



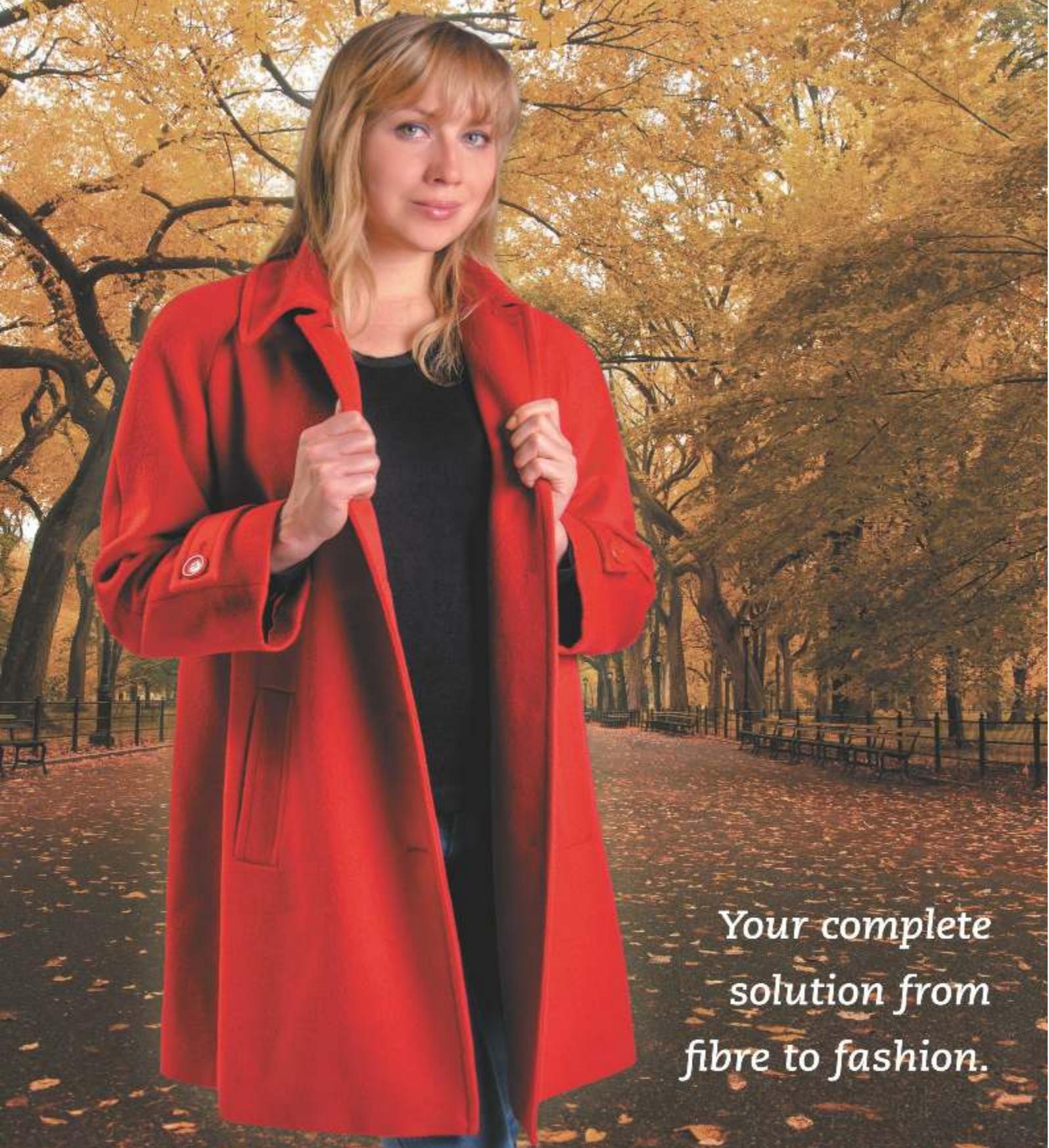
ALPACAS AUSTRALIA

The official publication of the Australian Alpaca Association Ltd



In this issue:

- Alpunka Knits
- Show Roundup
- Fibre Focus



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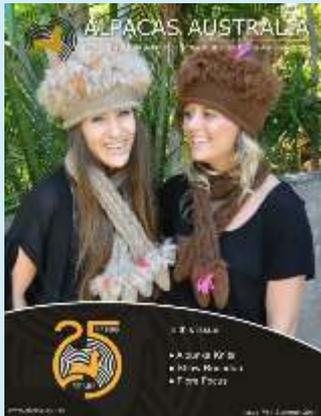
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Cover: 'Alpunka' hats & Scarves by Loani Prior

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President's Message

This is the final issue of the Alpacas Australia magazine for 2014. Thank you to all of the contributors, our magazine committee and our editor, Esme Graham for producing an informative magazine to keep us abreast of industry developments both locally and internationally.

This edition includes reports on the major industry shows from the latter half of 2014, along with stories about the importance of presenting your fleece harvest to maximise potential returns. For some members the herd will have been shorn weeks ago, for others shearing will still be underway. How you manage your harvest will impact the options you have to achieve a reasonable return, so investigate the options available and ensure you present your fleece to its best advantage by following best practice for shearing, preparation and storage.

2014 has seen some remarkable Australian alpaca industry achievements – the first shipment of alpacas to Turkey early in the year, and more recently, one of the world's largest single shipments to China. Our Classing Code of Practice has generated interest from several overseas countries, and the trial collection, classing and interlotting of alpaca fibre through Schute Bell wool brokers confirmed the viability and potential of this process.

Suri breeders continue to work together also to collect quantities of suri fibre to continue important research into the processing opportunities across micron and colour ranges. Alpaca meat continues to appear on the menu at discerning restaurants and is gaining in popularity. Our National Conference featured local and international presenters covering topics as diverse as animal health, fleece and meat research. The Alpaca Fibre Showcase display was featured at Sydney Royal Show, Mudgee Field Days, Mudgee Alpaca Show, the Royal Adelaide Show and at the National Show and Sale - with a combined audience of between 1.2 and 1.5 million visitors.

Thank you to our volunteers, committee and panel members, office staff and my fellow Directors for your efforts this past year. 2015 marks the 25th year since the Australian Alpaca Association was formed. With each of you I look forward to celebrating this milestone and reflecting on the developments in the Australian industry throughout the past 25 years, along with celebrating further success as the industry goes from strength to strength. Thank you for being part of that success.

Kind regards
Michelle Malt
AAA President



General Manager's Message

As we head towards the end of 2014, I must acknowledge the strength of our partnerships that lead to an evolving viable Australian alpaca industry and an association that respects the collective efforts of our AAA Board and most importantly the members. With 2015 fast approaching, we will continue to face the future with a greater spirit of teamwork, determination and passion for what we do to ensure our industry receives the due recognition and rewards it truly deserves.

A key focus throughout 2014 and into 2015 is for the National Office to continue to listen to our members, and drive strategic change as set by the Board, ensuring environmental factors are addressed and stakeholder needs met in line with AAA's key objectives.

Important areas we will address and plan for include:

- Ensuring an environment for a modern and innovative industry that meets the requirements of the next generation
- Continuing to add value by improving our member service offering
- Maintaining a strong commercial focus
- Establishing strong external partnerships and advocating on behalf of industry

In terms of our strategic and operational movement, a snapshot of recent activity follows.

Member Services Review

As per our strategic theme of providing and keeping a desirable membership, the AAA Board endorsed a Member Service Offering Working Party whose brief in conjunction with management was to assist the Board in providing a membership focussed service at all times, by:

Undertaking a review of AAA's member service offering including associated transaction fees, annual subscriptions and membership categories. Considering alternative member benefits such as rewards programs, insurance, member introduction incentives, etc.

Providing the Board with recommendations for consideration to ensure AAA can provide its members a value added service offering taking into account financial implications with any potential change to fee structures.

The working parties charter and action plan has been signed off by the Board and participants locked in, (including members of small, medium and large studs and from a variety of states), with work to soon commence. At some point during the review all members will be given the opportunity to lodge a submission on the working parties terms of reference, so please look out for this notice if you wish to have a say.



Exports

In late September 2014 the Australian alpaca industry completed the world's largest ever known export of finely fleeced alpaca breeding stock into China, with some 525 animals leaving our shores. The China export follows this year's opening of trade with Turkey which chose to start its national herd with Australian bloodlines, and new trade opportunities with Korea following the announcement of protocols for alpaca export by the Federal Government.

These markets are exciting immediate business opportunities for Australian studs, and extend the traditional export markets we have long established with Europe, the UK and New Zealand for our premium bloodlines. Most of the opportunities have been generated by private alpaca investors for which they are to be congratulated. The association is nonetheless starting to take a more proactive role in this space by beginning to understand the linkages between government, establish stronger relationships and, where appropriate, advocate on behalf of the industry in an attempt to break down barriers to international trade.

The AAA management and Board will be providing further information on exports via the AAA website to help members understand and be better informed about the role of government and associated bodies in protocol development and import/export processes. Members must however become proactive, start reading, making enquires and talking to fellow members already engaged in the export trade. There are opportunities if you have the animal that meets the demand of the buyer.

Christmas and New Year

Thank you to all members for their enthusiasm, passion and goodwill as the National Office in conjunction with your volunteer Board continues to provide efficient and quality customer service and support to all our stakeholders.

As we come into December I wish all families, friends and associates of the AAA a safe and merry Christmas, wonderful New Year and look forward to your continued support in 2015.

In closing, I do express my sincere appreciation to all our hard working National Office staff and advise members that the office will be closed for a few weeks during the Christmas and New Year period, so please do not leave member transactions/services to the last minute. Refer to the AAA website for exact closure dates.

News & Views



Keeping The IAR Up To Date

Registered animals, either deceased or sold can be removed from the database by notifying the AAA office by phone or email or members can download form A6 from the website, fill it in and forward to the office.

Rarely Seen Outside South America New birth at Twycross Zoo United Kingdom!

Twycross Zoo is delighted to announce the birth of a female vicuna, born on Friday 19th September. This latest addition is yet another success to the zoo's breeding programmes which have already seen the births of two critically endangered Amur leopards, twin baby emperor tamarins, and an Asian elephant to name but a few in 2014.

Mother Maxine and father Felix have both been at Twycross Zoo since 2006. Maxine came to Twycross from Belfast Zoo and is an experienced mother while Felix arrived at Twycross from Lodz Zoo in Poland and has now fathered ten crias, making them both excellent parents. The female vicuna cria is the fifth baby between the pair. Their latest arrival has yet to be named but follows siblings Flora, Guy, Oka and Bayley who are now all part of other zoos healthy breeding programmes. Vicuna crias are independent babies and the little female was on her feet within 15 minutes of being born.



Apology

We wish to acknowledge that the items included in the article - "Do you have a cria kit" in Issue 73 were taken from the booklet "ABC for Alpaca Owners" by Carolyn Jinks & Dr Ewan McMillan. This very practical handbook is available from - www.alpacadynamics.com or www.grandeverge.com

Condolences

Flags were flown at half mast in the Clarence Valley recently as a mark of respect for Jeremy & Sue Challacombe who died in a car accident at South Grafton. Jeremy was a Councillor with the Clarence Valley Council and Sue, a retired school teacher, was President of the Sth Qld Northern NSW Region of the AAA from 2010-2013.

Both tireless workers for the local community and the AAA, they will be sorely missed. Our thoughts are with their family and friends as they try to come to terms with their loss.

2014 Royal Adelaide Show Report

Lea Richens
Councillor, Royal Agricultural & Horticultural Society of SA Inc
Supervisor, Alpaca Section

The 2014 Royal Adelaide Show opened amidst a fanfare of excitement and anticipation.

Its 175th Birthday celebrations were marked pre-show by the launch of an intriguing history of the Society, Sharing the Good Earth and more than 1450 guests at the lead up Gala Dinner. The Show itself promised record competitive entries, huge crowds, and a myriad of events to recognize this historic event. Even the weather was near perfect. But instead of a Show emulating so much history and happiness, it will instead be remembered as the saddest in the Society's history, with the tragic death of an eight year old girl when flung at high speed from one of the feature Show rides. Words cannot describe the cloud of disbelief and despair which hung over the showgrounds during its closing days and over the wider community.

From the Alpaca Section I am happy to record that, despite some hiccups on inspection day, we were able to deliver a well organized and smooth running event. Exhibit numbers were lower than previous years, but the quality of both alpacas and fleeces was very high. For the second year in a row, the Royal Adelaide Show Supreme Champion Huacaya (also the South Australian Alpaca Breed Supreme Champion) went on to take out top honours at the National Show. Thank you to all who entered, and congratulations to everyone who won a ribbon and/or award.

This year we were very pleased to welcome judges Angela Preuss and Dean Ford, who worked in tandem over the 3 days of judging. They spoke highly of the standard of entrants and both provided valued commentaries to exhibitors. We were particularly grateful for their expertise and the fact that they were able to stay on to oversee and encourage the development of our Junior Judge section.

Our Pavilion enjoyed a steady crowd of visitors throughout. The large contingent of alpacas presenting at the Grand Parade made for an impressive display on the main arena. Several PR opportunities arose and to those undertaking media interviews, sincere thanks.

May I also take this opportunity to thank everyone involved at this year's Royal for their valued participation and support – our exhibitors, our wonderful stewards and marshals, generous sponsors, the team of dedicated Urrbrae students, the shearing team whose demonstrations again attracted large crowds, to those exhibitors who remained, with their alpacas, at the Show for its ten day duration - to everyone who helped in any way – a huge thank you. Royal Adelaide Show Results are available on AAA SA Region's website - www.aaasa.com.au



Results

Supreme Champion Huacaya – Ambersun Pure Exception (*above*)
Grand Champion Suri – Marquez Juanita (*centre*)
Grand Champion Huacaya Fleece – Softfoot Galloway
Champion Suri Fleece – Marquez Hannah
Mike Peters Memorial Trophy for most successful new exhibitor – Goldleaf Alpacas (WA)
Most Successful Junior Handler – Kahlia Nissen – Urrbrae Ag. High School (*above left*)
Champion Junior Judge – Yarden Yarom – Urrbrae Ag. High School

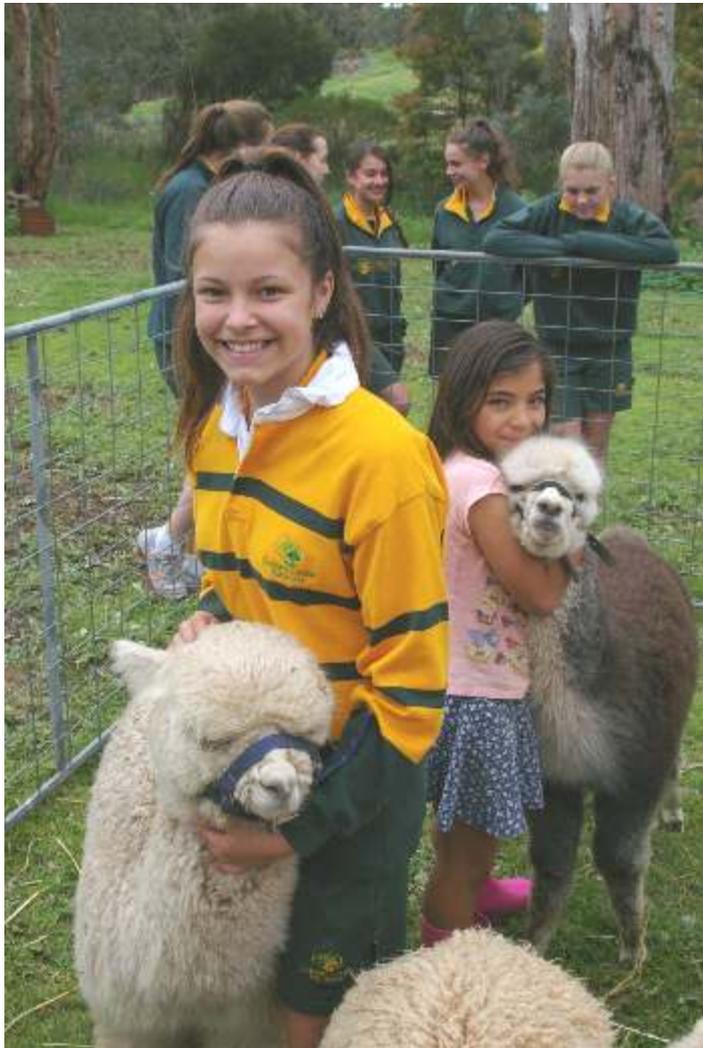
The South American Connection

Spanish Language Education Program

By Steve Marshall – Stansbury Alpacas

An exciting partnership between Golden Grove High School and Stansbury Alpacas has resulted in more than 1000 students visiting the farm and learning about alpacas over the last six years.

Languages Coordinator, Carlos Gallardo of Golden Grove High School established the excursion for year 8 students, enabling them to experience firsthand a very practical aspect of Chilean culture. Clearly a highly accomplished teacher, Carlos used the Stansbury Alpacas excursion to implement a course that thoroughly engages



students in the curriculum while extending their knowledge and understanding through an effective teaching and learning unit of work, based on alpacas.

Students arrive at Stansbury Alpacas and are greeted by Steve to be provided with an introductory farm overview and safety talk. From this point the group is divided into three to rotate through the educational sessions which are;

Group A with Steve Marshall for shearing.

Beginning with a talk about alpaca pedigrees, the IAR and then wool types and styles the discussion progresses to general alpaca maintenance and shearing. This is followed by students assisting with loading an alpaca onto a shearing table and then shearing. Students, some of whom have never owned a pet, are utterly captivated by the hands on experience as they are involved in holding the alpaca or collecting and sorting fleece. Students learn a great deal as commentary is provided while injections are given, and toenails and teeth are trimmed. Each group of students are amazed at the softness of the fleece not to mention how small alpacas actually are when they are shorn.

Group B with Liam and Hannah Marshall for halter training and breeding program discussion.

Students get hands on with halter training, capturing that all important mobile phone selfie with an alpaca and learn about showing alpacas. Liam also explains the breeding program but then takes it to a practical level with an alpaca mating and spit off demonstration. At this point there is usually a myriad of questions to be answered and a great deal of learning occurs.





Group C go with a teacher for a farm walk. Two teachers lead the final group of students for a 2 km walk around the property where they can see other livestock as well as the environment the alpacas graze while enjoying some fresh country air as they navigate the steep terrain.

Each year Stansbury Alpacas hosts approximately 100 students in the morning and again in the afternoon to rotate through the three activities on farm. Students have often commented, saying that it is the best excursion that they take part in, while teachers have said the level of student engagement and learning is excellent. Steve's other role, when not on farm is Principal of a High School, however, he suggests the running of an excursion similar to this is possible for any breeder with the time and organizational skills.

If you wish to have a copy of the program used by Stansbury Alpacas please contact Steve Marshall.

Email: steve@stansburyalpacas.com.au



The Knitter

An interview with Loani



"I knit from home, in my comfortable knitting chair, dreaming up little woolly objets d'art to adorn the humble teapot. Tea Cosies. I knit them, pattern them and give them a funny name. When I am done, they are photographed like haute couture and published in a book. Sometimes I even design knitting patterns for Alpunka's - alpaca beanies and scarves and donate the pattern to the Australian Alpaca Association!!"

When did you learn to knit, and who taught you?

Most of us learn when we are young from our mother or an aunt. We pick it up and put it down throughout our lives as needs must. I learned at the age of six from my Greek neighbour, Mrs Theodosiou. It hasn't always been so, but for me, now, a day without knitting wouldn't be complete.

What was the first original piece of knitwear or pattern you ever created?

There has never been any reticence to work without a pattern. There were whacky looking jumpers made for me and my little boy, when he WAS a little boy. Now he is grown up, he orders double knit argyle scarves. Smarty pants. The first thing I ever knitted was, no doubt, a scarf, garter stitch with the obligatory holes and uneven edging, possibly bright yellow.

Why tea cosies and what inspired you to create such out-there designs?

The tea cosies started with a family Christmas. And then a collection of beautiful craft books and, would you believe, FOUR codes of football (and the golf and the cricket) to get through on the tele.

Ideas come from everywhere, always with form and function right at the front of my brain. Yes, others' knitting inspires, but mostly it is stuff like art deco lamps and tribal masks and coral reefs, Melbourne Cup Day and well... Lady Gaga. I reckon a designer needs two qualities above all else and that is gall to think you can do anything and a strong inner critic to recognise when you aren't quite there yet. I have a lot of duds hiding in a deep dark box in my house.



Was it a difficult process getting your first book, Wild Tea Cosies, published?

No. Not at all. My luckiest stars all lined up at once. I made four phone calls to publishers of illustrated books here in Australia and on the fourth phone call there was the friendly voice of a managing editor, and SHE was a knitter! It sounded like a fun idea to her and within a month I had signed on the dotted line. Tea he he to all those who rolled their eyes on the end of the phone before that, I say!

Do you have a favourite design from your portfolio?

Now you wouldn't ask me if I had a favourite child would you? I love all my tea cozies. I love all YOUR tea cozies. How can one not love a tea cosy.

You teach workshops around the world to fellow 'Tea Cosy Nutters'. What's the best place you've visited?

The older I get the more I just want to stay at home. Is that bad? I live in the hills of Noosa - a little Australian paradise near the beach. I give two day 'At Home' workshops here. Tea Cosy Nutters come to me. We knit and talk and eat lemon meringue pie and everyone goes home with a tea cosy to warm their teapots and their hearts. Last year Hilary came all the way from Leeds to play tea cosy with us! Hi Hilary.

Who are your knit design heroes?

I love the work of Kate Davies. It is so considered and careful and classic and well, just beautiful. Jo Sharp is an Australian designer. Her garments are very wearable in our subtropical weather. Again they hold a lovely classic line. And a Nancy Bush sock always does the trick for me.

These are the things I love to knit and wear.

What do you have on your needles today?

Would you believe me if I said nothing! I wouldn't believe me either. I have a sock on the needles but I heard tell of a new baby coming in the family and somehow that sock isn't quite as inviting any longer.



Alpaca Hat & Scarf

Designed by Loani Prior



Materials

Hat: 2 x 50g balls Australian alpaca 8 ply.
30 x 30 square cm of stiff interfacing for the ears.
Scarf: 3 x 50g balls Australian alpaca 8 ply.

Equipment

- One set 5mm circular needles, 100cm long from needle tip to needle tip: Hat
- One pair 4mm circular needles, 100cm long from needle tip to needle tip: Hat
- One pair 6mm circular needles 80cm long from needle tip to needle tip: Scarf
- 6mm cable needle: Scarf (a 6mm dpn will do the job)
- Darning needle.
- Crochet hook.
- Fine wire brush. I used my cat's wire grooming brush. It's an easy purchase at any supermarket.

Method

Each part of the hat and the scarf is knitted in the round from the top down. This makes for very easy sizing. You can use any method to knit in the round. I used the Magic Loop. Go to YouTube and search "Knitpicks magic loop knitting" for a terrific tutorial.

Tip: It helps to mark the beginning of the round with a stitch marker.

Alpaca Hat

The hat is made up of three parts: a Beret, two ears and brushed tassels of yarn.

Beret: adult

Using 5mm circular needles and 8 ply alpaca, cast on 8 stitches and join in the round.

Work INCREASING rounds, as follows:

Round 1 (and each alternate round): Knit.

Round 2: Increase by knitting into the front and back of every stitch.

Round 4: *K1, increase in next stitch, repeat from * to end of round.

Round 6: *K2, increase in next stitch, repeat from * to end of round.

Round 8: *K3, increase in next stitch, repeat from * to end of round.

Round 10: *K4, increase in next stitch, repeat from * to end of round.

Continue in this increasing pattern until there are 11 stitches in each segment of the pie, a total of 88 stitches.

(To make a large adult beret increase one more time until there are 96 stitches in total.)

Keep increasing in the same manner but with TWO rounds between each increasing round until there are 15 stitches in each segment of the pie, a total of 120 stitches.

Knit 2 rounds

*(To make a large adult beret increase one more time and start the decrease with *K14, K2tog.)*

It is time to DECREASE. I'll get you started:

Round 1: *K13, K2tog, repeat from * to end of round.

Knit one round.

Round 3: *K12, K2tog, repeat from * to end of round.

Knit one round.

Round 5: *K11, K2tog, repeat from * to end of round.

Knit one round

Continue in this ever decreasing pattern with one round between each decreasing round until there are 10 stitches in each segment of the pie, a total of 80 stitches.

(To make a large adult beret, finish decreasing when there are a total of 88 stitches)

Change to the 4mm circular needles.

Work 12 rounds in stocking stitch (Knit every round) and cast off very loosely.

Beret: child

Work the same as for *Beret: adult* until there are 10 stitches in each segment of the pie, a total of 80 stitches.

Keep increasing in the same manner but with TWO rounds between each increasing round until there are 14 stitches in each segment of the pie, a total of 112 stitches.

Knit 2 rounds

It is time to DECREASE. I'll get you started:

Round 1: *K12, K2tog, repeat from * to end of round.

Knit two rounds.

Round 4: *K11, K2tog, repeat from * to end of round.

Knit two rounds.

Round 7: *K10, K2tog, repeat from * to end of round.

Knit two rounds.

Change to the 4mm circular needles.

Work 10 rounds stocking stitch (Knit every round) and cast off very loosely.

Ears (Make 2)

Using the 4mm circular needles, cast on 36 stitches and join in the round.

Work 8 rounds of: (K17, P1) twice

Rnd 9: (K6, ssk, K1, K2tg, K6, P1) twice (32 sts)

Work 5 rounds of: (K15, P1) twice

Rnd 15: (K5, ssk, K1, K2tg, K5, P1) twice (28 sts)

Work 5 rounds of: (K13, P1) twice

Rnd 21: (K4, ssk, K1, K2tg, K4, P1) twice (24 sts)

Work 5 rounds of: (K11, P1) twice

Rnd 27: (K3, ssk, K1, K2tg, K3, P1) twice (20 sts)

Work 3 rounds of: (K9, P1) twice

Rnd 31: (K2, ssk, K1, K2tg, K2, P1) twice (16 sts)

Work 2 rounds of: (K7, P1) twice

Rnd 34: (K1, ssk, K1, K2tg, K1, P1) twice (12 sts)

Work 1 round of: (K5, P1) twice

Do not cast off. Instead, cut the wool leaving a long piece. Using a darning needle, thread the long piece through the remaining 12 stitches and draw up tight. Sew a couple of extra stitches to secure. The purl stitches form the edge of the ears; the decreasing pattern marks the centre of the ear. Place the finished ears onto the stiff interfacing to draw an outline. Cut around the outline. Insert the interfacing into the knitted ear and fold in half lengthwise to shape the ear.

Woolly Tassels (Make about 30)

To make these very simple brushed woolly tassels, wrap the three fingers of one hand about 10 times with the alpaca wool. Cut a short thread to tie the circle of yarn firmly together at one end and cut the threads at the other end. Hold all the threads at the tied end of the tassel while you use the cat brush to brush (or card) the tassel strands back into fluffy alpaca wool. Best to do this against your jeaned legs or a small square of leather or vinyl. Save the wool that comes away in the brush for stuffing the toes.

Putting it all together

You'll need to draw on your best costume design skills here. Best to place the beret on an upside down bowl.

Choose one just smaller than the circumference of the beret. Using the crochet hook to thread the through the beret, tie the brushed tassels onto the beret from the crown down in circles round and round about 4cm apart.

Scarf

Using the 6mm circular needles cast on 36 stitches and join in the round.

Rnds 1-6: Knit.

Rnd 7: *P3, C6B. Repeat from * to end of round.

Repeat the last 8 rounds over and over until the scarf measures 120cm. Cast off.

Toes (Make 4)

Yes make four toes - two for each foot.

Using the 4mm circular needles, cast on 24 stitches and join in the round.

Work 12 rounds of: (K11, P1) twice

Rnd 13: (K3, ssk, K1, K2tog, K3, P1) twice (20sts)

Work 6 rounds of: (K9, P1) twice

Rnd 20: (K2, ssk, K1, K2tog, K2, P1) twice (16sts)

Work 3 rounds of: (K7, P1) twice

Rnd 24: (K1, ssk, K1, K2tog, K1, P1) twice (12sts)

Work 1 round of: (K5, P1) twice

Rnd 26: (ssk, K1, K2tog, P1) twice (8sts)

Do not cast off. Instead, cut the wool leaving a long piece. Using a darning needle, thread the long piece through the remaining 8 stitches and draw up tight. Sew a couple of extra stitches to secure.

Putting it all together

The purl stitches form the side edges and the decreasing veins front and back of the toe. With the wool you have saved from brushing the woolly tassels, stuff the toes, not too tightly, not to lightly. Sew two toes together from the wide open ends half way down to the points. Using mattress stitch, sew the open end of the toes to the opening of the scarf. Make more woolly tassels to attach around the join.

The Hidden Road to

CHINA

By Steve & Sue Ridout – Wildflower Alpaca Exports

Opening up new International markets for the Alpaca Industry isn't easy, the Chinese market wasn't going to be the exception.

All breeders across Australia over the past few years have been fielding enquiries from China, some just wanting pets and others quite large groups. The knowledge about alpacas across China was limited.

The interest increased in 2012 with many enquirers really knowing more about alpaca, their care, fleece characteristics, breeding and wanting to set up a viable long term industry. Nurturing those enquiries and developing the relationships were of utmost importance. Anyone that has had business relationships in China knows that trust in a relationship is key to its longevity.

An enquiry came in approximately 18 months ago from China, an Agricultural Professor (Mr Dong) who was keen to import a large group for breeding and genetic research purposes, this is where our relationship and the Road to China began.

Mr Dong had set us a task of supplying over 500 head, with strict selection criteria (age, sex, fibre diameter) introduced. The logistical challenge of securing not only this number of alpacas, adhering to the strict health requirements as well as getting them to a non routine airport in China was going to create a few hurdles to overcome along the journey.

Both Sue and I really thought hard about how this would be seen in the industry, the quality of alpacas we were going to offer, the ongoing benefits to the industry if this was to succeed and ultimately "how in the hell are we going to make this work"! Initial discussions with the importer ascertaining their knowledge and understanding of the basics of camelid husbandry, feed, pasture management and ultimate destination really was at the forefront of initial discussions.

As the China – Australian protocol had lapsed many years ago, we began the negotiations with DAFF and AQSIQ (Chinese Quarantine Authority) to establish an up to date protocol between the two countries. As some testing methods were not certifiable in alpaca, discussions with State Laboratories took place to find alternate methods of testing. Discussions were held with DAFF who in turn started the dialogue and negotiations with AQSIQ. The discussions took the next 8 months to resolve many aspects of the health requirements for this shipment. The new Protocol is still under discussions between the two countries for future shipments.

One test in particular (Paratuberculosis) was the stumbling block, all tests need to be certifiable by DAFF, the required testing method CFT being non species specific had a history of many anti complimentary results in alpaca so this testing method was not an ideal option for us to use. After many months of discussion a dispensation was granted to use a more specific method using Paratuberculosis ELISA Commercial kits for small ruminants, both DAFF and AQSIQ advised that the dispensation would be granted to Wildflower Alpaca Exports for the consignment on this import permit only, with strict guidance by Chinese Veterinarian Authorities (CIQ).





The animal selection process was not going to be easy, we decided to involve as many breeders as possible (logistically) to fit the criteria required in a close proximity to two isolation facilities. The reasons behind setting up two facilities were from a bio security perspective. Initial selection in South Australia and Victoria took place with the help of Softfoot and Surilana Alpacas. Both saw the benefits of involving studs from close proximity to increase diversity of genetics, injecting life back into their local alpaca community by joining the project.

The initial selection group were shown to Mr Dong and understanding what the buyer wanted and translating that into what we thought he wanted could have been a stumbling block. During the initial inspection, attended by Mr Dong, we were able to demonstrate the selection method used and allowed him to visualise what we had been discussing over many months in regular conference calls. We were satisfied that we had successfully met his expectations, 567 alpaca were selected to start the process.

A meeting was held between ourselves as exporter, DAFF and CIQ in Melbourne to put a contract in place for the official testing program to begin. The Australian Government veterinarians were then appointed to control the testing and treatments for this shipment.

The first round of on farm testing began for those selected. Tests carried out were for Bluetongue disease, Epizootic Haemorrhagic disease, Paratuberculosis, Equine Rhinopneumonitis and vaccination for Leptospirosis. Paratuberculosis had to be tested using 2 methods: ELISA blood testing and Tuberculin Skin testing. The Tuberculin required for the skin tests were not available in Australia but our veterinarian successfully sourced this overseas. Only alpacas that had all negative results were eligible for quarantine. The testing days would be attended by the Australian veterinarians as well as Official CIQ veterinarians.

At the South Australian and Victorian facilities a total of 540 eligible alpacas were isolated for a further 30 days where a second round of testing took place.

The airport of destination (Taiyuan) hadn't seen a 747 type aircraft before, being a domestic airport within China operating smaller passenger aircraft. Checks had to be carried out as to its runway capacity, ground handling capability and sufficient



experienced staff to assist whilst on the ground. Once the suitability of the airport was established Singapore Airlines Cargo had to apply for landing permission at this airport. A 747 400 series aircraft was then chartered from Melbourne Airport to Taiyuan Wusu Airport China.

Calculating the number of crates on the aircraft also determined the load configuration (single and two tier crates), the weight and balance of the aircraft is crucial! Our usual crate supplier was seconded to supply 22 main deck double tiered crates and 4 single tier crates. Each crate and tier had 2 points of watering to ensure the alpacas had the ability to drink along the journey. All crates had to be made of treated timber and absorbent flooring. Stocking densities form a part of the equation especially when you have a mix of males, females (some pregnant) and cria travelling. The pregnancy gestation for female alpaca also governs their ability to travel. IATA regulations only allow those that are no more than 250 days gestation on the day of departure to legally travel, we are required to have all females ultrasound scanned by a vet to 'age' the gestation.





Crates arrive at Taiyaun airport & are loaded onto trucks



Alpacas in quarantine in China.



The next hurdle was to transport this number of alpacas from isolation facilities to Melbourne airport for loading. We used four double tier semi trailers for this trip. Taking into account the loading time on farm, drive time and unload at Melbourne airport. Part of the protocol is for the alpacas to be examined within 24 hours of departure so it was going to be very tight!

On the day of load out we held very early morning final Inspections at both facilities prior to their transport to the airport. 525 alpacas had passed all their required testing and were ready to travel. Loading at the airport had to be completed four hours prior to the flight departure to provide final weights for the airline to calculate the load. Many experienced handlers at both facilities and at the airport made this run very smoothly. Six hours later we had loaded 21 two tier crates and 4 single crates, all with enough water in their troughs until well into the flight to China.

The Aircraft was loaded and departed at 02.38hrs on Monday 29 September 2014. Stress is a major contributing factor in any loss of livestock so this is why we always have attendants on long haul flights who ensure that they are settled, have plenty of fresh water, check the temperature of the aircraft holds and simulating night/day using the cabin lighting.

On arrival into Taiyaun Airport we were met on the tarmac by a large group of dignitaries, quarantine vets, customs officials, media and the new owner. Offloading and transport to their quarantine facility was a priority to ensure adequate water and feed could be provided to the new arrivals. The purpose built quarantine facility owned and operated by the Shanxi Agricultural University was well set out with large open pens, feeding and watering stations where the alpacas will spend the next 45 days prior to being released on farm. Further testing takes place within this time frame. After a long flight and further hours unloading both Ben Schmaal and I were keen to see a bed for the night. Our Chinese hosts showed their appreciation by taking us all out for dinner at 9pm! We both obliged and were happy to have dinner so by 11pm we finally made it to the hotel.

Up early the next morning, breakfast and then collected to go back to the quarantine station where we showed and advised the handlers more of the basics of alpaca handling for the remainder of the day. Satisfied with their routine, feed quality and expertise we finally said goodbye to the new owners and of course alpacas.

Huge thank you goes to both Surilana (Ian, Angela and Chris) and Softfoot (Sandy, Gary and Ben Schmaal) for their help and use of their properties for our quarantine facilities. Also thanks to DAFF for their persistence in keeping the dialogue happening. The large team of vets and staff that managed our testing and health requirements, the two laboratories for all the testing, and all those who contributed alpacas to make this journey a very real success, thank you.

結束

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PERTH ROYAL SHOW 2014

By Ron Raynor - Ellen Vale Alpacas

The exhaustion that came from a dash across Australia by Sophie Jackson with her brand new fiancé Ross to get home from the previous weekends National Show in Bendigo by Wednesday night and then spending two hectic days getting their show team ready and into the Perth Royal Show by Friday night was all forgotten on the Sunday, when the Banksia Park Stud that Sophie manages for her parents took out 6 of the 10 Huacaya Championship trophies. One of these was their incredible six month old male alpaca named Banksia Park KOCS Warlord who went on to be awarded Supreme Huacaya at the conclusion of the judging. It's rare to see a "Junior" alpaca take out a Supreme title but when Jenny Jackson invited members into the ring to have a look at his fleece it was very obvious this is one very special alpaca.

Experienced Judges Peter Kennedy and Shane Carey impressed the show participants with their decisiveness and clear reasoning for their decisions. Numbers were down a bit on previous years which took the pressure off trying to get a large number of entries through in the one day but their lengthy deliberations with some classes indicated the quality and closeness of some entries which made for a challenging day.

Changes made by the RAS to the layout of the show pavilion this year allowed a much improved area for the enlarged alpaca craft display and the alpaca information booth. The range and quality of the craft display was probably the best for several years with displays ranging from knitted items through to all manner of felted items impressing the many thousands of visitors to the pavilion. The dedication of the small group who spent the entire show doing demonstrations of spinning, knitting, felting and weaving ensured there was always an interested crowd at the booth. The Information Booth organiser, Natasha James, took up the challenge of renewing and refreshing the displays that demonstrated the wide range of products being made from alpaca fleece and hides much to the appreciation of the public. Many alpaca breeders were also surprised at the range of commercial products now being made from alpaca.

The Huacaya judging got off to a great start for Alcatraz Alpacas who demonstrated the value of picking the right one to buy when their Goldleaf Desert Sultana picked up the first of the Huacaya Championship trophies in the Junior Female section.

The first of Banksia Park's six Championship wins then came in the Junior male section with their outstanding 6 month old Banksia Park KOCS Warlord. This son of Blackgate Lodge Snowmaster will be one to watch in the 2015 show season.

Melinda Brown showed that relatively newer breeders can also have success when her own Toffee Woods Magica was crowned Intermediate Female Champion from a very strong line-up of quality female alpacas.

Banksia Park then started their run with Champion Intermediate male, Champion Adult female, Champion Adult male and Champion Senior Female.

Faversham Alpacas halted Banksia Park's run for a while when their Faversham Larry took out Champion Senior male. This impressive son of Faversham Amarni looks like he will make his own mark through the quality bloodlines of his unfortunately deceased father whose progeny have had such an impact in recent years particularly in Western Australia and more recently at the national show.

Deborah Mulroney's new venture Noble Alpacas chimed in with Autumn Lane Sophia, a lovely black female, picking up the Champion Mature female trophy. It's not often we see a black alpaca winning championship trophies at Royal Shows.

The final Huacaya championship trophy for the halter show was picked up by Banksia Park's seven year old VCK Colorado who continued his long winning streak in the Mature sections at numerous shows in recent years.

The Huacaya Sires Progeny award was taken out by Faversham Armani and the Suri Progeny award was won by Surilana Tito Man exhibited by Eversprings Alpacas.

*Supreme Champion Suri
Surilana Idol with Mick Pitcher from Pitwillow Alpacas*





Encantador's Dante showed it was no fluke in winning the Supreme Huacaya fleece award by also taking out the award for Best Wether in the halter section.

The Suri numbers might have been a bit down on previous years but the quality was still very high. The rising Suri star in WA is obviously Bedrock Alpacas who have been well known for several years as breeders of top performing Huacayas but their foray into the world of breeding Suris is really starting to bear fruit.

Successes with their Champion Junior Female, Champion Junior male and Champion Adult male have certainly set them up as Suri Breeders to look out for in the future.

The Supreme Suri in the halter show was the magnificent Surilana Idol, a 4 year old light fawn male, owned by the stalwarts of the Suri breed in Western Australia, Gail Williams and Mick Pitcher of Pitwillow Alpacas. Gail and Mick are tireless workers for the Alpaca industry in WA and the recognition given to them at the Show dinner of a Certificate of Appreciation from the Alpaca Association was very well received.

*Supreme Champion Fleece & Best Wether
Encantador Dante with Murray Stannard from Encantador Alpacas*



*Supreme Champion Huacaya
Banksia Park KOCS Warlord with Sophie & Jenny Jackson from
Banksia Park Alpacas*



The Supreme Suri fleece award was well deserved but also a lovely surprise for Robyn Mann the owner of Springwood Park Taj who submitted her first ever entry into the Suri fleece competition. When Robyn decided to sponsor the Supreme Suri Fleece trophy she never imagined she would win her own trophy with a fleece from one of her own Suris bred on her property in Margaret River.

The full list of results can be found on the show results section of the website of the Western Australian Region of the Australian Alpaca Association Ltd at wa.alpaca.asn.au

2014 Offshore Mills Visit

Offshore Commercialisation/Value Adding Opportunities For Australian Alpaca Fibre

By Julienne Gelber

In June this year I spent two weeks visiting Europe and Malaysia, following up some contacts made last year in the UK and chasing some new leads.

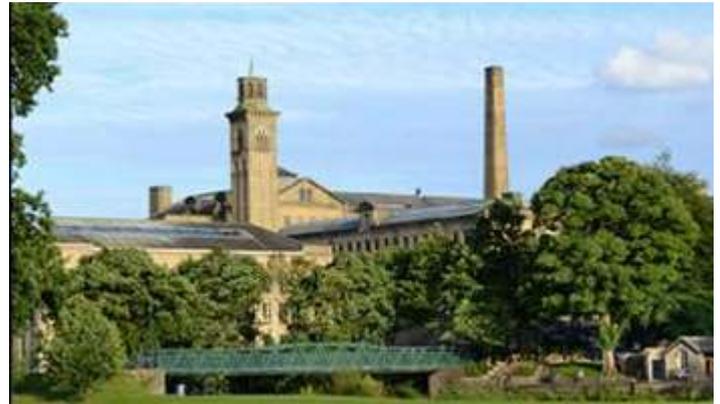
In the past I had concentrated my efforts to understand the high end natural fibres market and manufacturing by regularly visiting the yarn fairs, the most prestigious of which was Pitti Immagine Filati. At these fairs I was able to identify mills using natural wool fibres/the noble fibres to get some idea of their client base and their manufacturing processes and limitations, trying to obtain interviews with their technical processing/design staff, and always showing them (and sometimes their clients) samples of raw Australian alpaca as it improved in style and quality. Whilst Pitti Immagine Filati, every four years, brought me quickly up to date with current wool fibre trends and I received lots of encouragement and ongoing advice from the technical boffins to ensure that the fibre we were growing in Australia would meet their specifications, never the less I simply couldn't land an order or establish an ongoing working relationship with a mill/client for either suri or huacaya raw fibre.

Obviously I needed to change my strategy, particularly, as during the past 15 years natural fibre processing and manufacturing had undergone massive down-sizing world wide and the balance of power had shifted away from yarns. In fact the primary processors (first stage) that had survived the last decade of contraction emerged as often the most powerful players in the processing chain. They had consolidated, upgraded their technology and with fewer players in the industry filled their order books and through economies of scale, were making a profit. They were calling the shots and I felt that they could make or break any push by Australian alpaca growers to supply their raw alpaca fibre needs. So I needed to understand the needs of these processors/mills – ownership, fibre specifications, machinery constraints, lead times etc. Hence my visit to the UK last year and the follow up in June this year.

One of the main objectives of this years trip to UK, Italy and Malaysia was to identify likely clients/joint ventures/mills interested in working with quality Australian alpaca fibre. I deliberately chose the top end of the market where hopefully Australian growers would receive a good raw fibre price, there would be less competitive pressure from South American fibre and the specialist market runs would be smaller suiting our comparatively limited supply of fibre. This end of the market also blends rare fibres, again suiting our small consignments.

Ideally I sought fully integrated mills – scouring through to finishing - with a reputation for quality and innovation. Mills that were prepared to work with small runs of greasy fibre, scouring, combing and processing to tops for woollen or worsted yarn suited to either jersey knitting or cloth.

So briefly I will recount my visit. Sadly, I didn't have time to take many photos as many of the mills were flat out, working on commission runs for clients which meant that if I wanted to see the new lines and processes, I had to agree to "no photographs" and "commercial in confidence" agreements.



UNITED KINGDOM

In the UK, only one small vertically integrated commission mill remains in Yorkshire and is currently not accepting new clients. The one remaining commercial scour, Haworth, is a modern, high volume operation. Their minimum quantity for greasy wool is 500kg. They do offer a smaller quantities, rare wools service for white fibre only. Lines are accumulated and run through on a 4/6 weekly basis. The mill routinely scours mohair and would be competent for huacaya but has no experience in suri alpaca. Compared to Australian scouring charges, they are cheap! Haworths also comb and have an internationally recognised testing laboratory.



Have a look on You Tube at the great clip on the Haworth Scouring Company which is a 9 minute tour through the mill.

Throughout Yorkshire and Scotland are a number of spinners (mills) that could convert huacaya tops to yarn, knitters (mills) capable of producing wonderful circular jersey knits and high quality weavers that can blend and convert into cloth for interiors and fashion. The tertiary end of processing is still well supplied.

I was envious of the British alpaca industry as they have access to many interesting small woollen and "art" mills e.g one interesting mill was a specialist upholstery fabrics weaver using British wools as the cloth base, but blending some quite exotic fibres such as hemp, jute, nettle (and why not Australian suri or huacaya?). There is a BAS/industry initiative in the UK where breeders can take their fibre direct to a respected British mill group for consolidation and processing.



Spinning - UK mill.

MALAYSIA/SINGAPORE

It is interesting to see Japanese and European investment in high quality processing in this region.

Disappointingly the Singaporean scour, Compass, has run into financial difficulties and it is rumoured it will be closed down so we cancelled our visit there.

The Malaysian top maker and spinners were high quality mills, expert with mohair and fine merino, so should handle Australian alpaca comfortably. I was excited to find that the top making plant has a small "special" line which is in mothballs, but could be commissioned to do small volume runs for alpaca and particularly suri. The only problem being that both mills can only work from scoured fibre.

Their English is good but they will be very particular about contracts, quarantine clearance on scoured wools etc.

The disadvantage is the climate - these countries are hideously hot and the mills are located in remote provinces. Not nearly as pleasant as a mill visit in northern Italy or charming Yorkshire.

Carded Sliver Malaysian mill



ITALY

Wool processing/milling in Italy is in a sorry state. Many of the mills in Biella (the heart of Italian wool textile manufacturing) closed last year and there is a general contraction of the sector. It was sad to see the once mighty Loro Piana family's mills and retail chain being sold to Louis Vuitton and Zegna also rationalising their operations.

Only one vertically integrated mill remains in the Biella region that could undertake small run processing. But here we have possibly a winner. The mill manager has excellent technical and rare wools expertise and has recently bought a herd of white Accoyo huacaya alpacas!! He is energetic and simpatico. I spent an afternoon in the mill. They are a quality establishment, used to working with mohair and huacaya with both woollen and worsted capacity. The mill manager and his production manager were very interested in working with Australian alpaca growers, prepared to accept smaller consignments of raw fibre and to do a trial. No language problems as English is spoken.

Fadis Hank Winding machine Italian mill



CONCLUSION

Designers and the high end consumer know that alpaca is a special rare fibre and will pay a premium for alpaca rich garments/home wares that perform.

There is now sufficient high quality white Australian alpaca to supply these top end mills.

Provided we harvest and grade our fibre to processors' and manufacturers' specifications, the overseas mills acknowledge that alpaca will perform well in processing and general wear.

We just need one significant order to get the ball rolling!

Potential Markets for

Suri Fibre

By Fiona Vanderbeek

Some suri growers will already have purchasers for their fleece, or be value-adding by processing it themselves and selling rovings, yarn or finished products. For those who do not have a current outlet for all or part of their clip, there are a variety of options, depending on the quality, colour and extent to which the grower wants to prepare their fleece before sale.



Maximising the value of your suri fleece

Prices payable may still seem considerably less than many of us would like to believe our beautiful suri fibre is worth. This is primarily due to the fact that commercial processing of suri is still very much at a research stage in Australia. However, significant progress is being made with a number of trials underway or in the pipeline and growers are strongly encouraged to participate and support these trials, which will ultimately add to the commercial value of suri fibre. One of the key limiting factors has been collecting sufficient *quantity of high quality* suri fibre for commercial trials - at least 100kg of any one line is needed to get the fibre scoured ready for processing. The *quality* and *uniformity* of suri fibre are absolutely paramount to drive this niche sector of the alpaca industry forward. Consider the following key points about the growing of suri fleece:

- Fleece length: Every processor stresses the importance of length when working with suri – for successful commercial processing, fleece must be between 80-140mm in length. To produce fibre of this length may require changes to the management of your herd, such as alteration of shearing or birthing times.
- Lustre and handle: These are the attributes which set suri apart from other fibres. Dry, chalky fleeces will be downgraded at classing for processing, as their inclusion with higher quality fleece will downgrade the entire bale.
- Uniformity: Uniformity of micron (as indicated by the SD of the individual fleece when tested) is at least as important, if not more important, than the actual micron.
- Contamination: Fleeces contaminated by vegetable matter, coarse primary fibres (due to poor skirting at shearing) or fibres of a different colour (due to poor shearing shed management) will also be downgraded at classing.

Current options for your suri fleece

Described here are a few of the current potential options for your suri fleece – this list is not exhaustive but intended to provide some indicators of the alternatives available.

Rumplestiltskin processing trials

This is the third year of fibre collection for the Rumplestiltskin trials in New Zealand. The first year's collection has now been processed and those who donated fibre to the trial will receive a sample of the finished product. This year's collection will be consolidated with the previous one and baled fleece exported to New Zealand. The Australian central depot for fibre is in Crookwell (AAFT; Paul Valley), with collection days being held around Australia.

Fleece criteria

- White fleece only is being collected (last year's trial of collecting coloured fibre resulted in such small quantities that it is not currently viable).
- Saddle fleece only can be accepted.
- The saddle is subjected to a three point grid test conducted by AAFT assigning it to a specific micron line.

- Length is absolutely critical: 80-140 mm only. Longer fibres are significantly detrimental to the scouring process.
- All fleeces to have SD < 5.0.
- Fleece must not be tender.
- Fleece must have low VM contamination.
- Locking style is not critical, provided that fleeces are not badly cotted. Very tightly twisted locks are not ideal as there is increased wastage during processing.
- Fleece must not be "chalky" and should exhibit good lustre and handle.
- Criá fleeces can be included provided they meet the criteria, particularly with regard to length and SD.

The price paid is dependent upon the micron of the 3-point test and ranges from NZ\$20/kg for <19 micron, through NZ\$10/kg for 19-21.9 micron, to NZ\$5/kg for 22-23.9 micron.

Suri Fibre Development Group

The Suri Fibre Development Group (SFDG) is a group of seven suri breeders, all with a passion for suri fibre, working together to promote the fibre industry. Currently the focus is on education, collection/classing of suri fibre and building relationships with processing partners. Members of the SFDG have met with potential processors in Australia and overseas and identified several with real potential and interest in working with the group – particularly on blending suri with other natural fibres.

Once again quality and uniformity of fibre will be of paramount importance and only white fleece is likely to be used in these blends. At this early stage the SFDG will be seeking donations of fibre as there will be significant development costs.

Markets for unclassified or lesser quality suri fleece

For growers who for various reasons do not want to invest the time in pre-classing and preparing their fleece for the types of trial described above, please do not simply discard your fleece but support the fibre side of our industry by consigning your fibre to an outlet such as Australian Alpaca Fleece Ltd (AAFL).

The price per kg may seem low, but they are prepared to take all your fleece, and undertake skirting and classing for you – and at least your fibre is being put to use. Work with others in your area, either through your Region or in locally formed groups, to consolidate bales of fleece which AAFL will then transport interstate at no cost to you.

Lesser quality fleece can also achieve prices of up to \$4.50/kg for use in the Australian carpet industry (Velieris). They will purchase all colours and higher micron fibre. Length can be 80-150mm or short pieces of between 20-40mm. This is a good use for higher micron pieces, fleeces from older/coarser animals and for suri which is chalky and lacks lustre. Once again work with others to produce consolidated bales to maximise value and minimise transport costs.



Conclusion

Through the efforts of groups such as SFDG and the Rumpelstiltskin team in New Zealand real progress is now being made with the commercial processing of suri. The key limiting factor is the supply of commercial quantities of uniformly high quality suri fibre presented in good condition and at the correct length for processing – this is the holy grail towards which we must all continue to aspire.

For further information on future trials and markets, contact Fiona Vanderbeek on 02 4878 9310 or alpacas@birrong.biz

Photos courtesy of Surilana Alpacas



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Thank you! Dean & Jenny Ford

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Effects On Foot Pressure

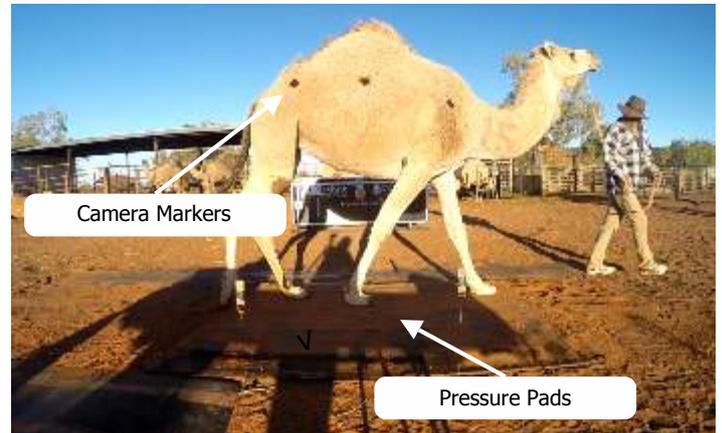
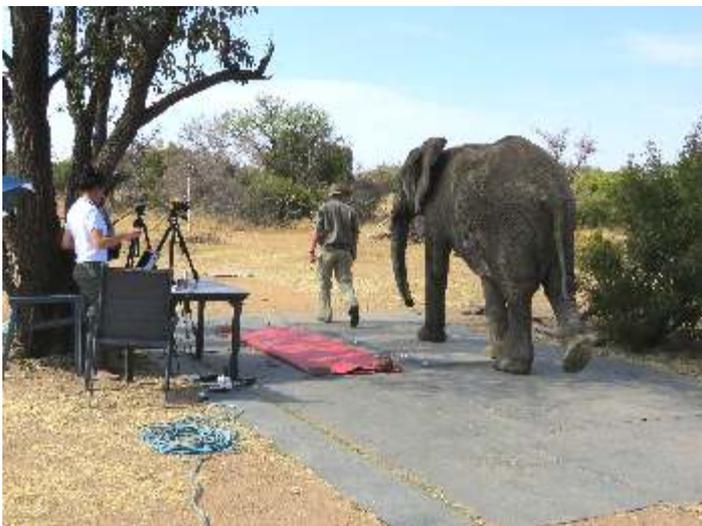
By Dr. Olga Panagiotopoulou BA (Hons), MSc, PhD

Determinants of the effect of captivity on mammalian foot pressure and anatomy.

Dr Panagiotopoulou's research seeks to understand how captive conditions can influence locomotor pressures and potentially foot diseases in large mammals. Animals are kept in captivity for domestic purposes or for protection from hunters, yet whilst in captivity they occasionally develop diseases we do not often see in wild populations. Previous studies have suggested that substrate properties such as asphalt and flat concrete coupled with restrained spaces can affect the animals' natural locomotor mechanics and create the perfect conditions for foot disease. Whilst animals kept in small enclosures often develop extreme foot conditions (mainly osteoarthritis), animals kept in larger spaces, which simulate natural environments (natural ground properties, ample space for the animals to forage and move), tend to remain healthier.

Olga's team studies animals kept in different captive conditions in Australia, Asia and South Africa with the scope to comprehend how and to what extent captivity has altered natural foot function. She anticipates her research to shed some additional light on the foot form, function and pathogenesis relationships and assist towards the improvement of the captive management conditions to facilitate a better life and future for our quadruped friends.

For her project, Olga is using two custom designed pressure plates (Zebris Biomechanix, Germany) which are placed on the ground next to each other and the animals are guided by their keepers to walk at constant speeds over them a few times.

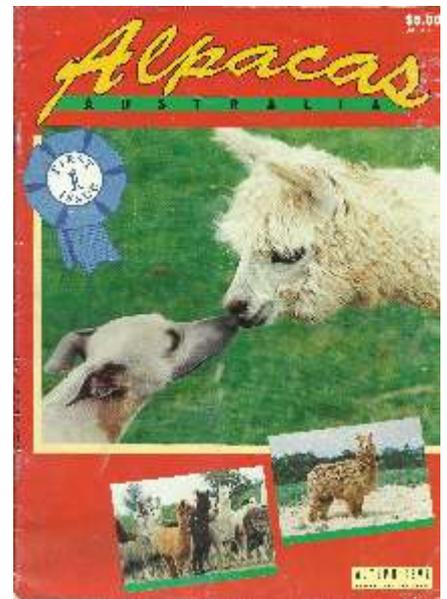
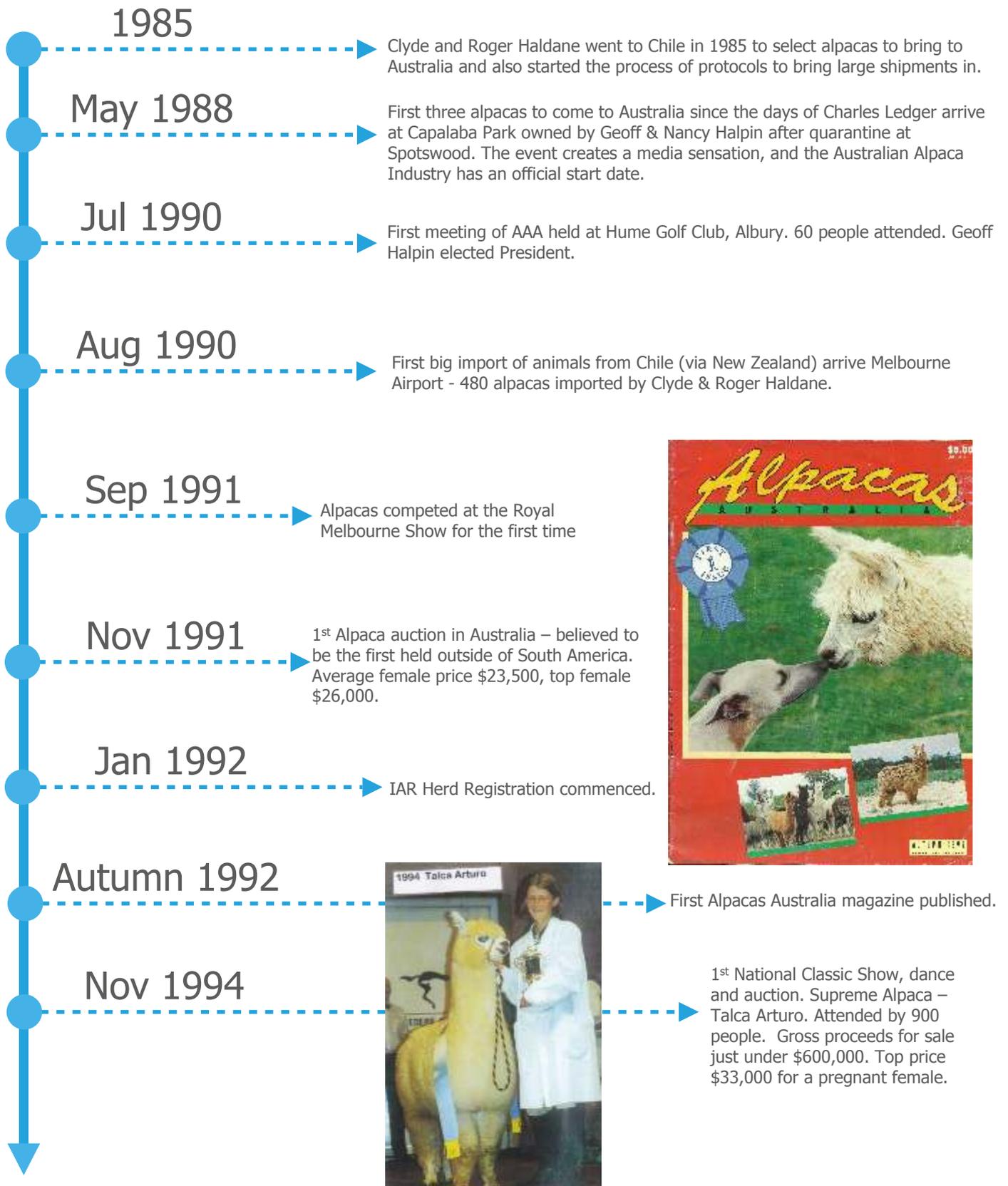


The pressure platforms can be used to measure the dynamic foot pressures of animals of body mass range from 700g to 8000-9000 kg. The spatial resolution of each platform is approximately 12.7mm, the sampling frequency is 100Hz and the outer dimensions are 600mm x 2129mm x 21mm (L x W x H). All collected data are processed using the statistical parametric mapping (SPM) technique Olga's collaborator Dr. Todd Pataky from Shinshu University in Japan has pioneered. SPM regards each dynamic pressure distribution as the unit of measurement, and yields a statistical "map" which describes the distribution of effect strengths over the plantar surface.

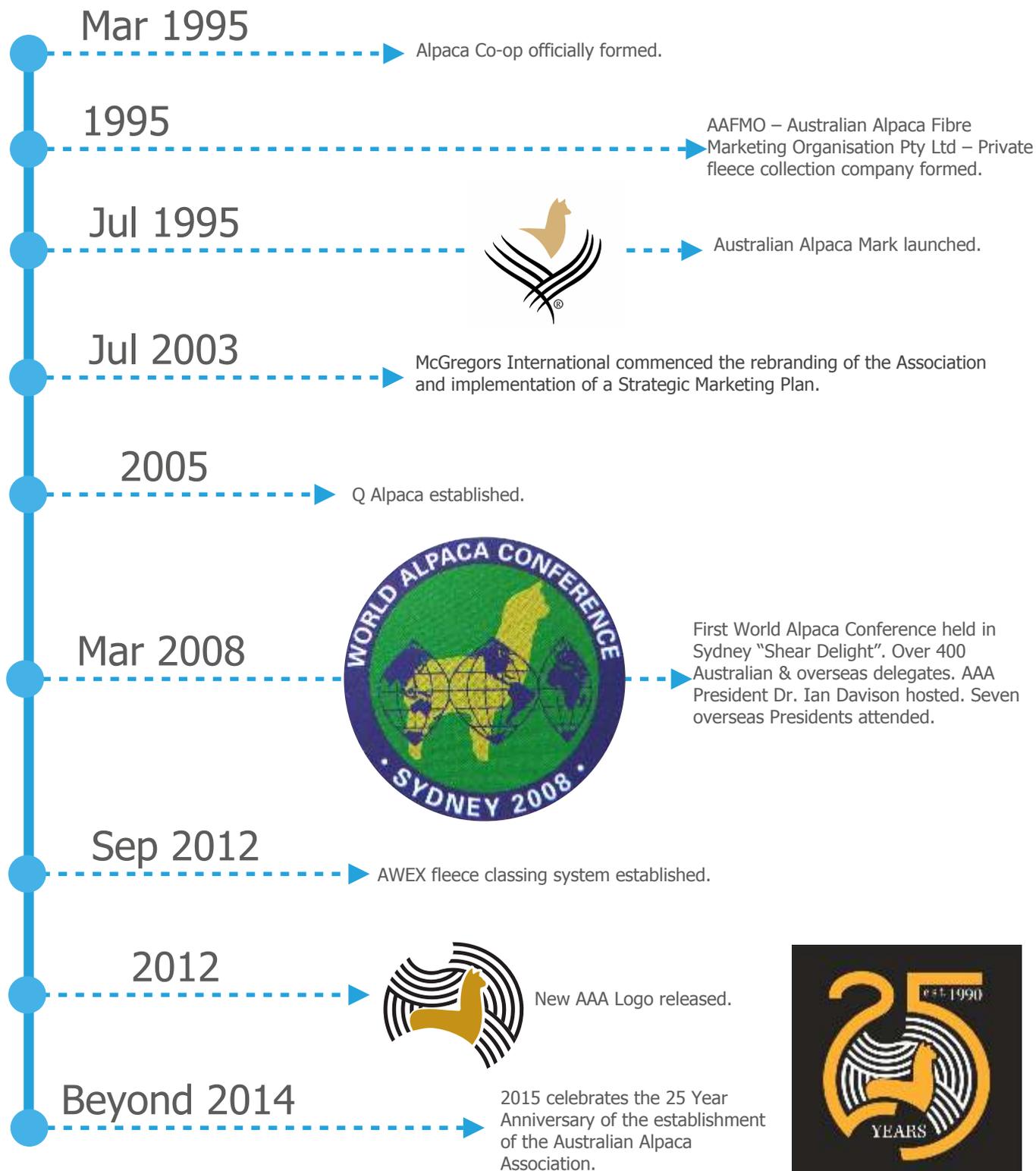
The alpaca testing was done on farm at Paltarra Park in Qld and the results of the study should be available early next year.

*Dr. Olga Panagiotopoulou is Chief Investigator, Lecturer in Anatomy & Head of the Moving Morphology and Functional Mechanics Laboratory
School of Biomedical Sciences, Faculty of Medicine and Biomedical Sciences
University of Queensland, Australia*

INDUSTRY TIMELINE



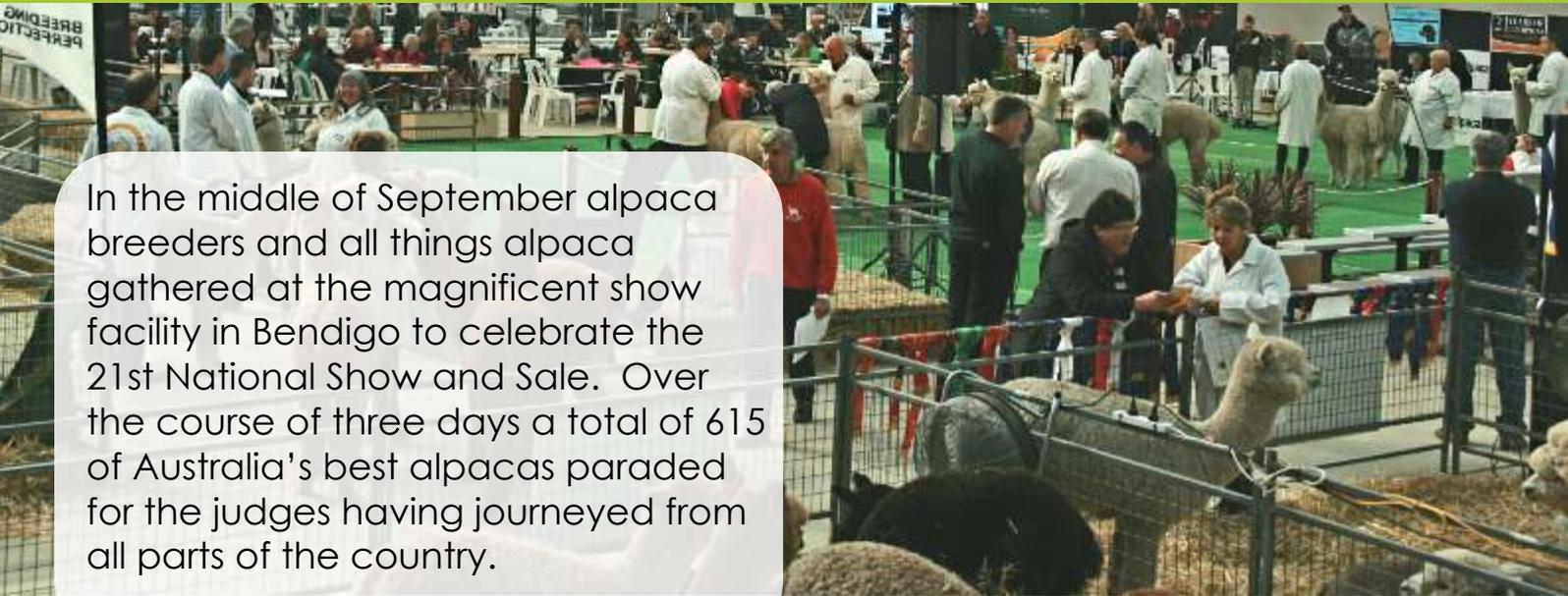
1985 – 2014



Editors Note: Above are some pertinent events from the journey taken by the Alpaca Industry since its inception. During 2015 we shall review in more detail some of the highlights. Accurate details were difficult to come by, corrections/additional information is welcome.

21st National Show and Sale

by Paul Haslin - Convenor



In the middle of September alpaca breeders and all things alpaca gathered at the magnificent show facility in Bendigo to celebrate the 21st National Show and Sale. Over the course of three days a total of 615 of Australia's best alpacas paraded for the judges having journeyed from all parts of the country.

Our judges, Natasha Clark from Victoria and Jenny Jackson from WA, teamed up perfectly to evaluate the very competitive line-ups, finally presenting us with two very worthy Supreme Champions. The suri title went to Surilana Mind Blowing, a magnificent 17 month old light fawn male. Honours in the huacaya section went to Ambersun Pure Exception, a 23 month old light fawn female.

With those major sashes awarded, attention turned to the selection of Best Colours in Show. With the judges wearing a head-set microphone they were able to describe to the audience the qualities and characteristics that they were observing on each animal. Combined with the excellent camerawork transmitting vision to the giant screen the audience were well and truly in the midst of the judging. Then, as each colour section was completed, the audience was invited into the show ring for a close up inspection of each alpaca.

With joint chief stewards, Keryn Burns and Graeme Dickson, on hand to guide and control, ably assisted by a first class stewarding team, the judging proceeded in a smooth and timely fashion.

With those formalities completed the shed party got underway for a true celebration of the 21st birthday. A feature of the birthday milestone was a competition to identify photographs of all the Supreme Champions since the beginning of our National Show. Some of the pictures from the early years certainly had everyone scratching their heads! Thanks must go to Lyn Dickson for the painstaking work involved in tracking down all those photos - a sudden reminder that the digital age doesn't stretch back too far.

Of course, as to be expected at these shows, there was keen interest over the four days in the fleece, craft, art and photography competitions, which were beautifully displayed near the traders' sites. Additionally, on Saturday the Youth Paraders were in full



*Supreme Champion Suri - Surilana Mind Blowing
Surilana Alpacas*



*Supreme Champion Huacaya - Ambersun Pure Exception
Ambersun Alpacas*

swing in their own show ring, under the watchful eye of Louise Lazarus and ably judged by Laurel Shouvlin from the USA. There were 35 entries from four different states competing, the Supreme Champion was Katie Thomas and Master Trainer was Mikhaila Lazarus.

Sunday morning had us marvelling at the skills and presence of our Junior Judges. The competition was won by Amber O'Neill from NSW. Second place went to Taryan Kotsiakos and Hannah Doyle was a very creditable third. We could certainly see that the future of our judging is in good hands.

Then the climax of the weekend as the parade of auction alpacas was presented. The impressive line-up from the catalogue was augmented by two significant stars - the Supreme Champion Huacaya and the Best Fancy, being a striking leopard-spot appaloosa male.

Then it was all roads lead to home, except for a weary but satisfied clean-up crew.



2014 Nationals Fleece Section

By Pauline Glasser - Fleece Convenor

Behind the Scenes - A LOGISTICAL EXERCISE!



Supreme Huacaya Fleece - Blackgate Lodge Sunseeker - Rainbows End



Supreme Suri Fleece - Surilana Macusani Lash - Surilana Alpacas

This year the STH QLD NNSW AAA Regional Fleece Team volunteered to convene the 2014 National Fleece Show.

It certainly was a challenging logistical job! Di Smart, Lehanne Robinson, Colin and Pauline Glasser travelled to Bendigo, to work with Judge Lyn Dickson and Apprentice Judge Dean Ford.

Prior to September THE PLAN

A large amount of organisation took place in the months prior to the judging. Each team member had a specific role. Lehanne and Col weighing and testing 230 fleeces, Di organisation of acceptance and return register of fleeces and the organisation of sampling to be packaged to the New England Testing Laboratories. Pauline's role was to have all entries on the computer and print outs ready for Judges & Stewards once we arrived in Bendigo. Col laminated for weeks, the girls cut out, collated all bag numbers, entry names and judging numbers.

The Plan for the display took a time to decide, on how to achieve what we wanted, how many fleeces to display? We knew what we wanted but were not quite sure how to achieve it! A phone call to Shane Carey who directed us to Sid and Deb Parker. Sid was a delight, transforming our vision into reality. Sid manufactured stands which flat pack for transport and table extensions for the judges tables! The Theme would be Gold, Grey and Black with Champions on Red. Lehanne spent hours going through classes and working out the colour combination and the number of satins that would be necessary to complete the display. Phone calls to regions to borrow their satins, which then had to be coded so we didn't misplace any! Out came the overlocker and afternoons making satins in the right colours to make sets.

The team decided on a uniform, as exhibitors needed to recognise us when we returned fleeces that were not on display. Di and Pauline devised a return of fleece system of cards which exhibitors received with their introduction packages on arrival.

Transporting Fleeces to Bendigo? At the EKKA Cheryl Cochrane of Nerimbera Transport was approached re pick up from Lower Southgate NSW to Bendigo VIC. Nothing was a problem for Cheryl and her brother Byron. This was a huge relief as it meant door to door service where satins, computers and printers could safely be sent as well! Di was able to acquire huge waterproof fertiliser bags to pack fleeces and our equipment into as well as the exhibitors wool bales.



A call for helpers - we decided we would like to offer all members the opportunity to help at the Nationals - the AAA office girls sent a broadcast email and members offered their help - a Roster was developed, all set to go.

Fleece testing and histograms arrived on time, great! Update of computer work and print out of all histograms in A5 card for display.

THE PLAN turns into reality

Fleeces arrived courtesy of Tumi Alpaca Transport, Rohan made a late afternoon delivery, Australia Post delivered fleeces daily and TNT arrived with bales from the Colourbration Show - All was set to check off fleeces. All accounted for except two - phone call and they were never sent! A great relief. Email to all exhibitors to let them know their fleeces had arrived safely.

The team arrived to spend three days weighing, tagging and sampling 230 fleeces (some fleeces were entered in four different classes e.g. class, sires progeny, dams progeny and commercial class - another lot of logistics, different tags and discussion re what if? etc. so we were all on the same thought process.) Sampling done, Di off to the post office as short turn around. Fleeces were then packed in order of classes to arrive safely in Bendigo. Byron was booked for the next week to pick up the goods! The same afternoon we arrived in Bendigo a phone call from Byron to say all had arrived safely. Thank you to Byron from Nerimbera Alpaca Transport.

We started set up on Monday after the sheep cleared out of the pavilion. Unpacking of our stuff! Boxes made and tables set ready for the two day judging on Tuesday and Wednesday. Helpers arrived and the job was finished very quickly. Tea and coffee station setup for judges and helpers. Sid and Deb arrived with the stands. Computer was working and all sheets etc for Lehanne's class organisation and Di's judge pencilling sheets all ready for a very early Tuesday. We were all set to go. Home for drinks!

Judging went to plan thanks to Lyn and Dean, two huge days. The Supreme Champion Suri Fleece was awarded to Surilana Macusani Lash shown by Surilana and the Supreme Huaya Fleece and the Bill Plunkett Perpetual Trophy for the Grand Champion Fleece was awarded to Blackgate Lodge Sunseeker shown by Rainbows End. The Alan Jinks Perpetual Trophy for the most valuable fleece was awarded to Glenhope Hugo from Glenhope Alpacas. Congratulations to these studs for producing such fabulous fleeces.

Wednesday night the judging finished, it was set up time, all fleeces had to be taken to the opposite end of the Pavilion. Lehanne and Col had it organised, all non winning fleeces were packed away out the back in the float ready to be distributed to exhibitors on Thursday. All firsts, seconds, thirds and champions/reserve champions on display. Display needed to be bigger! Col found recycled timber 'out the back' and the display accommodated the prize winners. By 10.30pm it was time to go home as we were all "brain dead". We would love to have finished display for all exhibitors to see when they arrived. It was not going to be a reality. Home to drinks, evaluation of our plan and print out the results to display next day.

Thursday: Up early, finished display, time for a break! Results posted on results board.

Friday: Return of all non display fleeces to their owners.

Sunday: Pull down display and organise fleeces in studs ready for distribution after the sale. Pack up our gear and send home with Geoff and Sheryl Simper from Blu-Haven back to Grafton NSW. Thank You to all who made this exercise possible: The exhibitors who trusted sending fleeces to us! Paul Haslin so understanding of our requests, Lyn Dickson, Dean Ford, Sid & Deb Parker, Shane Carey, Rohan from Tumi Transport, Tam Lamson, Prue Waldock, Heather Burn, Sue Tutera, Graeme Dickson, Sheryl and Geoff Simper and Byron from Nerimbera Transport for your support.

We all did it! An exhausting job but very rewarding!



Art, Craft and Photography

By Sarah Wheeler - Craft/Photography Convenor

It never ceases to amaze me how clever alpaca people are. The art, craft and photography entries on display over the course of the show bore testament to that.

With just under 100 entries from all parts of Australia representing a wide range of styles and techniques this was one of the most tightly contested and impressive art, craft and photography sections of recent years.

Both the Art and Photography judge Mark Short and Craft judge Lucy Edwards commented on the very high standard of the winning exhibits, many of which were sold to buyers at or after the show.

There was some discussion as to whether some items were art or craft and it may be necessary next year to clarify definitions. The craft judge felt that some entries could have been more favourably judged in an art class.

There was a steady flow of people viewing the exhibits throughout the show, many of whom commented on the importance of this section and the need to promote and increase its entrants. To this end an offer of private sponsorship was made from one region to ensure increased entries next year.





Congratulations to the following trophy winners

Art

Champion Junior Artwork - Bethan Hartill
 Champion Artwork - Sandy Retallick
 Reserve Champion - Sharon Dawson

Craft

Hand Spinning Champion - Cynthia Hall
 Reserve Champion - Cynthia Hall

Hand Weaving

Champion - Ingrid Was
 Reserve Champion - Lyn de Bruyn

Knitting

Champion - Cynthia Hall
 Reserve Champion - Kath Martin

Felting

Champion - Jan Bentley
 Reserve Champion - Maxine Sleep

Junior Open

Champion - Hannah Fletcher

Supreme Champion Jan Bentley

Most successful exhibitor Cynthia Hall

Photography

Champion Junior Photographer - Dominic Lukin
 Reserve Champion Junior Photographer - Bethan Hartill
 Champion Photographer - Perry Wheeler
 Reserve Champion - Cathy Proctor

Auction Highlights



Grand Flowerdale GP Toros ET purchased by NZ Summerhill & Neo Alpacas NZ Photograph is Peter Kennedy, Shirley Grant and Jeffrey Farman

Highest price - \$60,000

Ambersun Pure Exception purchased by Merrijig Pastoral.

Second highest price - \$50,000



“Auction Top Sellers”



Christmas Special

"A Definitive Guide to Alpaca Fibre' by Cameron Holt & the AAA's 'Alpaca Fleece Classing' for only \$130

Cameron Holt's book alone \$110

Also the AAA has back issues of Alpacas Australia available from the AAA online shop

A Winning Fleece

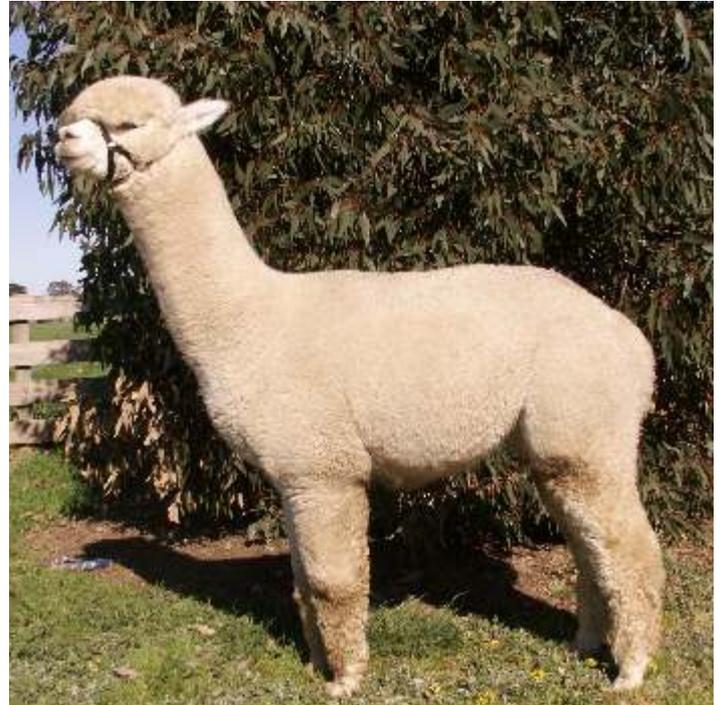
Sunseeker has an almost unparalleled fleece show record. His first fleece won Champion Beige Fleece at the World show in England and took out Champion Junior Fleece at the National Show in 2011.

His second fleece won Champion Adult Fleece at the National Show in 2013 and also took out SUPREME FLEECE of the show. This fleece was tested at 18.6 μ with a 4.6SD.

His third fleece won Champion Senior Fleece at the National Show in 2014, took out SUPREME FLEECE and also won the Bill Plunkett memorial trophy for Highest scoring fleece of the show. This fleece tested 19.18 μ with a 4.2SD.

Sunseeker is a wonderfully grown, conformationally correct male with an outstanding temperament and has proven his ability to produce colour. His fourth fleece is still showing fineness and exceptional style.

Blackgate Lodge Sunseeker is a 4 year old certified proven male. His sire is Camelot Tor and his dam is Blackgate Lodge Sonnette who is by Tulaco out of a Royal Inca dam. Sonnette has produced numerous broad ribbon winners, despite never being part of an ET program.



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The Queensland Royal 2014

By Judy Durkin

The Brisbane Royal Show for 2014 managed to provide our Alpaca Competition organizing team with some challenges that we met head on, in particular the closure of our Pavilion two weeks before Show opening day. This caused a less than desirable location shift to a neighbouring pavilion not really suitable for a show ring and not particularly spectator friendly. But everyone rallied, exhibitors were appreciative of any location as the alternative would have been no competition at all and this being our States "premier" show, exhibitors agreed that despite the hiccups it was worth the trouble. Feedback was that there was a good friendly atmosphere and that was despite the drenching rain on Saturday keeping spectator numbers down across the whole show.

Animal entry numbers initially were on par with the previous year at 133, so it seemed the decision to split halter judging over 2 days to ensure activity in the pavilion, didn't put exhibitors off. On the day however we saw several withdrawals.

The drought conditions across our state over the preceding six months had taken its toll on both the fleece condition and animals overall condition causing owners to make the decision not to add further stress to their already stressed animals.

Supreme Champion Suri - Sharalandan Park Adonis with owner Alan Gill, Judge Shane Carey and RNA Councillor Will Roberts



Supreme Champion Huacaya - Sunline Jorja ET with Owner Jill Willis and Judge Shane Carey

This was also evidenced by the fact that Fleece entries were up by 10% with 60 fleeces being judged and displayed for the whole ten days of the show. It could be deduced that the fleeces being shown were pre-drought fleeces. We received great feedback on the Fleece display from the show organizers and other neighbouring exhibitors and although we didn't have animals on display, we did have a static display utilizing our Alpaca Selfie promotion which we copied from the AAA Alpaca Showcase. We also enjoyed the RNA Young Judging competition again this year, as well as introducing the AAA run Paraders competition.

The RNA Councillor for our competition was on site for the Paraders to gain an appreciation of its value and graciously agreed to award ribbons to the winners. He was very impressed with the level of skill displayed by the competitors and the animals. It is hoped the RNA will come on board and support the Paraders competition next year.



Congratulations to Darrel Laughton from Beavona Lodge alpacas who was awarded the Best Spinning Award. Darrel entered two suri alpaca skeins in the Qld Royal Fine Arts competition. Using woollen (spun from commercially processed rovings) and worsted (spun from hand combed locks) processing techniques. This is the sixth time he has taken the Best Spinning exhibit at the Qld Royal Show - 2007, 2008, 2009, 2010, 2011 and again this year.

Discussions commenced at the end of October with the organizers about next year. There is a lot of uncertainty about facilities during the redevelopment of the Showgrounds, but rest assured, all the comments and feedback I was able to gain from many of you on the day has been submitted, warts and all.

I would really like to encourage more of you to support the final Royal Show in our showing calendar, don't leave it to the regulars and stalwarts. Get involved with promoting our industry, it is only by getting out there and doing, will we grow our market and provide a continuing passion into the future for the animals we hold dear and what better place to do it than at the Royal Brisbane Show 2015.



Youngest competitor at the show who, with the consent of the judge, took his Granfather's alpaca Incamon Kellett into the ring and was awarded a blue ribbon in it's class.

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Alpacarazzi



During the National Show & Sale this year, Anne Clark of Kurrawa Alpacas made a detour to the ABC radio studio in Bendigo to promote alpacas. Here we see Legend's Challenger being interviewed by ABC Radios morning announcer Fiona Parker.



The Future of the Industry - Handler Hannah Fletcher delighted with her win with Fletchers Ark Fudge - Winner of the Senior Roan Female Class at the National Show.



Happy Netherlands purchasers Dries Luijten from Quality Line Alpacas & Woulter Coenradie of Alpaca Garde Inukshuk with the trophy won at the National Show by their recent purchase - Alpha Centauri Kommissar sold by Andrew Munn of Alpha Centauri Alpacas.



Queensland Royal saw alpaca promoted in a different way this year. Alpunka hats made from alpaca made an impression on everyone, including the alpacas!

Commercial Alpaca Fleece Considerations

By Bob Richardson - Clearview Alpacas

Australian Alpaca Fleece Ltd was formed by the Australian Alpaca Association just 10 years ago, following advice that the Alpaca Cooperative needed to cease trading, and with strong support from all AAA Regions on the need to provide a stable national market for Australian alpaca fleece. With substantial initial capital support from the AAA, the business plan was to concentrate on marketing raw fleece, but it was quickly realised that only by value-adding to finished products could profitability be achieved. AAFL remains the second largest AAFL shareholder.

Since 2004 AAFL has successfully marketed Australian fleece to a wide range of customers in Australia, New Zealand, Peru, UK and China. It has also developed several of its own brands of apparel and homewares for sale nationally and on-line. A number of AAFL products are now being made exclusively from Australian-grown fibre by our Peruvian partner Incalpaca, who also make other alpaca items for AAFL's own labels.

Australian alpaca fleece production represents just 5% of the annual world clip, which is dominated by Peru as shown in Fig 1. IWTO data also indicates that world alpaca fleece produced is very small in comparison to wool production: just 0.4%. According to publicly available internet data world alpaca fibre prices for commercial quantities have remained fairly static overall in real terms over the past 30 years, and processed tops of up to 26 microns FD averaged USD14.50 to 16.00/kg in 2013. Although some increase in world alpaca fibre prices has recently enabled AAFL to offer increased grower prices for 2014/15, this is still low in comparison to production costs. However the fact that some of our former commercial customers are now buying their requirements overseas convincingly indicates that local prices must reflect the broader market. This applies to all other competing fibres too, of course.

Practical Challenges for Alpaca Growers

There are many difficulties facing the collection and marketing of Australian alpaca fleece: small herd sizes, a wide dispersion of herds in all States and large variability in both quality and colour all pose real cost challenges. While AAFL has continued to purchase ALL types, grades and colours of huacaya and suri fleece and pieces, some compromises have had to be made to reduce classing costs.

Why is AAFL unable to offer a full classing service for all fleece received?

After 200+ years of selective breeding the quality, evenness and productive yield of Australian merino fleece is now outstanding. With minor skirting after shearing the whole fleece now has very little variation, and with some training formal classing into readily saleable lots is quite straightforward. However, in the relatively brief period of formal alpaca stud breeding and recording

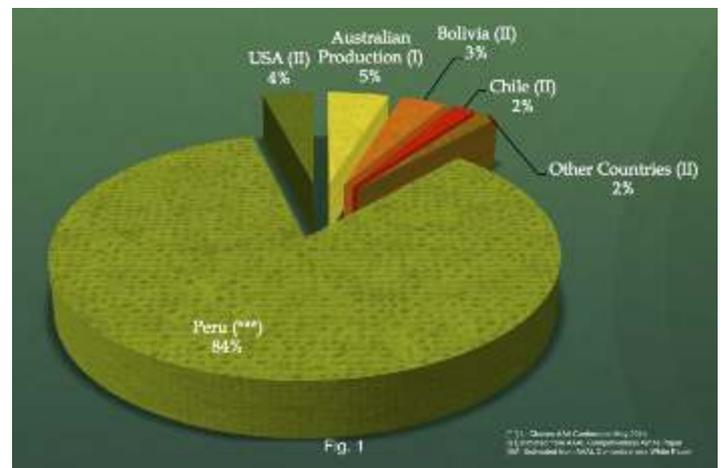
worldwide, and despite significant breeding improvement fostered by our Association over 20 years, ALL individual alpaca fleeces still exhibit markedly greater variation of quality in comparison to commercial flock merinos. A simple comparison of CV and SD from routine fibre sample tests between alpacas and merino sheep easily verifies this - most prominently on whole saddle grid tests.

Thus expert detailed classing of alpaca fleeces, especially for application to higher value apparel products, normally requires separation into at least three different grades; a time-consuming and therefore costly commercial task. And while we know it's possible for growers to be trained to do this, few will be willing to devote the time and effort to do so. So except for negotiated pre-classed bales, most fleece is briefly individually valued into one of four categories for grower payment, before it is re-baled and consigned to overseas buyers.

Accordingly, the most important breeding improvement priority for commercial alpaca fleece production is to greatly reduce the quality variability across stud alpaca shorn fleeces. Not only is there a need for a large reduction of primary fibre diameter, visible as 'guard hair' (as has been largely achieved in quality merinos) but secondary fibre diameter variability must also be reduced. This is much more important for commercial fleece value and usefulness than fibre diameter fineness below about 19 microns.

When alpacas producing fleece samples with a fibre diameter standard deviation of 3-3.5 become widely available, classing and processing will be much easier and cheaper, and customers will be willing to pay higher prices for the product. And as with high quality merinos, SDs in the 2.5-3.0 range should be an ultimate aim for elite stud breeders.

As for micron fineness, commercial buyers generally prefer the range to be around 20-24 for higher value products. Fleece finer than 20 microns invariably has less yield weight, is more difficult



and costly to process, classed lots are necessarily smaller. And if wool is to be blended with alpaca it needs to be several microns finer still to achieve comparable softness, increasing product expense.

Conclusion

It's disappointing that all world animal fibre prices, including alpaca, remain so low in comparison to production costs. Nonetheless, the animals we all still love after many years have to be shorn each year. With an AAAL estimate of around 400 tonnes being shorn annually, AAFL is concerned that apparently a large proportion of the annual shearing clip is not being productively used, indicating either longer term storage or possibly even disposal as non-value. It is obviously important for industry development, including alpaca sales, that productive use and markets be developed for ALL fleece, and AAFL has a goal to buy 65 tonnes of all types and grades over this season. One current buyer is seeking 20 tonnes at present. So please try to ensure that all shorn fleece finds a market somewhere!

There are some practical ways to maximise the value of our fleece, while also minimising the time and effort for the many growers who *'just want to get it over with!'*

- Ensure the shearing area is clean and free from contamination, and the alpacas are clean and dry. (Where practicable, and with care, limit food and water for non-lactating alpacas for several hours before shearing to help keep the area clean.)
- Separate low quality skirtings first, adjusting the skirting boundary for age and quality. Bag clean skirtings separately.
- Keep the shorter neck fleece (not the head) in a separate bag.
- Place the main saddle fleece in a plastic bag or garbage bag. For AAFL further skirting is not essential, but this can add value if adequate skirting wasn't possible during shearing – because AAFL valuation is based only on the saddle as presented.
- Place all neck and clean pieces bags inside the fleece bag. AAFL prices are based on the whole clean fleece weight.

- Preferably take a mid-side sample prior to or during shearing, and weigh the whole fleece. Remember that measurement and recording is the key to breeding improvement!

Please don't throw clean fleece away! Remember AAFL pays the inter state freight for all pressed bales over 100kg.

Bob Richardson AO and his late wife Judy started breeding alpacas in 1993 on their 1250 ha merino and beef property at Canowindra NSW. Bob was active for many years in SRNSW and the AAA National Committee, completing two terms as vice-president. With then AAA President Kerry Dwyer he was a foundation board member of AAFL in 2004, and is currently still a director and Company Secretary. He was awarded AAAL Life Membership in 2009.



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Fleece Collection, Classing & Selling

By AAA Fibre Market Development Reference Panel

The most common Frequently Asked Questions on this subject are:-

- How much alpaca fleece is shorn in Australia each year?
- How much alpaca fleece do we collect each year?
- How much alpaca fleece do we sell on the world market each year?
- How do we simplify and commercialize collection, classing & selling?
- How do we try to maximise returns for alpaca fleece, both suri and huacaya, to growers?

Your AAA Fibre Market Development Reference Panel has been addressing these questions and endeavouring to put systems, training and a process in place to address all of the above issues; to enable effective management of the outcomes by all alpaca fleece producers, at the same time offering a Quality Assured product in the market-place which should maximise our fleece returns.

Firstly we have estimated the annual clip to be 1,000,000kg/pa. This figure is based on the number of alpacas on the database plus a considerable number of unregistered stock, all with an average cut of 3.25kg per head.

So how much of that clip is available for sale? Let us assume that the total collectable amount of fleece for both suri and huacaya is 50%. Where will this be sold? Some of it will be sold through private treaty (as it is now), some contracted to overseas customers, some through craft markets and some through hand spinners; hardly a commercial operation that meets the needs of all growers all around Australia in a growing fibre industry.

Our approach to collection, classing and selling has been to set up a system that will accommodate both fleece types (suri and huacaya), all colours and all qualities (from ultrafine through to hairy pieces) for all growers across Australia under an industry approved QA standard.

There will always be groups of growers who wish to privately combine their clips, vertically integrate fleece with end-products to satisfy a niche market and there will always be a craft market. However not everyone has access to these outlets, and perhaps not the expertise, time, nor desire to become involved in such ventures.

Most of our alpaca growers wish to achieve the best possible prices for their fleece in the simplest and most efficient way possible. True market prices for suri and huacaya fleece direct to the grower will only be achieved by selling to the world market. In this model, growers are able to be price setters and not price takers. To achieve this we need to set up a number of classing houses, probably wool brokers, with the facility to receive fleeces direct from growers. These classing houses will either hire a registered AWEX alpaca classer or have a qualified classer as an employee.

Once the fleeces are classed according to the AAA Classing Code of Practice they are pressed, branded and core tested. Core testing is conducted by the Australian Wool Testing Laboratory (AWTA) in accordance with a world recognised testing protocol, the same as for other fibre industries. This test ensures that the bale/s are to the standard described with some eleven test results to assist the buyers and/or manufacturers meet their processing requirements.

AWTA is the only international wool testing laboratory with I.W.T.O qualifications in Australia. Whilst lines are classed to micron groups, colour and length as per the classing standards, the price may vary within these groups according to the actual test result.

For example a line of Superfine (18.6 - 20.5um) may vary from one bale to the other; say Bale 1 is core-tested at 18.8um and Bale 2 at 20.1um. Both are still superfine but depending on the SD/CV the lower micron bale would bring a higher return.

How does this work in practice?

Classing houses receive fleece on consignment and set up a grower account for the amount received. They then class and interlot one grower's fleece with others to make up bale quantities of a line. This process is conducted in the same manner as for other fibre industries - for small wool growers, cashmere and mohair producers.

When all the classing is completed, the lines are either sold at auction, or by tender or by private treaty with reserve prices being set by growers. The lines are marketed under the brokers' or classing house names and are available for purchase by both Australian and overseas buyers.

Payment is made to growers after the sale at the selling price less classing costs and selling commission.

Why combine our fleece with other growers in this way?

Not many alpaca breeders (or fleece growers as we prefer to call them) have enough alpacas to fill a bale of fleece with all one quality, all one colour, style and length in order to meet commercial specifications. There are economies of scale which will help the small grower to take advantage of combining his/her best fleece with others' similar fleece qualities to receive dollars in the bank.



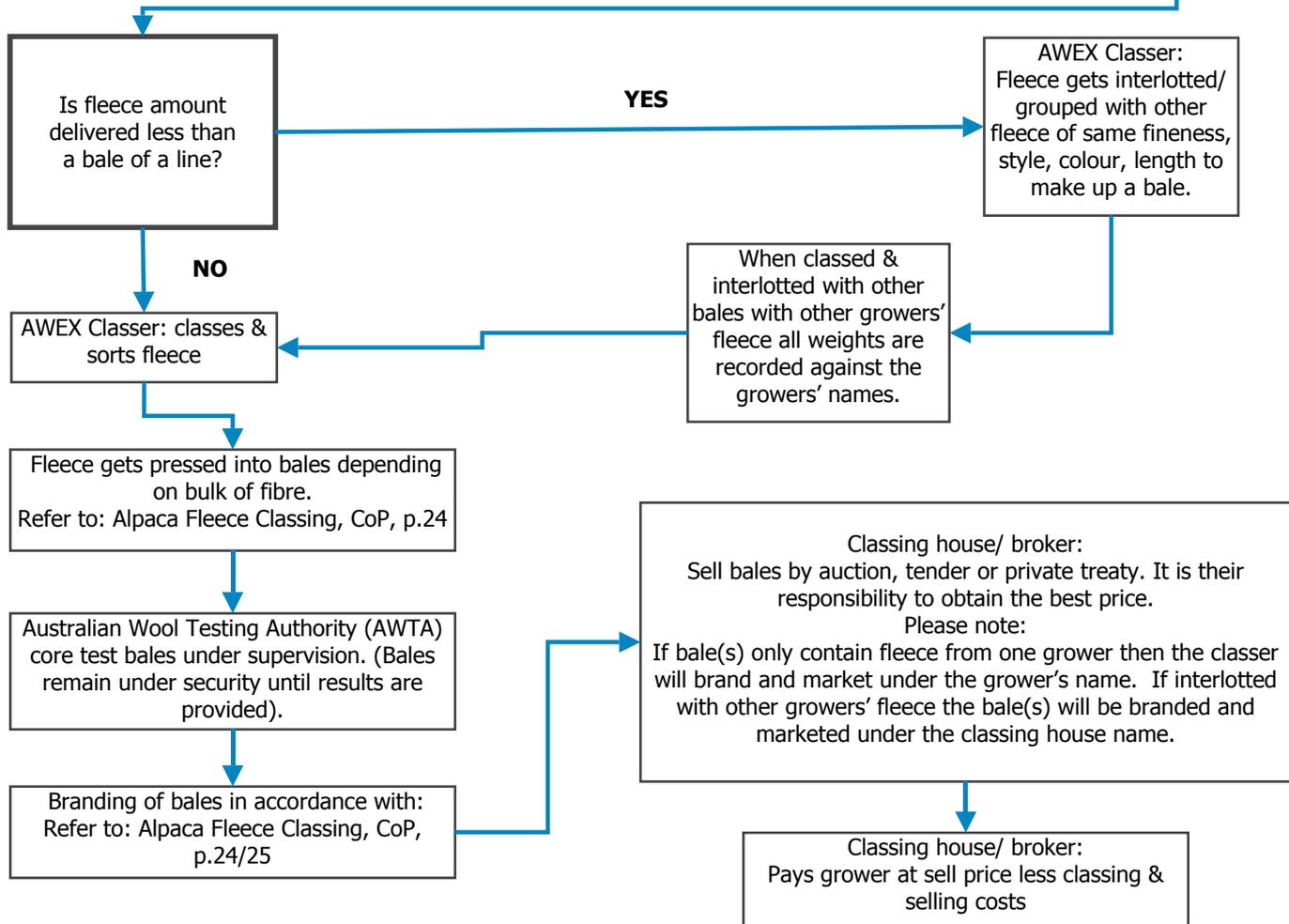
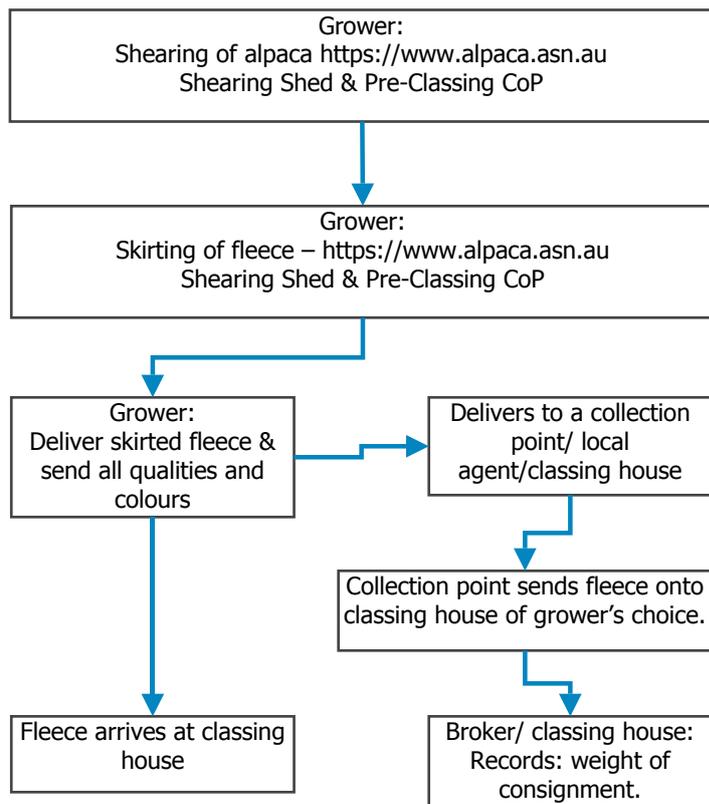
As an example a superfine bale of 150kg requires fleece from 125 alpacas to fill the bale. One 20 foot shipping container holds approximately 100 bales or 15 tonnes of alpaca fleece; overseas buyers prefer full container lots to minimise freight costs.

It's also important to realise that there is a market for all parts of your fleece as per the AAA Classing Code of Practice. Many growers throw out or mulch those hairy leg or belly pieces, especially off the older alpacas. If they are all collected and interlotted, there is a small value to them, but when skirting do keep them separate from your main fleece lines.

Below is a flow chart showing the process that the system outlined above will follow. Once established it does not involve the AAA and is a direct contract between the grower and the classing house. Contributors to this system do not need to be members of the AAA as we believe we need to capture as much fleece as possible from all sources.

We are also pleased to advise that the AAA has applied to register a trade mark that, subject to certain conditions, may be applied to all Australian alpaca fleece bales which have been classed by a registered AWEX classer, identifying the contents as Australian Quality Assured Alpaca. This mark is also designed to be licensed to manufacturers who use QA Australian alpaca to enhance the saleability of their alpaca products.

Quality Assured Classing & Selling Process



The Third Leg

Bringing stability To The Alpaca Industry

By Ian Frith - Illawarra Prime

Why farm alpaca for meat and hides? Why, because we have come of age and farming alpaca as a commercial sustainable industry is fact rather than fiction, and if we do not then our industry as it is known will not survive on fleece and genetics alone.

The doors are now open to us to breed for the future meat industry alongside our fleece, and fleece products, sales of animals within our excellent genetic gene pool whether to existing breeders, new breeders both here at home or globally. The opportunity is there to breed seed stock for future meat breeders thus ensuring an ongoing industry and future prosperity. No longer will you need superannuation paddocks for those animals surplus to your breeding programmes with respect to genetics, show and fleece, now there is a market for them, not just the diminishing pet or guard animal market, but a market of substance. There is now no reason to have empty females, as the progeny will fill a void. This is why the meat and hide industry is so important, because it will become a dominant force in the future of the alpaca industry. But it won't be easy, as there is a science to this industry if we are going to get it right, and not a culling exercise of unwanted animals. We must plan for the future, ensure we have the markets and our public have been educated in the acceptance of our product.

We must firstly understand what product we have, before we even think of moving on. We know that the meat is lean, 5.5 grams fat per 100 grams, i.e. 94% fat free, second only to emu (leave out the ultra lean beef), but we must also understand the basic nutritional information. So it's high in iron, high in protein and very low in cholesterol, so just on the first three it's got to be good for you!! Presently we are conducting a PhD study in conjunction with RIRDC and Sydney University, into the qualities, sustainability and acceptance of alpaca meat. (see article by Melanie Smith BAnVetBioSc(Hons 1), PhD candidate on page 47).

So we understand the nutrition, and benefits of the meat, it has a taste between lamb and veal, we have dispelled the myth that it is gamey, but we must also understand the cuts from the carcass that our chefs and their patrons desire. The prime cuts are naturally what you would expect. The tenderloins/back-strap, racks, shoulders, short ribs, followed by shanks, neck rosettes, hind quarter for leg smoking and making jerky. Every part of the animal is used, kidneys are to die for and the liver grilled, or made into paté.



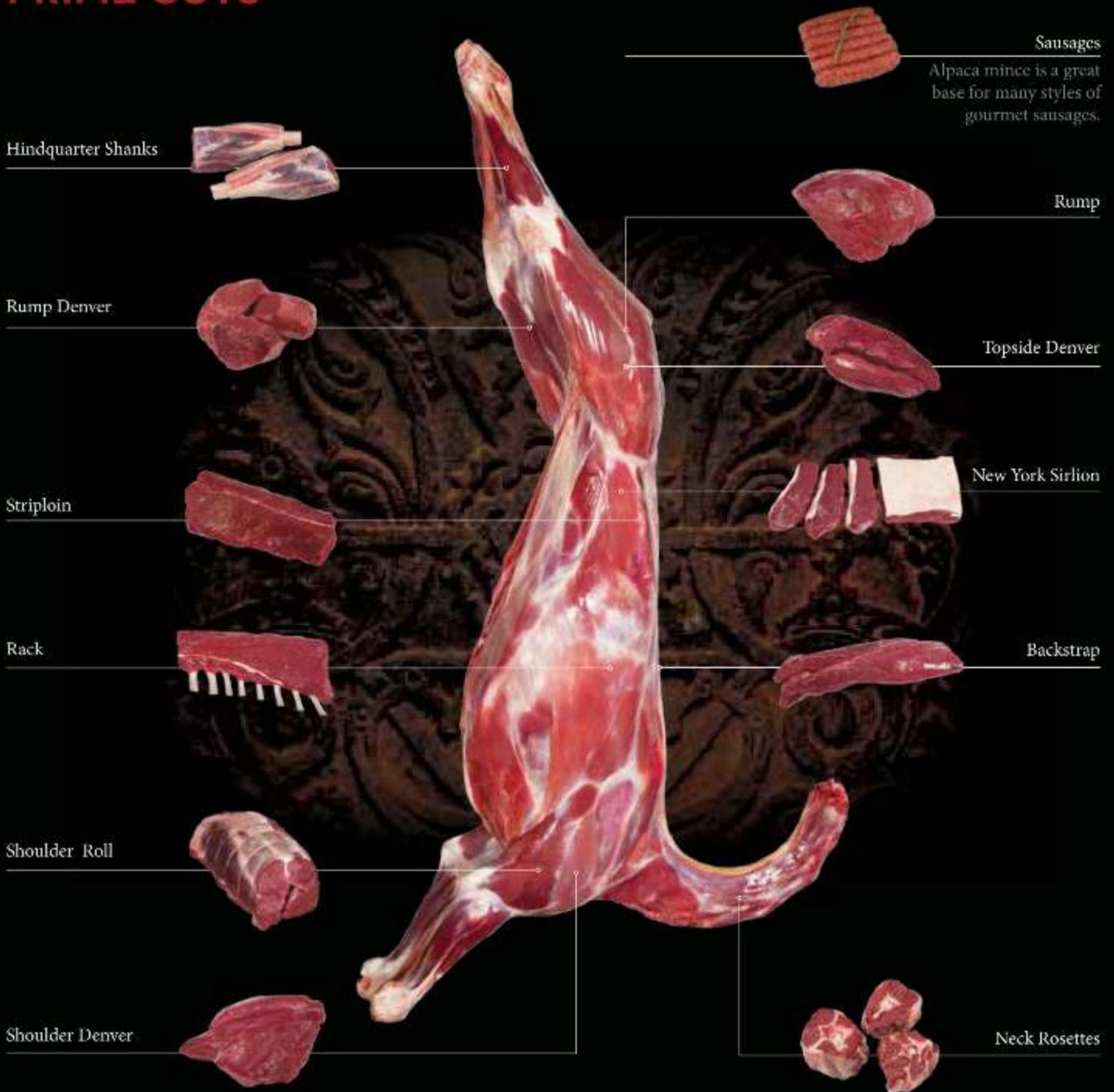
We then have to find an approved abattoir with a camelid processing licence. This is not daunting, it's just a matter of the abattoir applying for such a licence if not already having one. The big point is do they want to do it and will the volume be worth it? Can they do it on their sheep chain, or do they have to use the cattle chain? This totally depends on the individual abattoir. It is desirable to find such an abattoir as close as possible because the animals can stress on a long journey and have to be rested before slaughter. If they are stressed, like any animal the muscle and fibre tightens and the meat can become tough.

We have a situation where we are 45 mins away from our abattoir, the animals are first cab off the rank at 0700, hung for 24hrs then shipped to our butcher. Average carcass weight is 39/40 kilos which is approximately 59% of live weight. Your butcher should be well equipped with heat shrinking and cryovac etc, which eliminates the last of any bacteria and gives you an added two to three week shelf life in your cool room, resulting in always having stock on hand. If freezing same principal, except you will get minimum twelve month freezer life.

The average carcass will give you approximately:

- 7 kg of shoulder
- 8kg leg
- 1.5-2kg shanks
- 3 kg prime mince
- 2 kg racks (8 cutlets to rack)
- 3 kg strip loin
- 1.5 kg fillet
- 2 kg neck rosettes
- 7 kg burger/sausage/kofta
- 1.5 kg short ribs

PRIME CUTS





Now you have your cuts sorted, how about a chef? Highly advisable to befriend a chef and work with him to understand the cooking process and prepare recipes. You will need these recipes as you introduce the meat to other chefs and cooks. The majority will never have cooked or even seen alpaca before, do not sell alpaca meat to supermarkets or butchers, as the end user will not be aware of the cooking process and could end up having a bad experience. Burgers/sausages by all means to butchers and delis etc, it's very hard to ruin them, but never to supermarkets. Actually, there is an excellent market alone in just burgers and sausages, easy to move, a differentiation in product and less hassle. We have one client who between Christmas and New year just past went through 150kg of burgers, nearly four animals in a week. Would you not like 52 clients like that?

Do not be afraid to invest in your chef, and take him to train other chefs. We need as many chefs as possible to enjoy this meat and understand it. Degustation nights are fun, introduce it to the slow food network, they are the foodies. Yes it may cost you a few dollars but a great investment in the future.

Once the word is out you can establish your markets. Have recipe brochures prepared, do sampling invite local press. We already have been on food safari, Paddock to plate in SA. Ambersun who in conjunction with Prados Alpacas run Fleurieu Prime Alpaca and have been on Landline and then the ABC distributed the segment through all their cooking shows nationally. Great publicity but even greater were the orders that came through. This market being in its embryo stage is not just going to come to you, it is a business and you have to get off your bottom and make it successful. With a unique product it is not really that hard. Distribution - up to you. Contract it out or do it yourself and get to your clients. There are onerous health dept requirements for the transport and sale of meat, so make sure you are aware of them.

I mentioned earlier that the meat industry going forward was not about the culling of unwanted animals. We have to build breeding herds specifically for the meat like we have sought out the genetics for our fleece and show animals. There has to be a scientific approach to how we achieve this. We need robust males with excellent confirmation that can carry good condition. We need again robust females that are excellent mothers, produce good cria and have good supply of milk so we can wean earlier than usual and have them pregnant again as soon as possible. At present the average dressed carcass is 59% of live weight, we

need to increase that over the next five years to 65%, an automatic increase in bottom line profit of 10%. We need to experiment with nutrition, protein intake, grasses that we feed the animals. Supplementary feeding perhaps of grain without damaging the integrity of the meat (ie increasing fat levels).

If on supplementary feeding will the percentage weight gain be greater over a shorter period? Will it bring the animals to market quicker? More importantly will it be cost effective? At present as you are all well aware we have 11.5 months gestation (342 days) and animals go to market at roughly 24 months of age. This means we are always working three years in advance and trying to judge what the market will require in volume at the end of this three months. If just six months can be reduced off this timing then we will have made enormous progress and ensured sustainability. This is critical as the export market is waiting for us. We have orders that we cannot fill at present, due to a few hiccups. Firstly, finding an export abattoir within close proximity that will process camelids. Second, animal availability, putting together a 40ft container i.e. 500 carcasses or 20 ton can be done on a one off a basis but if repeat orders came in bi monthly it would hurt our domestic market which you can't afford to do, and therefore we could not guarantee supply and lose all credibility for the future, so we must crawl, before we walk, before we run. But it is out there.

A report published by RIRDC in 2001 stated that 11,250,000 kilos of alpaca meat was produced in Peru on an annual basis. That was 13 years ago, so lets imagine this has compounded at 5% per annum over the last thirteen years and now that figure 21,213,552 kilos, That is 21 thousand 213 tons!!

In comparison over a thirteen year period in Australia starting at say just 50 ton, the annual production would be 94.25 ton. easily manageable, just 2356 animals. For 200 ton you would need 5000 animals. We can daily breed this. In round figures this would produce \$2,800,000 in income on a whole carcass basis at \$14 per kilo. On Peru's basis, if they exported you would be looking at \$296,000,000. It is interesting to note also that Peru's average carcass weight in 2001 was 23kg, or 57% of the average Australian carcass, so therefore a lot more animals were slaughtered to reach this tonnage i.e. some 450,000, whereas on Australian figures this number would be 281,000. Quite a difference!

Fortunately for Australia, 70 to 80% of these animals were not killed in licensed abattoirs and used for local consumption, which gives us a huge advantage and opens the export market up for Australia. Hides wholesaled at \$250 each would, on the 5000 alpacas for export, bring in a further \$1.25m. The leather products from alpaca that I have seen so far have been magnificent, and cover handbags, purses, men's wallets, gloves etc. Whilst we have not had time at this stage to venture into this area it's certainly on the horizon.

So why farm alpacas for meat and hides?

Because it's the Third Leg ..The stool stays upright and we are finally looking at a financially sustainable commercial rural industry.

Remember in years to come we will always be farming two types of alpacas. Those that come with pedigrees, and the others will come with recipes.

Investigating Meat Quality

Attributes Of Alpaca Meat In Australia

By Melanie Smith BAnVetBioSc (Hons 1), PhD candidate

The Australian alpaca industry is at a pivotal stage of its transformation in becoming a commercial entity beyond its reliance on fibre as a product. Traditionally alpacas have been farmed for their fleece with advancements in fibre production and reproductive performance being successful. However, to promote the longer-term viability of the industry there needs to be a commercial market for alpaca meat. Benefits for alpaca producers of establishing a quality meat industry include the utilisation and monetary returns generated from otherwise unprofitable animals that are not suited for fibre production and improvement in genetic gains.

Currently there is a paucity of local and international scientific information available on alpaca meat quality and production. This includes an absence of information on the impact on carcass quality of meat processing technology such as electrical stimulation, tenderstretching and ageing. The majority of the available scientific information is inconsistent and not entirely relevant to Australian producers. These knowledge gaps need to be addressed for optimal production of quality alpaca meat. To address this, research is currently being conducted by The University of Sydney and the NSW Department of Primary Industries, Centre for Red Meat and Sheep Development. The main objectives of this research are to provide alpaca producers and processors with information on key meat production parameters including optimal slaughter age, carcass composition, and meat quality attributes of alpaca meat.

Preliminary results are very encouraging from the first of two experiments that investigated important carcass and meat quality

traits, between different age groups (18, 24 and 36 months) and genders (castrated males vs. females). These traits included; dressing percentages, carcass yield breakdown, processing techniques (applying electrical stimulation), tenderness, fresh colour, colour stability, nutrient value, and a consumer sensory evaluation.

The second and final experiment will be investigating the effects of on farm finishing methods by comparing the differences between animals grazed on pasture only compared with animals grazing pasture and provided with a grain supplement. The flow on effects to carcass and meat quality traits will be investigated, along with the benefits of tenderstretching. It is anticipated results from this research will be distributed over the next 12 months.

Acknowledgment:

This project is partially funded by RIRDC and Illawarra Prime Alpaca. The authors of this paper would like to thank the NSW DPI technical staff, along with the cooperating abattoir and butchery for their assistance.

Melanie graduated from The University of Sydney in 2011 with a Bachelor of Animal and Veterinary Bioscience, receiving first class honours in her project on sheep productivity. Her main interests lie within the areas of meat science, and animal production. In 2012 she started her PhD titled Investigation of quality attributes and consumer acceptance of Australian Alpaca meat.



Gastric Ulceration

In New World Camelids

By Dr Chris Cebra, VMD, MA, MS, DACVIM

Gastric ulceration is one of the best publicized health problems to affect New World camelids outside of their natural range. It was one of the first disorders recognized in these transplanted camelids and often the only one recognized postmortem.

A fair amount of research was conducted, particularly on the use of medications to treat ulcers, but the results of this work were often unsatisfactory. First off, the medications often did little to change stomach acidity, one of the putative causes of ulcers, and second, it was often difficult to assess who to treat.

Ulcers are loss of the surface lining of the stomach or intestine. Traditionally, since the part of the stomach where ulcers most commonly occur is also the area with the greatest acidity, we have thought of ulcers as being a chemical burning away of this lining. Other factors, often extrapolated from people, were also thought to contribute. Among these factors were stress, the use of aspirin-like medications, dehydration, and high dietary carbohydrate. How much each of these factors contributed could vary from case to case, and in many cases, none of them were present.

Camelids secrete stomach acid into their third compartment at a fairly constant rate. This is typical of herbivores and particularly ruminants, because they are constantly eating or chewing their cud, and thereby fairly consistently releasing feed from their first stomach into subsequent compartments. With fairly constant secretion, the acid needs to be diluted or neutralized to bring stomach contents to a higher pH to go down the intestine. Dilution happens through the passage of first compartment contents into the third compartment. These contents may be more or less acidic, based on how much soluble sugar the animal eats. Neutralization happens further along in the stomach and intestine, where more basic fluids are added.

The roles of stress, aspirin-like medications, and dehydration are harder to define. Again extrapolating from humans, their roles were often described as either increasing gastric acid secretion or compromising the stomach lining's defences by decreasing the protective mucus coat or by decreasing blood flow. The theory of increasing acid secretion may not have much validity, because camelids likely secrete acid constantly anyway. The other way these factors worked their way into the popular psyche was how sick camelids often spent their last days under veterinary care. Aspirin-like drugs are important contributors in many situations due to their beneficial effects, dehydration is common in sick animals,

and the whole situation of being sick and being hospitalised is often considered stressful. When the animals finally succumbed, and an ulcer was identified postmortem, rather than considering it the cause of the primary disease, it was often considered a fatal complication of the treatment period. Various recommendations were made, including limiting the use of aspirin-like drugs and providing companion animals for the treatment period. Antiulcer medications, although they were repeatedly shown in scientific studies not to be absorbed or effective in reducing gastric acidity in camelids were routinely prescribed and used in large quantities. No appreciable success was noted through this approach, but in the presence of failure, continued failure did not seem noteworthy.

In the following years, we learned a lot about normal camelids and the diseases that affect them. Our differential diagnosis lists grew longer, and we identified more diseases that had specific treatments, including even some that responded positively to treatment. We also learned that there are different types of ulcers and that their development occurred for different reasons.

The first compartment is essentially a fermentation chamber, where increasing acid production is the result of increased fermentability of the ration. First compartment ulcers are a poorly recognized entity. They can be focal, multifocal, or diffuse and usually lead to vague signs of poor growth, weight loss, or intermittent diarrhea. Complications are usually due to protein loss or invasion of microorganisms, particularly fungi. Causes of these ulcers include previous or current forestomach acidosis, tumors, foreign bodies, and fibrous balls within the gastric lumen. There is generally no suitable treatment, as the lesions are not identified pre-mortem.

The third gastric compartment is long and tubular, running craniocaudal in the right abdomen. Within the first two-thirds of its length, fermentative digestion is still taking place. At its caudal extreme where the organ abruptly turns dorsal and cranial, there is a small region of hydrochloric acid secretion. Ulcers here cause about 6% of all camelid deaths in North America. Interestingly, their occurrence appears to be diminishing, potentially due to a "maturation" of the industry and a decrease in the number of neophyte owners.

Ulcers typically occur at the elbow of the third gastric compartment or up toward the pylorus - the places where the luminal contents are most acidic. Given the location, it is likely that gastric filling and emptying functions are very important in ulcer development. In a normal camelid, less acidic fermented feed would push into this region from the first and second compartments, and the newly secreted acid would be rapidly propelled out of the tubular stomach into the intestine for neutralization. Under conditions of poor gastric filling and emptying, such as anorexia or intermittent feeding, dehydration, electrolyte or acid-base abnormalities, and gastric hyperacidity (grain feeding), the acid contents would remain unneutralized and possibly damage the mucosa. Reflux of bile from the duodenum would exacerbate acid injury.



Gastric ulcers are most commonly recognized on perforation. Affected animals frequently are depressed, weak, and anorexic, and may appear colicky or shocky. Fecal production and gastric motility are greatly reduced. Blood and peritoneal fluid provide evidence of septic inflammation. Some camelids lose most of their acid-secreting mucosa and are chronic poor-doers for months before perforation, but most are outwardly completely healthy until perforation. Thus, it is difficult for us to recognize non-perforating ulcers, and their frequency is unknown. Faecal occult blood tests are not a reliable method of diagnosing non-perforating gastric ulcers, and melena is more common with gastric masses or massive ulceration due to copper toxicosis.

Treatment after perforation is usually heroic. Camelids do not always die acutely: many are able to surround the lesion with omentum, fibrin, and adhered loops of bowel, but these camelids do not do well long-term. Pharmaceutical treatment of non-perforating ulcers has also been fairly unrewarding: it is difficult to identify which camelids to treat and most anti-ulcer medications are poorly efficacious in camelids. Parenteral administration of proton pump inhibitors appear to offer the most promise.

Because of our failure in recognizing ulcers before they perforate and of treating them after they do, the emphasis should be on recognizing at-risk camelids and changing their management to decrease the likelihood of ulcer formation or progression. Clinical evidence also suggests that ulcers can form and perforate in under 24 hours, so following these guidelines may help save animals. To preserve good filling and emptying, camelids should be provided with, and eat, diets mainly consisting of roughage. Too much grain, fruit, or other fermentable feed increases forestomach acid production and inhibits motility. Roughage must be eaten to be effective. Animals that are bullied or are bullying or otherwise

preoccupied do not eat. They should be identified and separated from their distractions. This, of course, does not mean isolation, but rather maintenance in a smaller group of friends. Breeding males are especially prone to stress, particularly when facing competition, and show or shipped animals are also at high risk due to the changing environments and intermittent feeding associated with travel. Sick animals also tend not to eat well. Correction of their underlying diseases should be the focus of treatment, and with success in that department, ulcers rarely become a problem. In summary, maintenance of good gastric emptying, and avoiding causes of stress or anorexia are probably the best way to avoid gastric ulcers.

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Other Gastrointestinal

By Dr Chris Cebra, VMD, MA, MS, DACVIM

Grain Overload

Camelids are adapted to survive in a harsh, nutrient-poor environment. Their gastric fermentation of fibre is the most efficient of hoof stock species. It is likely that the non-keratinized epithelium of their gastric saccules contributes to this efficiency by providing surface area for rapid absorption of volatile fatty acids from the gut lumen. Bicarbonate is generated when fatty acids are absorbed under low energy conditions, leading to speculation that camelids have greater gastric buffering capacity than cattle, and thus are protected against grain overload. It is unlikely that this bicarbonate would be generated under high energy conditions and it is unwise to think that camelids are anything but highly susceptible to grain overload.

The perception that camelids are less susceptible to forestomach acidosis than conventional ruminants is flawed. Camelids are purported to be discriminate eaters, and thus not prone to engorgement, and they are rarely fed large quantities of highly fermentable feeds. They also are reported to actively secrete bicarbonate into their forestomach, which has led to the belief that they have exceptional gastric buffering capacity. It is unlikely that saccular bicarbonate functions as a physiologically-important buffer. It also is probable that high density confinement and the availability of highly-fermentable feed increases competition between animals, alter feeding behavior, and increase the risk of forestomach acidosis. As with ruminants, dividing grain feedings over the day, making feed changes slowly, providing adequate roughage, and preventing individual animals from engorging on grains are useful methods to prevent forestomach acidosis. Deleting or decreasing the barley from grain mixes has been helpful in preventing future cases.

Feeding accidents are a common cause of forestomach acidosis. We also have noted two other syndromes of susceptibility. The first of these occurs when trying to increase body condition in a debilitated, elderly camelid through increased grain consumption. The abrupt addition of a small amount of grain often leads to acidosis, and frequently is fatal. Ulceration of the forestomach mucosa may be extreme in such cases. The other syndrome involves group-housed camelids, which are fed a combined ration for all animals. Though the overall amount of grain would appear reasonable if equally divided, certain aggressive eaters may get more than their share. Pathogenesis of the disease is very similar to cattle. Clinical signs include acute depression, gastric atony and fluid distention, a stumbling gait, and arching of the head and neck over the back. Diarrhoea is a convalescent finding, and polio-like signs have been reported. Diagnosis is made by determination of gastric fluid pH. Metabolic acidosis is the most common blood abnormality.

Normal forestomach pH in camelids is between 6.4 and 6.8. These values tend to climb with anorexia or salivary contamination. Camelids with acute acidosis often have values of 4.0 to 4.5; these may climb to 5.0 or more with time. In general,

anything under 6.0 should be considered suspicious. Some camelids on grain diets have gastric pH around 5.5 for long periods; they typically have intermittent bouts of diarrhoea and poor doing, unlike ruminants which can adjust to these lower gastric pH. Treatment follows the guidelines established for ruminants. Correction of dehydration and systemic acidosis is critical as is prevention of continued forestomach acid production and systemic absorption. Treatment with intravenous fluids containing bicarbonate and cold oral fluids containing magnesium hydroxide usually is sufficient, although gastric lavage or gastrotomy may be necessary with severe disease or if intravenous fluids are impractical. Treatment with antibiotics and thiamine HCl also are recommended to prevent secondary complications. Most affected animals survive with treatment. A small percentage become chronic poor doers with hypoproteinemia and weight loss, most likely due to deep, non-healing ulceration of the gastric mucosa.

Gastroliths

The non-keratinized epithelium of the gastric saccules is protected from the abrasive action of ingested fibre by muscular sphincters coated with keratinized squamous epithelium. If large particles pass this sphincter, they are frequently trapped in the saccular lumen. Wedge-shaped grains, particularly sunflower seeds, appear more prone to do this. Once in the lumen, mineral is laid around the objects, forming stones. In general, these stones do not result in overt clinical disease and they are a frequent finding in aged camelids. However, because of the important role of the saccular lining in nutrient absorption, it is likely that camelids with most saccules blocked are poor doers. Also, on rare occasions, these liths are large and jagged, and may cause fatal peritonitis by rupturing through the serosal surface of the gastric compartment. Gastroliths are easily recognizable on abdominal radiographs, but there is currently no treatment for them.

Neoplasia

Squamous cell carcinoma is the most commonly reported primary neoplasm affecting the gastrointestinal tract of camelids, while multicentric lymphoma is the most commonly reported neoplasm in camelids overall, and commonly invades the terminal third compartment or saccular regions of the first compartment. Other neoplasms, particularly those of glandular tissue or smooth muscle origin occur sporadically. In general, neoplastic disorders cause gradual weight loss with progressive lethargy and anorexia. Diarrhoea might be noted early in the course of the disease or terminally. Lymphoma may cause palpable masses on other body parts. Often, the early clinical signs are missed and the llama is either found dead or extremely debilitated. Antemortem diagnosis and successful treatment of malignant internal neoplasms are rare, but could be increased by earlier identification of the sick animal, and greater awareness of the tumors, and a diagnostic work-up directed towards neoplastic disorders.

Calamities

Twists, blockages, and related disorders

Most veterinarians are more familiar with horses than they are with camelids, and that may be useful or detrimental when dealing with camelids with various intestinal accidents. These occur fairly rarely, but even so, are more common in camelids than in ruminants. The major issues relate to blockage of the gut with undigested plant material or twists of the most mobile part. Specific plants, ectoparasites causing the alpacas to chew themselves, and dental issues may promote blockage formation, but that is speculative. Coccidia may promote twists; that is slightly more scientifically supported.

For the owner, the most important thing is to recognize what is happening and how severe it is. Alpacas with abdominal pain usually lie down and get up frequently, lie restlessly, and kick some of their legs out to the side. In other cases, they are more mopey and develop a pot-bellied look. In all cases, their appetite and fecal production diminish, but it may take days for complete cessation of these functions.

For the veterinarian, recognizing severity is also crucial. Blood tests may reveal evidence of obstruction similar to what is seen in ruminants with abomasal outflow compromise, but these changes are only seen with certain types of blockage. The most important, initial, on-site evaluation is confirmation that bowel is becoming distended and losing its function. This is best determined by ultrasonographic examination, mainly concentrating on the right flank. Fluid-filled loops which do not contract and propel well is typical. Unfortunately, most of the problems respond best to surgical repair, but if that is done early, prognosis can be quite good.

Non-parasitic diarrhoea

Most of the disorders causing diarrhoea in camelids are the result of parasitic infections, but a few notable ones are not. The most important of these is viral diarrhoea, usually associated with Coronavirus. This is most likely a bovine virus that has crossed over into alpacas. It tends to affect animals without immunity to it. When a crossover event first occurs, all camelids are susceptible and herd outbreaks of diarrhoea affecting all ages are seen. These usually begin with animals that were off property, for a breeding or a show usually, who brought the virus back with them. Once these outbreaks have run their course for a while, only crias are susceptible. Rotavirus has also been described, but appears to be less common.

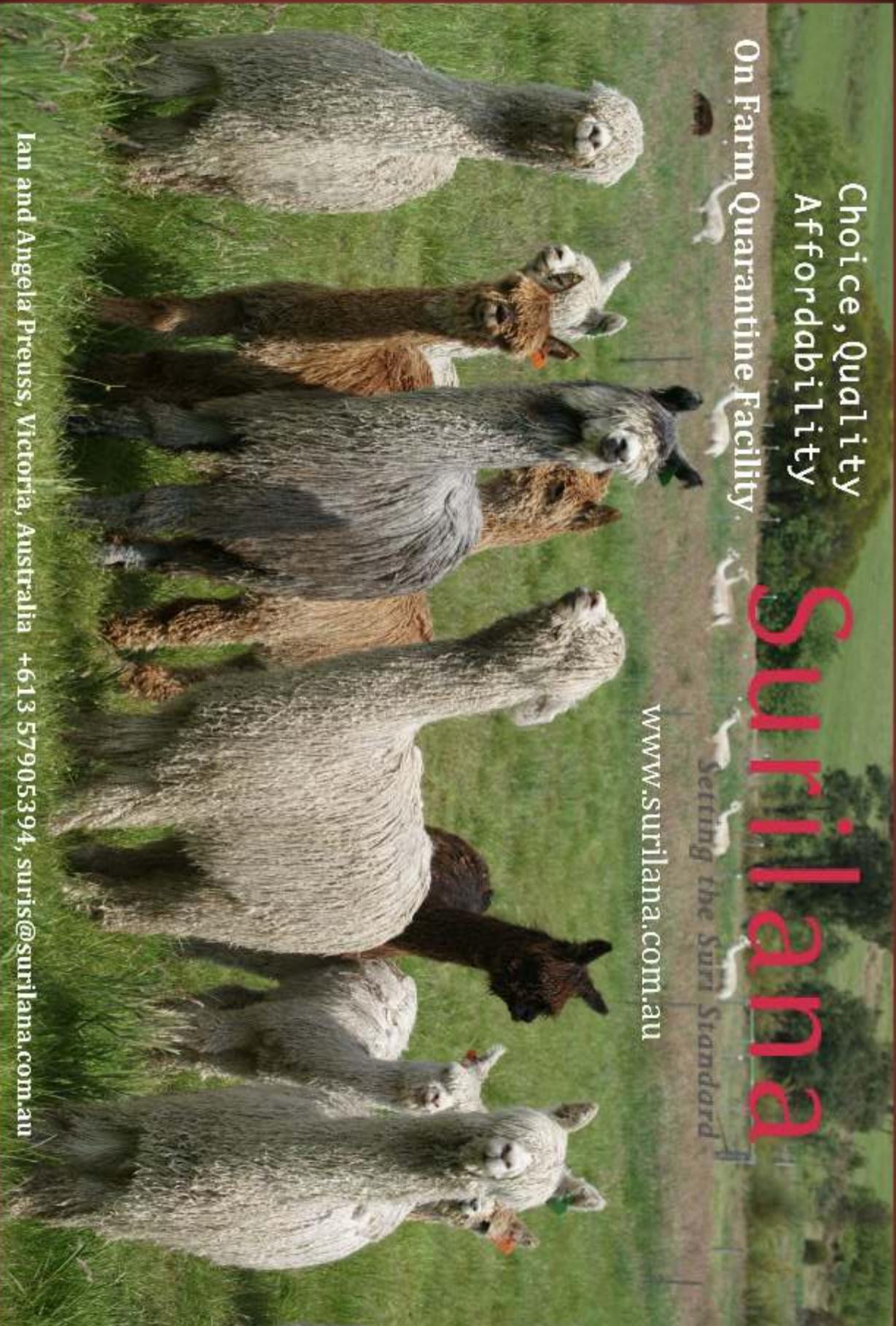
Diarrhoea associated with viruses is usually explosive and watery. Affected alpacas can be reasonably bright, but also can become lethargic with dehydration and electrolyte loss. Water and electrolyte replacement are the cornerstones of treatment, and in adult animals, provision of shelter, adequate water, and a salt block may be all that is necessary, and the disease runs its

course in 4 to 9 days. Neonates are much more vulnerable, and may require supplemental oral or even intravenous fluids. Oral calf electrolyte products often contain too much salt and sugar for camelids, and should therefore be diluted or used in combination with other water sources.

Diagnosis can be tricky. Bovine ELISA or PCR assays may work, or the virus may be found on electron microscopic examination of fresh faeces.

Dr Cebra was key-note speaker at the 2014 AAA Conference in Adelaide. He has worked with llamas and alpacas for over 20 years as a clinical veterinarian and researcher. He has authored or co-authored over 50 peer-reviewed scientific reports on camelids and numerous lay articles, reviews, and book chapters. Most recently he finished his chapters for a new comprehensive textbook on llama and alpaca health care.





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