



Raroa Red Deer Stud Our Breeding Objectives And Decision Making Process John Carter

It is extremely difficult to find much published information on genetics that addresses, in layman's terms, the help I needed when making specific choices for one on one breeding.

I have attended Massey field days and have enjoyed Dorian Garrick's lectures and his play way method of introducing the ignorant to the mysteries of how genetic improvement works. I have also read every thing that comes my way through the rural press and also (in desperation)Equine Genetics and Selection Procedures. While I think I understand the general principles of how genetic improvement works within a herd I am still totally bemused about how to scientifically decide the specific one on one selection that will produce the stags I want to sell and the hinds I want to keep.

As a red deer stud what are our breeding objectives ?

Obviously this is to breed **the ultimate red deer** with the problems being first to define this animal and then to breed it.

This conjures up in my mind the old Minhinnick cartoon of an animal that milked like a top dairy cow, cut wool like a top Merino and produced steaks to die for.

I suppose the ultimate red hind would:

1. be 100 to 120 kg live weight @ 3 years and eats like a sparrow;
2. weans 60 kg calves on 1st March ghat grow to 100 kg by October/November;
3. has sons that cut 3.5 kg A grade velvet @ 2 and 7 kg SA @ 5 years;
4. produces daughters better than she is;
5. has a calf every year to 15 years of age.

The test for stags is to produce these daughters on a rising plane.

As to our programme to produce this wonderful animal I am afraid I am relying heavily on Invermay and their DNA programme to give me the knowledge to select the breeding combinations to achieve this objective. In the mean time we will battle on and try to achieve some short term goals:

Stags that:

1. have a minimum of 2 kg of B grade at 2 years over the whole line;
2. to have 40 of those stags producing 2.6 kg to 3.5 kg @ 2 years;
3. to have approx. 30 stags that are 200 kg @ 2 years;
4. to have 90% of 180 spikers at a minimum weight of 108 kg @ 12 months.

These targets also require proper tine placement and antler construction and desirable body conformation. They must achieve this with minimal supplementary feed and excellent health. A placid temperament is essential.

Hinds that:

1. as 1st calvers wean (on 1st March) a hind calf a minimum of 40 kg or a stag of 44 kg;
2. as M/A hinds wean hind calves a minimum of 48 kg and stags 52 kg;
3. are a minimum of 90 kg at 15 months, 105 kg at 2.5 years and 110 kg as adults;
4. **that produce stags that meet the above criteria.**

Again these targets must be met from within a semi commercial regime and with excellent health and placid temperaments.

Apart from the progeny from 1st carvers we are currently not too far away from these targets.

Our ongoing programme to reach these targets has four main elements.

1. performance recording;
2. selection pressure from introducing 100 to 120 maiden hinds each year;
3. investing in new sire stags and the strategic buying of hinds;
4. using ET programmes with key hinds and stags to expand their genetics.

The key to successful long term stud deer breeding is to have an accurate identification system to establish parentage plus the most extensive performance recording one can achieve. At the moment deer farming does not have the equivalent of the beef breeders Bred Plan with its EBV's on a range of traits, but we must emulate their approach and record a wide range of trait performance.

For whatever reasons the market for red breeding stags is dominated by the romance of stags and their antlers. Results from red sire stag sales show me that the prices achieved are the result of a limited range of factors with the most relevant being:

- the antler reputation of the sire - this is a result of his success in velvet competitions and how well he is promoted;
- the quality of /or weight of the stags own antlers or velvet the stags bloodlines ie Wamham, Furzeland Yugo etc the stags body weight

- his dam's reputation for producing antlers in her stag progeny

the sire's performance and reputation being the dominant factor.

Although the reality of the commercial market is that the vast majority of progeny are sold for venison this is not reflected in the red sire stag market. Apart from velvet genetics, buyers do not appear to seek out stags for the specific traits which will improve their returns. The role of red deer as the most efficient venison producers is not being seriously addressed by stag buyers.

Having said that it is also fair to add that the majority of red deer stud breeders offer stags that are well above average for growth and body weights, as well as for antlers, and they do improve the weight gain performance in the purchaser's herd. Our minimum body weight for stags offered in our stag auctions has risen by 20% in 8 years and our top weights by 25%.

Our breeding programme since introducing Eastern stags has been to:

1. Breed up the Warnham / Woburn bloodlines in our herd for the best possible velvet performance while also looking for weight gain improvement.
2. To cross the East European with the English bloodlines to improve live weights and growth rates while not losing the English velvet performance..
3. To balance the breeding herd about equally between the two bloodlines
4. To ultimately breed a distinctive Raroa style / type of red deer

With approximately 440 hinds calving each year we have the numbers to do this without compromising either programme, Currently our breeding herd is about evenly divided between straight Warnham / Woburn /English bloodlines and hinds with at least one cross to the East Euros. In both groups nearly all the hinds are now either from 100% imported parentage or have 4 generations of single sire breeding in their pedigrees.

The decision making process

For us, the crunch questions and decisions are how do we decide on our stagging lists or put another way, which hind goes to which stag each March.

Based on our extensive performance information the individual breeding decisions are usually made on the basis of-

- is the mating likely to produce a stag of the quality we need for our sire sale
- would a hind fawn from the mating be retained and would she improve the quality and /or balance in the breeding herd.
- does a specific trait such as body weight need improving

Certain farming factors also have to be considered.

- We stag the 1" carvers in their age group to stags who do well with young hinds
- We also try to keep reasonable numbers of each age group together in a stagging group to maintain the social structure or put another way to give them some mates.

Is there a role for a veterinarian to advise us in the area of genetics and our breeding programme ?

Prior to being asked to write this paper it is a question that I have not thought about as I had conceived genetics as a specialised field. Likewise I have also not heard of geneticists who advise on specific one on one matings.

As the "stud master" at Raroa I find it difficult to seek specific advice from outside on preparing stagging lists. In our situation I am the only one with an intimate knowledge of the performance data. I do get a lot of help from my manager on a day-to-day basis working with the deer. We discuss individual animals and their attributes and characteristics and knowing your deer is very important as a balance to just relying on the records.

I feel that to make breeding decisions one needs a feeling for the specific animal plus its performance information, including its close relatives. That is impossible for anyone not involved as deeply as the stud master or the deer manager. I need the veterinarian or geneticists to educate me on what to look for and for detailing and clarifying the principles to apply.

There is an important role for veterinarians to play in advising their commercial clients on the genetic approach which will improve their herds to the benefit of their financial performance. It is well overdue for most commercial deer farmers to look at what part of the business they are in and what trait improvement will add dollars to their bottom line.

Like the chemists say, you are the professionals the farmer see most often, and your role could well be expanded to include advice on how to raise the genetic worth of their animals as a key factor for them achieving better animal performance and therefore better financial performance.