



# Holy Grail, Holy Trilogy, Wholly Alpaca!

by Dr IAN DAVISON

**As the modern Australian alpaca industry approaches its 20th anniversary, some things, at least, are becoming a little clearer.**

*T*HE first is that, as a lifestyle, raising alpacas has been an incredibly rewarding and fulfilling occupation for a large number of alpaca owners, quite independently of the financial rewards that may or may not have materialised.

The second is that the promise of unspeakable wealth based on the breeding of alpacas has been the experience of only a very few breeders, not all of whom remain in the industry.

The third is that the alpaca industry has become a significant source of income for a number of people, not all of whom are breeders. Those providing services to the alpaca industry, such as shearers, software programmers, printers, publicists, transport agents, educators, veterinary surgeons, real estate agents, farm suppliers, exporters, feed stockists, agricultural consultants, fencers, and many more draw an increasing part of their income from the alpaca industry. And there are many breeders, small, medium and large, whose income from alpacas – sales, stud

services, leases, fleeces, alpaca products, and even tourism – is contributing increasingly to personal annual income, and is even a primary source of income to more than just a few.

Now, more than ever, new entrants to the alpaca industry need to carefully consider where they wish to see themselves in the broadening range of industry positions. There will be those for whom the alpacas are an ancillary farm activity, who own alpacas purely as a lifestyle interest, and others for whom a modest annual fleece clip will be their sole purpose, to support craft interests. Other breeders will be content to breed and sell a few animals every year, aiming to limit their herd to a predetermined and manageable number. Still others may wish simply to keep a few elite animals for showing or stud duties. And the advent of broadacre farming of alpacas for fleece alone would not appear too distant. All those breeders will be seeking improved quality stock in their future

purchases, whilst not necessarily aiming to stay on the cutting edge of genetic improvement.

*But for those whose aim it is to remain at the forefront of the breeding industry, it will increasingly require that they remain steadfastly focussed on their goals, producing the elite alpacas that will improve the breed, and lead the way for the industry as a whole.*

Those goals will not be the same for all breeders, but for those who see themselves as laying the foundations for a long-term fleece industry, the Holy Grail will be the production of robust, healthy and fertile alpacas, cutting high weights of fine, soft and lustrous fibre, with uniformity of micron, character and colour, and a minimum amount of guard hair.

Big order!

But fortunately, there are tools to help the breeder who is seeking that Holy Grail. Those tools are not without cost, both in dollars and time, but those breeders prepared to pay the





### The Holy Grail

- Fine;
- Dense;
- Rapid growth;
- Uniform;
- Lustrous;
- Soft handling;
- Absent guard hair.

price are destined to be the industry leaders. Those who cannot, or choose not to, make that commitment, can still share in the success of the industry by aligning themselves with those who do, thereby maintaining a stake in the process of genetic improvement.

The key steps to genetic advancement are no more than common sense:

1. Identify those commercial traits which will improve your product;
2. Select those animals already exhibiting superiority in those traits;
3. Implement a breeding system which favours those animals;
4. Use artificial breeding techniques to accelerate the production of those animals;
5. Measure the outcomes and annual progress to assist in further selection.

It is unique feature of the Australian alpaca industry that we have pioneered the

development of those tools which will help us achieve these outcomes. They are the Holy Trinity of alpaca breeding technology:

- The SRS® Breeding System;
- The Across-herd Genetic Evaluation program;
- Embryo Transfer.

The SRS® Breeding System (<http://srsalpacas.com>) is a scientifically based system which uses visible fleece traits to select alpacas producing denser, finer, more lustrous and rapidly growing fleece, resulting in higher fleece weights and more uniform fleeces. It is a system based on an understanding of the physiology and histology of fleece-producing skin, pioneered by Dr. Jim Watts in the Australian Merino, and now applied increasingly to alpacas, both in Australia and overseas. It aims to raise the bar in both fineness and fleece weight for the elite alpaca, and in so doing, improve the lustre and handle in those fleeces.

The SRS® Breeding System is one whose fundamental premise is to identify, improve

and breed towards those fleece traits that will ensure commercial viability well into the future. It also identifies, through herd classing, those animals most likely to accelerate improvement in those traits.

Having established the objectives and focus of the breeding program, the next step is to accelerate the rate of genetic improvement. Embryo transfer, a technology pioneered in Australia by Drs Jane Vaughan and David Hopkins, provides exactly that opportunity (<http://www.criagenesis.cc/8Credentials.html>) By selectively joining those male and female alpacas showing advanced SRS® skin and fleece traits, and then harvesting those embryos and implanting them into recipient females, there is no limit (theoretically) to the number of progeny which can be produced in one year from any given combination of elite male and female alpacas. Selecting the best from each successive drop, and mating them according to SRS® classing decisions, hugely accelerates the rate of genetic improvement in those desirable traits of fleece and conformation.

### The Holy Trilogy

- SRS® Breeding Systems (SRS®);
- The Across-herd Genetic Evaluation program (AGE);
- Embryo Transfer (ET).





There remains only the task of monitoring the annual improvement resulting from the implementation of SRS® and ET. That task falls to the visionary Across-herd Genetic Evaluation (AGE) program, implemented by the Australian Alpaca Association as a service to its members, and now widely employed by breeders in Australia and New Zealand. Its details can be sourced from the AAA website (<http://www.alpaca.asn.au/genetic/index.shtm>)

In summary, it measures the performance of each alpaca enrolled on the AGE with respect to specific traits of fleece and conformation, and then uses the genetic linkages defined within the IAR to predict the likely outcome in their progeny with respect to those same traits. These predictors are called 'breeding values', and are given a positive or negative value, depending on the alpaca's ability to raise or lower the measured performance of their progeny in each trait when compared to a

nominal 'benchmark' value. The latest round of AGE results, for example, has calculated results for each enrolled alpaca relative to a Breeding Objective that seeks a 'moderate reduction in fibre diameter and moderate gain in fleece weight' (again, relative to the nominal benchmark), and has identified those animals within our own herd most likely to achieve that objective. Alternatively, we can request values for breeding objectives identifying those animals most likely to maximise gain in fleece weight whilst maintaining fibre diameter at current levels, or those maximising reduction in fibre diameter whilst maintaining fleece weights.

Thus armed, Australian alpaca breeders have a unique opportunity to define what will become the Holy Grail of the international alpaca industry, through the implementation of this Holy Trinity of breeding technology.

The future is *wholly* exciting!

#### **About the author:**

Dr Ian Davison is a practising orthopaedic surgeon living in Cambewarra, Australia, 160kms south of Sydney, where he and his wife, Harriet, established Illawarra Alpacas in 1992. Their herd, now numbering over 500 alpacas, has featured prominently in major shows and promotions since their first supreme championship in 1977. Dr Davison was a founding director of the Australian Alpaca Fibre Marketing Organisation, and a member of the Working Party for the design and implementation of the Across-herd Genetic Evaluation program for the Australian Alpaca Association. He is a foundation shareholder in the Australian Alpaca Fleece Limited and SRS® Alpacas International, and currently serves as President on the National Committee of the Australian Alpaca Association.

**Illawarra Alpacas, NSW, Australia  
P: 02 4446 0096**

