

Feeding hinds for maximum fawn growth

A cornerstone of profitable deer management

If hinds and fawns are fed well, especially during late lactation, fawns can consistently grow at more than 400 grams/day.

Achieving this growth rate is a key to profitable deer management. Well-grown weaners are more likely to achieve optimum weights for the peak value chilled venison season in spring. Female replacements will be well-placed to achieve maximum conception rates at their first mating.

This *Deer Fact* outlines feeding strategies to help produce heavier fawns, earlier in the season. It covers feeding during conception, pregnancy and lactation through to weaning.

Feeding and breeding for early conception

In autumn, in response to shortening hours of daylight, deer melatonin levels increase. This triggers ovarian development in hinds and semen production in stags. The precise timing is influenced by latitude, but by late March the roar and mating are normally underway.

It is possible through good nutrition and mating management to advance mating and conception to mid-March, 10 days to a fortnight earlier than usual.

When hinds fawn earlier they have more time to rear fawns that will reach target weights the following year. These fawns also get off to a good start before pastures lose quality in summer.

Key points

- Growing good fawns starts with decisions made the year before. Well-fed hinds, weaned by early March, will cycle and fawn earlier, giving next year's fawns a great start in life.
- Measure feed during pregnancy to make sure your hinds are being fed enough. Increase feed levels in the last trimester of pregnancy when the foetus is growing rapidly.
- Deer are programmed to make the most of summer growth and to grow rapidly while it's available.
- In summer-dry areas, or in droughts, provide lush high-protein forages or high quality supplements so that lactating hinds maintain condition and fawns achieve their growth potential.
- On most farms it is preferable to wean pre-rut, by the end of the first week of March. In a drought, wean as early as mid-February, so long as there is good feed available for the fawns. Fawns can then be given priority access to this feed.
- It is important to avoid weight-loss in hinds, including rising 2-yr olds, in the lead-up and during mating. Pre-rut weaning helps improve their condition before mating.



Photo: I & R Evans

Hinds and fawns grazing in late summer on a mixed chicory, red clover, white clover, plantain and grass sward at Ivor and Robyn Evans' farm in Takaka.

This was the second summer grazing for the season on the sward that was sown two years before. The blue flower is chicory, a deep-rooted nutritious herb that grows well in summer

Because the timing of conception is heritable it is also possible to select for deer that conceive earlier than the average.

Over time, there is the potential to advance mating dates into late February, with fawning in red deer beginning from ~20th October. Some farmers are actively selecting stags with this trait using Deer Select and the conception date breeding value (EBV CD).

Fawning in mid-October is unlikely to suit farms in colder country. But in warmer country where there is plenty of feed for hinds at this time, breeding for earlier conception offers useful gains.

Early conceiving hinds tend to have longer gestations. This partly cancels out the advantage of conceiving early. But for every 10 days earlier that a hind conceives, fawning is advanced by six to seven days.

Management tips for earlier conception

- Wean fawns in late February or the first week of March to divert feed from lactation to improving hind body condition scores.
- Earlier weaning in drought conditions is a must. Before doing this:
 - Familiarise the fawns with the supplementary feeds they will be weaned onto.
 - Complete ID tagging and any health treatments.
- Maintain good body condition scores (BCS 3.5 average) before and during mating.
- If practicable, join hinds with stags at pre-rut weaning (by 10 March at the latest).

Feeding during pregnancy

Measure the feed you have available before allocating it to your hinds. It is important to ensure they get enough for optimum lactation and birth date.

If hinds are in poor condition at fawning, and feed conditions are poor then this will be directly reflected in fawn weaning weight as well as hind condition. Having hinds in good condition before fawning is a good insurance policy, particularly on farms where the summer feed supply is unreliable.

The average red deer has a gestation length of 232 days (33 weeks), but this varies with feeding levels. Better-fed hinds have a shorter gestation length, while hinds on a restricted diet fawn a few days later. This ensures fawns are a viable weight at birth.

The bulk of foetal growth happens in the last third of gestation. How this demand is met depends on the district and the farming system. On farms where supplements can be fed, it is relatively easy to calculate feeding levels. With all-grass systems, this is more of a challenge.

Management tips

These recommendations are based on feeding 120 kg hinds on medium quality pasture (10 MJME/kg DM)

- Feed at least 2.5 kg DM/hd/day up to week 18 of pregnancy (from April to July)
- Feed 2.6 kg DM/hd/day of dry

Body Condition Scoring

It is hard to assess the condition of hinds by eye. Yet feeding to achieve target Body Condition Scores (BCS) is essential for profitable management.

It's easy to body condition score. Just run a cross-section of the mob into the yards and run your hand along the rump and spine.

BCS's are based on a five-point scale, with 5 representing very good condition (fat) and 1 representing very poor condition (emaciated).

As a rule-of-thumb, a unit change in BCS equates to 8-10 kg change in liveweight for adult hinds. For hinds in moderately good condition or better, BCS is a reflection of the amount of subcutaneous fat. However, for hinds of poor condition that carry very little fat, it also reflects loss of muscle mass. This is most obvious over the rump and hip bone, but also over the length of the spine.

Copies of a BCS wall chart are available from DINZ, Tel 04-473 4500, or view a www.deernz.org/BCS chart

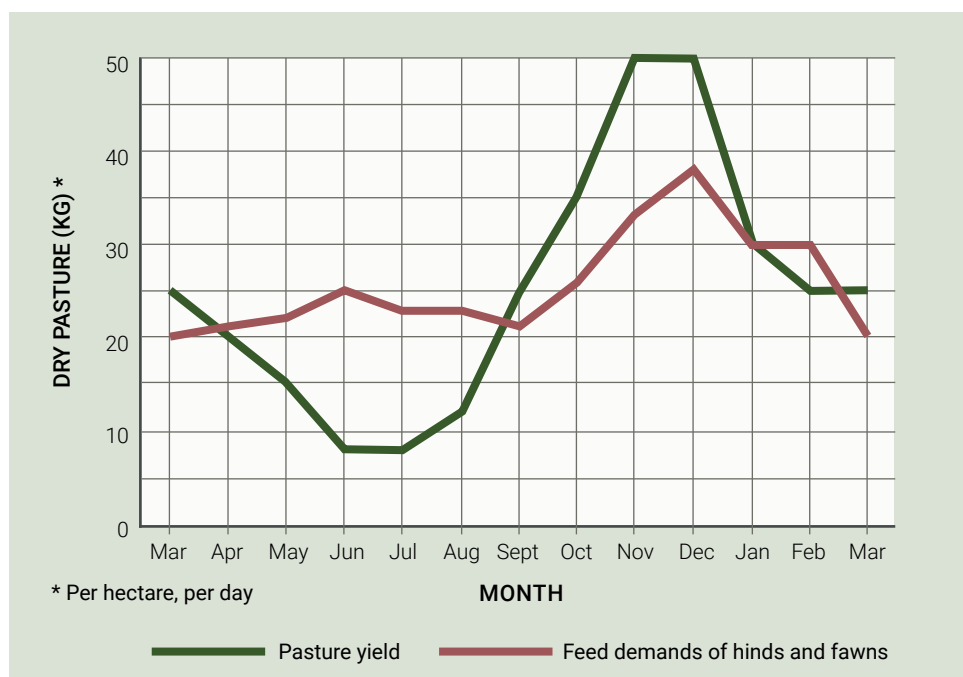
matter (DM) from week 18 to 30 (August to early October)

- Increase intake to 2.9 kg DM/hd/day from week 30 (October to November)
- The easiest way to measure pasture covers is to use a sward stick. The sticks convert the height of the pasture to dry matter cover, with a different scale for each season. Call Beef+Lamb on 0800 233 352 and ask for one free of charge.
- Every 6-8 weeks, body condition score a selection of the mob to check that diets are adequate.

In the run-up to fawning

Graze hinds on high-legume pasture with covers of at least 1800 kg DM/ha (about 8 cm high).

Depending on the location of the farm and the season, by



Body condition score during seasonal feed shortages

This ensures that supplements and/or crops are providing the correct nutrition. Both under and over-feeding can be expensive



Photo: Rachel Bryant

Irrigated mixed herb pasture ready to turbo-charge fawn growth

early October pasture growth should be surplus to hind demand. To keep the pasture green and leafy for longer, make baleage or introduce cattle with your hinds.

Some farmers prefer to remove the cattle before fawning as inquisitive cattle can disturb hiding fawns, leading to mis-mothering and death.

As grasses age their quality drops and as soil moisture falls, clover growth is reduced (or finishes in the case of annual clovers).

Sometimes there is a conflict between good nutrition (highly palatable digestible pasture with lots of green leaf) and providing hinds with very long pasture as cover for fawning.

Some options:

- On tractor country, mow the paddock for hay or baleage a couple of weeks before fawning, leaving strips of long grass for fawning cover.
- Place a few tree prunings in the paddock as potential fawn hides.
- Erect a temporary electric fence to create strips of longer pasture and lift the bottom 1-2 wires up the standard once fawning begins.

Feeding for maximum lactation

Deer evolved in far northern latitudes where pastures grow extremely rapidly in the short summer. Deer are programmed to make the most of this lush growth while it's available.

Liveweight gain in unweaned fawns can range from 220–700 grams/day in Jan/Feb. With good feeding, fawn growth rates of over 400 g/day are readily achievable.

Because deer are also programmed to have reduced appetites and slower growth in the winter, it's not possible to catch-up lost summer liveweight once pasture growth returns in the late autumn.

Lactating hinds need nearly twice the energy intake of non-lactating hinds. Between them, the hind and fawn need 45 – 70 MJME/day in order to maximise fawn growth rates and to maintain hind condition.

To achieve this, pastures need to be as green and leafy as possible, with high legume content. In New Zealand that can

Why summer feed quality is so important

Deer are wired to grow during the summer and early autumn. This is the time of the year when they are most efficient at converting feed into animal protein and when their appetites are the biggest.

Top quality feeds like clover, lucerne, plantain and chicory are highly digestible and have high energy and protein levels. Such feeds provide up to 13 megajoules of metabolisable energy for every kilo of dry matter (13 MJME/kg DM).

Because high quality feeds are processed quickly in the rumen, deer can eat greater volumes of them and get more energy from every kilo they eat. Deer therefore grow much faster than they would on poor quality feeds.

Deer grow slowly on low quality feeds like 'standing hay' in late summer because of a double whammy. These feeds take a very long time to digest and when they are digested, they provide low levels of metabolisable energy and protein.

Aim to feed lactating hinds the highest quality feed you can afford. For each 1 MJME/kg DM increase in feed quality, fawns grow about 50 g/d faster.

be a challenge, with peak lactation occurring six weeks after fawning, at a time when clover/ryegrass pastures are losing quality, especially in drier districts and in some seasons.

On dryland, or in areas where summer rainfall is not assured, alternative sources of quality feed are essential from mid-summer to autumn.

An adequate supply of clean water is also required. Hinds need up to 7 litres of water a day during peak lactation, and are unlikely to get this from their feed intake. (On concentrates allow for up to 10 litres a day.)

Hinds that are in good condition before fawning are able to milk off their backs in late lactation if feed conditions are poor. While weaning weights are unlikely to suffer markedly under these circumstances, hinds will lose condition.

If possible, hinds with a low BCS at weaning need to be given the opportunity to recover condition in time for mating so that next year's productivity is not compromised.

Management tips

- To ensure high feed intakes, provide high quality feed and covers of 1800 – 2200 kg DM/ha (5+ cm). High quality feed has 60% or more green leaf, of which at least 15% should be legume, plantain or chicory.
- If dryland pasture quality is low, grow specialist summer forages (e.g. clover, chicory, plantain, lucerne, summer brassicas) or provide irrigated pasture. On farms where this is not possible, or in droughts, supplement pasture with high quality baleage/silage and grain.
- If fawns have access to high quality feed in late lactation they will be encouraged to increase their feed intake (and growth rates) and develop rumen function. It will also help minimise setbacks at weaning.
- Hinds that produce high volumes of milk and large weaners usually lose condition. Do not allow their condition to fall below BCS 2.5.
- If covers are below 1800 kg DM/ha (5 cm) hinds will be likely to lose weight and be slower to conceive at mating.
- Introduce hinds and fawns to new feeds before weaning so that fawns will make the most of them after weaning.
- There is a useful web-based app for calculating feed allocations for hinds and weaners here: www.deerfeed.co.nz



Hamish Orbell

Clayton Station is a high altitude property with long winters and dry summers

Supplementary feeding of lactating hinds and fawns is a key to improved deer profitability

Weaning

Under most circumstances it is best to wean pre-rut, in late February or the first week of March. This gives hinds time to improve their body condition before mating and means fawns can be given priority access to quality feed.

Where high quality feed is not available or very limited, such as in a drought, weaning as early as mid-February will be better for both hinds and fawns. The hinds can then go onto silage and the weaners put on higher quality rations or moved off the property.

If you simply don't have any quality feed for the fawns, or can't move them off to someone who does, early weaning is not a good strategy as the impact on the fawn is too large.

Management tip

Target average weaning weights for stag fawns in early March are:

- NZ/English Red: 60 kg (56 kg females)
- Eastern European: 64 kg (57 kg females)
- Wapiti/Elk-cross: 68 kg (62 kg females)

See DINZ *Deer Fact*: Best practice weaning management

More >>

www.deernz.org/deerhub/feeding

Hind and weaner feeding app: www.deerfeed.co.nz

DINZ *Deer Fact*: Drought feeding and management

DINZ *Deer Fact*: Best practice weaning management

CASE STUDY

Hind feeding pays at Clayton Station

Better hind nutrition during lactation is being reflected in earlier conception and fawning dates on Clayton Station in the Mackenzie Country.

Clayton, a high altitude property with long winters and dry summers, was a DINZ South Canterbury Focus Farm from 2011 to 2014.

Under the ownership of the Orbell family, the productivity of the 4,102-hectare property has steadily increased, with recent marked improvements in the profitability of its deer operation.

Improving the quality and quantity of feed on offer during summer and autumn, to boost lactation and weaner performance, has been a key to improving deer productivity.

Owner Hamish Orbell says there is only limited ability at present to bring all the hinds down to the flats for intensive feeding before weaning, though this will change over time with increased fertility and oversowing. To supplement hind and fawn diets during the critical second half of lactation, Clayton has successfully trialled making barley available in its hill paddocks using Advantage Feeders.

Historically, feeding grain has not been practical because of the wide dispersal of hinds and fawns and the constant disruption and time involved in feeding out in the paddock. The Advantage Feeders allow a relatively large quantity of grain to be offered to hinds while restricting daily per-head allowances.

In the first year, the feeders enabled hinds to maintain their body weights and condition, which advanced the conception date by two weeks. This then allowed fawns an additional two weeks of growth before weaning, worth an extra \$14.20/head after all costs.

In the second year, Orbell had hoped to measure the extent of any improvement in growth rates in the weaners, but dealing with a severe drought took priority. "We couldn't have a control mob and besides, we were just too busy."

Interviewed in December 2015, he said another drought was looking likely, so measuring the direct benefits of grain feeding on fawn weights would again have to take the back seat.

"But there's no doubt the feeding is doing what it's meant to do. Some of the hinds were a bit shy of the feeders in the first year, but now they know what they're for, we are seeing the benefits – good conception rates and an earlier fawning."



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This *Deer Fact* was produced by Deer Industry New Zealand (DINZ) as part of the Passion2Profit (P2P) strategy. P2P is a Primary Growth Partnership joint venture between DINZ and the Ministry for Primary Industries.

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