THE FALLOW DEER INDUSTRY

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Introduction and History

Fallow deer were introduced to New Zealand in the latter half of the nineteenth century. Large herds were established at South Kaipara Head and in the Wanganui hill country. Smaller herds scattered through the Waikato and Bay of Plenty as well as various parts of the South Island. Deer fencing to contain the feral population of Fallow at South Kaipara Head was erected by deer industry pioneer Roy Monk in 1970. With the use of helicopters feral herds were also mustered into the fenced areas. The Fallow deer is a territorial animal and being fenced in was an easy project.

Roy Monk obtained deer farm licence No 8 on his property known as "Waioneke". Other farmers with feral herds followed Roy's initiative.

The shooting of male Fallow for venison began in the early 1970's and in 1975 Hanz Fitzi and Roy Monk built the first game packing house to handle Fallow deer only. By this time the farming of Red deer had become well established but Fallow were farmed in a "range" situation. No yarding had been attempted because the animal was regarded as being impossible to farm in the true sense. All culling of the herds was therefore done with a rifle. In 1978 Fallow were sucessfully yarded on Porter Holdings property at South Kaipara Head. Further yardings were not without some disasters but in essence the farming of Fallow deer had begun.

Development of Handling Techniques

Fallow deer, in the feral state, is very territorial, and consequently very difficult to move from home territory. Feral deer were captured by helicopter or by starving them out of an area with the use of large mobs of sheep or cattle. With the gates left open into fresh pastures, the deer would travel to the fresh feed on their own accord. The gates were then closed late at night to contain the deer in the new area. Once out of the home territory, mob stocking reduced the territorial instincts, and with constant handling the Fallow became quiet and easier to handle.

With much trial and error the yard design and restraining devices were developed. It was found that the deer became quiet when moved from an outside pen into a pen with controlled lighting. A tunnel, holding up to five Fallow does, is attached to this controlled lighting pen. The deer can then be moved one by one from the tunnel to a weigh box, then to a small keyhole handling bale with drafting doors behind. A larger drop floor bale is used to handle sire bucks. Some farmers use the larger drop floor bales to handle all classes of Fallow but this system has a slower throughput than the keyhole bale. The keyhole bale also allows the veterinarian the luxury of sitting in a chair while TB testing at a rate of up to 250 Fallow per hour.

A few pointers on definite DON'TS with Fallow deer should be mentioned.

1. Bucks in hard antler should never be yarded.
2. All bucks should have their antlers removed before the end of January.

One can almost set a watch by the fact that Fallow bucks become aggressive by the 12th of February, and will remain aggressive until Labour weekend in late October, when the antlers are shed. Mixed aged bucks, even with no

antlers, are also very aggresive during this period. I once yarded 100 sire bucks in mid February and lost 12 from fighting and heat exhaustion. It is therefore necessary to have all sire bucks sorted for mating well before the rut. With feral herds of Fallow, or deer farmed in the natural state, the only time to yard these animals with minimum losses is two weeks before fawning is due. At this time all males have cast their antlers or spikes. Spiker yearling bucks are easier to handle than mixed aged during the rut. When the spikes are removed below the coronet in late January, the young bucks can be transported for slaughter, through the Autumn and Winter with minimal bruising.

MAF Involvement an the Impact of Scientific Research

Once the handling techniques were perfected the Fallow farmers next objectives were survivability, performance and production. Weaning rates on some properties, in the early days, were as low as 30%, and the New Zealand average was probably no more than 60%. The present day success of the Fallow industry is mostly due to the work of Dr Geoff Asher and his team at Ruakura. Research on several Waikato properties and our larger property at Waioneke, showed the greatest factor contributing to fawn mortality was the non-viable fawn which was directly attributed to the live weight of the doe. On a commercial basis smaller Fallow herds can now achieve greater than 90% weaning and even with Waioneke's very large herd weaning rates of 85% have been achieved.

No doubt Geoff will be covering some of these topics in his paper on Fallow production, however as a farmer I feel a need to mention some of Geoff's work. One trial of interest to me was when 50 does that were dry (at weaning) for three consecutive years. When the does were slaughtered at our DSP at Game Meats, 49 of the does were in calf and only 2 or 3 had abnormalities in the cervical region. Another trial with Geoff was the use of growth implants in slaughter bucks at Waioneke. Bucks treated with the implants over a 4-5 month period did not grow antlers and proved easier to handle during the rut. These bucks also produced a 10% heavier carcass, with much of this gain being obtained in the saddle and hind leg cuts. However, this practice was discontinued several years ago in line with the NZ Deer Industry's wish to promote our products as clean and green. The option of castration, for ease of handling, has not been accepted by farmers. Geoff's current AI programme and advanced calving trials, will have a far reaching impact on the Fallow industry.

Veterinarian Involvement

Obviously it is not necessary for me to state the importance of veterinarian involvement in a Fallow deer farming operation. Waioneke has had a preventative animal health programme implemented right from the early days. It was always our intention to have very close contact with our veterinarians, especially during the "learning curve" period of farming a new species. We were also fortunate to be able to observe hundreds of Fallow carcasses being processed through our DSP at Game Meats. The knowledge gained by our MAF veterinarians and private practitioner was invaluable to our animal health programme. Stress was the most common diagnosis of deaths in the earlier years but this situation is minor at present.

Waioneke deer were weaned pre rut in 1980 with disasterous results. Duodenial ulsers were the main cause of death, usually occuring a week after weaning. By using various drenches and antibiotics our losses at weaning were reduced to 2-3%. The next problem was a severe storm at Easter, which saw many weaners go down due to exposure. In subsequent years, weaning at Waioneke takes place after the rut and losses are now minimal. Fawns weaned post rut

are not as susceptible to problems. Other farmers, with smaller herds of Fallow, wean sucessfully pre rut.

This year our weaning and TB testing programme commenced at the end of May and with 4300 does with fawn at foot, plus sire bucks, we are looking at a programme lasting 7-8 weeks to complete. All does are weighed, drenched, TB tested and seperated into wet and dry mobs. All weaners are weighed, tagged drenched, and recieve various injections as well as a TB test. Our veterinarian visits for $3\frac{1}{2}$-4 hours daily for the 4 day TB testing week and we process 5-600 deer per day. All the weaners are then transported to other properties after a clear TB reading at the end of each week.

Fallow have proved to be susceptible to facial eczema but the management tools are available to prevent an outbreak. Facial eczema has not been a problem at Waioneke in the past, as we have large areas of Kikuyu. The property now has large areas of new grass which is sprayed by helicopter if the spore counts are high. It is our intention to use a deer grain booster with a zinc additive in a barley mix as a more efficient alternative next season.

Blood tests were carried out on our quarantine farm this year. High spore counts were monitored in an area which had been sprayed and was very heavily stocked with deer in quarantine. Zinc additive was being fed with barley and the blood tests showed no signs of eczema.

Another area of veterinarian involvement with our operation is with live exports. MAF livestock veterinarians have assisted with the export of live Fallow to Canada since 1988. The logistics of testing large numbers of deer for the Canadian protocol and solving the various problems involved with a new venture like this have not been easy.

Velvet

Mixed aged bucks do produce velvet of commercial value. About 3-400 grams of A grade Fallow velvet is produced from a good Fallow buck. This product will fetch up to $100.00 kg. Most farmers restrain the bucks in a large drop floor bale for velveting with the veterinarian injecting a local anesthetic. Rompun is used by the veterinarian where no restraining device is available.

Venison Production and Markets

The Fallow deer can produce the same amount of venison per hectare as Reds according to Geoff Asher's research at Ruakura, but the product itself is different to Red venison. Fallow venison is finer grained, more tender and has a more subtle flavour and it is marketed also as a different product.

Market requirements are for animals between one and two years of age with a carcass weight of 23-28 kg (42-50 kg live weight). Bucks older than 2 yr are usually heavily discounted, due to the primals being less tender. Fallow bucks slaughtered this year in New Zealand, will number 8000.

The progressive farmer on good land, has produced 11-12 month old Fallow bucks at 23-24 kg before Christmas for a very good return. The hill country farmer can also produce a rising 2 yr buck at up to 30 kg the following August/September.

The Fallow carcass is broken down into a "Bone in Saddle" and both legs are usually sold as "Denver Leg". The Denver Leg is 9 muscles seamed out, with the silver skin, (fasia), and gristle removed. This cut is a recent development and would now be one of the more common leg cuts used outside of Europe. These saddle and leg cuts are generally exported chilled to the main markets

of Japan, USA and Australia. Some leg cuts and most of the forequarter are exported frozen to European countries such as Germany, Sweden, Norway and Switzerland. Another growing market for Fallow venison is our local market. Forequarter product is manufactured into sausages, salame and venison ham. The top cuts are also in great demand from hotels and restaurants. The world demand for Fallow venison continues to exceed supply.

Imported Fallow

Dr Whitley Ottway was the first to import Fallow from England in 1983. Swedish, Danish and Hungarian deer were imported in later years. Progeny from these animals are very much in vogue with Fallow farmers with some high prices being paid for stock showing superior growth rates. In 1985 Dr Whitley Ottway also imported the first Mesopotamian Fallow to New Zealand. These animals are about a third larger than the straight Dama Dama Fallow and they will cross breed successfully. Half bred stock have sold at auction for very high prices and it will be interesting to observe the developement of the progeny.

I have seen some half bred Mesopstaimian progeny of all shapes and sizes and more information is required as to what the ultimate animal will be. It is my belief that a quarter bred Mesopotaimian with a body 10-20% heavier than the Dama Dama, is the animal to go for. This type of carcass would be acceptable for the Fallow venison market. However it is yet to be proved, by research,that these larger animals can achieve a higher level of production per hectare. I always maintain that there is no substitute for good levels of feeding, and that a combination of improved genetics and feed levels will produce the best possible animal.

The New Zealand Fallow Deer Society

The Fallow society was formed in 1985 with Mr John Marshall being the foundation chairman.
The objectives of the Society are:

1. To encourage and promote the advancement and the interests of Fallow deer farming.
2. To encourage and promote research and marketing of Fallow deer.
3. To represent the interests of Fallow farmers and to liase with the NZDFA and the Game Industry Board.

Approximately 200 Fallow farmers belong to the Fallow Deer Society. To be eligible a member first has to be a full member of the NZDFA. Annual forums are held and a newsletter is produced six times per year. The total population of farmed Fallow deer in New Zealand is now in excess of 30,000.

Fallow Deer Genetics Ltd

This company has some twenty two Fallow farmer shareholders with a total pool of 6500 breeding does. Top yearling does are selected and farmed on a central property for further evaluation. Top New Zealand sires are used as well as imported stock. The objectives are to increase the liveweight gains of breeding stock and carcass weights of slaughter animals and to improve the weaning percentages from the current 75-85% to 90%. Another objective is to provide Fallow of superior genetic merit to shareholders and the industry.

Live Exports

Waioneke Park has been involved with live exports of Fallow to Canada since 1988. An operation similar to Waioneke has been set up in British Columbia.

It has been no easy task but the condition of the Fallow deer exported have exceeded all our expectations.

Although the winters are very cold, the deer have adapted well and the growth rates through the Canadian summer has been exceptional. The deer relish on the pasture which contain an abundance of Timothy and Alfalfa. All the deer pastures are irrigated through the summer months. Winter feeding, at temperatures as low as -30°C, consists of one pound Barley with a dairy mix additive as well as Alfalfa Hay. Despite the seasonal grass, feed costs are more reasonable in Canada.

Dr Ian Amoore, Waioneke 's veterinarian, also travelled to Canada to liase with Agriculture Canada's veterinarians and the private practitioner involved with our Canadian operation.

No major animal health problem has been encountered in Canada. Probably the biggest threat to the well being of the Fallow would be from predators such as Coyotes, Cougars and Bald Eagles. The good "Kiwi" electric fence however is a great deterrent.

The first significant crop of fawns is expected this northern summer and larger quantities of venison will be processed next year under the direction of Game Meats (NZ) Ltd.

Conclusion and Acknowledgements

The Fallow Deer species has been proven to be a very hardy and disease free animal. With good facilities and farming practices the breed offers a viable alternative for the livestock farmer. World demand for Fallow venison is assured, at the present rate of growth, far into the future.

Once again I wish to thank Geoff Asher for his imput to Fallow farming. As this is a veterinary conference I would like to thank the following veterinarians for their efforts with our operation.

Ian Amoore	-	Waioneke's Private Veterinarian
Dennis Postelnik	-	Game Meats MAF Veterinarian
John Lee	-	MAF Import - Export