

THE DEER FARM & PARK DEMONSTRATION PROJECT



A Starter Guide to Deer Farming and Park Deer Management



Venison Advisory Service Ltd

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1 Background and the UK venison market

Looking back over the last ten years, UK retail sales of venison rose from £32 million in 2006 to £43 million in 2009, an increase of over 34 per cent, and since then growth has continued – Marks & Spencer sold three times as much venison in 2011 as it did in 2010. Other retailers reported sales up by 50 per cent. Asda said its sales were up by a third, and in 2012 the Co-op stocked venison for the first time. Waitrose reported an increase in sales of 92 per cent in 2013. Sainsbury reported its venison sales up 115 per cent in December 2015 over the previous year.

In Summer 2014, analyst Kantar Worldpanel reported an increase in UK venison sales of more than 400 per cent over the previous year.

Scotland produces an estimated 3500 tonnes of venison *per annum*, of which just over 50 tonnes comes from farmed deer.

The bulk of all venison produced in Scotland comes from the annual wild cull, but, whilst this has increased in the last two years, volumes remain insufficient to meet market demand. Figure 1 shows data from Scotland's wild deer cull from 2004 to 2015.

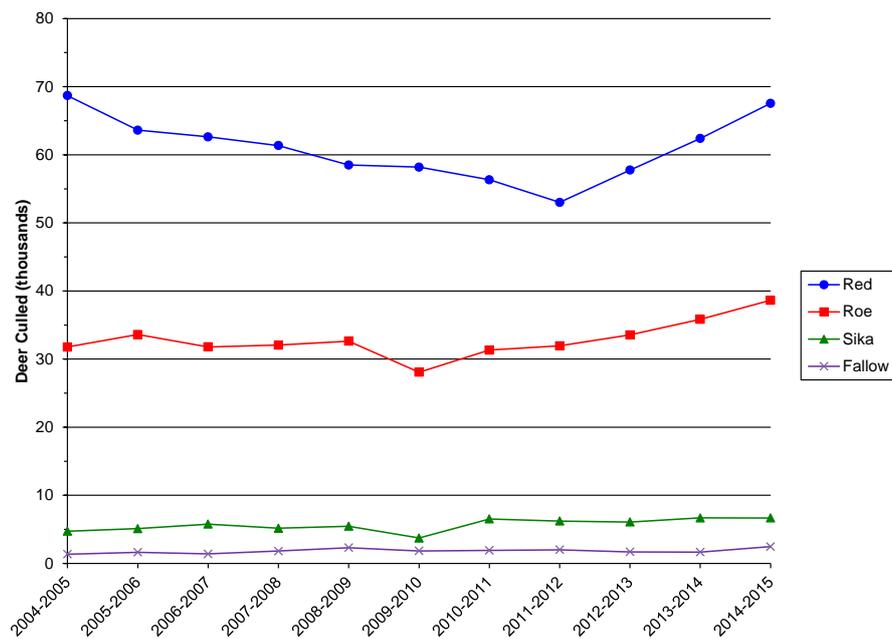


Figure 1: Scotland's wild deer cull 2004–2015

Consequently, imports from New Zealand, Poland, Spain and elsewhere in Europe are sustaining a year-round UK market. Scotland's two major game dealers reported that they imported 25,000 carcasses (over 1000 tonnes of venison) in 2012 to meet market demand, and in 2013 the UK imported the equivalent of 29,000 carcasses from New Zealand alone.

The farmed venison supply from New Zealand however, in the short to medium term, is not forecast to increase, as current demand for milk solids in China has created a strong requirement for dairying herds and has forced New Zealand deer farmers to move up into more marginal ground. New Zealand's main

venison producers are also now licensed to export NZ venison into China where a growing appetite for the product is developing.

There is a drive in Scotland to encourage increased production of Scottish farmed venison and reduce the UK's reliance on imports, and it is estimated that an additional 1200 tonnes of venison *per annum* are required to keep step with demand. Even with this growth, and if the market continues to grow at around 10 per cent *per annum*, imports are likely to outstrip domestic production from both wild and farmed by 2020.

Up to 300 more deer farms, or half that number if of significant size, will be required by 2021 to sustain current market share.

The Scottish Government is backing the drive to increase Scottish venison production. Richard Lochhead, Cabinet Secretary for Rural Affairs and the Environment, said in May 2013:

“We need to increase our venison production by a third to keep pace with demand. Our venison is another high quality and delicious product that is increasingly desired by customers at home and abroad.”

Some facts about the sector:

- Estimated number of deer (all species) in Scotland – 700,000–800,000
- Scotland's annual venison outturn – 3500 tonnes
- Annual export of Scottish venison from UK – 1000 tonnes
- Imports to UK from New Zealand direct c. 800 tonnes (plus additional from/through Europe – Poland and Spain). Total imports to UK vary but exceed 1000 tonnes *per annum*.
- Only 60 tonnes of total production comes from Scottish deer farms – less than 1.5 per cent.

Mintel reported that by the end of 2015, UK game meat sales would reach £106 million, up from £98 million in 2014, with growth expected to continue, and forecast to hit £143 million by 2020.

“It is venison which is the star performer in the market, fuelling growth in game meat. Indeed, usage of venison has increased from 13 per cent to 17 per cent over the last 12 months.”

Further endorsement was also given to UK venison by Mintel in its report ‘The Fifty’ published in 2015.

Grant Westbrook, SVP Marketing, says in his introduction to the report:

“The world is evolving; consumer lifestyles and expenditure are shifting. New tastes, new demands, new trends. All these things contribute to make consumer markets such fascinating places to operate in. That is why we've created The Fifty: a beautiful ebook and magazine which lifts the lid on fifty fascinating markets where opportunities abound.

“A year in the making, this work is the culmination of hundreds of individual market studies, thousands of consumer questions and countless hours of expert analysis. We've looked at how consumers are spending, how their lifestyles and behaviours are changing. We've looked at innovations and new products launched and asked the question: Where are the opportunities?”

From all of the markets, we chose fifty (the clue is the title!) that you need to at least be thinking about, if not exploring further.”

The entry under UK Game Meat in ‘The Fifty’ states:

“Soaring venison sales have put game meat in the spotlight. While the size of the game meat market is dwarfed by that of poultry (with sales of £97 million in 2014, versus £1.7 billion for poultry) the game meat market has enjoyed strong growth in 2014, increasing around 9 per cent from 2013. This rise in sales has largely been thanks to the popularity enjoyed by venison. The fact that many more UK consumers have expressed an interest in trying game than have eaten this type of meat before, highlights the significant growth potential in this sector. Leveraging the health credentials of game such as venison will help to position it as a better-for-you alternative to red meat, thus boosting sales further.”

There can be no stronger endorsement by a leading market analyst for the future of UK produced venison than this, and Scottish producers are well equipped to enjoy an increasing slice of that developing market.



2 Killing and selling options

2.1 Overview

Deer farmers are unique in the livestock sector in being able to kill their deer either on the farm or in an abattoir. At the time of writing this booklet, demand for farmed venison is very strong and there are at least two dedicated abattoirs killing farmed deer, one of which is in Scotland. Supermarkets generally purchase their farmed venison from abattoir-killed carcasses.

Whichever route is adopted, the deer must be examined *ante-mortem* by a vet within 72 hours of death. The meat must then be processed through facilities that have been licensed and regularly inspected by the Food Standards Agency or Food Standards Scotland. The carcasses must also be inspected *post-mortem* and stamped.

A third option is for farmers to kill their deer on farm with a free bullet and transport the carcasses intact to licensed red meat premises within strict time limits for skinning and evisceration.

Farmers can process and sell their own venison if they have licensed facilities. They can thus supply to their own or other farm shops, or sell through farmers' markets or any other outlets.

Those with parks can process their deer through facilities inspected under local authority auspices by Environmental Health Inspectors.

2.2 Halal and Kosher venison

To be halal or 'permitted', meat must be killed according to Islamic law. Many Islamic authorities permit animals to be stunned prior to slaughter so that it is feasible to supply pre-stunned halal venison if the deer are shot in the field, or stunned in an abattoir, immediately prior to being blessed and killed by exsanguination. About 80 per cent of halal meat of all sorts is from animals that have been pre-stunned without compromising their welfare. Venison can easily meet these religious requirements.

Kosher venison, as required by the Orthodox Jewish community, does not permit pre-stunning, and therefore cannot legally be produced in Britain.

3 Type of deer enterprise: Park or Farm?

3.1 Parks

Britain has a large number of historic parks, some of which have been in existence for more than five hundred years. In addition, there are very many much newer parks holding deer and managing them in ways similar to the historic parks.

The deer in all these enclosures can only be shot by free bullet and cannot in most cases be gathered or handled. They are distinct from deer farms. The deer within a park system are classed as wild.

This distinction is important because if deer in parks were categorised as farmed deer they would require to be *ante-mortem* inspected by a vet and the deer keeper would require to be certified under the Welfare at Time of Killing (WATOK) regulations. In addition, the meat from parks would have to be processed through red meat processing facilities similar to those of other domestic animals.

The EU Regulations take account of this: EU Regulation No 853/2004 Annex 1 defines wild game as:

“Wild ungulates and lagomorphs, as well as other land mammals that are hunted for human consumption and are considered to be wild under the applicable law in the Member State concerned, including mammals living in enclosed territory under conditions of freedom similar to those of wild game.”

It leaves the interpretation of this regulation to the relevant authority in the member state. For many years the UK Food Standard Agency has been unable to make a clear distinction between parks and farms and regularly attempts to class deer within deer parks as farmed by virtue of the fact that they are fed. This obviously ignores the fact that failing to feed deer in a park would lay the park managers open to prosecution under welfare legislation. Were the FSA to be successful in classing park deer as farmed there would be huge repercussions on the rural economy – for example, there would be an insufficient number of vets to *ante-mortem* inspect herds of park deer day after day, and there would be completely inadequate facilities for handling park deer as farmed.

We can only say here, at the time of writing, that deer within parks are classed as wild and as such do not require *ante-mortem* inspection, nor are they subject to WATOK regulations, and they can be processed through conventional game meat routes. They can, however, only be culled within respective seasons for wild deer.

3.2 Farms

Deer farms are very different from parks in that the deer can be handled, the calves are normally weaned, the deer are often housed during the winter, and finished animals are often sent to abattoirs for slaughter.

If killed on the farm, an *ante-mortem* inspection by a vet is required. All farmed deer carcasses must be processed through Approved Game Handling Establishments (AGHEs) and they may be killed at any time of the year. Farmed deer can only be killed by licensed slaughtermen.

Many people considering entering the deer farming industry see the relatively simple regulations relating to deer parks and think that it will be much easier to run a deer park as there is little need to

handle deer, no need for *ante-mortem* inspection, and the carcasses can be simply processed in facilities inspected by Environmental Health Inspectors under Local Authority control.

Whilst this may be true, the price a park owner obtains for his venison is far less – and, at the time of writing, about half of what a deer farmer would receive for his farmed deer carcase. In addition, by not handling his deer, the performance of the deer herd is also much less than a well-farmed herd. In general, unless a park owner processes and direct sells his venison, it is very unlikely that a deer park will be profitable. Most deer parks accept this as a trade off from the amenity value.



4 How to start

4.1 Land types and benefits/disadvantages

Deer, especially red deer, are highly versatile in their ability to cope with a great variety of situations. Probably originally adapted to living on woodland edges, they are well evolved for eating and digesting grass. They therefore benefit from shelter, being poorly insulated, and also thrive best on good quality grassland.

Red deer are also herd forming so are well able to cope with being stocked at quite high densities in large 'mobs'.

For the deer farmer, access to the sort of grazings preferred by dairy enterprises is invaluable as this will allow high stocking density and reduce fencing costs per head.

However, the British climate entails wet winters and, whilst the calves settle very well in sheds, adult hinds tend to bully when indoors and it may be considered best to outwinter the hinds. This means that some sort of wintering area is necessary. It needs to be very sheltered, with access for tractors to distribute feed and preferably with ground that is not susceptible to 'poaching' by deer and vehicles.

If hard standing or similar is not available there are alternatives. Deer can be given free access to a shed whilst still able to run out onto a prepared free draining base covered in bark, for example.

If the ground that is being proposed for a deer farm is of poorer quality then it can still be made to work, but the fencing costs will be much higher. Also, in the case of higher ground, shelter becomes even more important.

When considering ground for a deer farm it is important to think of where the conserved forage – whether hay or silage – will come from; also whether the ground could be cultivated to grow forage crops such as turnips, kale, etc.

More extensive deer farms on rougher or higher pasture are best adapted to be run as breeding herds, selling calves in the autumn to lower lying farms which are better able to source arable by-products and to winter calves more economically. They are also closer to abattoirs and markets.

Ideally, there is therefore logic in a stratification of deer farming with breeding herds in the hills, and finishing, or breeding and finishing, farms on lower ground.

4.2 Stocking densities

It is helpful to think of one red deer hind as having similar requirements to two large ewes.

4.2.1 Arable lowland pastures

As a rule of thumb, arable lowland pastures might carry 10–12 hinds per hectare through calving, and then with their calves from turn out in April to November. Alternatively, 15–20 yearling stags could be carried per hectare from April to finishing. This presupposes moderate fertiliser application, good sward, and good drainage. These stocking densities may also allow some silage production in a favourable season.

4.2.2 Upland sown pasture

With longer leys or permanent pasture, and with shorter growing seasons but also with moderate fertiliser application, upland sown pasture can carry 8–10 hinds per hectare from May to the end of November with their calves at foot, or 12–15 yearling stags per hectare.

4.2.3 Rough grazings

Never reseeded, rough grazings might be able to carry one hind per hectare throughout the year providing that winter forage is available and that the calves are removed from the ground at weaning.



5 Infrastructure

5.1 Fencing

Fencing for deer farms is, together with the handling system, the single largest capital cost. The purchase of the deer may be a bigger item but is immediately recoverable in sales. Once fencing is installed it cannot be recovered and is a depreciating asset with nominal scrap value.

Although on some New Zealand deer farms internal fencing may sometimes be reduced to a height of only 120 or 150 cm, that is for deer that have been bred on farms for many generations. In the UK it is standard practice for both red and fallow deer to use fencing around 190–200 cm high for both internal and perimeter fencing.

The recommended fencing specification used by deer farmers is a high tensile net 190 cm high, normally with 13 horizontal (line) wires. The vertical (stay) wires are generally at spacings of between 15 and 30 cm, with the closer spacing for areas around the handling system where the fence may come under pressure.

Such fences are described as 13/190/15, 13/190/22 or 13/190/30. In addition, the knots where the wires intersect are specially designed so as not to slip and also to allow the stay wires to be continuous. This makes the fence easier to erect and much stronger.

High tensile nets do not stretch and sag like mild steel and, because they can be strained up tighter, they use less posts and so are less conspicuous. Once the fencer is accustomed to working with high tensile steel nets they are quicker to erect.

It is very important that the strainer posts are very well erected and stayed as the system depends on these. The staples holding the net to the posts must not be banged home as the wire must be free to move.

It is strongly recommended that professional fencers accustomed to erecting high tensile deer net are used at least until the farmer has developed the necessary skills and acquired the necessary equipment.

5.1.1 Topping up existing stock fences

If existing cattle or sheep fences are in very good condition then it is sometimes possible to heighten them. However it is likely that new strainers will need to be sunk, so the financial savings may not be enormous.

A standard fence specification would be as follows:

New deer fences should be of single 1.9 m deer net (Tornado Titan or Cyclone Tightlock T13/190/22 or T17/190/15) with treated deer posts (100–125 mm tops) at 5–6 m intervals and a 2.5 mm plain wire on top. Raceways (5.5–7.5 m wide) should have no more than 4–5 m intervals between posts and a strainer every 50 m or so on longer sections for added strength. T17/190/15 net is recommended for raceways to take the extra stock pressure and to stop calves sticking their heads through.

Top up netting should be HT8/90/15 or similar and attached with spiral lashings or clips at around 300–500 mm intervals to the existing bottom net or a plain wire strained at the top of the bottom net and both top and bottom nets secured to it (a good join between the two nets is very important to prevent the nets

separating under pressure creating gaps that might allow deer to escape). Deer posts or extensions to stock posts should be at 5–6 m intervals. Deer strainers should be 175–190 mm tops with either a box section or angled stay assembly. All timber should be pressure treated to a high standard to ensure a minimum life of 15 years.

5.1.2 Electric fencing

From time to time deer farmers may resort to electric fences. These can be used to strip graze fodder crops using five or so wires, or as line wires on outriggers to protect old or weak fencing. In all cases the wires need to be well strained and are usually powered by mains fencing units. It is important to avoid letting antlered stags have access to electric fencing because they do not seem to feel the electricity through their antlers and can easily become entangled.

5.1.3 Layout of fencing

The fencing layout of a new deer farm is very important and it is recommended that advice should be sought from a qualified consultant or someone with experience of farming deer.

Depending on the size of the farm and the numbers of deer likely to run, the size of paddocks could be limited to perhaps four or five hectares (10 or 12 acres). The objective is to provide sufficient paddocks to be able to rotate the deer during the summer, and to keep the various age and sex classes separate, etc. For this a minimum of five enclosures will be needed. One or two small paddocks are likely to be useful for holding stags. Cover is helpful to provide shelter and also privacy during calving. There will also be a need to provide a wintering area. All these paddocks should ideally connect to the handling system by means of a deer fenced race or raceway so that different groups can be gathered into the yards without disturbing the entire herd.



5.2 Races

Raceways should be at a width that depends on the size of the deer mob to be brought down to the yards. The minimum width for the race might be 4 m but could start wider at the field end. It is helpful if the race is wide enough to allow a quad bike or even a pick up to turn in it, yet not so wide that it needs more than one person, or on larger farms two people, to prevent the deer running back past them.

If the race goes round corners try to make these curved and incorporate as many curves as reasonably possible as this encourages the deer to run along the race.

Where there are gates in the race, and some will be needed as the yards are approached, use rails to fence out a small triangle so that bottlenecks don't create sharp corners.

Deer cannot easily see deer fences and may be inclined to run into them so the raceway should be made visible as the yards are approached or as the raceway goes around a corner. This is normally done by using more timber in the fences or by attaching shade cloth (horticultural membrane or windbreak material) to the fence.

5.3 Gates

The siting of gateways requires careful thought. It is important to avoid the situation where half a group of deer go through the gateway whilst the rest of the mob follows them on the wrong side of the fence without going through. To avoid this it is useful to site gates in corners of fields.

Metal gates as sold by fencing manufacturers are probably the most practical although wooden gates can be made on the farm and covered in deer net.

5.4 Cattle grids

Red deer can be contained by cattle grids if the grids are well designed. There must be no possibility of the animals tip-toeing around the edge of the grid or along a central strut. The sides of the grid must be securely fenced and there should be no tempting pasture on the other side. Care must be taken if new animals are introduced or if hinds are pacing fences at calving time or for stags at the rut. In addition, the poles making the grid are much more effective if they are contained in sockets and so are loose and able to revolve. Although much more likely to be successful if the grid is longer than the standard, simple 4 m grids have proved effective.

5.5 Handling systems

The handling system on a deer farm is the heart of the farming operation. Unless it functions easily and efficiently, stockmen become reluctant to handle the deer and the enterprise will suffer. On the other hand, with good yards, working with the deer becomes a pleasure.

Whilst the basic principles of yard design are easily stated there is no substitute for experience, and advice on design should be sought.

Ideally the yards should be sited bearing in mind the following:

- Access for vehicles
- Electrical and water supply

- Adjacent to sheds for winter housing
- If possible in such a position that deer run uphill to enter the yards
- It is much better to be under a roof.

They should provide facilities for:

- Separating calves from hinds
- Splitting groups of deer into several groups
- Restraining stags to remove antlers
- Allowing the deer to be ear tagged
- Allowing the deer to be wormed and treated with other drugs such as copper, flukicides, etc.
- Weighing the deer
- Loading the deer into trucks or livestock trailers. The yards should be easily entered from the raceway and should incorporate a milling area so that deer can settle down after they have entered. It is also very important that the animals can flow smoothly through the system, entering quietly, being processed, being drafted into different groups and released back into the paddocks.

5.6 Construction of yards

Solid sides to the handling system are good at keeping the deer quiet, but it is also helpful if they can see people and other animals. Thus a good system might have solid boards to about 150 cm and weldmesh above that.

Many yards are constructed of plywood on box section steelwork. The floor is normally of concrete with a rough texture and a covering of bark or woodchips providing a secure footing and avoiding any risk of deer slipping.

Deer can be easily handled and drafted out of quite small pens rather than large solid-sided pens in which they may be inclined to run and jump.

Some areas need to be 'deer free' so that pen and paper, medicines, weigh-scale readers, etc. can be away from the animals.

5.7 Winter housing

Calves weaned in September prior to the rut may be housed immediately and kept indoors until turn out in April or even May. Alternatively, once suitably adjusted to a hard diet they may be turned out again for a period depending on the season. In New Zealand, deer are rarely housed although research has demonstrated that their energy demands are 50 per cent higher when run outside. In the UK, where many farms have existing sheds, and the climate is colder and wetter, winter housing of calves and even hinds is normal.

The feeding system can use traditional diagonal feeding barriers adapted by attaching a rail or building barriers with 23 cm spaces between the bars. Alternatively, the deer can be hand fed into troughs, and silage or hay into ring feeders or racks. Whatever system is used it is essential to provide a lot of trough space since dominant deer may clear a big area around them.

Deer are normally bedded with straw in a deep litter system.

Ventilation, which is crucial in cattle sheds, is of much less importance for deer in which pneumonia – other than parasitic pneumonia – is almost unknown. This may reflect the lower density of deer in the shed. A space allocation of around 2 m²/head is reasonable for calves.

In calves, bullying is much less of a problem than it is in breeding hinds. For adult hinds it is usually necessary to pull out individuals that are being bullied and pen them in a group of subordinates. Deer begin to lose their winter coats from the winter solstice in December and when housed they knock hair out of each other so they can appear seriously threadbare by April, but the coat soon grows in once they are running outside.

5.8 Water

Deer are rather similar to sheep in their water requirements. If being fed on wet food, such as roots, their requirement for additional water is insignificant. The same is true when they are grazing, but in warm weather their requirements will increase and they will need access to either natural water sources or troughs. During cold spells it is obviously essential to bear in mind that water pipes may freeze.



6 Breeding stock – sourcing, purchase and release

Breeding stock can be obtained from a variety of sources. A prime consideration must be their tuberculosis status. Deer should only be bought from herds with a low risk of contact with cattle or badgers and where the tuberculosis risk is reckoned to be very low.

6.1 The wild

At the time of writing, nobody is considering catching wild deer although a new deer farm sited next to wild deer populations, usually in Scotland, may take those in as a means of stocking. Taking live red deer from the wild may help the landowner as an alternative to shooting but can be a risky proposition. Such deer will almost certainly be of highly variable age and breeding condition. They will also be nervous unless they have been accustomed to coming to man to take feed. The removal of deer from the wild is limited by close seasons and may require a permit from Scottish Natural Heritage.

6.2 Parks

Deer from parks can be as unapproachable as those from the wild. Their degree of tameness will also be influenced by the method of capture: deer that have been excited before capture will take longer to settle down. Deer from some parks may be of extremely good genetics and that may justify their purchase.

6.3 Deer farms

Obviously if deer are accustomed to farm procedures they will settle more quickly. In addition, their age should be known and it should be possible to obtain some assurance as to their health status. Many farms that have been recording data will be able to provide weights, and the best managed herds may also be able to provide records of the dam and sire.

It should be noted that deer that have fed poorly early in life will always remain smaller and less productive than deer that have been allowed to grow to their full genetic potential, although given adequate feeding, the offspring of such deer may provide excellent breeding stock. This should be borne in mind when purchasing deer.

The efficiency of venison production will benefit greatly from using large sires. East European bred stags are available in Britain, although in short supply, and their use allows farmers to achieve higher carcass weights at younger ages.

In general before buying:

- Be sure to see the deer (do not buy deer without seeing them, or having them seen by your adviser before purchase).
- Request a written confirmation that they have been wormed before transport to your farm, or ensure that they are wormed on arrival and held indoors for 24 hours after worming.
- Ensure that the deer are ear-tagged and that you know the numbers. It is a legal requirement that all deer that are transported must be ear tagged. It is usual to buy yearlings – their age is guaranteed and they have time to settle before breeding if you can buy them in plenty of time before the rut (e.g. September). However, the purchase of an existing herd with an established social structure is ideal, although not often a possibility. A further alternative is to buy hind calves.

6.4 Hinds

The preferred hind type is red deer of Scottish or Scottish/English park cross origin with an expected mature live weight of around 110–115 kg, selected for conformation and temperament. Hind herd life is approximately 14 yrs. At the time of writing, cost per hind ranged from approximately £350.00 to £500.00 purchased post-rut as a rising 2 yr old. Alternatively hinds can be purchased as yearlings and then mated on farm.

The preferred time to move yearling hinds is spring to late summer to ensure good feeding and acclimatisation on the farm prior to their first mating. If older hinds that have already been rutted with a stag are being purchased, then movement could take place during the winter, from late November to March, to allow them to settle onto the farm prior to calving.

It would be reasonable to expect rising 2 yr old hinds to have a weaning percentage of around 70 per cent and for adult hinds of 80–90 per cent. Hinds should be left undisturbed through the calving period (from mid May to mid July).

6.5 Stags

The Venison Advisory Service recommends stags of English park, English park cross Scottish or possibly Eastern European origin (Eastern European stags have been shown to produce first cross calves with significantly higher growth rates and finished weights than those from typical Scottish stock but can be more difficult to handle, and there are currently very few available in the UK). Typically one mature stag can be mated with around 40 hinds, although with proven stags significantly more hinds could be mated. Stags cost approximately £2000–£3000 each.

Note: Legally stags cannot be transported whilst in velvet and so should arrive on the farm well before the rut to acclimatise to their new surroundings before mating. Stags would normally be de-antlered around mid-August and then transported as soon as possible thereafter.

6.6 Release on the farm

The release of deer on arrival requires care. Fences should be in good order and the vehicle aimed away from the fences; nervous deer may run into fences when released. Keep onlookers out of sight when the door is opened. It may be necessary to push deer out: if so hold a large board in front of you as this reduces excitement.

Because of the difficulties of moving hinds with young calves, or stags in velvet, deer are usually moved during the winter. It is always best to move the adult hinds in mid-pregnancy where possible. Hinds are often moved as late as April without problems, but moving them so late increases the chances of mis-mothering. Hinds will often cross suckle or mis-mother calves, but this is a much bigger problem when they have been introduced to new ground just prior to calving and especially when they are first calvers. It is often worthwhile creating some cover with branches of trees if there is no existing natural cover, especially for first calvers or newcomers to the ground.

When bringing deer on to a farm or park it is very important to make sure that they do not suddenly gain access to concentrate feed. If there is little natural forage provide silage or hay and only introduce concentrates very gradually over a period of several days or even weeks.

In introducing *wild deer* it is important that arrangements are made to ensure that they begin to take feed again as quickly as possible after transport. If there is no grass, as may be the case in winter, then it is important to ensure that the new arrivals are not too nervous to come to feed sources or are chased away by the deer already on the farm. If the deer are not used to hand feeding then a variety of foods must be available.

A small field with some cover and a few tame individuals already in it is ideal for the release of deer as the tame ones will teach the others to take feed. Do not attempt to examine the newcomers too closely for some days as leaving them in seclusion is likely to be more beneficial. If you have any doubts about the weather, pasture, or condition of the animals, then it is well worthwhile housing the deer in buildings until the spring. In the case of calves this is probably always indicated unless ample grass is available. Even wild deer will very soon accustom themselves to housing, especially if the building is darkened and they are not disturbed too frequently.



7 Transport

Farmed deer are routinely transported by road for movements between farms and to slaughter. Deer hauliers are controlled in that journeys over 65 km carried out as part of an economic activity require authorisation of the transporter under Council Regulation (EC) No 1/2005. The Regulation is implemented in England by The Welfare of Animals (Transport) (England) Order 2006 (WATEO), and by parallel legislation in Scotland, Wales and Northern Ireland.

Unlike with other species, there is no requirement for the driver or his/her attendant to possess a certificate of competence when transporting deer. The driver must, however, be able to show that he/she has the appropriate equipment and operational procedures in place to transport animals in compliance with the Regulation. Additional safeguards including vehicle approval, certified by independent certifying bodies, apply to journeys over eight hours.

At the time of writing there is no requirement for deer transporters to provide a 'journey plan', even when deer are being transported across Europe, although other member states may require this.

Normal livestock transporters are suitable for moving deer. Although deer are much more agile than conventional livestock, and appear to have better powers of co-ordination, it is important to drive slowly around corners and avoid sudden stops and starts. If deer lie down they often allow others to trample them, especially if they are too crowded. Generally fallow deer travel lying down while red deer usually stand. It is always much better to give too much room rather than too little, especially for longer journeys. Suggested floor areas are given in table 1.

Animal size (red deer)	Floor area per head / m²
Adult stags (antlers removed)	0.80–1.00
Adult hinds and yearling stags	0.50–0.60
3 month old calves – yearling hinds	0.40–0.48

Table 1: Suggested floor areas for transportation.

For deer no larger than red deer hinds, i.e. red deer yearlings, calves and all fallow deer, 'double decking' is satisfactory at 1.5 m headroom. Floor allocations may then be increased.

It is vital to provide adequate ventilation during transportation. Deer have a surprisingly high requirement at this time, and due allowance must be made for ventilating should the vehicle have to stand stationary for a period.

The floor must be covered in a thick layer of sawdust, hay or straw, and allowance should be made for some consumption of this during a long journey. It is obviously sensible to keep the journey time as short as possible and to avoid interruptions. On very long journeys, of, say more than twelve hours, the deer should be watered and fed. It is often beneficial to play a hose over the deer, especially in hot weather, to enable them to drink as they are often unwilling to use a bucket. Feeding is less urgent, but potatoes and other low dry matter foods are valuable. In all cases deer should be given access to food and water for the period up to loading but avoid last minute gorging and do not feed concentrates.

There is no legal requirement to unload deer even on long journeys across Europe. This helps the deer which are much more tranquil if left in the familiar surroundings of the vehicle. However it is vital

that deer on such long journeys are given sufficient space to lie down and that feeding and watering systems are used.

It is highly desirable to segregate loads by species, sex and age, and young calves should not be moved with adults in the same compartment. Under no circumstances should antlered stags or bucks be moved unless penned by themselves. Projections on the inside of vehicles can cause abrasions and, late in the winter, moulting deer can lose a serious amount of their coats in that way.

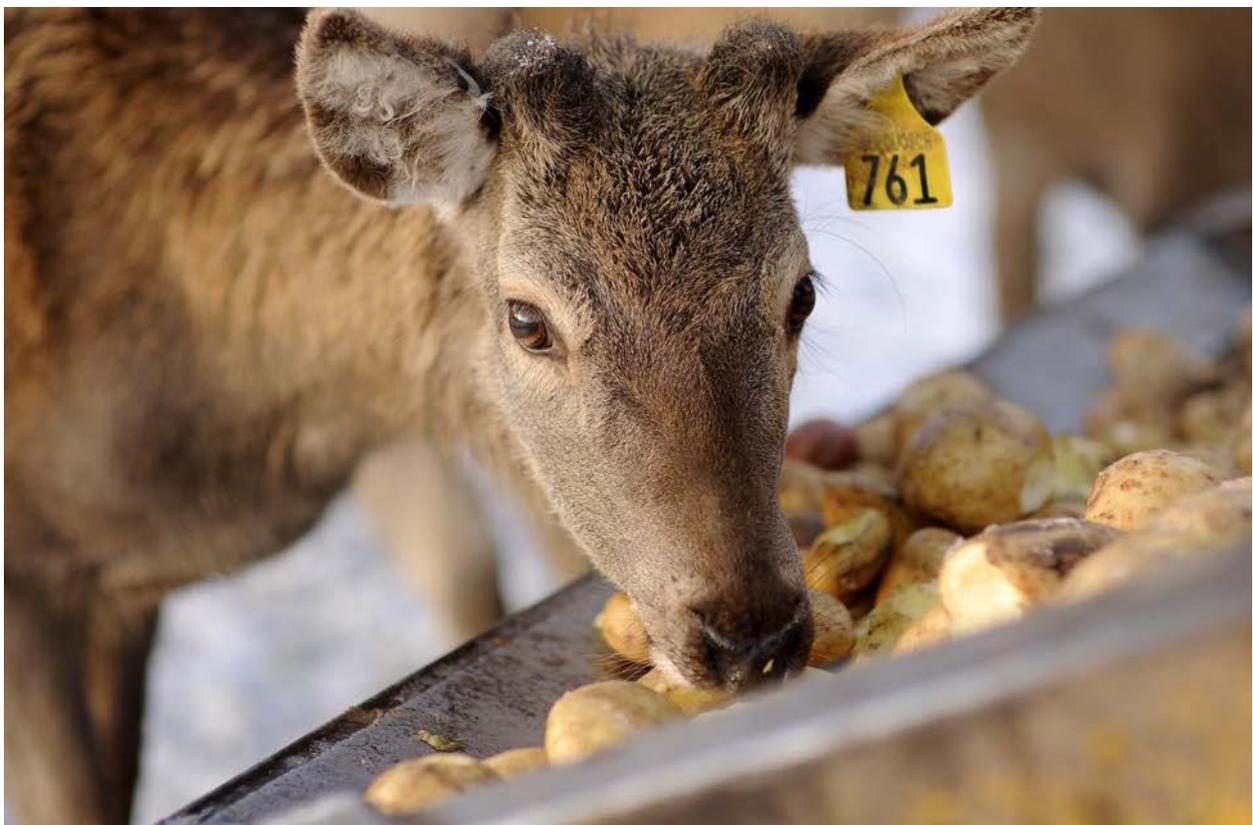
It is illegal to move stags when their antlers are growing.



8 Identification

There is no legal requirement to identify deer, whether on farms or parks, until they are transported. Land carrying enclosed deer should be registered with the local Department of Agriculture and an agricultural holding number will be provided. The Movement of Animals (Records) Order 1960 was amended in 1989 to include deer in the definition of animals and extending requirements of the 1960 Order relating to movement records of deer. Park keepers and deer farmers are required to maintain movement books to register movements of deer on or off the property.

Deer movements are monitored by the Trading Standards departments of the County Councils in England, and animals should be accompanied by ARAMS2 movement forms (Reports of Deer Movement made under the General Licence for the Movement of Deer under the Disease Control (England) Order 2003). In Scotland movements of deer are recorded on Animal Transport Certificates.



9 Record keeping

It is a basic rule of livestock management that adequate records are kept, and the use of a standard livestock movement record book is essential as the bare minimum. In addition, many farmers will want to keep breeding records and details of weights. If the deer farmer wishes to make significant genetic improvement in their herd then he or she will need to establish which hind produced which calf. This can be done by tagging calves at the time of birth, or before weaning, or by DNA typing of hair samples.



10 Veterinary

Deer do not require the level of intervention as cattle and sheep. Calving problems are rare and there are few prophylactic measures required. Worming can be carried out using pour-on preparations although drenches may be required for fluke treatments. Mineral deficiencies, particularly copper, may require correction by providing these in feed or by administering a bolus.



Appendices

A Farm management programme

In a farm system, hinds would be set stocked at around 10 per hectare (depending on grass quality) for calving, and calves would be weaned in the autumn and then housed for the winter. They would then be turned out onto pasture in the spring for finishing, or sold off the property as stores in the late autumn.

Summary of monthly deer farm management

Mid August:

- Breeding stags de-antlered as soon as velvet is shed. Worm drench or copper if required.
- Yearling stags de-antlered in batches as soon as velvet is shed. Weigh and sort for slaughter. Target 110 kg live weight for stags, 88 kg for hinds.
- Set up quality pastures for rut.

Mid September:

- Wean calves if pre-rut weaning is preferred (this can result in earlier conception). Worm, sex, tag and weigh calves.
- Identify hinds with no udders and record. Cull hinds that are dry on successive years.
- Sort hinds into rutting groups and introduce stags at ratio of 1 to 40. Mob sizes to suit paddocks (multi-sire mating works well with deer). Worm drench if required.
- Monitor grazing and introduce silage or concentrate if required.

Early November:

- Remove stags from rutting groups to prevent late calves and put in a sheltered paddock. Feed *ad lib* silage and 1 kg concentrate/head/day (on smaller units this may not be practical, and stags can be wintered with the hinds, but the occasional late calf is inevitable).
- After the rut, wean the calves if this is the preferred policy as above.
- Set up wintering mobs in selected paddocks and feed *ad lib* quality (10.5–11 ME) silage to mature hinds or winter on crop such as turnips/swedes/rape allowing 2 kg dry matter/head/day along with *ad lib* baleage or good quality barley straw.
- Winter rising 2 year replacement hinds on *ad lib* silage or crop as above and 250–500 g concentrate (on smaller units this may not be practical but care must be taken to prevent bullying of young hinds).

December – February:

- Monitor stock and adjust feeding according to weather.

March – April:

- Increase concentrates for in-wintered calves to around 500–750 g/day, and separate any that are being bullied.
- Monitor pasture and turn out calves on set up pastures in late April/May
- Reduce hind feeding as grass growth starts.
- Check fences in preparation for calving.

April – August:

- Monitor worm burdens and drench accordingly.
- Set stock hinds at around 8–10 per hectare by early May for calving. Ensure calving paddocks have areas of cover for calves to hide. Hinds may be rotationally grazed from mid-July onwards to ensure adequate pasture quality for lactation.
- Top silage paddocks post calving to improve summer grazing quality.

Note: Yearling hinds calve later than mature hinds and should not be allowed to become over fat before calving to avoid calving problems.



B Financial data for venison production from farmed red deer

Notes:

- i) All UK deer farms are now eligible for farm subsidies but these are not included in this calculation.
- ii) Some supermarket buyers are offering significantly more than £5.00/kg dressed carcass weight (DCW) but no account has been taken of costs of transport to abattoir and therefore the lower figure of £5.00/kg has been used.
- iii) No suggested stocking density figures are given as this depends on the quality of ground, but as a rough indication red deer hinds will need about twice the acreage of ewes.
- iv) All feed costs are based on purchased prices.

Table 2: Potential output from established 100 red deer hinds (breeding and finishing).

Sales	(£)
100 hinds @ 90 per cent calving yield 45 finished hinds less 8 retained as replacements = 37 of which 26 (70 per cent) sold as breeding @ £350/hind	9,100.00
Balance of hinds (10) as venison 45 kg DCW @ £5/kg = £225/hd	2,250.00
Cull hinds (8 @ 55 kg DCW @ £3.80/kg)	1,672.00
Stags for venison (45 @ 60kg DCW @ £5/kg)	13,500.00
Total sales	26,522.00
Costs per 100 red deer hinds (breeding and finishing)	(£)
Feed – hinds (silage 10.5 ME/6 kg/hd/165 days, 990 kg/hd @ £26/t)	2,574.00
Feed – hinds (concentrate 0.5 kg/hd/90 days), 45 kg/hd @ £210/t	945.00
Feed – calves 80 (silage 10.5 ME/3.5 kg hd/180 days) 630 kg @ £26/t plus concentrate (0.5 kg/hd/180 days) 90 kg @ £210/t	2,822.00
Feed – stags (4 breeding and 2 replacements) £30/hd	180.00
Fence maintenance	500.00
Tags, drench, sundries £2.50/hd	250.00
Total costs	7,271.00
Gross Margin for 100 hinds	19,251.00

Comparisons:

- Gross Margin for 200 lowland ewes 2013/2014 £9250.00 (*Aberystwyth University*).
- Gross Margin for lowland suckler beef (average) £242.00/cow (*Quality Meat Scotland 2013*).

C Case study: farm layout, financial projections, etc.

VAS



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500 HIND DEER UNIT

EXAMPLE

PLAN AND DATA FOR SET-UP OF A LOWGROUND UNIT ON ARABLE GROUND



Note:

- Red lines denote new fencing.
- Red solid new tree planting.
- Blue lines denote top up existing fencing.
- Short yellow lines denote gate positions.
- SE Paddock 10 (in yellow) optional and not included in calculations.

C.1 Fencing

The total new deer fence required to enclose the paddocks outlined on the plan above, with connecting raceways to the handling unit/yards, would be 12,070 m approx. In addition 800 m of top-up would be required to make the new fence running either side of the ditch between Paddocks 1 and 2 deer proof.

Fencing costs	(£)
Approx 12,070 m new deer fence at est. £8.50/m	102,595
Approx 800 m top up fence at est. £4.50/m	3,600
Total fencing costs	106,195

Notes:

- Any post and rail work to fill gaps, etc. is normally charged extra over.
- As most fence lines are relatively straight with easy contour allowing access for tractor and post driver in most places, the price per m could vary from that shown.
- Laying of materials should be included in quotes
- Some fence lines would require trees to be trimmed back.

C.2 Gates

It is estimated that a total of 20 gates (3.6 m galvanized box section with mesh) are required to allow easy stock rotation and access. Gate cost £270.00/unit (including furniture and hanging). Total: £5,400

C.3 Stock costs – initial purchase

Stock costs – initial purchase	(£)
250 hinds @ £350.00	87,500
6 stags @ £2000.00	12,000
Total initial stock costs	99,500

C.4 Herd expansion

This table shows the expansion of the herd from 250 to 530 hinds over six years from initial purchase of 250 in-calf hinds. Fencing paddocks 1, 2, 3 and 4, a total of 45 ha (5,000 m fence) at start and then taking in one additional paddock (P) per annum (so 1000–1500 m additional fencing per annum).

Year	Hind numbers	Calves weaned	R2 hinds retained	Yearlings sold	Cull hinds sold	Stags purchased (retained)	Cull stags sold	Area required / ha
1	250 (purchased)	200						45 Ps (1–4)
2	250	212	60	140		6		59 (+ P 5)
3	310	220	80	132		2		73 (+ P 9)
4	390	330	80	140		2		83 (+ P 8)
5	450	382	80	250		2		92 (+ P 7)
6	530	450	40	302	30	2	2	104 (+ P 6)

Notes:

- Assumes 250 in-calf hinds purchased, hence 200 calves in year 1.
- 80 per cent weaning assumed on initial purchased hinds. For subsequent years, 85 per cent (90 per cent should be achievable).
- Stag to hind ratio 1–40.

C.5 Deer breeding and finishing – 500 hinds – all calves finished on farm*Target 90 per cent weaning, 40 hind calves retained as replacements, 14 breeding stags*

Output	Total (£)
Sales finished stags for venison (225 @ avg 60 kg @ £5.00 per kg)	67,500.00
Sales finished hinds for venison (35 @ avg 45 kg @ £5.00 per kg)	7,875.00
Sales 150 hinds as breeding @ £350/hind	52,500.00
Sales cull hinds (40 @ avg 55 kg @ £3.80 per kg)	8,360.00
Sales cull stags (2 @ 85 kg @ £5.00 per kg)	646.00
Total output	136,881.00
Costs	Total (£)
Feed – hinds 500 (silage 10.5 ME/6 kg/hd/165 days), 990 kg/hd @ £26/t	12,870.00
Feed – hinds 500 (concentrate 0.5 kg/hd/90 days), 45 kg/hd @ £210/t	4,725.00
Feed – calves 450 (silage 10.5 ME/3.5 kg/hd/180 days) 630 kg @ £26/t plus concentrate (0.5 kg barley/soya/mineral mix) 90 kg @ £210/t	15,876.00
Feed – stags 14 at £30/hd	420.00
Vet and med (£5.00 per hind + £3 per calf)	3,730.00
Fence maintenance (£3.00 per head)	1,500.00
Transport/slaughter (£15 per head)	7,500.00
Total costs (ex labour)	46,621.00
Gross Margin	90,260.00

Notes:

- Farmed venison prices can vary and have been inserted above at max £5.00/kg dressed carcase weight (DCW).
- Selling a proportion of hinds as breeding stock substantially increases gross margin.
- Wintering on crop (turnips, Italian ryegrass, swedes, kale) as part of a re-grassing rotation may be a low cost option worth investigating.
- Increased silage quality could result in a reduced requirement for concentrate and significant savings in feed cost for calves.
- Concentrate costs included at £210/t although can be bought cheaper and home-made (barley, soya, mineral) mix could cost £160/t or less.
- Cull stags may have a sporting value (currently £600–800) well above venison price.
- Professional advisory/consultancy costs not shown.

C.6 Capital costs for 500 hind deer unit

	(£)
Fencing, year 1: (£8.50/m) total: 5000 m including raceways	42,500.00
Deer gates, year 1: 11 @ £270 per gate	2,970.00
Fencing years 2–6: 1 paddock per year, 7000 m including raceways	59,500.00
Deer gates, years 2–6: 9 @ £270 per gate	2,430.00
Deer wintering shed (see note below)	20,000.00
Deer handling unit: includes crush, weigh scale, outside yards	25,000.00
Breeding stock: Hinds (in calf) – 250 @ £350	87,500.00
6 breeding stags (year 2) 6 @ £2000	12,000.00
2 stags per annum (years 3–6) @ £4,000 per annum	16,000.00
Total capital cost	267,900.00

Notes:

- In wintered calves require an initial 1.0 m²/hd rising during the winter to average 1.5 m²/hd, so 450 calves would require average 675 m² of shed space. Existing sheds where available may need little modification to house deer, or consideration should be given to out-wintering calves in selected sheltered paddocks on crop.
- Breeding stags could be selected from own herd from year 4/5.
- Electric fencing can be used to subdivide finishing paddocks to allow rotational grazing/better pasture utilisation.
- Presume existing machinery will be available for use so additional machinery has not been included in capital costs.

D Further information

British Deer Farms and Parks Association:

<http://www.bdfpa.org>

Deer Farm and Park Demonstration Project:

<http://deerfarmdemoproject.scottish-venison.info>

Scottish Venison Partnership:

<http://www.scottish-venison.info>

Venison Advisory Service Ltd:

<http://www.venisonadvisory.co.uk>

The following reports are also recommended:

- *Scottish Venison: An Industry Review (2010) – Ashwood Management Services*
- *Increasing Scottish venison production: a proposal for pilot husbandry projects (2013) – Scottish Venison Partnership: J Fletcher, A Sneddon*
- *Farming for venison: investigating the barriers to deer farming in Scotland (2015) – University of Aberdeen, James Hutton Institute, Scottish Venison Partnership*
- *What's hot in health? Let's talk venison (2015) – Food & Health Innovation Service*

These are available from:

<http://deerfarmdemoproject.scottish-venison.info>



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