Camelid Connections

MAGAZINE

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Issue 27 - March 2024

CAMELID CONNECTIONS

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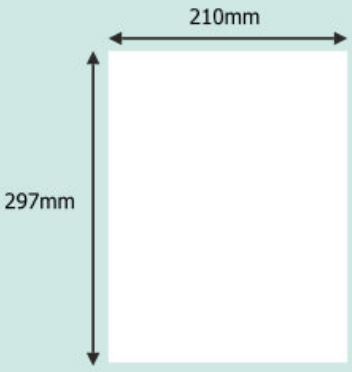

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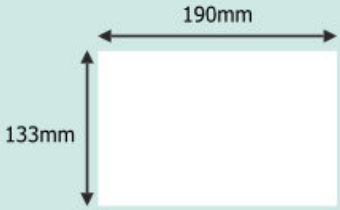

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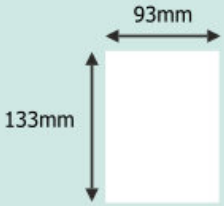

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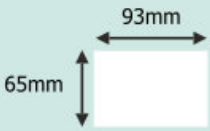

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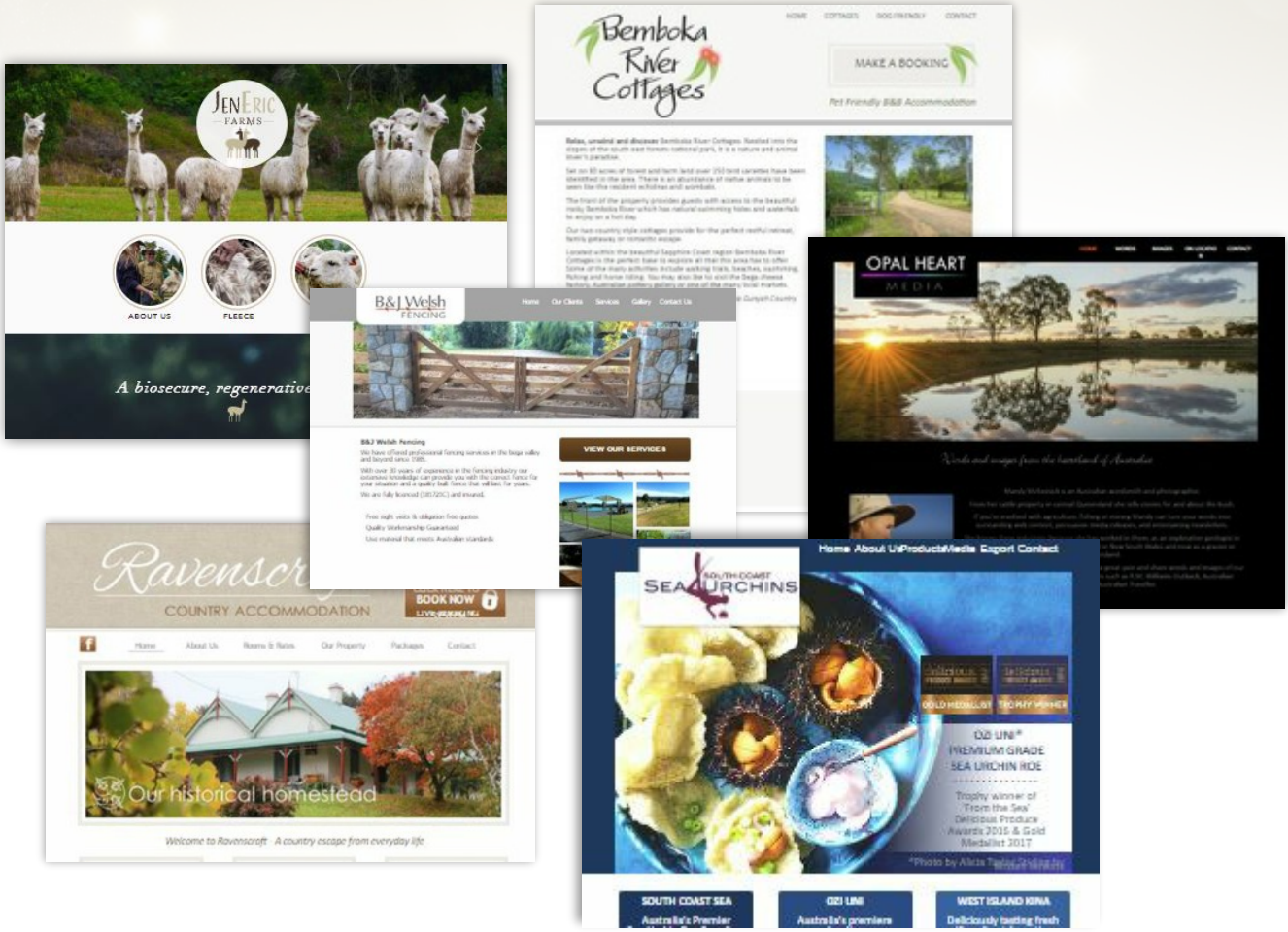

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www.oakgrovegraphics.com.au

EMAIL: julie@oakgrovegraphics.com.au | PHONE: 02 6493 2036

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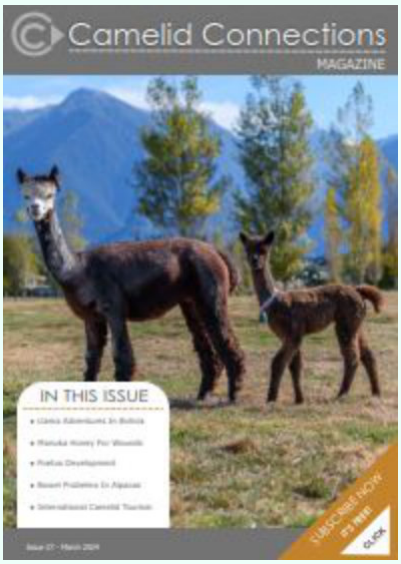
PO Box 4059, Candelo NSW 2550 Telephone +61 (0)2 6493 2036
Email: info@camelidconnections.com.au Web: www.camelidconnections.com.au

Editor
Esme Graham Telephone: 0457 304 868 Email: esme@camelidconnections.com.au

Designer/Editor
Julie McClen telephone 02 6493 2036 Email: julie@camelidconnections.com.au

Designed and Produced
By Oak Grove Graphics
PO Box 4059, Candelo NSW 2550
Telephone +61 (0)2 6493 2036
info@oakgrovegraphics.com.au
www.oakgrovegraphics.com.au



Cover Image: Kepler Mountain View Alpacas, NZ

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Welcome to Camelid Connections

This quarter we have an interesting article by Julie Wilkinson from Baarrooka Alpacas on the development of the cria foetus. Unfortunately, many of us would have found a foetus on the ground in a paddock and then spent time trying to work out which girl had dropped her cria so this article may help you narrow down the suspects - see page 28.

Keith Payne continues his interesting series about his trip to South American, this time taking us on a snowy trek into the mountains of Bolivia. Our camelid tourism series is branching out to international camelid owners, and we start off with another place that sees Winter snow with a Kiwi alpaca breeder who shows us her farm in the beautiful Lake Manapouri district in Southland New Zealand, with the lush pastures on her farm that would be a dream come true for many.

Have you thought about using Manuka honey as a wound dressing? With the problems surrounding the overuse of antibiotics many old fashioned remedies are getting a scientific examination - see the latest on Page 12 to learn more.

Also in the husbandry field we have two articles, the first about bowel problems you may encounter in alpacas and a reminder about Vitamin D requirements for alpacas as we now enter into the cooler months of the year here in the southern hemisphere.

On page 20 we have an interesting article from the USA about local farm branding and the benefits it can bring to your promotion of alpaca products.

We hope you enjoy this latest edition and encourage you to support our advertisers and consider advertising your animals for sale, stud services or camelid related products, as we have some of the most affordable advertising available in the camelid focussed industry.

Meet The Team

Esme Graham - Editor

My husband and I bred suri alpacas for over 20 years, I was heavily involved with both regional committees and the national board of the Australian Alpaca Association for a number of years, and had the honour of being selected as a life member of the Association.

My major interest has been in marketing and education and to this end I was editor of Alpacas Australia magazine for six years and I hope that the experience I gained editing that publication can be extended to educate and inform a wider range of alpaca and llama breeders who are not necessarily association members but have a love of all things camelid.

Julie McClen - Designer/Editor

A breeder of ultrafine Huacaya alpacas for over 23 years at Oak Grove Alpacas, I have a passion for fine fibre and the genetic connection to the most diminutive and finest of the camelids - the wild Vicuna.

I strongly believe that education in any industry is the key to success, so with Camelid Connections we hope to provide interesting and informative articles to assist all camelid owners in getting the most out of their animals and businesses.

I also own Oak Grove Graphics a web and graphic design agency which is producing this magazine, and also allows me to connect with many different people in the camelid related world through my design and web work.
www.oakgrovegraphics.com.au

Foster Care

By Susan Haese, Yaringa Alpacas, South Australia

If you have ever bottle raised a cria, you will know it is very time consuming and requires great commitment over a period of months.

This article is about foster care – that is – getting another female to feed the cria for you. As well as taking the pressure off you as an owner, foster care means your cria will grow up knowing it is an alpaca, which can sometimes be an issue with bottle fed cria. It is important to understand this is not an easy process and you may not be able to achieve the desired result.

I think it is probably more likely that a female would adopt a cria belonging to a female related to her, or at least from her own herd. This article is about a cria coming in from another herd of unrelated alpacas. A lot of females would consider this cria to be "foreign" and would be less likely to accept it.

Choosing a foster mother

In a small herd, you may not have a suitable female available at the right time. In a larger herd, watch your females, particularly when you put out feed, and make a note of any female who allows a cria other than her own to feed from her. These females are potentially suitable for foster care.

It is essential to ensure that the proposed foster mother is holding good weight – preferably a body score of three or higher – as feeding two cria is going to be tough on her. It is also worth considering that it is less likely that a female feeding two cria will hold a pregnancy so it may be best to choose a female who is not pregnant.

Gabriel

Gabriel, an orphan, arrived at Yaringa at five days of age in search of a foster mum.

We began by looking for an appropriate area to use when introducing the cria to the foster mum. I chose a 3 m x 3 m stable – two solid walls and two gates so there was plenty of air flow and the animals inside could see out easily.

We put in unlimited oaten hay, a small quantity of lucerne hay and some grain mix, and, of course, water.

Foster mum 1: Kimberley – a five year old female with her second cria at foot.

When we introduced Gabriel, Kimberley tended to ignore him and kept eating grain which suggested she may accept him. Unfortunately Kimberley's six week old cria had other ideas and kept pushing Gabriel away so he was never able to get near Kimberley's back end. We watched for some time but it wasn't going to work.

Foster mum 2: Tiara – a three year old female with her first cria at foot.

Tiara was extremely offended by Gabriel's presence and kept spitting at him and in the end he sat in the corner. At this point we decided to give up and try again the next day.

Foster mum 3: Isobella – a two year old female with her first cria at foot.

Isobella was very busy eating but occasionally turned and sniffed Gabriel. Isobella's cria Milano was only three days old and smaller than Gabriel. Within minutes, Gabriel was sniffing around Isobella looking for milk. Isobella moved from grain to hay, paying little attention to either cria, and with a bit of prompting Gabriel started to feed from her. I left them to it and came back an hour later to find Isobella feeding both cria. This of course was only step one.

For the first 24 hours it is really important to keep checking the cria in case the foster mother changes her mind about having the cria close as it is very easy for a young cria to get

injured by an unhappy adult. I kept a couple of other females in the area outside the stable so Isobella didn't worry about being away from the herd.

After 48 hours Isobella and the two cria were let out into a bigger area – about 10 m by 10 m and were joined by two other females not currently feeding cria.

Creating enough milk for two cria

The next step was to ensure Isobella was able to provide enough milk for both cria. It quickly became apparent that Gabriel was going to dominate the milk supply and Milano could easily miss out, so the decision was made to keep bottle feeding Gabriel in the short term. For the first week Gabriel was given four feeds per day taking between 150 and 200 mL per feed.

We also attempted to feed Milano but this was not successful. At least if we fed Gabriel it gave Milano several opportunities each day to feed without interference and supplementary feeding one cria gave Isobella's milk supply time to catch up with demand.

Adequate nutrition for the mother is essential. Isobella had access to unlimited oaten hay and was also given grain mix each day. Most of our females feeding cria are given 500 grams of mix per day (oaten chaff, lucerne chaff, whole oats and crushed lupins). Isobella started with 500 grams but this was increased each day until she got to as much as she could eat.

In the second week Gabriel was given three feeds per day taking 250 mL per feed.

In the third week Gabriel was given three feeds per day taking 300 mL per feed. It was noticeable though that Gabriel was getting more difficult to catch each time and would spit when he was caught, but he would then feed.

In the fourth week, Gabriel was given two feeds per day and was offered 300 mL per feed – but bit by bit he was drinking less and less so by the end of that week we decided to give him 24 hours without a bottle. Even a cria needing two bottles a day would be much easier for someone who works full time to manage than a cria who needs to be fed every couple of hours.

After 24 hours Gabriel was offered a bottle again but he refused to take it so this was the end of bottle feeding.

On week three I put another female with a similar aged cria at foot into the pen as this cria needed daily treatment for an injury. This was a mistake as the third cria started feeding from Isobella also.

Cria development

What really surprised me was that Isobella's weight really did not change throughout this process. At the time of writing this article, the two cria are just over three months old – and Isobella has a body score of 4.

From the beginning we tracked the weight of both cria to ensure that both were continuing to gain weight. It is clear from the table on the next page that the cria growth is not linear – i.e., they do not put on the same amount of weight each time – but both cria have gained weight every time they were weighed.

Isobella does not seem to distinguish between the two cria, and treats both as hers, and the three of them are clearly a family.

We plan to wean Gabriel at four months of age (the bigger cria) followed by Milano two weeks later.

Weaning both together could easily lead to mastitis due to the high level of milk production needed to feed two cria.

Isobella has proved herself to be a true asset to our herd.

Website: www.yaringaalpacas.com.au
Facebook: Yaringa Alpacas

DATE	*GABRIEL – born 11/4 (kg)*	*MILANO – born 16/4 (kg)*	*Difference (kg)*
22/4	9.7	7.3	2.4
27/4	10.1	8.3	1.8
1/5	10.7	8.6	2.1
8/5	11.2	9.5	1.7
15/5	12.5	10.7	1.8
22/5	13.7	11.3	2.4
5/6	14.7	12.0	2.7
17/7	18.0	15.9	2.1

LLAMA ADVENTURES

IN THE ROYAL MOUNTAINS OF BOLIVIA

By Keith Payne - Big Ears Llama Ranch

In May last year I ventured to Bolivia, intending to complete a five day trek in the Bolivian Cordillera Real (Royal Mountains), using llamas to transport the gear - Andean style. Meaning the llamas would not be using western style packs, and they would be driven in front of us instead of us leading them.

After four exhausting flights I finally arrived in Bolivia and stepped into 4,200m of altitude. A short drive to La Paz and 3,500m of altitude - still pretty high up and the exhaustion and dehydration was kicking in. But after two days of adjustment and a good sleep I felt ready for my llama/ trekking adventure. I was to be joined on the trip by a Bolivian guide and my good friend Jose from Peru, Jose would be my guide and translator for the duration of my stay in Bolivia.

We were collected at 6am and once underway advised there had been a metre of snow in the mountains and it was still snowing. Sure enough as we navigated some interesting roads, the snow accumulated, eventually we were obliged to stop. We ended up finishing the day in a deserted building, leaving the following morning on foot to try and work our way to a well known base camp called Chiar Khota where we could assess the situation further. Meanwhile we learned that the vehicle transporting our llamas had also failed to navigate the roads. A couple of neighbourly donkeys were engaged and ably transported our supplies.

The trip to the base camp was long, but the snow had stopped and the sun became hot. We travelled down a wide valley full of llamas and alpacas, all of whom seemed amused by these visitors to their domain. The landscape was dotted with basic sod cottages, most of which had 2-3 stone corrals nearby, some appeared to be lived in and an equal number had been abandoned. Left to slowly decay into the hills. A close look at the camelid herds would disclose a person watching over them, keeping an eye on our movements but not welcoming communication. As we moved along I began to understand the danger presented to camelid famers by way of pumas and poachers. Accordingly, they are wary of strangers.

The base camp is positioned at altitude of 4,700m (by comparison the Mt Everest base camp is at 5,350m) and it was filled daily by professional climbing clubs from Europe, Argentina and Asia. Jose and I had a mattress to throw our sleeping bags on and falling asleep was a breeze.

The managers at the base camp kept their own herd of llamas. Of course, in Andean fashion they were never contained and wandered about the hills overlooking the camp. I would be up early each morning to watch them arise at the first hint of light and after toilet begin to graze. Just as I have observed my own llamas doing over the years. The temperature was always -5 to -20C each evening but would work its way to mid/late teens by noon for a couple of hours. And so this mountain herd would wander along the very steep and slippery mountains side, munching as they went, very relaxed. I could not see any vegetation that would sustain a llama, but they managed well. These were very fit and healthy animals.

“ There on the trail ahead of us appeared the llamas from the base camp. ”

The snow had made it too dangerous for us to travel through passes to other locations so Jose and I occupied ourselves around the nearby magical high mountain lake, preparing for the next day when we would attempt to conquer a majestic peak nearby, called Pico Austria.

Up early we followed a path down a few hundred metres before beginning the ascent. It went well on the single file trail in the snow. Until at about 4,900m we got the shock of our lives. There on the trail ahead of us appeared the llamas from the base camp. We were a bit dumfounded but their reaction towards us was classic “what are you humans doing on our mountain, eh”. But they were gracious enough to jump off trail into deep snow so we could continue on. They were totally unfazed by the snow, the cold, the altitude etc. My question was “what do they eat up here” and Jose pointed to the tips of ichu grass sticking up through the snow. Very coarse and now frozen as well, but not an issue for the llama!

Eventually we had to turn back before reaching the summit. At 5,180m our guide decided the deeper snow made it too dangerous to continue and after paying tribute and an offering to the mountain apu we began our descent. It turned out to be much more difficult than the ascent but that is another story.

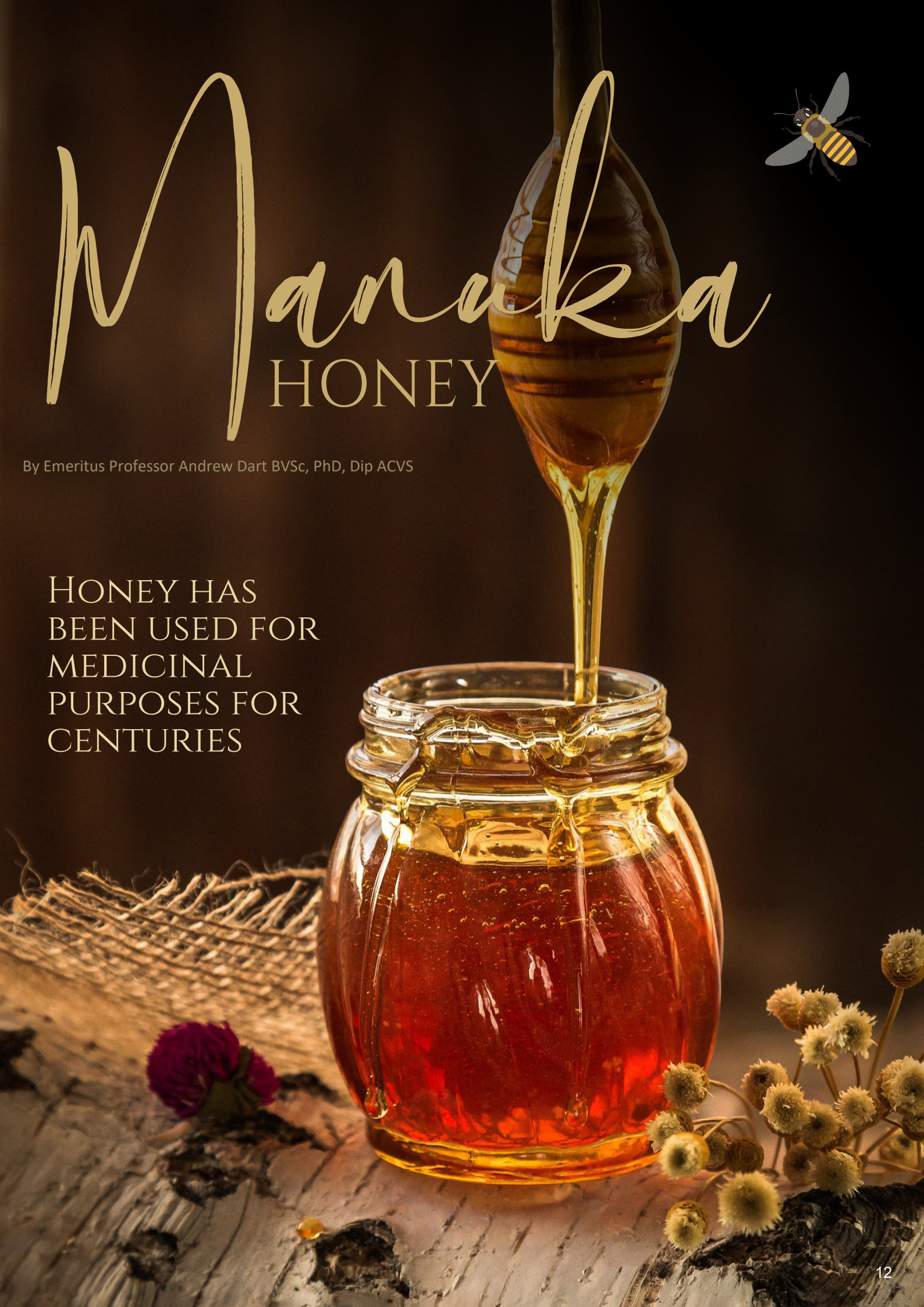
The donkeys capably transported our supplies out and we returned to La Paz. Next day we were scheduled to make a presentation at the La Paz University about llamas in New Zealand and my guanaco/llama breeding/training program. Followed by an adventure living on the Turco altiplano with llamas for two weeks.

Lots more stories to come.

All photos taken by myself, the high plateaus we crossed are known as the Tiwanaku Altiplano..

Manuka HONEY

By Emeritus Professor Andrew Dart BVSc, PhD, Dip ACVS



Honey has been used for medicinal purposes for centuries

Introduction

Honey has been used for medicinal purposes by the ancient Egyptians, Greeks and Chinese. Historical uses of honey include gastrointestinal ailments, pain relief and treatment of infections. However, its most common use was to promote wound healing and for this purpose it was often combined with other substances such as animal fats and lint. However, the use of honey to treat wounds fell out of favour shortly after World War I with the development of modern antimicrobial agents.

Recently, with the emergence of antimicrobial resistance in many clinically relevant bacterial species, there has been renewed interest in the medicinal properties of different types of honey. The vast majority of recent research has focused on the antimicrobial properties of honey, however, there is a growing body of research that suggests many honey varietals have other mechanisms of action that modulate the process of wound healing. Variability in the concentrations and profile of the bioactive components of different honey varietals suggest that different types of honey have varying medicinal properties, or in other words, all honeys do not behave equally.

Whilst there are over 300 types of honey found around the world, the majority of studies have been performed on manuka honey which is produced from the manuka tree (Leptospermum scoparium) found in New Zealand. The Leptospermum species of plants are predominately found in Australia and New Zealand and total approximately 83 different species. Honey derived from the manuka tree has been found to display superior antimicrobial activity compared to many other honey varietals. As a result, the increasing public awareness of its health benefits, has seen the cost of raw manuka honey increase 10-fold over the past 20 years.

Wounds in the distal limb of horses occur frequently and are characterized by contamination, excessive skin tension and tissue avulsion that often precludes primary closure. There is often involvement of the underlying bone, tendons and joints so ultimately these wounds are left to heal by second intenion. Wounds involving the distal limb in horses have been found to exhibit a weak and persistent inflammatory phase of healing in the distal limb compared to those involving the body. This prolonged low grade inflammation, in combination with the lack of soft tissues and a relatively poor vascular supply, can promote the formation of exuberant granulation tissue which results in a complicated, and often delayed, healing process. There are some similarities between wounds in the distal limb of horses and diabetic ulcers observed in people, including relatively poor blood supply and chronic inflammation. As such, wounds of the equine distal limb may serve as a useful model for experimental studies that are beneficial to multiple species. The purpose of this review is to summarize the current knowledge on the bioactivity of manuka honey, its application and role in second intention wound healing in horses and highlight areas for future investigation.

The properties of Manuka honey

Generic features of honey. A high sugar content and a low pH, generally between 3.2 and 4.5, are physical properties that are common to all varietals of honey. Ripened honey consists of 80% sugars, 18% water and a complex mixture of amino acids, peptides, arabinogalactan proteins, organic acids, polyphenols, carotenoid-like substances, flavonoids, vitamins and minerals. The high sugar content produces a high osmotic gradient that leads to bacterial dehydration and shrinkage of the cell wall.

This high osmolality also initiates an influx of fluid, lymph and nutrients into the wound bed, creating a moist environment. These properties promote autolytic wound debridement and enhance tissue healing. The low pH environment promotes the release of oxygen from hemoglobin and encourages wound contraction, as well as reducing the activity of bacterial proteases. Bacterial proteases contribute to poor tissue healing by damaging the extracellular matrix and destroying cytokines and growth factors. Glucose oxidase is an enzyme produced by worker bees and is found in all types of honey in varying concentrations. This enzyme is responsible for oxidizing glucose into gluconic acid and releasing hydrogen peroxide. Hydrogen peroxide is only detected in diluted honey because dilution leads to activation of glucose oxidase.

The generation of hydrogen peroxide is greatest when honey is diluted to 30-50%. Hydrogen peroxide is a commonly used disinfectant and its presence contributes to the overall antimicrobial activity of honey. Hydrogen peroxide also acts as a messenger in the activation of nuclear factor-κB (NF- κB), a transcription factor which plays a key role in regulating the immune response to infection.34 The activity and concentration of hydrogen peroxide varies substantially between honey varietals and can be related to plant species, environmental conditions and entomological factors, including age of the bee and foraging patterns.

The variable antibacterial activity of some honey varietals is also affected by processing and storage conditions, including heat and light, and catalases that are produced by some bacteria and pollen. It has also recently been shown that the antibacterial activity of late harvest honey (honey aged in the honeycomb for one year) is significantly increased compared with freshly harvested honey

Unique Manuka Factor (UMF) is a trademarked grading system placed on the label of commercially available Manuka honey by licensed producers in New Zealand. The UMF rating assures the purity and quality of the product and represents a similar zone of growth inhibition in a radial diffusion assay with Staphylococcus aureus when compared with a known concentration of an antiseptic (phenol) solution.

Each individual batch of manuka honey is tested for antimicrobial activity, however, it is worth noting this testing does not demonstrate precisely which components contribute to this property.

In general, a UMF rating of 10-15 is required for the batch to be considered therapeutically useful, whilst a UMF16-30 has superior activity with high antimicrobial efficacy. A UMF rating 5-9 has minimal antimicrobial activity and is not recommended for therapeutic use as an antimicrobial agent, whilst a UMF 0-4 has no detectable antibacterial activity.

The specific actions of MGO have yet to be fully elucidated, but it has been suggested to involve a combination of enzymatic and non- enzymatic processes that involve the ability of MGO to interact with macromolecules such as DNA and RNA.

The mode of action also appears to differ depending on the micro-organism involved. Exposure of gram-positive organisms to MGO leads to the downregulation of autolysin, an enzyme involved in cell division, and the cleavage of bacterial cell wall components. Exposure of gram-negative bacteria to MGO appears to lead to altered gene expression of proteins involved in the structural integrity of the cell wall and cell lysis.

A decrease in virulence factors of bacteria has also been observed following treatment with manuka honey, including downregulation of flagella-associated proteins, inhibition of siderophore formation, and reversal of antibiotic resistance.

Future directions for research

The majority of research into the properties of honey has focused on manuka honey. The standardization and grading of the antimicrobial properties, the increased incidence of antimicrobial resistance, and the popularity of natural products in healing have increased the price of manuka honey substantially over the last two decades. However there are approximately 83 species of bushes and trees from the Leptospermum (Tea tree) family found in Australia, including the manuka tree (Leptospermum scoparium). There is growing interest from the Australian honey industry to market honey produced from Australian plants, such as the jelly bush (Leptospermum polygalifolium), jarrah tree (Eucalyptus marginate) and marri tree (Corymbia calophylla), for medicinal purposes. Limited research has shown that honey produced from these plants show similar antibacterial activity to manuka honey

Conclusions

The use of honey in wound healing has been described since ancient times and the evidence for its use continues to expand. While more unbiased information, particularly large randomised clinical trials, is required, the majority of the literature that has accumulated over the last few years supports the properties that can be medically beneficial in a human and veterinary setting. As the evidence continues to expand it is possible that the use of honey based products therapeutically will also increase benefit human and veterinary patients.

Based on the current knowledge, treatment with manuka honey should be instituted as soon as possible after injury. Where bacterial contamination is substantial, manuka honey with a UMF ≥15 should be used. While bandages will improve the contact between the honey and the wound and may be indicated in the early stages of wound healing, prolonged bandaging may lead to the production of excessive granulation tissue. If topical treatment without a bandage is to be used, more honey is not necessarily better. Using a thin film combined with regular application, contact times may be optimised. Application 2–3 times daily to open wounds may improve efficacy. Manuka honey should be applied for at least 21 days after wounding but there may be beneficial effects if it is applied until wound healing is almost complete.

This is an extract from a research article by Emeritus Professor Andrew Dart BVSc, PhD, Dip ACVS

Andrew has been practicing veterinary science for over 35 years, most of that exclusively in equine practice and as a specialist large animal/equine surgeon for over 30 years. Apart from an interest in equine surgery he has developed a wealth of experience in surgery and medicine of alpacas throughout his career. Andrew has spent time in both private practice and as a clinical academic, and he has trained and mentored over 40 postgraduate interns and residents and countless veterinary students. He continues to provide mentorship for younger veterinarians.

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The connection between Vitamin D & Sunlight

Coming into winter have you checked your 'pacas requirements?

Alpacas evolved in regions where the altitude means a much thinner atmosphere and less filter for sunlight so they are accustomed to higher concentrations of sunlight to make the Vitamin D they require.

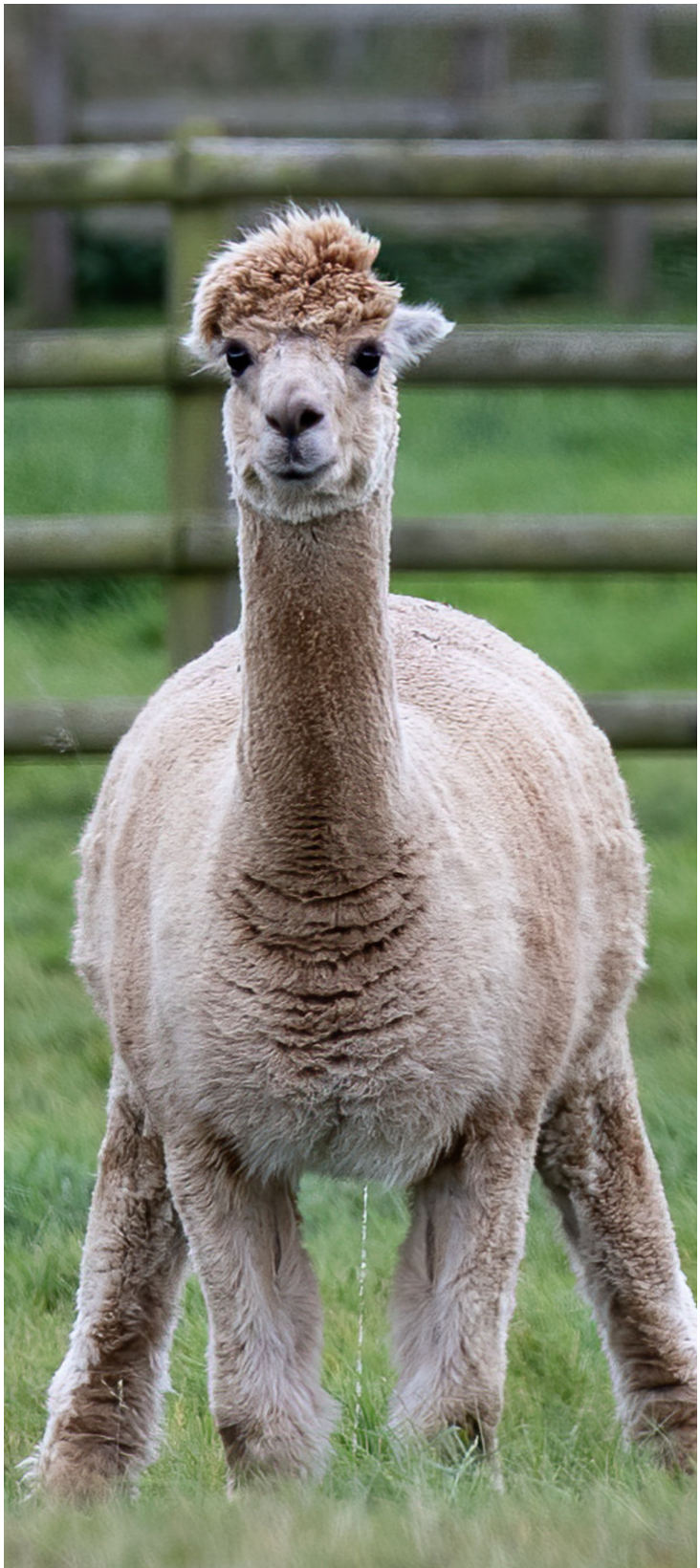
When we started exporting them across the world their environments changed and, almost always, the concentration of sunlight lowered. We then started increasing the density of fleece they carry and surprise, surprise they could no longer absorb the amount of Vitamin D they require (in combination with other minerals their bodies produce) to sustain healthy bone growth. It is therefore necessary that we supplement the required vitamin D.

Vitamin D is generally available in an injectable form containing vitamins A, D and E. The dose required per KG body weight will vary depending on concentration of vitamin D in the different ADE products.

Cria should receive injectable ADE at around 10 weeks of age. A further dose may be required in mid-winter in southern parts of Australia. Adults (particularly those with dark, dense fleece) should receive one dose in midwinter in southern areas. As vitamin D can be toxic if administered in excess, new owners are advised to consult their veterinarian to confirm the required dose of to be administered.

BOWEL PROBLEMS IN ALPACAS

By Tekorito Alpacas NZ



Constipation (Faecal Impaction)

Given their high fibre diet, it might seem counter-intuitive that alpacas can suffer from constipation.

The cause may be unclear but possibilities are a sudden change of diet, drinking too little water or even stress. Symptoms include an increased frequency of rolling, increased vocalisation, laying on one side and kicking at the stomach, all of which suggest abdominal pain.

Veterinary assistance is needed as treatment may include Buscopan (smooth muscle relaxant), Flunixin (Banamine) for pain relief and mineral oil administered either orally or rectally. Walking the alpaca on a halter and lead will assist the action of the oil. Faecal material is usually expelled after a few hours and often as large masses. Normal defecation resumes within 24 hours. *(Note Flunixin is sold under a raft of manufacturers names)*

Diarrhoea

Most alpaca owners will have seen an alpaca with diarrhoea at some point. Unfortunately, there are many causes and detective work can eliminate some possibilities before the arrival of the vet. Diarrhoea must be taken seriously as the alpaca can lose significant amounts of water and electrolyte as a result.

Following is a number of possibilities:

Parasites: Coccidia, giardia and Cryptosporidium are common causes of diarrhoea in alpacas, depending on locale. These can be present in contaminated feed or water and may cause damage to the alpaca's intestinal lining.

Symptoms can include loose or watery stools, weight loss and loss of condition. Diagnosis is typically made through faecal testing and treatment may involve anti-parasitic drugs.

Worms: Alpacas can also be affected by camelid specific worm species, as well as sheep and cattle worms.

Parasitic gastroenteritis can lead to diarrhoea and/or anaemia caused by scour worms or barber's pole (Haemonchus spp) this problem needs to be attended to promptly by faecal testing which, particularly in warm wet areas, should be done on a regular basis as, once the problem is entrenched, animals can be lost.

Bacterial infections: Bacteria such as E. coli, Salmonella, and Clostridium perfringens can also cause diarrhoea in alpacas. These bacteria may be present in contaminated feed or water and can be transmitted from other animals. Symptoms may also include fever, lethargy and dehydration. Diagnosis is typically made through faecal testing and treatment may involve antibiotics, fluids and supportive care.

Viral infections: These include rotavirus and coronavirus as a cause. These viruses can be spread from animal to animal and through contaminated feed or water. Symptoms may also include fever, and lethargy. Treatment is typically supportive as there are no specific antiviral medications available for alpacas.

Consumption of toxic plants: There are a variety of plants that are irritating to the bowel and can cause diarrhoea if enough is eaten. Treatment is simply to move the alpaca to another paddock not containing the offending plant. Recovery may take some days as the alpaca adjusts to the new forage. You should be aware of toxic plants in your area and check your paddocks regularly.

Diet: A sudden change in diet or consuming spoiled or contaminated food. This can occur when alpacas are moved to a new location or when there is a change in their feed or hay. Symptoms may also include bloating and abdominal discomfort. Treatment can involve removing the offending food or gradually transitioning the alpaca to a new diet.

Stress: Stressful situations such as transportation or changes in their environment, for example, when alpacas are moved to a new location or when they are exposed to loud noises or other environmental stresses. Symptoms may include diarrhea, lethargy and decreased appetite. Treatment should involve moving the alpacas to calmer surroundings or providing supportive care.

Antibiotic use: Antibiotics can disrupt the natural balance of bacteria in the alpaca's gut so leading to diarrhoea. This can occur when antibiotics are given to treat a bacterial infection or as a preventative measure. Abdominal discomfort and bloating may also occur. Treatment may involve stopping the antibiotic or providing supportive care.

Other medical conditions: Some medical conditions, such as liver or pancreatic disease, can cause diarrhea in alpacas. These conditions can affect the alpaca's ability to digest food properly. Symptoms may include diarrhoea, weight loss and poor fleece condition. Diagnosis is typically made through blood work and other diagnostic tests and treatment may involve medications and dietary changes.

Our thanks to Tekorito Alpacas for the above information – They can be contacted at https://www.tekorito-alpacas.co.nz/

Local Farm Branding

& The Power Of Local Scale

By Lynn Edens - Snowmass Alpacas

One of the most exciting developments we've observed in the American alpaca industry over the last two years has been the rapid expansion of individual farm product branding. Not only is this boosting the profitability of farms who are monetizing their farms in this way, but it is also increasing demand for American alpaca fibre, improving access to commercial processing, and creating new options for business collaboration. In this article we discuss how many growers are benefiting from these trends and suggest ways you can position your own farm to take advantage of them.

Paths To Monetization

Few of us can confidently assign a dollar value to our farm's brand potential, but all farms have a brand identity to monetize. A farm's brand identify derives from its location and history, the passions and values of its owners, the products it produces and the roles it plays in its community.

Farmers monetize their farm brands when they effectively use these unique attributes of their businesses to create connections and meaning that consumers value and then translate those positive feelings into increased revenues, improved margins, or both. The value creation associated with this brand development can extend beyond the boundaries of the farm and improve results for other businesses in the community or region as well, through mutually beneficial product and service collaborations.

However, the benefits of farm branding are not just monetary. Putting pen to paper (or hands to keyboard) to describe a farm and what makes it special and valuable, both to its owners and to its community, is a rewarding exercise that can both feel great and help reveal meaningful new business opportunities. The personal connections made when running a business that successfully communicates the passion and values of its owners can also be a tremendous source of personal satisfaction.

Because there is nothing like success to show the path, the sidebar discussions included in this article highlight the branding efforts pursued by two of our favourite industry-leading alpaca operations, Good Karma Ranch in North Carolina and Heart & Soul Alpacas in Montana. Their stories help illustrate how farm branding has improved their businesses, fostered collaboration, and is helping support the broader U.S. alpaca industry.

They also reveal another appealing side of our industry, which is the willingness of alpaca owners to share their experience and advice with others in the community. If you are contemplating developing your own brand and don't know where to start there are many business owners further along that same path that would be happy to share what they know.

The Bigger Impact Of Farm-Branded Fibre Products

While alpaca business owners can brand any type of product, farm-branded animal fibre products are often a priority because these products provide consumers with an opportunity to purchase goods that make them feel connected to a farm and its animals. However, historically it has sometimes been a challenge to source yarns, knit goods and other items that were made from farm fibre and/or available for labelling with a farm's logo. Most farm stores operate at a very small scale and the cost associated with bespoke production in low volume is high. Production times tend to be very long as well, with waits that can extend to a year or more at busy mini mills. Opportunities to individually brand products produced at a cost-efficient scale by others have also been limited, particularly with respect to the range of products available.

However, lingering impacts of the COVID pandemic on manufacturing have created new opportunities. Continuing labour shortages have made smaller volume, higher margin orders more appealing to commercial scale mills, knitters, and weavers. This in turn has fostered new collaborations and product development that further improve access to cost effective manufacturing options. These changes increase the potential value of a farm brand.

They also improve the value of regionally focused alpaca fibre collection and processing efforts. At Imperial Yarn, a business which we co-own and therefore have market information from, the client base for custom branded products has grown to include privately run alpaca fibre collections initiated by individuals and groups that want to develop and distribute regionally branded products or create scale and better pricing for products that will eventually be independently branded by their members. This is a particularly exciting trend because it creates local demand for alpaca fibre and reduces the total transportation costs associated with getting that fibre to the point of grading and beyond providing benefits to growers who can supply fibre even if they do not retail the finished goods. It also provides more opportunities for product customization by the groups who have independently achieved the volume they need for efficient pricing. Importantly, we feel these fibre collection efforts will be more durable than some that were undertaken in the past (including by us), as they are driven by product demand rather than fibre supply.

Not all the fibre products purchased by alpaca business owners for farm branding are made of 100% alpaca fibre and some do not include alpaca fibre at all. For example, Imperial Yarn offers custom brandable products made with or including American grown sheep's wool, cotton, and hemp in addition to alpaca, and some alpaca business owners are finding these products fit not just their retail niche but also their bigger brand story, because they help demonstrate to consumers how alpaca farming fits within the broader natural fibre production effort and positions alpaca farms within the "American made" manufacturing movement.

Our ownership of Imperial Yarn has given us insight into another trend, which is the increasing number of farms that are offering farm stay opportunities through Harvest Hosts, a business in which farms and other hosts offer reservation based overnight stays for RVs in return for purchases of the host's products. Participation in the Harvest Hosts program provides retail sales opportunities even for alpaca farms that do otherwise not operate farm stores, and alpaca farms and ranches working with Harvest Hosts are ordering growing amounts of product from our firm and, we assume, others' as well.

Farm Branding Implementation

A farm brand should appear on products that help consumers understand and appreciate what makes the farm unique and valuable and should not appear on items that dilute or confuse that message. In many cases this is obvious: If the farm brand story is about American grown luxury, its brand should not appear on low quality or foreign manufactured goods, for instance. A farm that has as its branding focus "agritourism fun for the whole family" might find farm branding of artisanal children's toys makes sense, whereas one that wishes to be known for its environmentally beneficial land use practices probably would not.

Alpaca owners who currently operate farm stores will already have some knowledge about what type of products their customers are likely to purchase, what needs they are meeting with those purchases, and at what price points they are comfortable purchasing. In this case, owners need to decide whether they are adding new farm branded products to generate more sales to existing customers or to draw in new ones and then select farm branding inventory according to their answer. Farms can use alpaca product wholesalers as a source of market knowledge as well. Wholesalers know what farm branded products are selling well for their customers and their experience can help identify products that are likely to be successful in a farm branded sales effort.

Those who are completely new to farm retailing need to begin by identifying what type of client is likely to connect with their farm's unique story, and then purchase products for resale that both help tell that story and appeal to customers who find the story compelling. Those who are struggling to identify the brandable attributes of their farm's story and values will find many good resources online to help structure the exercise. University agricultural extensions are often great sources for further farm marketing training as well and online course offerings bring their content to you at a time and place that fits your schedule.

Often farmers who develop their retail farm brands find themselves revisiting their logo design. A good farm branding logo has simple graphics, looks good in black and white as well as colour, can be embroidered or stamped as well as printed, and can be scaled up or down to fit on everything from a yarn wrapper to a farm banner with no loss of readability or impact. The graphic elements, font style and colours of the logo should help remind people of the farm's story.

Sometimes a complex existing logo can be simplified for use in labelling. If not, take key elements from it — colour, font style, etc — and create a new one that looks good on labels and tags of all sizes and material types. Hiring a graphic designer to help with this can really pay off.

Farms can keep branding costs down by using just a few different labels on all of their products. As one example, at Imperial Yarn we offer two sizes of customed embossed leather tags, one of which is great for all of our hats and scarfs and the other for all of our blankets, throws and outwear. A farm can order as few as 50 of these tags at a time and have them sewn into as many different products as they wish, when they wish. Similarly, a farm's hang tags can be designed to fit a wide range of products and yarn wrappers can be designed with space for hand labelling of specific attributes of the skein or ball and printed in a size that fits on most or all skeins or balls. Minimizing the differences between labels will also give the farm store a more distinct and memorable look.

Monetizing your farm brand can sound like a lot of work – but much of it is work you are doing already. For instance, running a quality farm business with high standards for animal husbandry and sound environmental management practices is an important part of the value of your farm brand. So is getting up every day (or most of them, anyway!) feeling excited about what you do and pleased at the thought of sharing your enthusiasm with others. Being a good neighbour is part of your farm brand, and so are your relationships with other businesses and other alpaca breeders. And these are the things that need your personal touch.

The labour associated with other parts of farm branding, including everything from logo design to website maintenance to product labelling, can be outsourced to others if you lack the time or inclination to manage them yourself, and there is no reason you can't start small with a modest incremental investment and then build as you find success. Start with a few products and see what farm branding can produce for you.

Case Study

Our farm-branded products help demonstrate to our customers that raising alpacas for a living has value. We love what we do,but it has to make sense because our alpaca business is our full-time work and sole source of income. We find our customers really respond to this and appreciate that we utilise all aspects of what we produce. They prefer to purchase our branded products over other products we offer because it creates a sense of connection for them. The value of this connection, for them and for us, is why I recommend that other farms consider selling products with their farm brand.

We sell farm-branded fibre apparel, including socks, scarves, fingerless gloves, ponchos and hats. We also sell felted soaps and dryer balls produced by Winterstorm Ranch Fiber Mill, which is located in Texas. A local Montana jewelry artisan produces alpaca and Montana themed jewelry for us. Our business is rapidly expanding, and we recently opened an online store.

One of the primary ways we have found to market our products is through our participation in Harvest Hosts. Through this organisation people make reservations to stay overnight with their RVs on our property in return for purchasing our products. This has been a huge boost to our marketing and sales. On average we sell $100 of our products to each camper and we think we can substantially increase this. In addition to the immediate sales we make we have also built our customer e-mail lists – Harvest Hosts helps with this – and believe this will generate more online business as well. People love staying at the farm and our farm-branded products will help sustain their enjoyment of that experience.

Karen Ball, Heart & Soul Alpacas

Case Study

Consistency of our farm's brand image inside our shop helps customers understand that we are a full, vertically oriented business and that the products we offer are not simply items bought online and resold, but rather carefully selected and branded for sale in our shop. This helps bring to light the story we are telling them about farm-to-product businesses as well as why we raise alpacas in particular.

All of the items in our shop are re-labelled with our farm labels. Literally everything we sell has our label on it. We also concentrate strongly on items we can have our label affixed to and actually brand the items themselves. It's time consuming but necessary. My labels make the origins of the products clear so our customers know if the item contains fibre produced on our farm or elsewhere. I feel strongly that the consistent look of labels throughout our shop adds a great deal visually and makes our farm the brand. Anything I put in my store has to be of a quality that I am comfortable putting our farm's name on and that selectivity also contributes to our brand story and value.

We sell fibre to Imperial Yarn and buy farm branded products from them as well. Our customers love this. They immediately understand the value of those products because of what we tell them on farm tours coupled with the experience of seeing the animals themselves. It seems to help them understand why the products are special as well as why they cost what they do. The items that we label with Imperial Yarn truly bring me joy. I love to see our label on products that are start–to-finish American made. I feel strongly that this production model offers the best future for the American alpaca industry and we are doing everything we can to support it.

We collaborate with other small regional businesses outside of the fibre industry also. For instance, I work with a Charlotte based, woman-owned business called Lumen Candle to make candles that are branded for Good Karma Ranch. The owner even names the candles she produces for us with fun alpaca or farm related names. Her candles have been a very big hit in our shop for the last three years. I love them and it helps her business too.

If you are considering whether to develop your own farm branding effort, I'd say do it! Hands down brand something. Start with one main product and see how it goes and then add from there. People want to support small businesses and they love to support local farms.

Shelly Walsh, Good Karma Ranch

Alpaca Farming in the Deep South of New Zealand

By Jessie Haanen – Kepler Mountain View Alpacas New Zealand

An alpaca farm way down on the Southwestern corner of the South Island in NZ? Not what you expect to discover when visiting the World Heritage Unesco Fiordland National Park, a temperate rain forest, but located on the edge of it you will find us, Ray and Jessie Haanen.

South of the Southern Alps is the steep maze of the Fiordland ranges, which continue for 220 kilometres to the south-west corner of the island. Our alpaca farm, aptly named Kepler Mountain View, is sited in the Fiordland Basin besides the Southern Alps with jaw dropping views into the Kepler, Hunter, and Takitimu Mountains making for a unique microclimate. Our farm is located on what was once the part of the Manapouri Glacier approx. 20,000 years ago. The top 50cm of soil is silty loam soil then moves into fine gravels making for perfect drainage.

The location means we have the pleasure of experiencing 4 seasons (sometimes all in one day!) which keeps life interesting and very conducive to farming alpacas. An average rainfall of 80-90mls of per month means we can grow lush pasture from late spring, summer and autumn and lots of it.

Unpacking is timed to commence late November through to end of February to coincide with that peak pasture growing season with the aim to wean most of the cria prior to winter.

During late winter/ early spring we can get the occasional snow fall, usually overnight, all alpacas have access to shelter and sheds and lots of nice hay keeps them very happy during these periods. As our weather forecasters are generally correct, hay in the shelters can be topped up prior to any weather event.

With climate change on our doorstep, in 2021 we constructed a 20m by 15m shed so we can always work with the alpacas regardless of the weather but also if there were to be any major events then we had the capacity with our other sheds and shelters to be able to house all our alpacas undercover. We have Stronghold yards set up in the shed which are moveable and leave the shed open so alpacas in that vicinity always have free access to wander in. Mums have learnt to quickly run for the shed at the slightest bit of rain with their cria so we are now developing a herd that uses shelters as the cria continue to seek shelter from both rain and wind as they become adults.

Our average temperatures through winter are -4 degrees overnight then rising to 10 degrees during the day so we live in what is considered a cold climate, during summer we average 10 degrees overnight with mid 20s during the day and a period of 3 weeks somewhere between November and February where we always get a 3 week dry spell with temperatures pushing into early to mid 30 degrees as the Fiordland Basin heats up.

We make our own hay and baleage as we have ample surplus pastures over summer. Paddocks are soil tested annually to ensure good soil heath and plant nutrients are maintained. When resowing paddocks we use a mix of Tall Fescue, Brome, Timothy, Cocksfoot, Plantain and Red and White Clover.

Alpacas love sweet baleage and their favourite grass that get picked out first – red clover. Nothing beats walking past the baleage and smelling that sweet smell! The alpacas do extremely well on baleage and hay over the cooler months generally coming out of winter still body scoring between 3.5 to 4. One of our struggles is keeping our alpacas from putting on too much condition over late spring and summer as due to our soil types our grasses are high in protein.

We paddock vac daily and run two composting piles where poo and left over hay/baleage is layered and turned throughout the year and then spread on the paddocks, after a year of composting it is beautiful black fertile soil.

Due to our location and cooler dry weather, we currently do not have the risk of Facial Eczema, Lice, Ticks or Haemonchus contortus. We have our quarantine plan when taking alpacas off our farm for shows or introducing new alpacas to our farm to avoid introducing any unwanted pest or diseases onto our farm, we go as far as to make visitors to our farm wear shoe covers before entering.

Our isolation means we can manage this well and be vigilant about potential risks. We made a conscious decision not to have any other livestock on our farm to protect the health of our alpacas.

Over winter months we do a weekly check between the toes and the chins of all our cria for scold. As they have been weaned from their dam just prior to or during winter this is their most vulnerable time so being vigilant avoids any longer-term issues. A little beard trim for those trough “chin dippers” and a little Zinc and Caster Oil mix fixes any wet skin under chins and a spray of Tetravet between toes dries any scold off quickly. The cria also have access to sheds and shelters and their hay is kept in these, they will generally sleep in the shelters and sheds which gives feet a chance to dry.

Why do you Farm alpacas?

This is the most common question we get from the many visitors to our property:

Easy – we fell in love with them starting as a lot of alpaca farmers do with 4 wethered males 18 years ago and the rest is history!!

Aside from them all being our "kids" we have several streams of income from our farming venture:

- **Retail** – Jessie works as a fibre artist during her spare time (winter) and felts one off unique creations from wearable art through to felted rugs. We have local people that knit for us and work with small NZ manufacturers so our focus is on having NZ made products in our retail gallery "Wild Wool Gallery" located on our farm. www.wildwool.nz

- **Tourism** – While remote, our farm is located in an area where people stay to visit Milford and Doubtful Sound, we run farm tours and take the opportunity to educate people from all over the world about alpacas and the benefits of alpaca fibre. www.kmv.co.nz

- **Accommodation** – We run a self-contained cottage with its own gardens and outdoor living area along with a outside hot tub right beside the alpacas paddocks so visitors can star gaze plus chat to alpacas who love watching guests in the spa. We also take guests out to meet and feed alpacas during their stay. www.kmv.co.nz

- **Breeding** – We own 3 stud herds, NZ Summerhill, NZ Mystic Grey and NZ Black Magic and our focus is breeding elite alpacas with fine but dense uniform fleeces and are always looking for that next step up in our breeding decisions. We run a breeding herd of 80 adult females and run approximately 18 sires so between cria and rising 2 year olds our herd runs at between 135 to 200.


“We feel we are really living the dream making a living off farming alpacas full time.”

DEVELOPMENT OF A FOETUS

By Julie Wilkinson – Baarrooka Alpacas

This article was written in response to a request from a breeder who wrote:

"The other night our neighbour rang me to say their dog had brought what she thought was a cria foetus to their back door. After inspecting all pregnant girls and none showing any obvious signs, I was left trying to work out how old the foetus was to narrow down which girl had aborted. The foetus found was 11 inches (28cm) long but had no fleece at all, so I started to search through past issues of Alpacas Australia, The Yarn and reference books to find out at what stage of gestation development does an alpaca foetus develop fleece - couldn't find anything at all not even when I googled. Very frustrating and interesting that I couldn't find anything"

Following on from this request, I too spent a lot of time googling and reviewing texts. No-one has written a definitive time-line of the development of an alpaca foetus, but the information I was able to obtain has enabled me to put together an article that should help determine the age of an aborted foetus (or one in vitro viewed with the aid of an ultrasound machine).

Thank you to the breeders who provided photographs of aborted foetuses used in this article to illustrate foetus development.

Abortion is relatively common in alpacas and for many years dried foetuses from alpacas and llamas have been used by the Peruvian people as good luck charms. They are a common sight in the marketplaces throughout South America.

Foetal Development

The fertilised ovum develops into a blastocyst within 5-6 days. The blastocyst comprises three parts, the central blastocoele, an outer layer of cells, the trophoblast which forms the placenta and the inner cell mass which forms the foetus (see Figure 1) (Tibary 2003).

Attachment between the trophoblast and the uterine wall, that is, implantation of the embryo, occurs around 25 days after breeding. Embryotic loss prior to implantation is very high (Tibary 2003). Pregnancies are almost always carried in the left uterine horn, so if the embryo originated from an ovulation in the right ovary, it would need to migrate to the left uterine horn for implantation.

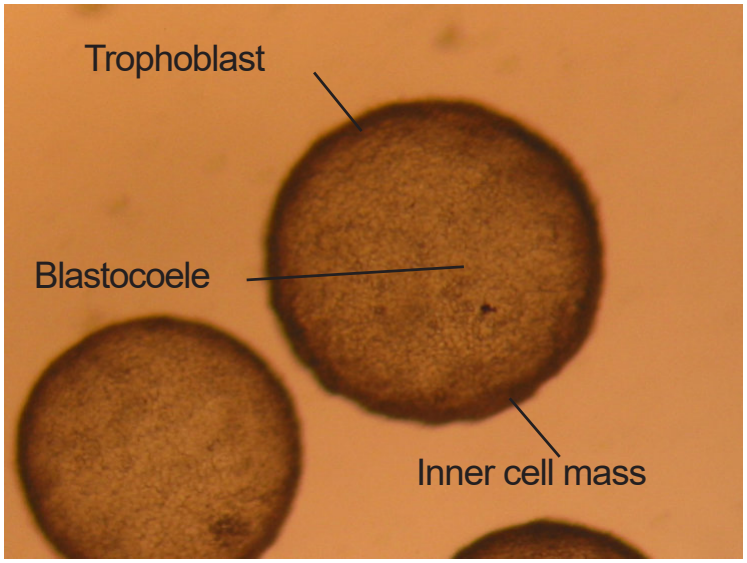


Figure 1. A diagram of a blastocyst, showing the various parts that develop into the foetus and placenta.
Photo: JaneVaughan

Morphogenesis (the shaping of the organism, i.e. the foetus has completed cellular differentiation of cells, tissues and organs) is completed by 60 days (Tibary 2003) and the sex of the foetus can be identified.

The foetus grows very slowly for the first 6 months. The majority of the growth of the foetus is within the last trimester (65% weight gain in last trimester - Tribary 2003; 85% weight gained after day 210 - Fowler & Bravo 1998).

According to Tibary (2003) the following weights are achieved in the last trimester (assuming an 11.5 month gestation and a birth weight of 8.9 kg):

8 M	30% birth weight	3.5kg
9M	51% birth weight	4.5kg
10M	65% birth weight	5.8kg
11M	98% birth weight	8.6kg
11.5M	100% birth weight	8.9kg

In Fowler & Bravo's paper (1998), the following weights are given in a graph (see Figure 2):

5 M	Approx. 200g
6M	500g
7M	1.2kg
8M	2.5kg
9M	4.4kg
10M	5.5kg
11M	8.5kg
11.5M	8.7kg

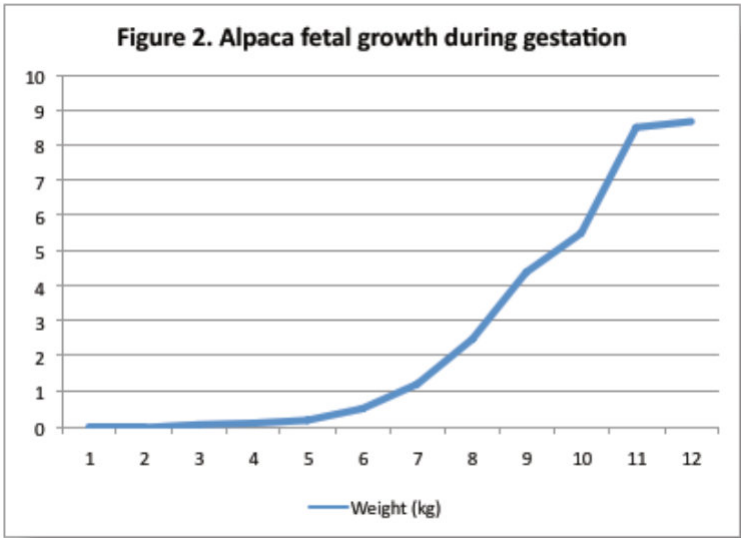


Figure 2. Adapted from Fowler & Bravo 1998

Above: Aborted foetuses at variousages; Top Left - early term abortion, 93days; Top Centre- early-mid term abortion; Top Right - 6 month old foetus; Bottom Left - breeder suggested 9 month old foetus, but hair only on eyebrows and lips indicates around 7 months; Bottom Centre- 8.5 month old foetus- hair growth is evident on body; Bottom Right - mummified aborted foetus- one of twins, the second of which was carried to term.

Photographs supplied by (clockwisefrom top left): Birrong, Rockville, Carawa Downs. Camelot, Birrong and Baringhup. Thank you to those breeders.

Hair appears on the lips, eyebrows and tail at 7 months gestation and the foetus is fully covered by fibre at 8 months (Tibary 2003). The epidermal membrane forms just before development of hair and is attached to the foetus at anus, lips, vulva, umbilicus, prepuce and the junction of skin and footpads and nails (Fowler & Bravo 1998).

The gestational age of a foetus (either aborted or viewed by ultrasound) can be determined by two calculations. The first method (Parraguez et al 1997), used in early pregnancy, measures the gestational sac diameter (GSD) in cm and determines gestational age using the formula:

GA = logGSD + 1.2339/0.0585.

The second method (Haibel & Fung 1991) is more appropriate for aborted foetuses and in utero foetuses greater than 60 days and uses the measurement of the maximum head width or biparietal diameter (BPD) in mm using the formula:

GA = 18.8 +3.79BPD.

Using the BPD method, the head of the foetus is measured at the eye sockets and the gestation age calculated. Using a recently aborted 5 month old foetus with head diameter of approximately 4.0 cm:

GA = 18.8 + 3.79 x 40
GA = 170 days (5.7 months).

An even easier formula to remember is the Jane Vaughan one:

GA = 4 x BPD + 20 [This is an easy one to remember out in the field or in the vet's surgery].

It must be remembered that the figures quoted above are averages and that there is a lot of variation in the size and growth rate of a foetus, due to environment, dam health and nutrition and genetics. There is also a wide range of natural variation in birth weight of a cria - anything from 6 -11 kg is considered normal. Hence using weight only to determine the age of an aborted foetus is likely to be inaccurate. However, the combination of weight, developmental indicators (such as hair growth) and the use of the BPD formula are likely in combination to give a good idea of gestational age.

P. Walter Bravo, in his book The Reproductive Process of South American Camelids (out of print) apparently has a very good series of photos of aborted foetuses at various ages. I was not able to access this book, but it would be worth keeping an eye out for it.

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Australian Alpaca ASSOCIATION

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- Keep up to date on the latest news in biosecurity, husbandry, agribusiness, and research

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SHOWTIME

Alpaca Shows

Alpaca shows are an integral segment of the industry and play an important role in keeping our industry strong and thriving.

They provide an avenue for breeders to showcase the best of their breeding programs. Not only is it an opportunity to market stock, but the show ring also fosters social interaction. The shows are run to strict AAA rules which adhere to the accepted worldwide standards for showing alpacas and fleece.

Are you entering a show? This checklist will assist you!

Print out a copy of the Showing Rules for your reference available in the show resources area members' portal on the AAA Website

- Print out a copy of the AAA Event and Equipment Guidelines available in the show resources area members' portal on the AAA Website
- Check the IAR tag is correct
- Check your alpaca's front teeth are aligned with the top pad
- Check your alpaca has a straight tail with no kinks
- Check your alpaca's ears are not banana shaped or folded in
- Check your alpaca's toenails are tidy and not overgrown
- If male, check that he has two testicles
- Check that there are no lice on your alpaca
- Check your alpaca has good conformation
- Check your alpaca's legs are consistent with the showing rules, without faults

What to expect at your first alpaca show

eAlpaca

The first step is show entry, which is done through eAlpaca.

- Go through your alpacas and choose your best alpacas to show.
- Refer to the Show Rules from the members' portal of the AAA website to have as a reference

You will need to check the following:

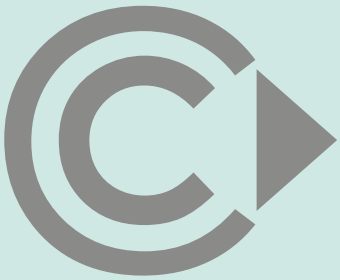
- IAR tag
- Conformation (check the breed standard in the Showing Rules)
- Alpaca's front teeth – aligned with the top pad
- Alpaca's toenails – trimmed and not overgrown
- Ears – correct and not banana shaped or folded in
- In a male, two testicles should be present\
- Tail – straight – not kinked
- Fleece should be burr free and as free from vegetation as possible

When you arrive at your show:

- Park and find out where your pens are
- Walk your alpacas in and set them up with food and water
- Collect your bag and showing numbers
- Prepare your numbers in your arm bands
- Check the catalogue and make sure your alpacas are all in the correct classes

At the show:

- Speak to as many breeders as possible, you will learn so much from fellow breeders through conversation
- Sit back, relax, watch, learn and enjoy your first show.
- Don't hesitate to ask people anything you're not sure of – the show ring is an extremely enjoyable, social aspect of breeding alpacas.



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