



# **The Peruvian Alpaca Meat and Hide Industries**

**A Travel Report Presented to  
Rural Industries Research and  
Development Corporation**

By Warwick Hack

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# Foreword

There are presently some 1600 individual breeders of alpaca in Australia with a combined livestock value of over \$100 million.

Since 1982 alpacas have been successfully bred in Australia and while industry has been building up numbers of animals there has been recognised a need for the collection of scientific data to ensure that sound commercial and marketing plans are implemented in the future.

This study tour of the Peruvian alpaca meat and hide markets has provided an opportunity to obtain information and scientific data on alpaca by-products and their markets. Contacts with industry researchers, producers and businesses utilising these by-products of alpacas was also established during this study tour.

All other fibre-producing industries based on animal production have meat and hides as their main secondary products. This study has provided baseline data on these by-products that can be utilised for future research and development of a commercial strategic plan for the alpaca industry

RIRDC'S involvement in this study is part of the Corporation's New Animal Products program that aims to foster a sustainable commercial alpaca industry.

This project was funded from RIRDC Core Funds which are provided by the Federal Government.

This report, a new addition to RIRDC's diverse range of almost 700 research publications, forms part of our New Animal Products R&D program, which aims to accelerate the development of viable new animal industries

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Peter Core  
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# Executive Summary

The overall objective of this study has been to identify issues relating to the potential development of markets for Australian alpaca meat and hides,

As there has never been any markets in Australia for either alpaca meat or hides the study has concentrated on obtaining basic information on the quality and the end uses of these products.

This study tour was undertaken in Peru as this is the only country in the world where there are regular local markets for both alpaca meat and hides.

The timing of the study tour of Peru was organised to coincide with the International Alpaca Conference being held in Arequipa, Peru. The conference was seen as an ideal opportunity to see a wide range of commercial displays of alpaca products in one location and to meet with these business owners.

Attendance at the conference provided an opportunity to obtain the latest worldwide alpaca industry information and to meet and network with both local and worldwide alpaca experts, growers, researchers and customers of alpaca products.

## Alpaca Meat

Some 11,250,00 kgs of alpaca meat are produced in Peru annually. However eighty percent of this meat is not processed through slaughterhouses and therefore there are concerns in the market place as to the hygienic condition, taste and smell of this product.

Alpaca meat is rich in protein, 21-24%, low in cholesterol, 5.5-6.0%, and low in fat (Dr. Amaro Sanchez Cabello 2000).

Approximately 50% of a carcass is used as prime cuts, such as loin cutlets and steaks, which are sold in either the fresh or frozen meat markets to restaurants, hotels and supermarkets.

Secondary cuts are processed into sausages, hot dogs and processed alpaca hams.

## Alpaca Hides

Overall, due to either bad skinning technique or poor shearing practices carried out immediately prior to slaughter many skins are rendered unsuitable for tanning due to the excessive number of cuts in the skin.

Alpaca hides when tanned produces strong and supple leather suitable for coats, gloves, purses and uppers for shoes. Alpaca hides with fibre on were used to make decorative wall hangings and toys such as teddy bears and toy alpacas.

The Peruvian tanner considered the tanning process of alpaca hides to be similar to that used for tanning lambskins.

## Blood and Bone

Other by-products from the slaughtering of alpaca are blood which after processing, due to its high protein level, is used in rations for farmed trout and bones that are used as fertiliser.

# Itinerary Outline

Air Travel from Adelaide to Lima, Peru via Santiago, Chile.

Air Travel from Lima to Arequipa, Peru

Attended International Alpaca Conference in Arequipa from 23<sup>rd</sup> October to 27<sup>th</sup> October 2000.

At the conference consulted with researchers, hide craftsmen and inspected hide products.

Visited the only commercial tannery in Peru, Peru Leder Export S.A., which tans alpaca hides and inspected their tannery.

Travelled by bus to an alpaca farm on the altiplano to see first hand the conditions under which alpacas were run and the husbandry practices used.

Travelled by bus to Chivay and met Mr Javier Lou, General Manager of the Araucaria Meat Company, and inspected their alpaca meat processing plant and its alpaca meat products.

Visited several restaurants and super markets in Chivay, Arequipa and Cuzco to assess the level of use and acceptance of alpaca meat.

Returned by air to Adelaide via Lima.

# Background

The Rural Research and Development Corporation (RIDRC) funded the study tour.

In 1999 there were 22,669 alpacas registered in Australia and it is estimated that by the year 2004 there will be 70,000 alpacas (personal comm. C. Tuckwell).

While this may seem to be too large an increase over a 5 year period it is estimated that the majority of alpacas registered today are mainly breeding females which will enable this number to be achieved.

The demographics of the alpaca herd in 2004 are estimated to be 36,000 animals seven years or older, of which 19,000 will be ten years or older in age.

During this five-year period the emphasis on the breeding phase of the industry will decrease and the commercial fibre phase will increase. This will highlight the importance of the instigation of breeding programs for the selection of animals with high yields of fine fibre.

These breeding programs will result in a significant number of animals being culled over the next five years. This together with the increasing number of aged alpacas raises the question as to the end use of these culled animals.

All other fibre producing livestock industries have secondary markets of meat and hides.

Information collected during this study will assist in the formation of a strategic plan for the development of potential alpaca meat and hide markets in Australia.

## South American Camelids

There are four species, which constitute the group of South American Camelidae. They are the Vicuña (*Vicugna vicugna*), Guanaco (*Lama guanicoe*), Llama (*Lama glama*) and the Alpaca (*Lama pacos*).

Peru has three million alpacas that are mainly run in the region known as the “Altiplano” which is the high Andean plain area. This area is semi-arid and for the production of sufficient pastures relies heavily on areas subject to snow melts from nearby mountain peaks. Shepherds herd their alpaca flocks up and down these areas and from “snow melt to snow melt”.

The two major alpaca fibre processing companies in Peru are the Michell and Inca groups. The Michell group in 1999 produced 1,125,146 kgs of yarn and 2,596,420 kgs of tops and others (personal comm. MICHELL & CIA Co. S.A 2000).

# Major Findings

## Alpaca Meat

### Purchasing and finishing of alpacas

Alpacas are purchased by live weight and the abattoir expects them to dress out at 50%.

Shorn animals are purchased in preference to unshorn animals for sanitary reasons, mainly fibre contamination of the meat. The alpacas should be shorn at least 15 days before slaughter.

The preferred age range is around two years of age when better organoleptic characteristics are present, especially tenderness.

Due to some grasses on the altiplano causing objectionable taste and smell the alpacas are put into feedlots for 20 days prior to slaughter. The feeding in the feedlot consists of lucerne, rye grass, phalaris and cereal barley grain. This tainting and offensive smell of the alpaca meat due to the animal eating certain plants is similar to that which occurs in Australia with goats eating plants such as horehound.

As a consequence of finishing animals in feedlots the taste and smell improves to a more neutral one and the meat colour turns pinkish and softens.

The placing of the animals in feedlots also eliminates transport stress, as the feedlot is located alongside the abattoir.

### Slaughtering

The slaughtering system is very similar to that used for sheep. The average alpaca carcass weighs 23 kgs of which 50% is prime cuts and 50% secondary cuts.

The best yielding animals are 1.5 – 2.0 years old, however most of the slaughtered animals are 7-8 years old due to their fibre becoming too coarse for economic production.

The carcass is allowed to set for at least 12 hours during which time the temperature and pH are monitored and controlled. The pH is kept in the range of 4.5 – 5.0.

There is only one official working slaughter house for alpaca in Peru and that is run by the “Araucaria” company in the Colca Valley, Chivay. This company has been working with the Government Development Corporation to develop a hygienic alpaca meat industry in Peru. The company slaughters from 60-100 alpacas per week averaging 5 tonnes of meat per week.

Abattoir post-mortems on carcasses show that the major disease affecting the carcass is sarcocystiosis. Alpacas from certain areas of Peru have infection rates as high as 22%.



## **Carcase cuts**

Carcases are classified by sex, age, colour, fat and yield.

Carcases are broken up according to the end use. When the end use is the sale of fresh or frozen meat some of the following cuts used are:

loin chops, deboned loin, tender loin cutlets, deboned chops, leg, leg fillet and leg chops.

Secondary cuts are deboned, frozen then minced with added spices and herbs and then formed into hams, sausages and hamburgers. Some sausages are sold uncooked but the hams and the majority of sausages are sold cooked. Cookers with water at 87<sup>0</sup>F are used to cook these products.

## **Marketing of alpaca meat**

The percentage of alpacas culled in Peru range from 10% to 15% resulting in some 450,000 animals being slaughtered annually. The meat production from these animals is estimated to be 11,250,000 kgs (personal comm. Mr Javier Lou 2000).

Market studies in Lima show that provided the appropriate quality and hygienic standards are met then the consumer will buy and try alpaca meat.

However in the city of Arequipa there was more resistance to the buying of alpaca meat but this rapidly disappeared once the sausages and meat had been tasted.

In small country towns there is a ready acceptance of alpaca meat and smallgoods.

The major customers that seek the hygienic better prepared alpaca meat products are hotels, restaurants and supermarkets.

The main meat products sold are: loin cutlets, shoulders, deboned loin, leg fillet and ribs. The main smallgoods sold are hams, ham meat, sausages and hot dogs.

## **Alpaca Hides**

More than 90% of the processed alpacas are not slaughtered in slaughterhouses and many hides are rendered non-commercial due to the bad skinning or flaying systems used. Also a large number of hides have reduced value due to bad shearing practices used by the campesino communities. The "Araucaria" Meat Company ensures that hide damage is kept to a minimum during the removal process. On removal the skins are salted and then sent to the "Peru Leder" tanning company in Arequipa for tanning.

Peru Leder processes some 20,000 hides in total per year. These consist of alpaca, goat, wild pig and some native animals from the Amazon basin.

The tanning process of alpaca hides is considered to be similar to tanning lambskins.

The types of alpaca hides tanned consist of both adult and cria hides. The cria hides are obtained from crias that have either died from disease or other natural causes. These hides are always with fibre on and are used in making wall hangings and soft toys.

Alpaca wall hangings of 1.5 meters in diameter size were on sale for US\$399 with teddy bears ranging from US\$49 to US\$99 depending on their size. The only company at the conference producing these toys and wall hangings was "Lanart Co" which is based in North Carolina, USA.

# Significance of Findings

## Alpaca Meat

While the analysis of alpaca meat in Peru is favourable for human consumption with its high protein, low cholesterol and fat content it was also noted that feeding the animals in a feedlot for 20 days prior to slaughter could alter many characteristics of the carcass.

While it was stressed that 1.5-2.0 year olds were the best animals for slaughter many animals of 7-8 years were also slaughtered. The slaughtering of older animals result in a much higher percentage of secondary cuts and hence a reduction in overall return for the animals.

The average alpaca carcass weighs 23 kgs of which 50% is prime cuts and 50% secondary cuts.

The market studies carried out on alpaca meat products in Peru found a significant proportion of the population initially rejected the meat until they had tasted the various products.

Even following promotion and tastings of alpaca meats in Arequipa the majority of sales of alpaca meat in this city are alpaca smallgoods and not the primary cuts.

The slaughter and processing of alpacas appears to present little problem for the Australian meat processing industry as a sheep slaughtering facility with minor changes could easily accommodate alpacas into their system. The main consideration that needs to be assessed is the height of the chain that must accommodate the length of the neck of the alpaca.

*In Peru alpacas are seen as a commercially farmed animal and not as a cuddly pet.*

## Alpaca Hides

Alpaca hides that are removed with minimal damage, correctly stored, transported and tanned have potentially a high economic value.

Alpaca hides produce strong, supple leather that is suitable for high fashion garments such as coats, gloves and shoes.

Hides with fibre on and secondary hides can be utilised in making souvenir trade products such as purses, wallets, toys and wall hangings.

The tanning process of alpaca hides is considered to be similar to that of tanning lambskins.

# Personal Benefits

This study tour together with the attendance at the international alpaca conference has given me an increased knowledge of the alpaca industry as a whole and also in more particular the role of by products in making this industry a more economically viable industry.

I have also been able to increase my networks of both local and international industry researchers, leaders and producers.

My increased expertise and knowledge of the alpaca industry, in particular the by-products area, I believe will enable me to provide invaluable support in the future to the developing Australian Alpaca Industry.

# Recommendations for Future Research

History has clearly shown that all developing livestock industries, following the breeding up phase, will have reduced returns unless appropriate scientific data for all the commercial products of that industry is known. A good example of this is the emu industry that has suffered a long and severe downturn due to its lack of scientific data to establish markets for its meat and oil products.

All other fibre-producing industries based on animal production have meat and hides as their main secondary products.

Information obtained during this study provides critical baseline data that can be utilised to develop research programs for future Australian alpaca meat and hide markets.

## Alpaca Meat

Due to major differences in pastures and management of alpacas between Peru and Australia it is important that the quality of Australian alpaca meat products be established.

This can be determined by examining the following:

- ◆ nutritional values of Australian alpaca meat.
- ◆ the organoleptic characteristics of the carcase especially tenderness, taste and smell
- ◆ shelf life
- ◆ post-mortem inspections for disease issues

This information is critical for the development of future market surveys, strategic plans and or any future promotional material to be produced for the establishment of alpaca meat markets in Australia.

It is anticipated that initially the majority of animals to be slaughtered in Australia will be greater than 8 years of age resulting in a large percentage of the alpaca meat being only suitable for smallgoods. Due to the expected lower returns from these animals that are only suitable for smallgoods it is recommended that markets other than those for human consumption be investigated as well.

## Alpaca Hides

I believe that there are ready markets for alpaca leather and hides, both locally and export.

However it is important that the quality of Australian alpaca hides and the best tanning processes for alpaca hides be established.

It is recommended that research into both the physical attributes and the tanning process of alpaca hides are conducted.