

SOME COMMENTS ABOUT IMPORTED DEER FOR VELVET ANTLER AND MEAT PRODUCTION

It is currently fashionable although expensive to import deer into New Zealand. This is a rather novel "full circle of the wheel" considering the problems we got into with introductions last century. Today's deer farming industry, however, is new, innovative, fast moving and requires the best short and long term resources to fulfill its potential as a major industry in the 21st century.

The question is "Do these imported deer offer us much more than the resources we already have in New Zealand?" The plain fact of the matter is that we do not know with any certainty because we do not have any or enough information to make a judgement. In this matter I am assuming that our deer industry is able to benefit from the mistakes made in our traditional livestock industries and make measurable genetic progress in breeding by focussing on important attributes such as animal growth rate, antler production and perhaps temperament when selecting breeding stock.

Antler velvet production

A good average mature red deer stag can be expected to cut about 2.3 kg of A grade antler worth about \$275. In order to increase that return we want more weight or better quality or preferably both. Certainly this can be done by farming Wapiti or hybrids. In the last 3 years there have been 166 Canadian Wapiti imported into New Zealand (Moore, 1984) with about equal numbers of each sex.

The following table of antler velvet information compares the yields obtained from the Invermay experiments involving red deer, New Zealand type Wapiti and the hybrid produced by mating a Wapiti-type bull to red hinds. The last column shows the information from the Canadian Wapiti and this must be treated with caution because it is from a small number of animals and at each different age grouping the bulls are 6 months older than their New Zealand born counterparts because they were born in the Northern hemisphere (June).

Velvet antler yields (kg)

Age (years)	Red Deer	N.Z. hybrid	N.Z. Wapiti-type	Canadian Wapiti
2	1.0	1.3	1.6	2.7
3	2.0*	2.4	2.9	3.5
4	2.3	2.8	3.4	?
Mature	2.3-2.6	?	4.6	?

* This figure for 2 group of reds is somewhat higher than many "average unselected" red stags.

Clearly the Canadian wapiti are producing much more velvet antler than red deer of approximate equal age and at a premium price but it is too early to tell how much better the imported wapiti are than the New Zealand Wapiti-type.

Moore(1984) has estimated from some North American data that the North American Wapiti has the potential for producing 4 times the velvet yield of a mature red stag and realising eight times the value. That sort of difference is very impressive considering the Canadian Wapiti bull's weight is about twice that of a red stag and its feed requirements for maintenance is only 70% greater than that of a red stag. Obviously there are extreme animals in any group and in 1984 Invermay won the open section of the Southland A&P velvet competition with antlers from a N.Z. Wapiti weighing 6.5 kg. This sort of animal is obviously a good bet for a breeding sire since we believe that velvet antler yield is relatively highly heritable. A word of caution in sire selection. It is more important to pick a sire that is in

the top (say) 5% of a herd than to select on velvet weight alone because there may be big environmental differences between farms. This point and many others are well covered in the recent articles written by Dr Fennessy and Mr Butler for The Deer Farmer.

The use of Canadian bulls for specialist velvet antler production looks a good bet but their use as crossbreeding sires over reds does not. The bulls appear to be too large to freely mate with red hinds and damage could be done to both sexes at mating as well as producing calving difficulties in those reds that do conceive. A better long term crossbreeding programme might be to use $\frac{1}{2}$ or $\frac{3}{4}$ bred Canadian bulls (possibly obtained from mating the best red stags to some Canadian cows) or to use New Zealand Wapiti-type sires which are smaller than the Canadian bulls.

European red deer (particularly those in the eastern block countries) are bigger than our red deer. It is difficult to decide how much of this is due to the genetics and how much due to environment. Generally big animals tend to produce big antlers and there are reports of velvet weight over 5 kg from animals about to be imported into New Zealand. Selection for large numbers of top tines (European stags) may mean a very thick main beam below the crown when cut at the correct stage for velvet antler. It is to be hoped that the imported red deer are selected on a high "weight for age" basis and for high velvet antler weight. If these criteria are not used then the imported deer may be little better than well selected existing stock - although a lot more expensive-!

Venison production

The key feature here is rate of growth or "weight-for-age". We now know that well managed red stags can be expected to reach 90-100 kg at 14-15 months and 120-130 kg a year later. Crossbreeding with Wapiti appears to increase growth rate by about 25-30% over reds. The use of imported Wapiti over red hinds has been previously mentioned and does not look promising. In the long term the New Zealand Wapiti-type or $\frac{3}{4}$ Canadian sire may prove to be a good proposition for obtaining heavy fast growing calves for meat production but it is premature to come to any conclusions at this time.

Imported red deer must show some "weight-for-age" advantages over our own animals to begin to pay for their price tags. Such information is very hard to obtain because of the very few opportunities to record liveweight from "Park deer". Farmers would be wise to enquire about calf weight at weaning and 15 months and under what conditions these weights were obtained. Better still would be weight information from New Zealand and imported deer run in the same herd and given the same feeding. Another useful test for imported red stags would be to evaluate the progeny from New Zealand red hinds in comparison with the progeny from a range of N.Z. red sires.

A longer term contribution to venison production in New Zealand might be via imported Pere David deer. These animals are relatively rare (world population of about 1000) and have three interesting and potentially valuable attributes.

- 1) Pere David deer are heavier and more "blocky" in conformation than red deer and may therefore produce a more attractive commercial carcass.
- 2) Pere David deer breed earlier and calve down 50-60 days earlier than reds. Calving in October in New Zealand has obvious advantages in that the spring flush can then be used by lactating hinds whose feed requirements are very high. There will be a longer growing season for the calf before hitting the autumn/winter period and it may be possible to slaughter some well grown calves in late autumn for meat production.
- 3) We believe that Pere David deer will crossbreed with reds and some of the above advantages can be grafted onto our red deer. Earlier rutting Pere David stags may induce earlier oestrus in our red hinds.

In conclusion the imported Canadian Wapiti are already making an impact on the New Zealand scene in regard to velvet antler production. The value of this genetic source in relation to meat production is not so clear. Imported red deer should be examined closely and their production records for velvet antler and "weight-for-age" carefully considered before making decisions to purchase. Evaluation of Pere David deer for earlier breeding improved carcass conformation and for crossbreeding with reds is a long term project that suggest caution but is potentially very valuable. Possible differences in yard temperament between imported and local deer could be very important in long term breeding decisions where flexibility in farm management is essential