difficulty in removing all the vegetable matter in combing. The high level of vegetable matter in the fleeces was partly due to the behaviour of the alpaca animals, with their predilection for rolling in the dirt and so grinding dust, grass and seeds into their fleeces. With large differences in fibre quality from different regions of the fleeces, clip preparation prior to sale is crucial for high quality fleeces. It is easier to remove the poor components at shearing time than at the mill.

The overgrown fibre causes problems not only from its excessive length. Having spent more time under the harsh Australian sun, over-grown fibre suffers greater damage due to ultra-violet rays and other weathering effects. This changes the way the fibre takes up dyes, resulting in uneven appearance in fabrics.

Figure 2



It might be worthwhile for growers to consider breeding for pure white fibre. The high level of unwanted dark fibre present in the fibre used in the study would have made it impossible to dye in pale shades to commercial quality. While there may be a niche market for naturally coloured alpaca fibre, as there is for wool, far greater flexibility is provided to the fabric maker if white base fibre with low dark fibre contamination is available.

The researchers also studied in detail the quality of the fibre donated by the Co-operative using electron microscopy and related the fibre damage to effects in processing. The electron micrographs of fibres after scouring showed damage to the scale structure as seen in Figure 2. The scales are lifted and curled and in the worst fibres no scale structure is visible at all.

A sample of raw fibre was then studied to see if the damage

Figure 3

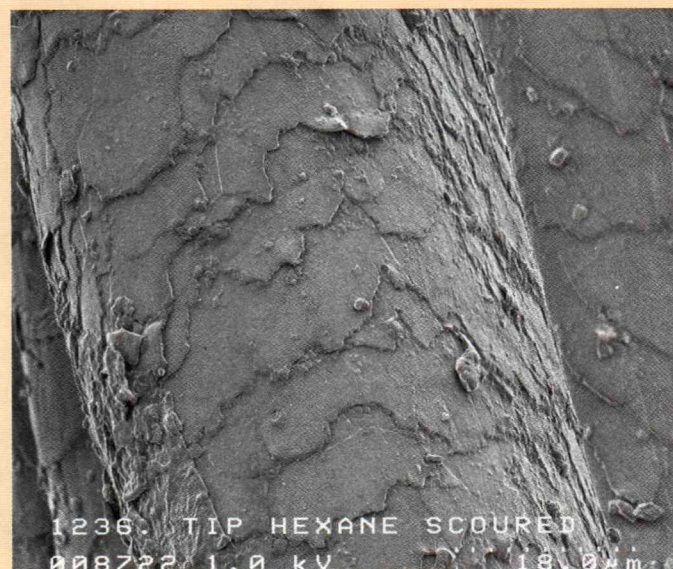
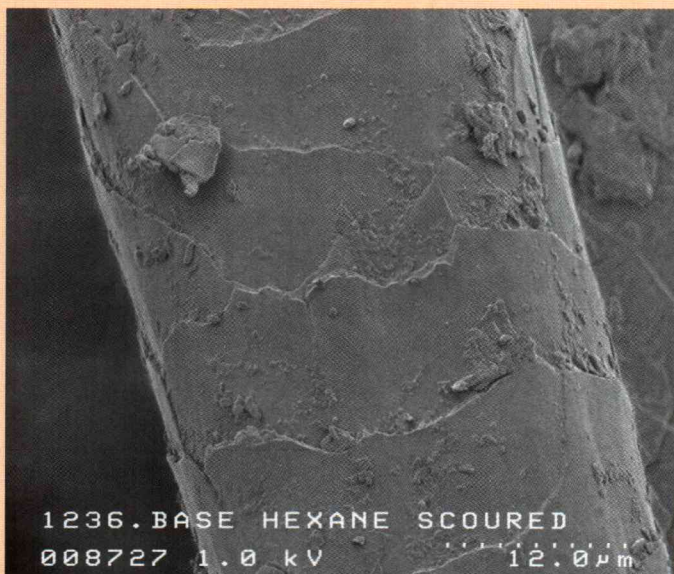


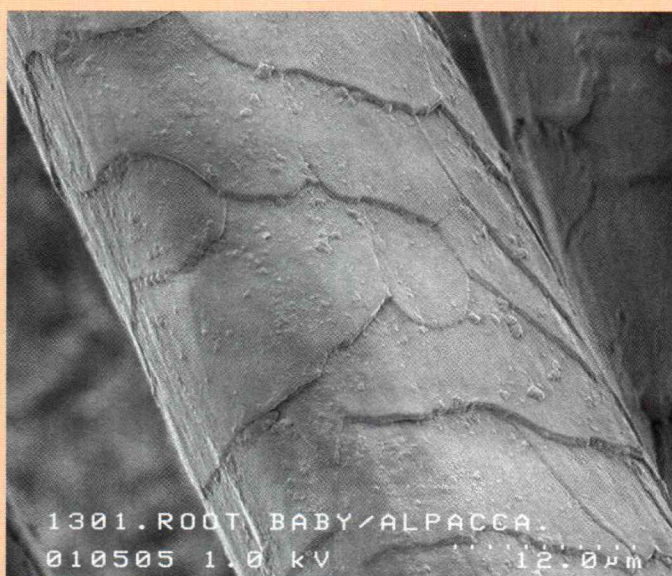
Figure 4



had occurred during opening and scouring. This sample was cleaned with a solvent (hexane). They also obtained for comparison some cria fibre and some annually shorn fibre. These samples were compared with the overgrown fibre used in the trials.

Because the raw, solvent cleaned fibre samples had not been mechanically opened and scoured it was possible to identify the fibre tip and fibre base. It was clear from these photographs (Figures 3 to 5) that there is less dust at the base than at the tip. In un-scoured fibres there is more grease at the base than at the tip. The level of scale edge damage is also much less in the cria and annually shorn fibres but some damage was still present in the raw over-grown fibre. This

Figure 5



suggests that opening and scouring did not cause all the scale edge damage seen. It is likely that UV damage from the long exposure of the overgrown alpaca to the elements and animal rolling had caused this.

According to industry sources, grower education is already making a big impact on clip quality and classers do not see the quantity of over-grown fibre that was present several years ago. However, there is still room for improvement in clip preparation to avoid very coarse fibre, in pasture management to avoid vegetable matter contamination and in breeding for finer and whiter fibre. Efforts on the part of growers to achieve these ends can only help the alpaca industry to thrive in Australia.

This article was initiated by Carol Mathew, who comments: 'There is some debate in the Australian alpaca industry over whether we should be value adding to alpaca fibre or treating it as another commodity to be sold overseas for value adding, as the technology and know-how is superior there. It can be argued that not only does value adding increase the economic well being of a country, it also allows the various players in industry to learn about production from the raw fibre through to the end product, and therefore help produce a finer and more controlled product outcome.'

'With this in mind the Alpaca Co-operative has sought to support research into fibre processing and donated fibre for this project.'

'In her article in Alpacas Australia Issue 28 1999, Jan Maude pointed out the structure of alpaca fibre is different to wool and therefore produces a number of processing problems. Jan referred to the use of lubricants and moisture to overcome problems in processing. The aim in gaining knowledge is to reduce machine down time and the need for constant cleaning and resetting of machines while preserving the unique qualities of alpaca fibre.'

'The researchers found that there is very little in the public domain regarding the processing of alpaca. Apparently, since the 1960s this information has been treated as a trade secret leading to the confining of industries to particular areas such as Italy and the U.K. It has also led to less knowledgeable processors producing inferior product which damages the reputation of alpaca fibre.'

'There is need for much more research into processing given the scant documented knowledge. Associate Professor Xungai Wang, in consultation with Bruce McGregor, is preparing a submission for RIRDC funding to do some detailed research over a period of three years. The knowledge thus gained will mean that Australian manufacturers will take to processing our fibre on a more regular basis, it will also mean they will produce a finer product – critical for the industry. Our aim should always be to preserve and enhance the wonderful qualities of alpaca. We need to preserve the softness of handle and silkiness of the fibre – qualities that induce the customer to pay the price tag for alpaca again and again. We also need to consider, however, whether Australia should publish this material freely or use it to give us the edge in processing?'

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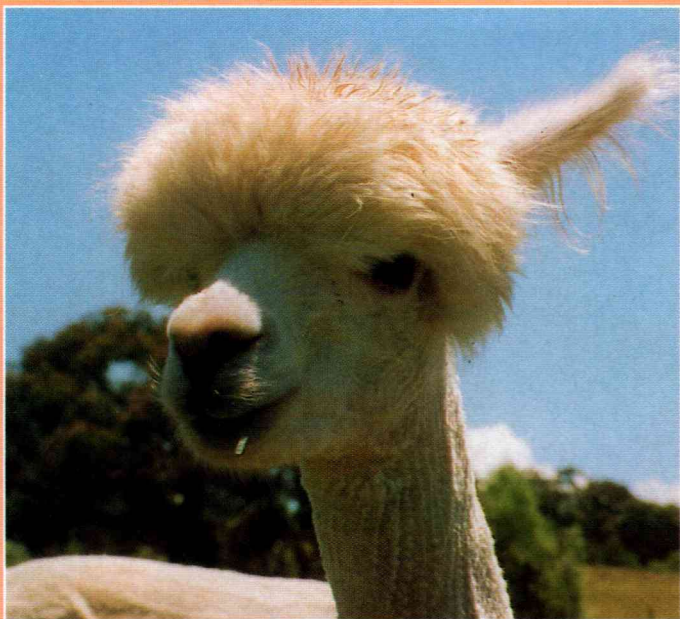
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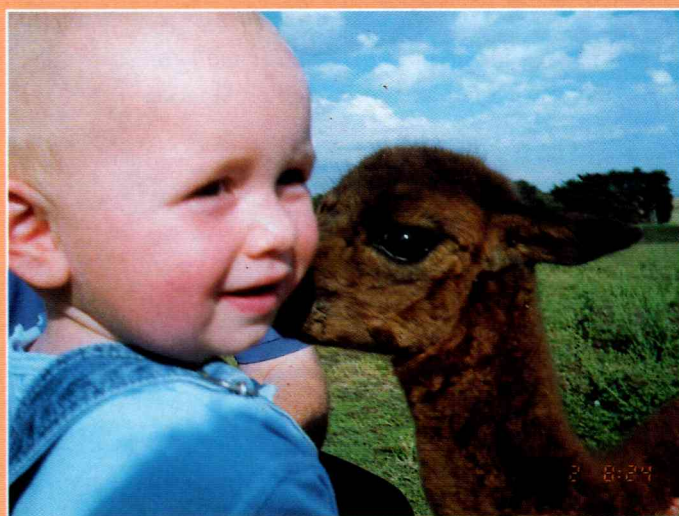
'I'm having a bad hair day'.
Susie Clark, Chachani Alpacas.



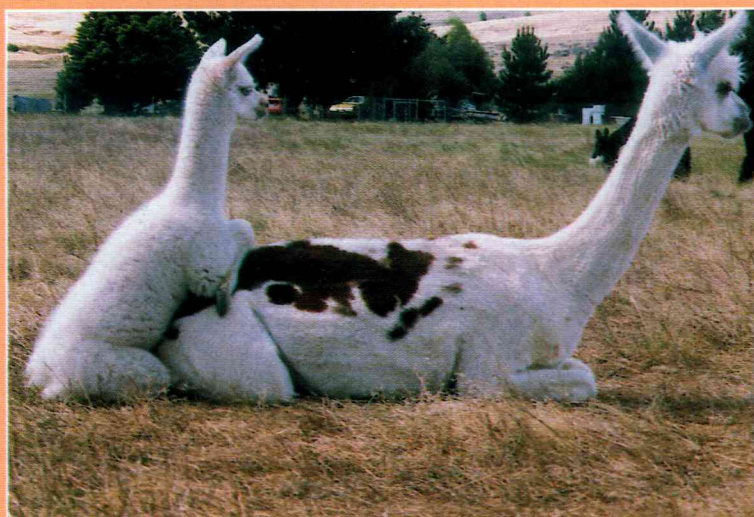
'Well, then I said...'
Wendy Beer, Beersheba Alpacas.



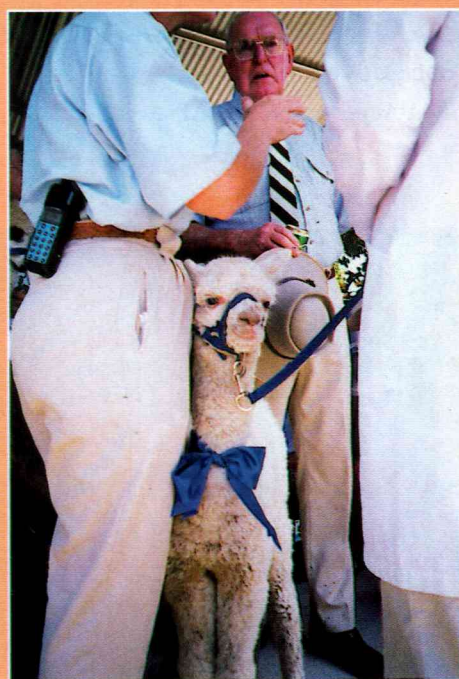
'La la lah...la la la lah...'
R&M Grubits, Intrepid Alpacas.



'Tell me a secret'.
Carolyn Jinks, Benleigh Alpacas.



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Matt Ridley, Blaydon Alpacas.

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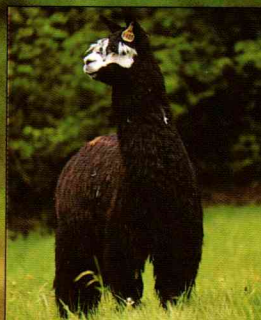
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