

POST-QUARANTINE EXPERIENCES WITH IMPORTED ELK

M Bringans

This study involved 71 Canadian Elk that were imported from 1982 to 1986, by clients of our practice, as follows:-

<u>Year of import</u>	<u>Bulls</u>	<u>Cows</u>
1982	4	1
1983	8	5
1984	10	8
1985	5	17
1986	5	8
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	32	+ 39 = 71
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All animals in this study were 10 months old on their release from New Zealand quarantine.

To avoid confusion of nomenclature of the species discussed, the following terms were used:-

- (i) Elk - pure imported stock
- (ii) Wapiti - New Zealand type elk (originating from Fiordland)
- (iii) Hybrid - cross between Wapiti and red deer.

**Background**

These elk have been predominantly representatives of 3 different subspecies; nelsonii, roosevelti, manitobensis.

In Canada these elk were tested for tuberculosis, brucellosis, Johnes disease, Q fever, bluetongue, EHD, anaplasomis and vesicular stomatitis; and treated for external and internal parasites, including warbles, bots and liver fluke for at least 45 days before entry into quarantine (an approved isolation unit). They were kept in quarantine for a period of 30 days.

In Canadian quarantine they are retested for bluetongue and epizootic haemorrhagic disease (EHD).

The animals were then transported by truck to Toronto, and underwent a 12 hour loading period and a 19 hour plane flight, to arrive in Auckland. There was a 3-4 hour unloading period there followed by a 12 hour trip to Wellington.

They stayed in MAF quarantine for 30 days before they were released. (This period was initially 60 days, which was later reduced to 45 days, and then to 30 days). During quarantine in New Zealand they are tested for avian and bovine tuberculosis, brucellosis, Johnes disease and Q fever. Bluetongue and EHD are no longer tested for.



Of all other imported cows mated on these farms at the time of the New Zealand rut, there has been 100% pregnancy rate (ie: mated at 22 months of age).

(ii) Males

At about 15 months of age, the young bulls go through a mild 'rut' and when housing males together, some have to be separated to prevent fighting.

A generally high fertility was evident amongst the elk imported. This we found surprising as we had encountered low fertility problems in several two-year-old New Zealand Wapiti-type bulls.

These imported elk bulls were used only 8-9 months after arriving in New Zealand and were only 20 months old at the time of mating.

Results were as follows:-

1983:	22 cows mated	-	20 calves	91%
1984:	9 Wapiti cows mated	-	9 "	100%
	12 Wapiti " "	-	12 "	100%
	12 hybrids mated	-	7 "	58%
1985:	12 hybrids mated	-	7 calves	58%
	5 " "	-	5 "	100%
	14 " "	-	12 "	86%
	10 Wapiti cows "	-	5 "	50%
	5 " " "	-	5 "	100%

With older bulls, as long as cow numbers did not exceed 20-30, fertility was still good.

1984:	32-month-old bull mated	28 cows -	22 calves	79%
1985:	50 " " " "	23 " -	21 "	91%
	32 " " " "	26 " -	23 "	89%
	32 " " " "	38 " (R/W)-	19 "	50%

With the latter bull, the majority of wapiti cows that ran with him calved, but the smaller hybrids had a poor calving rate. The cows had been observed to keep the smaller hinds away from the stag at mating time.

Note:

It has been common for clients to complain of a young elk bull with an "apparently" low libido.

This can be easily rectified by removing the young bull to a mating paddock where he cannot see, or sometimes even hear, an older bull or stag. We have several examples which illustrate this.

In 1984, one client mated a 32-month-old bull next to his 20-month-old bull. The young bull sat in the corner of the paddock apparently disinterested in his hinds. However, lameness in the older bull necessitated his removal to the yards at the other end of the farm for treatment. With half-an-hour the young bull was bugling and working his hinds vigorously.

### Health Problems

1. Warts - Outbreaks involving the muzzle, nostrils and lips were seen in 4/71 - 3 cows, 1 bull at around 14 months of age. These resolved spontaneously in 3-4 weeks.
2. Osteodystrophies - 6/71 had swollen carpal joints and slightly bowed legs on arrival from quarantine. With mineral supplementation ("Bonegro" mixed with oilseed) these animals slowly improved and 6 weeks later abnormalities had virtually disappeared.
3. Long Hooves - 4/71 - 2 cows, 2 bulls directly out of quarantine had elongated hooves, to the extent that these elk were almost walking on their pasterns. These self corrected once outside. Tranquillizing and trimming was no real advantage (unless the hooves were cracking).
4. Damaged Pedicles - Four bulls out of one shipment had injured pedicles, with subsequent resetting. The velvet at the 18 month stage was subsequently deformed, with extra tynes growing from the base. Three of these had normal velvet conformation at 30 months.
5. Coat Changes - The elk are released from quarantine in early winter. At this stage they are changing from winter to summer coats. By the spring they are back into their winter coats and by late summer are in phase with the southern hemisphere.
6. Velvet - About 50% of the elk have had their spikes cut in quarantine. Most bulls cut another head in the December following their release. This head generally has poor conformation, calcifies early and gives little indication of future velvet potential. The first true head is grown nearly one year later. The range of velvet weights in our group was from 4 kg -5.8 kg at this stage.
7. Ryegrass Staggers - This was undoubtedly the most serious problem. 7/71 - 3 cows and 4 bulls have been affected at some stage. However, only 2 crossbred fawns have been noticed with the problem by deer farmers in our practice area.

Ryegrass staggers has been documented in previous Deer Branch Course Proceedings (No. 1). We have had no deaths from it; all cases have responded to immediate complete removal from pasture, and feeding with grain and lucerne. These animals are generally back to normal within one week.

There is no doubt that elk are very susceptible to ryegrass staggers. We have seen it on farms where sheep have suffered from it only in an occasional season, and where red deer have never shown any signs.

In quarantine in 1984 some of the elk developed staggers, evident as a slight head tremor, from the hay being fed. This was corrected when the hay was changed.

8. Parasitism - Imported elk appear to need regular drenching, despite their age. Perhaps because of lack of contact with pasture for several months during their growing period, the elk may miss out on acquiring some of their natural immunity to internal parasites.

We have seen a chronic wasting problem in 1 of the 71 elk studied. This animal became extremely emaciated. Blood tests and faecal samples indicated internal parasites as a possible problem. Only after massive regular doses of Ivermectin (200 ml sheep oral "Ivomec" each 2 weeks) did this elk respond, returning to normal condition within 8 weeks.

Another 2 purebred elk, purchased from another area (not directly from quarantine) have also shown wasting problems:

(i) died despite treatment (drenching with Ivomec as above, copper injections, antiscour preparations). There were no significant findings at autopsy.

(ii) responded - Ivermectin, copper injections, yoghurt treatment (natural yoghurt,\* 2 x daily, 3-400 ml). This animal had to be kept off fresh pasture for more than 4 weeks. Within that time scouring recurred when the deer was returned to pasture.

9. Nutritional Scour - some of the elk developed loose faeces as flushes of pasture growth occurred, especially pastures rich in clover. Roughage such as lucerne should be available at all times in these situations.
10. Copper Deficiency - Suspected in a case of wasting with low blood copper concentrations.

### Other Observations

1. Throat bots

C. trompe was found in the nasopharynx of one elk, but this was incidental to the cause of death.

2. Multiple suckling

Adult elk cows will often let more than one elk calf suckle. One cow has been seen feeding three calves all at one time. (Her own calf was not one of these). The only danger of this is that a quantity of colostrum can be drained off a newly calved elk cow before her own calf has had a chance to suckle.

3. Temperament

There are many misconceptions about Wapiti and Elk temperament. Some can be related back to the "grisley" deer sent to the North Island. As with all breeds, the odd one has a bad temperament. Generally the elk are very intelligent and very quiet in a paddock situation. Because of their sheer size, yard facilities are extremely important. Working above them quietly seems to work very well. If facilities are not good, a blow dart is most useful.

**Note:** beware the elk cow with a young fawn and the elk stag in the rut.

\* Editor's note: The author indicated no known rationale for use of the yoghurt. It is not some new mystery cure-all!

## **General Discussion**

The importation of superior quality elk from Canada has undoubtedly improved the genetic base of the New Zealand deer population.

The liberation of elk in Fiordland, many years previously, resulted in a smaller animal with a smaller antler. This may have been because of selection either by the hunter's bullet, or due to the dense bush selecting against the larger animal. There was also crossbreeding with the red deer. This prevented the feral elk in New Zealand from developing to their real genetic potential.

Among the negative aspects of elk are the greater need of copper (which can be supplemented) and their susceptibility to ryegrass staggers (a problem which can be culled for and which does not appear to be much of a problem in the crossbred offspring).

On the other hand, crossbreds of elk or wapiti appear to be more resistant to malignant catarrhal fever (MCF). Rod Oliver has reported failure of a group of hybrid experimental stags to develop MCF, while red stags of the same age did develop the condition.

Production-wise, the elk has much to offer. Elk-type velvet is the premium velvet sought-after by our main market, Korea. Velvet weights from 2-year-old purebreds ranged from 4.5 - 5.6 kg, while from 2-year-old first cross wapiti x elk, weights ranged from 3.2 - 4.3 kg.

There is a demand also for lighter coloured larger cut venison in parts of Europe and North America.

Americans traditionally want a lean carcass. The elk-cross carcass from 6-7 months of age through to 20 months of age remains lean. Therefore they can be slaughtered at any nominated liveweight for a specific market, while the carcass is not overfat. Of course, mature elk can establish a considerable fat content the same as other species.

The larger Hungarian cuts are also sought-after in Europe, especially for a high priced venison-veal market.

Many farmers are trying to increase the growth rate in the New Zealand red deer. By doing this they are running into problems of stags becoming overfat at an earlier age. Perhaps they would be better to utilize the elk cross or pure elk to achieve their aim of rapid carcass growth.

## **APPENDIX**

### **Diseases that have been reported in Elk in North America**

#### BACTERIA

Actinomycosis

Anthrax

Bacterial Arthritis

Brucellosis (Endemic in bison; abortions, serological evidence and carrier states)

Clostridia

Leptospirosis - rare serological evidence of L. hardjo, L. pomona

Necrotic Stomatitis - im