

Best practice management of pregnant hinds

Don't let easy-care become neglect

Because breeding hinds appear to be resilient and easy-care, it is easy to neglect the key factors that determine productivity and profitability.

Good hind body condition and nutrition are the cornerstones of profitable breeding hind management.

It is much more profitable to run fewer hinds at a good body condition score (BCS) than to run more hinds with a poor BCS. This is because hinds in good condition (BCS 3.5 throughout pregnancy) will tend to fawn earlier. Their fawns will therefore be heavier at weaning because they will have had more time to grow.

In dry summers with restricted feed, hinds that are in good condition going into lactation are also able to 'milk off their backs', buffering their fawns from the worst effects of the drought.

Pregnancy scanning

Pregnancy scanning and foetal aging are powerful tools.

Dry hinds can be identified and culled (saving on winter feed). Dry rising 2-year old (R2) hinds can be retained for sale for venison at the peak of the spring chilled season.

Foetal ageing tells you when fawning is likely to start,

Key points

- Hind body condition and nutrition are the cornerstones of profitable breeding hind management.
- Feed to keep hind body condition score (BCS) at an average of 3.5 (range of 2.5-4.5) throughout pregnancy.
- The information provided by BCS, pregnancy scans and foetal ageing helps maximise breeding hind profitability.
- Plan winter feeding well in advance to reduce the risk of winter feed cost blow-outs or hungry deer.
- After the rut, there are two short 6-week windows when BCS can be improved – immediately after the rut and from September to mid-October.
- Move gradually from one diet to another (say, from root crops to pasture and vice-versa) over 7-10 days.
- Two to three weeks before fawning begins, set-stock hinds on pasture with a minimum height of 8 cm.



Photo credit: Photo: Kerry Walker

Feed to keep the average hind at a year-round body condition score (BCS) of 2.5-4.5.

its duration and the mean fawning date. Hinds can be drafted into early and late fawning mobs and managed accordingly.

If you are wanting to advance fawning dates, use foetal ageing to help prioritise hinds for retention or culling depending on when they become pregnant.

Nutrition

Nutrition of the pregnant hind is key. Hinds have the ability to achieve viable birth weights by:

1. Holding onto the foetus (longer gestation period) if feed is restricted or their body BCS is low
2. Fawning earlier (shorter gestation period) if they are in good body condition and plenty of quality feed is available.

This unique feature of breeding hinds can be used to advance fawning dates by up to 14 days. The earlier the fawning date, the higher the profitability of any deer farming system.

Early to mid-pregnancy

In the first half of pregnancy (April to July), hinds require little more than maintenance feeding. But remember that maintenance feed requirements are higher in cold, wet weather; on steep country; and when animals are stressed or facing immune system challenge.

Crude protein (CP) should make up at least 12% of diet dry matter (DM).

Metabolisable energy (ME) levels should be more than 9 MJ/kg DM – preferably 10 - 10.5. Below 9 MJME, hinds won't be able eat enough to meet their energy requirements.

Hinds fed at less than maintenance lose weight, become stressed and are more likely to be affected by parasites and disease. But until the end of July they can mostly buffer the foetus.

Late-pregnancy

From the start of the second half of pregnancy, hind nutrition needs to increase markedly.

In the first week in August and each month thereafter, increase rations (see Table 1 for details).

Lift CP levels to 14-16% of DM (16-18% if silage is >50% of the diet). Lift metabolisable energy (ME) levels to at least 10 MJ/kg DM.

Table 1
Pregnant hind energy and dry matter requirements – (120 kg MA red hind)

	Jun/Jul	Aug	Sept	Oct
Energy requirements (MJME/day)	24.7	25.9	27.0	29.3
Dry matter requirements (kg) ¹				
Low quality pasture (9 MJME/kgDM)	2.7	2.9	3.0	3.3
Medium quality pasture (10 MJME/kgDM)	2.5	2.6	2.7	2.9
High quality pasture (11 MJME/kgDM)	2.2	2.4	2.5	2.7

Source: David Stevens, AgResearch

¹ The DM calculation assumes there is adequate protein in the pasture

To calculate a feed budget for your farm/situation, see: www.deernz.org/feed-calculators

Trace elements

Trace elements in very small amounts are essential for health, reproduction and growth in all animals. Copper is the trace element that is most commonly deficient in deer. Cobalt, iodine and selenium deficiencies can occur in some regions.

Because of the importance of trace elements, discuss them with your veterinarian when you draft/update your animal health plan.

See: www.deernz.org/trace-elements

Foetal loss (abortions)

Recent research has shown that in most herds the abortion (foetal loss) rate is less than 1%. But on some farms losses can be >5%, particularly in first fawning (R2) hinds.

No single cause for these losses has been identified, though toxoplasmosis has been tentatively implicated on some farms.

If you suspect foetal wastage is reducing fawning rates on your farm, this can be confirmed or otherwise by pregnancy scanning in both early and late pregnancy. If this confirms that losses are occurring, ask your vet to try and identify possible causes. Routine vaccination of hinds against some abortion causing diseases, such as toxoplasmosis and leptospirosis may be advised.

Body condition scores

Maintain hinds throughout pregnancy at an average BCS of 3.5 (range 2.5-4.5 for individual animals).

This is much more profitable than running a greater number of low-BCS hinds. The impact of BCS on gross margins is shown in Table 2.

On average it takes 45-60 days of optimum feeding for hinds to gain 1 BCS. For most hinds this amounts to about 10 kg live-weight change. The feed cost of doing this is 2-3 times that of maintaining an optimum BCS of 3.5.

For this reason it is normally economic to buy in feed to maintain hind condition when pasture is short. The costs of the extra feed will be greatly outweighed by the extra income from having heavier weaners in autumn.

Hinds will not increase their BCS more than 0.2 units when on winter crops or silage. Even on high quality pasture in mid-winter most hinds gain little weight.

Regardless of feeding level, hinds will not gain BCS in the last month of pregnancy.

The best time to get hinds to put on condition is before or during the rut, as it will increase conception rates and advance conception date.

If you practice early pre-rut weaning (late Feb-early March), there is time to increase BCS by 0.5 by feeding high quality energy supplements in the 2-3 weeks before mating. This is highly cost-effective, resulting in higher conception rates and an earlier fawning, especially with hinds that have lost condition over lactation.

Failing that, the best opportunities for boosting BCS before fawning are immediately after the rut (May and early June), or in early spring (September and early October).

See: www.deernz.org/BCSchart

Management tips

- BCS hinds if you pre-rut wean early (in late Feb-early March), then again when the stag is removed in late April/early May and around the end of August. These are the times when you can take corrective action if it's needed.



Photo: Simone Hoskin

Hinds in good condition in winter on saved pasture

It's more profitable to run fewer hinds in good condition than a greater number of hinds in poor condition

- Cull or check the health of hinds with a BCS of 2 or below. Seek veterinary advice.
- Consider separating the hind herd into different BCS mobs. You can then preferentially feed those with a BCS of 2-2.5 without wasting feed on hinds that are already in good condition.
- For preferential feeding you need quality pasture, or facilities for getting high utilisation of supplements (such as Advantage Feeders).
- A BCS of 4.5 is the upper limit. Hinds with a BCS of 4.5 or more are at risk of dystocia, especially if unfit on easy country.

Feed and feeding options for pregnant hinds

Draft a feed budget in autumn, assuming the worst of winters. Be prepared to adjust your plan as winter progresses.

Calculate stock requirements, the quantity and quality of the feed already available on the farm and the costs and practicality of bought-in winter feed options. Measure your forage crop yields.

Get your silage/baleage/hay tested. The cost of a test is very small when compared with the costs arising from under-feeding your hinds. See www.deernz.org/feed-test

Root crops, or high energy supplements such as grain are often fed as supplements during winter. Such a diet can be low in protein, calcium and other minerals and should be balanced with quality silage/baleage, high-legume hay (lucerne/red clover/peas) or breaks of quality autumn saved pasture.

Hinds 'go off' fodder crops or self-fed pit silage after

Table 2

An example of the effect of BCS on breeding hind productivity and gross margins

BCS	2	2.5	3
MA hinds	857	845	819
R2 hinds	275	217	191
Total hinds	1,132	1,062	1,000
Days to weaning ¹	104	111	118
Weaning weight	49.9	53.1	56.1
Weaners for sale	598	666	691
Hinds sold	255	196	159
	\$110,000	\$127,380	\$138,580

Source: David Stevens, AgResearch

¹ Hinds in good condition fawn earlier, giving their fawns more time to grow before weaning

about 60 days. To keep feed intakes up, after 45 days start transitioning them back to pasture or add other supplements to their diet.

Managing dietary transitions

It takes 2-3 weeks for deer to fully adapt to diet change.

When introducing hinds to winter crops, pit silage or other supplements, gradually reduce their access to pasture over 7-10 days. In spring, reverse the process, using temporary electric fencing to ration pasture until they have adjusted to their new diet.

The pregnancy cycle and gestation length

In the autumn, about 3-4 weeks after conception, the fawn embryo implants in the uterus of its mother. Like other mammals, the fawn's main anatomical features develop early on, with the bulk of body growth occurring in the last third of gestation.

Gestation length, the interval between conception and birth, averages 233-234 days in red deer and 250 days in wapiti. As the genotype of the foetus influences gestation length, red deer hinds carrying crossbred foetuses generally fawn after 240-245 days.

That said, averages can be deceptive. Gestation length is highly variable in red deer – ranging from 218 to 248 days for hinds carrying red deer foetuses.

Recent research has shown the length of gestation is strongly influenced by the nutrition of the hind in the last third of pregnancy. When hinds face a modest feed restriction in spring, foetal growth rates can slow, resulting in a longer gestation. This ensures the fawn is born at a normal birth weight (8-10 kg).

Further studies have also shown that early conceiving hinds tend to have longer gestations, partly (but not completely) mitigating the birth date advantage from conceiving early.

However, it is still beneficial to advance conceptions since for every 10 days earlier that a hind conceives, fawning will be 6-7 days earlier.

Estimating Deer Gestation Length			
Mating date	Estimated birth date		
	Red deer 233 days +/- 3 days	Elk red crossbreds 239 days +/- 4 days	Elk/wapiti 250 days +/- 6 days
1 Mar	12 Oct	18 Oct	29 Oct
7 Mar	19 Oct	25 Oct	5 Nov
13 Mar	26 Oct	1 Nov	12 Nov
19 Mar	2 Nov	8 Nov	19 Nov
25 Mar	9 Nov	15 Nov	26 Nov
31 Mar	16 Nov	22 Nov	3 Dec
6 Apr	23 Nov	29 Nov	10 Dec
12 Apr	30 Nov	6 Dec	17 Dec
18 Apr	7 Dec	13 Dec	24 Dec
24 Apr	14 Dec	20 Dec	31 Dec
30 Apr	21 Dec	27 Dec	7 Jan
6 May	28 Dec	3 Jan	14 Jan
12 May	4 Jan	10 Jan	21 Jan
18 May	11 Jan	17 Jan	28 Jan
24 May	18 Jan	24 Jan	4 Feb
30 May	25 Jan	31 Jan	11 Feb

NB: ¹ Hinds with a high BCS (3.5-4.5) at fawning may have a gestation that is 3-7 days shorter

² Elk and crossbred bulls/stags sires are usually ready to mate somewhat earlier than reds

Hind behaviour & welfare

To reduce competition and bullying, keep R2, R3 and mixed age hinds in separate mobs.

Regularly check mobs on self-fed silage for bullying. Remove offenders.

When hind BCS falls below 2 it becomes an animal welfare issue. Seek veterinary advice.

Do not transport pregnant hinds within 21 days before giving birth or after 1 October without a veterinary certificate (Deer Code of Welfare).

Set stocking for fawning

Set stock hinds 2-3 weeks before the start of fawning. The industry average start date is 7 November, but this can vary by up to 14 days either way. For accuracy, use foetal ageing.

Hinds prefer to fawn at least 100 m away from other deer. To enable this, set stock at 5-7 hinds/ha.

If you expect the fawning period to be condensed (e.g. as a result of an AI programme), hind densities need to be lower, say 3-4 hinds/ha.

Check that fences on fawning paddocks are secure, especially on intensive farms. Misadventure – the loss of

fawns looking for a hiding place – is a major cause of fawn mortality on some farms.

Pasture covers should be a minimum of 1800 kg DM/ha (8 cm) if there is plenty of natural cover in which fawns can hide. If there is limited natural cover, covers should be a minimum of 2000 kg DM/ha (10 cm).

After fawning, use cattle to manage pasture quality in fawning paddocks and/or have high quality forage next door for hinds to move to once they have fawned.

More >>

www.deernz.org/nutrition

DINZ Deer Fact: Feeding hinds for maximum fawn growth

DINZ Deer Fact: Drought feeding and management

DINZ Deer Fact: Best practice weaning management

DINZ Deer Fact: Transporting deer within New Zealand

To calculate growth targets and venison income from different finishing options: www.deernz.org/deer-growth-curves



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