Farm Production & Practice

Ministry of Agriculture and Fisheries

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Deer
Red Deer
An Introduction

Red deer have been farmed in New Zealand since 1970. Until recently, farming was aimed solely at velvet production, but the big future for farmed deer is venison production. This AgLink outlines the main points to consider when establishing a farmed herd.

There are eight species of deer in New Zealand, with red deer being the most common species. Red deer were liberated in 1851, and by the early 1900s their numbers had increased so much that control was necessary. Since 1931, over one million deer have been killed by cullers and sportsmen.

A mature feral red deer stands up to 1.2 m high at the shoulders and weighs about 150–160 kg; hinds are smaller. Farmed red deer have grown bigger and heavier than feral deer, probably because of the better feeding.

In summer the coat is reddish-brown, in winter it is a drab grey brown. Adults have a light rump and creamy underparts. The antler consists of a brow tine, shorter bez tine and a trez tine about half way up the main beam. There can be several top tines.

Except during the rut, stags in the wild form separate groups from hinds and calves. But in autumn, a stag will round up and defend a group of hinds (harem) and he alone will mate with them (see AgLink FPP 247).

Farm establishment

Permits to farm are no longer required, but the farmer must inform the Forest Service if intending to farm deer. The farm can be stocked from the wild, or from surplus stock from other deer farmers. The capture of live feral deer is frequently done by helicopter. Costs vary; some operators charge a standard price per head, others charge by the hour.

Deer can be trapped on the bush edge or in clearings. Building and operating trapping paddocks is a skilled job and a visit to see some in action is helpful.

An advantage of buying farm deer is that they are already partly domesticated, whereas deer fresh from the hills need time to adjust to captivity.

Transporting deer

Only animals in good condition, and those which have had at least one month to settle down after capture should be transported. Carry stags or bucks in separate compartments. If transported together, stags should be of similar size and should be de-antlered before the journey. Keep hinds apart from males, and young stock apart from adult stock.

Deer travel better in a darkened stock crate, as it prevents them from becoming excitable.

The sides of the deer crate should be solid to exclude light and reduce risk of injury during transport. Stock crates must be firmly tied to the vehicle deck. Provide each animal with 0.55 m^2 of floor space.

The crate should be adequately ventilated and the floor should be slatted or covered with foam rubber to provide animals with sure footing.

Deer should be fed and watered before loading. They should not travel for longer than 18 hours without water, or 24 hours without an opportunity to take feed and a rest.

Deer can be released directly into the paddock (often best done at night) or into darkened yards. Newly acquired deer are best put into a paddock by themselves adjacent to other deer paddocks.

Yards

Yards need to be high and solid, with a darkened working pen. Lead-in races are very important, as deer do not handle as easily as other stock. Most successful yards have the following features:

- Long lead-in race, ideally curved so the yards are out of sight until the last minute.
- Working area dark, with close-boarded walls 2.1 m

high (red deer) or 2.6 m (fallow deer).
- Raceways at least 6 m wide.
- No iron sheeting or corrugated iron – this is noisy and frightening to deer. No sharp projections.
- Central, circular crush pen, with a maximum diameter of 5 m.
- Small pens, with timber gates and timber railings with 25 mm gaps to reduce jumping.
- Sand, wood chips or coarse sawdust for floors.
- No sharp corners or long narrow raceways.

More details of yards are given in AgLinks FPP 251, 252 and 253.

Fencing

Boundary fences must be 2 m high. They are usually netting fences with 150 mm mesh – to prevent dogs and fawns getting through. Posts are spaced at 5 m intervals. Alternatively a 13-wire fence with 2 m battens at about 0.6 m intervals can be used.

Netting can be used for internal subdivision also, or 6-wire electric (suitable for yearlings and hinds) or 13-wires with every second wire electrified.

The main points to remember when erecting fences are:

- Use heavy duty strainer posts and stay these well.
- Use stout well-stayed angle posts.
- Ensure posts in dips and gullies are very well footed.
- Do not over-strain the wires.

There should be water troughs and shelter in each paddock.

Handling deer

Deer need different stockmanship techniques to sheep and cattle. Patience is the key. Wild deer are very nervous and can accelerate almost instantly to 50 km/h if startled. Approach deer quietly and apply pressure slowly and firmly. Let them make their own way.

Move positively, without hesitating because deer, like dogs and horses, are quick to detect incompetence and negative attitudes.

Use as few people as possible – it is better to have two experienced people, than five inexperience helpers. Dogs can be used provided they are well controlled.

Paddock layout, gate placement and the approach to yards are very important in mustering and shifting deer. Individual handling of deer, for drenching or velveting, etc, is best done in covered yards. Always wear protective clothing when handling deer – they can kick very efficiently, and stags with antlers can be very dangerous.

Animal health

The key feature in deer health is disease prevention rather than disease cure. This is more important with deer than traditional livestock because deer are easily stressed by yarding, handling or under feeding. Most of the serious health hazards in farmed deer seem to be associated with stress.

Disease prevention principles

Several of the important diseases seem to occur more frequently when feeding is inadequate. Matching feed supply with feed demand is vital.

Watch abnormal behaviour closely. It may not be possible to save an animal that suddenly shows disease symptoms. But an early post mortem should reveal the cause of death and allow action to reduce the incidence of further disease.

Malignant catarrhal fever (MCF)

- Common throughout the country and usually fatal, particularly in stags in late winter; MCF can kill 20–50% of a herd.
- Cause is uncertain, but symptoms are similar to MCF in cattle, thought to be caused by a virus.
- Animals lose appetite, often separate themselves from the herd and die quickly.
- A post mortem will reveal severe bleeding and inflammation of the intestine and sometimes a mucus discharge from eyes and nose.
- No treatment is available, but animals should be spread out over the farm to reduce cross infection.

Yersiniosis

- A bacterial disease that can often be confused with MCF because the gut is often found to be severely inflammed.
- This disease often seems to be associated with physical and/or feed stress.
- Treatment with antibiotics is very effective if given early.

Tuberculosis

- Has been known in feral deer for many years and is now causing spasmodic problems in farmed herds.
- Infective bacteria can be spread through inhalation, drinking water, feed or licking.
- The cattle TB test given in the neck is now widely used although some misleading results have occurred.
- Treatment is not practical and infected animals should be destroyed.

Lungworm

- The most serious parasite of farmed deer.
- Infection mainly occurs during the first autumn and winter in calves.
- Good feeding reduces susceptibility.
- After weaning, young stock should be drenched with an effective anthelminthic every 3 weeks and then grazed on clean pasture.

Clostridial diseases

- Commonly causing such problems as pulpy kidney and malignant oedema in sheep.
- An infection of young stock.
- Where problems occur, prevention is effected by vaccinating hinds 6 weeks before calving and calves at weaning.

Remember

- Prevention is much better than cure.
- Sick deer, which have been isolated from the herd for treatment, are usually poor patients because of nervousness and fretting.
- Good management reduces stress and many of the worst diseases in deer are related to stress.
- Good feeding reduces disease and mortality.

Reproduction

Basic breeding facts

- Puberty: Hinds 16 months
  Stags 14 months
- Onset of breeding season: Hinds – early/mid April
  Stags – March
- Duration of breeding season: about 6 weeks (2–3 oestrus cycles)
- Length of oestrus cycle: 18 days
- Gestation length: 233 days
- Onset of calving: late November
- Duration of calving: 18–26 days

Deer in New Zealand seldom produce twins, so the main breeding aim is to achieve 100% calving. But in practice, this means 95% conception and 85–90% live calves at 3 months.

Female mating management: Hinds mated at 16 months of age need to be more than 65 kg to achieve 90% calving or better. As with sheep and cattle, adequate feeding is needed to ensure that hinds calve each consecutive year.

Where possible, yearling hinds should be mated separately from mature hinds because of bullying.

Male mating management: In most cases, herd sires

should be 3 years or older. Single sire mating can be used with confidence as long as stags are rotated around hind groups. One stag can successfully mate up to 50 hinds.

In large paddocks, or where there is broken cover, several sires can be used, as the herd will split into several groups with a stag in each.

Stags are dangerous during the rut, and should be treated cautiously.

Calving management

Hinds need to be set stocked in calving paddocks through December and January. Avoid unnecessary disturbance during calving. Calves have a birth weight of 6–7.5 kg. A calf mortality of 5–10% is normal and most of these deaths occur within a few days of birth.

Ensure shelter is available for new-born calves. But don't let pasture become rank as feed quality will drop causing reductions in hind milk production and calf growth rates.

If young calves must be handled (for ear tagging or weighing) use gloves.

Selection policy

- **Females:** Excepted breeding life is 10–12 years. Dry hinds (detected by udder examination) should be culled if policy allows.

  Without a satisfactory way of identifying offspring, culling hinds on the performance of their progeny will not be possible
- **Males:** Body weight at 15 months gives a good indication of ultimate body and antler size. The bottom 25% should be culled for meat at this age.

  The best potential herd sires can be identified at 26 months, from their body weight, velvet yield and temperament.

  Animals to be retained for a specialised velvet antler herd should be selected from 2 year old stags. Any animals with a bad temperament should be rejected.

Feeding

The most important task when farming deer for profit is to balance the budget of seasonal feed requirements with seasonal pasture production. Where there are differences between supply and demand, feed should be conserved or purchased.

Pasture quality and quantity varies seasonally; in most regions supply is reliable in spring and winter, very unreliable in summer and uncertain in autumn. Quality refers to the stage of plant growth when harvested, and the type of feed. Spring pasture is very nutritious, but feed quality decreases in summer. Hay is not only low in feed value but also very variable

Stags: Older stags need little feed in autumn, but in winter they have a high feed requirement due to:

- High loss of body heat and poor insulation.
- Most body fat lost during rut.
- During an 80 day winter if ¾ of the feed requirement came from hay and the remainder from barley, a mature stag will require a total of 13 bales of hay and 56 kg of barley to maintain condition.

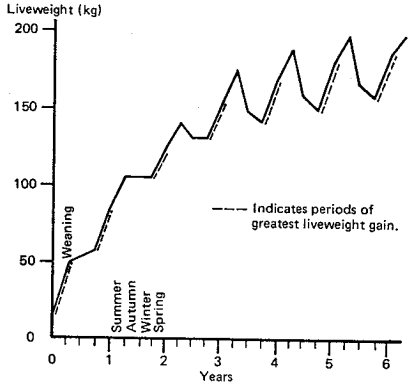

Fig. 1: Liveweight pattern of red stags.

Hinds: Young stock need more feed as they grow. The requirements of hinds over autumn, winter and spring are very similar. They need most feed during lactation in summer, when quality feed is often scarce.

Table 1: Relating annual deer requirements to sheep.

	(Stock Units)		
	Hinds	*Stags*	*Sheep (ewe)*
3 – 15 months of age	1.2	1.4	
15 – 27 months of age	1.9	1.8	1.0
Mature		2.2	

Seasonal feeding: Use a feed budget wherever possible. Feed hinds on short vegetative pasture in summer, but don't overfeed them during late pregnancy (November). Feed yearling hinds well, to get good April mating weights. Ration feeding of hinds on grass behind electric fences during winter and spring is a good technique.

Feed stags well in winter to prevent health problems and to improve velvet antler growth.

Feed calves well in atumn and winter to prevent health problems.

Table 2: Seasonal feed requirements of stags (ME units/day).

	Autumn	*Winter*	*Spring*	*Summer*
3 – 15 months of age	26	19	27	26
15 – 27 months of age	24	28	31	30
Older stags	19	35	42	38
Ewe rearing 1 lamb	13	10	28	11

Table 3: Seasonal feed requirements of hinds (ME units/day).

	Autumn	*Winter*	*Spring*	*Summer*
3 – 15 months of age	15	18	22	21
Older hinds	23	22	24	47
Ewe rearing 1 lamb	13	10	28	11

Table 4: Feeding value of selected rations (ME units/kg DM)

Pasture Spring	12.0
Summer – leafy	11.03
Meadow hay – mature	8.0
Lucerne hay – mid bloom	9.0
Silage – high moisture	10.0
Grain – barley	12.5
Deer nuts	10.8

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