

ALPACAS – “Making the transition from a cottage industry to a sustainable pastoral livestock option” happen.

Background

Alpaca have now been farmed in New Zealand for seventeen years, but for those outside the industry there is little known about them. Even for those who have been farming alpaca for a long time, there are still many unknowns under New Zealand conditions. Despite the early research that was carried out when alpaca arrived in New Zealand in the 1990's, there are still many more areas of investigation that need to be conducted.

Once the status of alpaca in New Zealand was changed from a zoological animal to an agricultural animal in 1985, imports began from South America. Initially these were from Chile, but the most recent imports have been from Peru, and latterly Australia. In October 2003 there were 3,852 New Zealand alpaca on the International Alpaca Registry (IAR) and an estimated 5,000 - 6,000 total in New Zealand. The Alpaca Association New Zealand (AANZ) is the body that represents the industry here and currently has close to 370 member farms. The number of animals on each property ranges from two wethers at the lower end, up to 300 plus animals.

One of the main areas of confusion amongst the uninitiated is the difference between alpacas and llamas. This is possibly not surprising when we consider that they are both members of the Camelidae Family known as New World Camelids (NWCs) and that the official classification of alpaca has only recently been changed, after 200 years, from Lama pacos to Vicugna pacos. This was brought about as a result of research conducted by archaeozoologist Jane Wheeler when she analysed the blood of 2,000 different animals made up from the four NWCs (vicugna, guanaco, llama and alpaca) for recurring microsatellites in the DNA. These patterns showed that the vicugna is undoubtedly the wild ancestor of the alpaca, and not the guanaco as previously thought. Basically, llamas are a much larger animal than the alpaca and were selectively bred and domesticated by the indigenous peoples of the Altiplano as a pack animal that could transport their trade goods between the mountainous regions and the lowlands. The alpaca, on the other hand, was selectively bred for its fine fleece, and the South Americans have been processing this for 6,000 years making alpaca the oldest livestock industry in the Americas. A further diversification is the two different fleece types that are found in alpaca – the ‘merino style’ fleece of the Huacaya alpaca, which is by far the more common, and the silky ‘dreadlock style’ fleece of the Suri alpaca.

Unfortunately, the Spanish invasion reeked havoc on the population of alpaca in their natural habitat, and subsequently the diversity of the gene pool. Before the conquest, there were 50 million alpacas and llamas, but 100 years later 90% of the animals had disappeared. Recent terrorism further reduced the number of the national herd and in 2001 there were only 1.7 million alpaca remaining. What is more, in the 1500's the indigenous people were decimated along with their animals, and forced to survive in the harsh terrain of the Altiplano as best they could. In this period of history, stringent breeding standards and programmes were abandoned, and thousands of years of

selective breeding were disrupted. Without fences or corrals, hybridisation of the four NWCs was limitless.

The challenge for breeders in New Zealand is to now try and breed those qualities back into the animal that was previously achieved in the days of the Incas. The one thousand year old remains of mummified alpacas found in the Al Yarral desert in Peru show the extent of their sophisticated knowledge. The combination of fineness (mean micron of 17.9) and denseness of the fleeces could be bred today, but it is the uniformity (SD of 1micron) that would be virtually impossible to find amongst today's alpacas.

In a country such as New Zealand where there is a rich history in wool growing and processing, alpaca fibre offers yet another challenge for farmers and commercial spinners and converters alike.

Sustainable Farming Fund (SFF)

In 2002, the Alpaca Association New Zealand was fortunate in being granted a Sustainable Farming Fund by MAF. This project is entitled 'Making the Transition from a Cottage Industry to a Sustainable Pastoral Livestock Option' and seeks to overturn many of the constraints that have prevented the industry from growing. Some of these refer to health and reproduction, whilst others are more concerned with the setup and development of fibre processing and marketing.

Focus Farms:

An important feature of the SFF is the use of community groups centered around selected Focus Farms. One of these is in Christchurch, whilst the two northern farms are in Palmerston North and Katikati. Many of the activities and support systems identified as being essential to the management of alpacas will be generated and communicated at these established Focus Farms.

One of the differences between the alpaca industry and the more established agricultural industries is the diverse experience of the owners and breeders themselves. As alpaca is seen both as an exotic animal as well as a livestock option, they appeal to many who have just left the urban areas for their first foray into rural or lifestyle block life. This brings into the alpaca community a wealth of skills that are not necessarily rurally based.

Whilst the passion for the animals is undoubtedly there, knowledge of disease states and farm management systems may need some help. Emphasis is placed then on knowing how to recognize the signs and symptoms of the more common and threatening diseases, and the best methods of treatment. As alpaca appear to be more susceptible to liver-based diseases than other farm animals, rye grass staggers and facial eczema are two conditions that have formed topics at the Focus Farms. Being a 'modified' ruminant with only three stomachs, alpaca often metabolise medications differently, and therefore it is necessary to customise the treatment for them. (As an example, the zinc bullets that are used widely for other ruminants are unable to be used in camelids, as they digest the outer coating in the first week leaving them unprotected thereafter).

Another topic that is always raised is how to improve the reproduction rate. Until a planned benchmarking survey is conducted, it is difficult to know exactly where this stands in New Zealand, but data from the IAR suggest that it could be as low as 60%. Ideally this should be raised to 80% or higher in order to optimize the growth of the industry. The average gestation period is 340 days, with Spring matings needing a slightly longer period than those done in Autumn. Twins are rarely born, and even more rarely survive, so this, along with the long gestation period is one limiting factor on the natural increase in the number of alpacas in New Zealand. It also forms some protection of any one individual's investment, as animals cost anywhere from \$800 for a wether to \$20,000 for a pregnant female. However, it is not quite as simple as that. Not every female will get pregnant in the optimum two to four week period after having given birth, and sometimes this may be deliberately put back so that a particular animal fits in with the management systems of a particular farm. Additionally there is the problem of reabsorption of the foetus. If this does occur, it generally takes place in the first 40-60 days after mating, so it is important that the animal is not put under any stress at this stage. Confirmation of continued pregnancy status is essential throughout the gestation period by both ultra sound scanning, and the use of a 'teaser' male, the event known affectionately in the industry as the 'spit off'.

Recognition of the different stages of labour, and when to call in the vet, are other topics covered in the Focus Farm sessions. These are then supported by modules dealing with neo-natal care of the cria (alpaca newborn), and in particular, plasma transfer for those at risk.

Another area that needs additional information, is the optimum pasture for alpacas that will not only give them the necessary nutrition, but will also not be so high in protein that the micron of the fleece 'blows out'. In their natural environment in the Altiplano, alpacas browse on mosses, lichens, tussock and other natural grasses. Growing on volcanic land, these plants make available all the trace elements necessary for the sustained health of the animals and tend to be much more fibrous than the lush highly-fertilised pastures of New Zealand. As a consequence, it is necessary to be more vigilant in checking their teeth and jaw alignment, as well as being aware of their gastrointestinal health that could be compromised by eating the wrong diet.

Fibre:

Fibre facts:

Soft, silky and lustrous

Tensile strength is three times that of wool

30% warmer than wool

Scale hauteur .4 micron, which explains the 'silky' handle

Occurs in 25 natural colours, including a true blue/black

Average fleece weight/animal 4.0 kg

Micron range 14-30+

One of the first questions asked by prospective alpaca-buyers is what does one do with the fibre? It is one thing to talk about the features of this luxurious fibre, but quite another to give a definitive \$/kg amount. To date, it would be fair to say that the majority of the marketing of the fleeces has been done by individual owners, mainly to the homecraft sector and spinners and weavers. As alpaca is such an exotic fibre, a kilogram of clean, carded cria fleece can fetch anything up to \$100/kg, and this can rise depending upon the desirability of the colour or other attributes such as lustre of Suri fleece. However, the demands are there for a sustainable commercial infrastructure and market, and to this end the Sustainable Farming Fund is assisting by spearheading certain requirements that ideally should see an outlet for 80% of the annual clip by 2008. This includes developing an E-market for members on the Association's website for buying and selling fleece amongst members, developing working relationships with commercial processors and converters, making initial contact with New Zealand designers and fashion houses, establishment of a shearing protocol for New Zealand conditions, and development and implementation of quality standards for shearing, alpaca fleece and associated products.

Recognising that finer fleeces (14-19 micron) earn a greater return/kg, another initiative to be taken by the New Zealand industry is a reclassification of the various grades of alpaca fibre. This is something not yet done in other parts of the world, except Peru where the Government gave incentives in 1997 for the super fine grades of fleece. Prior to this, the growers had been paid by the larger mills by weight which inadvertently encouraged cross-breeding with llamas in a bid to increase the average annual clip. However, prices for fleece rise dramatically for those under 20 micron, and subsequent rewards should be an incentive for breeders to breed for increasingly finer fleeces. One advantage of alpaca fibre is that it feels 5 microns lower than it actually is, so those below 18 can compete well with other exotic superfine fibres.

Benchmarking:

Until now, no comprehensive surveys have been conducted in New Zealand in order to ascertain the key statistics. Within the next 12 months, with the assistance of the SFF, a survey will be carried out of AANZ members to find out more precisely the number of alpaca in New Zealand, fleece statistics, colour, reproduction rate, and morbidity and mortality figures. This will provide invaluable information to assist the future direction taken by the industry.

Quality control:

It is the belief of the AANZ, that due to the nature of the investment required to enter the alpaca industry, and the exotic nature of both the animal and its fleece and products, quality systems must be introduced to reflect and maintain a high standard and image. Established Breed Standards and a pedigree Register ensure that the quality of animals being brought into New Zealand and registered with the International Alpaca Register are of a high standard. Showing at judged A&P shows further tests these parameters

against world standards, and encourages breeders to strive for excellence in their breeding programmes.

The SFF is also being instrumental in developing and upgrading robust biosecurity schemes to ensure that the alpaca industry takes its place as a responsible agricultural partner.

Research:

With the arrival of the first imports into New Zealand, research began at Invermay and Flock House. Much of this research showed for the first time how alpaca responded under conditions outside South America, and has since been referred to and used in other countries that have adopted alpaca. One of the projects under the SFF is to amass available published research papers and to collate them into a format that can be used by the AANZ membership and other interested parties. Not only does this disseminate the information to those who need it, but it also prevents the repetition of research.

Conclusion

Alpacas are by no means a “get-rich-quick” scheme, but with carefully planned strategies, they offer opportunities that will challenge and tantalise those breeding and farming them. There is work still to be done, but the help of the Sustainable Farming Farm will be invaluable for taking the industry that next step towards success. The Alpaca Association New Zealand welcomes any ideas or assistance in furthering alpaca in this country, and can be contacted through its website at www.alpaca.org.nz

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