

Drought feeding and management

Plan and act early

Droughts are now predicted many months in advance by weather forecasters like NIWA. This is in part due to their better understanding of the El Niño and La Niña weather patterns.

When these predictions are made, it is important to plan a drought response for feed and animal management well ahead. Farmers who have done this have shown it is possible to meet production targets for velvet and venison, as well as mating weights for hinds, despite severe drought.

- Make as much baleage/silage as possible in the spring as drought insurance.
- Consider planting a summer forage crop.
- Make decisions early and do so in progressive bites.
- Write down what you are doing, when, and why you are doing it. This information will be valuable for managing future events.
- Limit the impact of the drought on stock to the current season. Feed breeding stock to a level that will ensure a good fawning the following season and young stock so they reach slaughter and mating weights on time.
- Limit the impact of the drought on pastures to the current season. Manage paddocks that are likely to survive the drought 'gently'. Use the paddocks that won't survive the drought as feeding platforms and have a plan for resowing them once the drought breaks.
- If budget allows, consider off-farm grazing as an option for young capital stock.

When is drought more likely?

Weather patterns are highly variable and droughts can occur in any year. But they are more likely to occur, depending on whether an El Niño or La Niña is in progress. See www.niwa.co.nz

East coast droughts are more common during El Niño, but

Key points

- Droughts are the last thing a deer farmer needs. But by careful attention to deer nutrition, farmers have shown it is possible to meet production targets, despite drought conditions.
- In recent years, long-range weather forecasts have become more accurate. This makes it possible to plan for drought with reasonable confidence.
- Aim to minimise the cost of drought and to limit its impact on stock and pastures to one season.
- When drought is predicted, develop a response plan. Then, when drought sets in, make decisions early and in progressive bites as the situation unfolds.
- Decisions are likely to include:
 - Buying in extra feed early to minimise cost
 - Identifying and managing buffer stock classes that will be prioritised for progressive culling
 - Identifying paddocks that will survive and those that will be sacrificed
 - Preparing for early weaning. This is the most effective drought management action for lactating hinds.
- Longer-term, consider ways to drought-proof your farm.
- Drought is stressful. Keep in contact with other deer farmers and listen to what they are doing, take time to relax off the farm and keep making decisions (be positive).

How much to feed when there is no pasture?

The DM content of baleage and silage may range from 20-35%. This makes it difficult to accurately calculate how much to feed deer (or other livestock) on bare paddocks in a severe drought.

FEEDING DEER IN SEVERE DROUGHT ON BARE GROUND IN JANUARY

Approximate daily rations for 100 animals

	HAY (kg)	plus	GRAIN (kg)
Hinds + fawns	380	+	120
Yearlings	190	+	65
Stags	230	+	95

Baleage/silage: To replace the hay in this example with baleage/silage: hinds & fawns, 1300 kg; yearlings, 650 kg; and stags, 800 kg.

The table (left) is a starting point only. Check to see the diets are adequate by regularly weighing or body condition scoring a selection of each mob.

You may also like to use the web-based Hind and weaner feeding app at www.deerfeed.co.nz

Beware: some dominant animals will gorge rations. Spread the feed out so that all animals get a fair go or use proprietary self-feeders. If you see excessive bullying – often reflected in hair loss, constant disturbance and the loss of BCS and weight – remove affected animals to a distress mob and manage them separately.

Assumptions:

1. Hay is 8.5 MJME/kg DM; grain 12.5 MJME/kg DM and baleage/silage is 25% DM.
2. Hay and grain are 85% DM.
3. Rations are set at 80% of full production.

NB: Regularly weigh or body condition score a selection of each mob to ensure diets are adequate.

they can also happen in non-El Niño years (for example, the severe 1988–89 drought). Nor do they occur in every El Niño. But when forecasters issue drought warnings based on these events, take them seriously – the odds are on their side.

During El Niño, there tends to be stronger or more frequent winds from the west in summer, typically leading to drought on the east coast and more rain in the west. In winter, southerlies bring colder conditions to both the land and the surrounding ocean. In spring and autumn, south westerlies are more common.

La Niña tends to bring moist, rainy north easterlies to the northeast of the North Island and reduced rainfall to the south and southwest of the South Island. Therefore, some areas, such as Central Otago and South Canterbury, can experience drought in both El Niño and La Niña. Warmer than normal temperatures typically occur over much of the country during La Niña.

Animal management

If a drought is underway:

- Ensure all stock have a good supply of clean drinking water at all times.
- Sell non-capital stock, such as early lambs and store cattle.
- If drought has set-in by spring, send all finishing deer to the processor in November regardless of whether they have reached target weights. Once the chilled season is

over you can't feed deer fast enough to keep up with the weekly schedule price drops – you are effectively feeding them for nothing.

- Check velvetting stag records for early culling. Do you need so many yearling stag replacements?
- Cull some of the poorer breeding hinds and some of the poorer yearling hinds.
- Wean all deer earlier than usual (in mid-February). This will reduce feed demand by 12-20% and enable you to give weaners (who are most sensitive to feed quality) and young stock priority access to high quality feed. Weaners are dependent on their mothers until late January so do not wean before mid-February.
- Before weaning, feed out silage and grain to hinds and fawns. This will support lactation and hind condition and get fawns used to this form of feeding.
- To ensure good conception and fawning rates, mature and maiden hinds must be at least maintaining condition leading up to and during mating.

Early weaning (mid-February)

It is tempting to delay weaning to maximise weaning weight. But this can seriously compromise next year's production. Wean early if there is quality feed available for fawns, so hinds do not compete with them for this feed.

Hinds cannot meet their feed demand on covers of less

CASE STUDY

De-stock and store-up for drought

Flying over his region in December 2015, Canterbury deer farming veteran Don Hudson was pretty shocked to see how dry the area was.

"We are dry six weeks earlier than usual," he said, with no moisture reserve in the ground. At the time of speaking, it was 33°C and the drying norwester was blowing again.

In mid-2013, Hudson and wife Kathy, owners of Ardleigh Farming, bought the 540 hectare Weirton Farm in Geraldine: 20% of which is flat pasture, the rest hill country. The move was prompted by a decision to move away from dairy at Mt Somers to concentrate on their deer operation, plus bulls for dairy.

In December 2015 they were running 1,500 mainly velvetting stags, with 80 brought forward for trophy; 600 fawning hinds, 300 yearling stags, 150 yearling hinds, 150 ewes and 130 dairy bulls.

Hudson's drought strategy started three months before, when just 40 bulls were bought as replacements, compared to the previous year's 230. While replacement yearlings would be carried through, 90% of the finishing weaners went off for slaughter by the end of November. Just 12 were left on the farm, making valuable pasture available for the hinds to graze.

The hinds were fawning on the now vacated pastures and Hudson would soon open the gates to the next paddocks to double their available space.

Supplementary feed was another part of the plan, with 450 tonnes of palm kernel expeller (PKE) already contracted, with more to be bought in as needed. The hinds and fawns were being fed with that every three or four days. The farm also had a \$140,000 reserve of maize silage.



Hinds and fawns in early December on Weirton Farm, Geraldine
Like other stock on the Hudsons' farm, they will thrive regardless of what the summer brings, because of good drought planning

"Our strategy in the good years, which not everyone agrees with, is to spend the money and build up a silage reserve so we have twice our requirement for an average year. Some think it is expensive, but it does pay off in a drought," he said.

More winter fodder crops had been planted too. Eight ha of rape the previous year had tripled to 24 ha and 70 ha of fodder beet had been sown, a 15% increase in area. The feed cycle would start at the end of May.

Early March would see weaning start, as usual. The fawns will receive supplementary feed along with the hinds, the majority of which will be artificially inseminated later that month.

Hudson is happy that his strategy of "farming within available means" is paying off. "The stock are in excellent condition, we've had a very good fawning and the stags are good too," he said.

than 1200 kg DM/ha (3 cm long). On covers of 900 kg DM/ha (2 cm long), hinds will lose up to 300 grams/day, or about 1 body condition score (BCS) unit a month. They will also wean much lighter fawns.

AgResearch figures show that a loss of 1 BCS may next year result in an increase of 5-10% in the number of dries, a 7-10 day delay in fawning and 5-6 kg lower weaning weights.

Destocking

On deer farms it is particularly important to make destocking decisions early. On welfare and legal grounds pregnant hinds must not be trucked within 3 weeks before fawning and it is industry best practice not to truck pregnant hinds after 1 October. In cases of extreme hardship, ask your vet for advice and an exemption certificate.

It is not advisable to transport hinds with fawns at foot but, if there is no choice, draft them into separate pens for the journey.

In the future, consider having flexible stock classes such as store lambs and cattle making up 25% or more of the stock units on your farm. This will enable you to de-stock easily in the event of a severe or prolonged drought. It also means you won't have the heartbreak of having to sell or slaughter prized breeding stock.

Feed supplements

If drought looks likely, buy in extra feed early. But first do a cost/benefit analysis of the various options.

Multiply the metabolisable energy (ME) value of the feed by its DM (dry matter) percentage so you can compare like with like. Depending on relative values it might pay to sell some of your baleage and buy in grain or PKE (palm kernel expeller).

But don't sell it all! Grain should not exceed 60% of an animal's metabolisable energy requirements.

High energy supplements such as PKE and grain are often more cost effective than baleage or hay. Wastage is minimal when fed from purpose-build feeders.

PKE has been very successfully used as a supplement for deer. But because prices are sensitive to demand, purchase it early and preferably on contract. There is also some market sensitivity to the use of PKE – so check with your venison marketer before buying and feeding PKE.

Introduce grain or PKE gradually to the diet (starting at 25-50 grams a day) to give time for the rumen to adjust and to prevent acidosis. To prevent bossing and overloading by dominant animals, make sure all animals have good access to the supplement.

Breeding hinds may need high protein supplements – such as nuts, peas, linseed, soya meal etc – in the lead-up to mating. These feeds are likely to be in high demand, so should be ordered or purchased well in advance.

Feed to prevent weight loss. Much less feed is needed to maintain weight than to regain it once it has been lost.

If you are having difficulty obtaining feed or off-site grazing, contact Federated Farmers or DINZ. They may be able to find a farmer who can help you.

Pasture management

Early in the growing season think about putting your paddocks into three categories:

1. Those that will survive a drought
2. Those that are possible survivors
3. Those that will not survive

Don't graze category 1 paddocks out. Grasses store the energy they need for recovery above ground. Even if the pasture is brown, having 3-4 cm of length is better than 1

CASE STUDY

Maintaining hind liveweight the key at Goudies

Ken Burt manages Landcorp's Goudies Station in Reporoa in the Bay of Plenty with a team of seven. The 2000 hectare farm runs 1250 wapiti and red hinds and 1180 fawns on about 700 ha of deer-fenced land, alongside sheep – predominantly rams – and cattle.

Following an arid 2013 and 2014, Goudies was again dry and cooler through the winter/spring of 2015. In late-November 2015 Burt said pasture covers were not in a good way. With a big dry predicted, it was not a good situation to be in.

After retaining 200 weaners as hind replacements, 80% of the weaners had gone early for slaughter at an average 60 kg/cw by the end of October and the remainder were to be gone by early December.

His focus was on maintaining hind liveweight. "It's critical for them to be in good condition for mating and fawning," said Burt. "Not only does it ensure a good base for next year's production; it also gives us the opportunity to do the best with the weaners."

Burt's plan was to have all the fawns weaned at the end of February, so they were not competing with their mothers for feed, although if it looked drier than expected he would bring weaning forward to earlier in the month. Lucerne silage, grown on the station, was on the menu if required as a feed supplement. That was to be introduced in early February to the hinds with fawns at foot to get the youngsters used to eating it.

"In early February, we'll identify areas with good pasture cover where we will wean fawns."

He was keeping a close eye on body condition scores and monitoring feed levels in the paddocks.

For the time being, he was happy that the stock were in good condition and that there was good cover on the flats. This was where the hinds would be grazed in December after fawning. Staff would rotate them on pastures with good cover in December/January to maximise fawn growth while they're with mum.

Burt was hoping the moisture would come in the autumn but, if it came to it, he would then be reducing sheep and cattle numbers. "It'll be a whole farm approach at that stage."

Goudies Station manager Ken Burt when the grass was greener
Getting all the finishers away by the end of October not only assures best returns, it also releases the best tucker for hinds and fawns



cm. The extra length will help power regrowth when the drought breaks.

Category 3 paddocks can be used as sacrifice areas for feeding out drought rations. The fate of category 2 paddocks will depend on the severity of the drought and how long it lasts.

When the drought breaks

After it rains, continue to feed supplements. This will give pastures time to recover and build winter feed reserves.

It is tempting to graze recovering pastures in the autumn as soon as some growth appears. Don't! If you graze pastures below 1000 kg DM/ha you will reduce their growth by up to 25%. This could be as much as 25 kg DM/ha/day or 750 kg of pasture/ha/month.

Have a plan for re-sowing category 2 & 3 paddocks so that total farm productivity recovers as soon as possible. Under-sowing or direct drilling with winter cereals or annual ryegrass may be a good way to build a bank of quality winter/early spring feed.

To boost pasture recovery, consider applying urea to category 1 paddocks.

Beware: as grass growth recovers in warm damp conditions, a parasite control plan will be needed for young deer in response to growing populations of larvae on pasture. Ask your vet about the latest parasite control options and check out the Internal parasites *Deer Fact*.

Supplementary crops

Fodder crops are a useful form of drought insurance which, if they are not needed in summer, can be fed in late autumn and into winter.

Deer do well on forage brassicas and fodder beet, but to give their digestive systems time to adjust they need to be introduced to them gradually. With forage brassicas, introduce them over 7-10 days. With fodder beet, 14-21 days.

Because fodder crops are low in fibre and protein, provide them with about 1 kg/head/day of quality baleage or lucerne supplement.

Forage brassicas like swedes, turnips and kale can be sown in late November and early December but advice should be sought in relation to local conditions and paddock location on the farm.

Kale is a high yielding crop that can be break-fed behind electric wires. The shorter, leafy cultivars like marrow-stem kale are best for deer.

Fodder beet, which is related to sugar beet and beetroot rather than brassicas, is being increasingly grown for deer feed. It needs to be sown by late November.

Longer-term

Climate models have projected that under global warming, drought conditions will extend northwards to cover the entire east coast of New Zealand and droughts that were 1 in 20-year events could soon become 1 in 5-year events.

Some farmers believe this is happening already and are

drought-proofing their farm. Some of the strategies they are using, such as planting part of the farm in drought-tolerant, nutritious, summer growing species like lucerne, chicory and plantain, can be profitable even in normal years by enabling greater growth rates in fawns and weaners.

Lucerne is very high in protein and is superb in a drought. One study showed a 25% net return on the capital investment in establishing a crop.

Fodder trees

There are rough corners and slip-prone slopes on many farms that are good places to grow fodder trees. Japanese fodder willow, Matsudana willow and Lombardy poplars are easy to establish and grow fast. They can be direct grazed by deer or cut and carried to the animals. Either way, they are excellent drought feed.

Management systems

Consider adapting your farming system so that you have more options. For example, maintaining only 75 percent capital stock will make destocking decisions easier in a drought.

Look after yourself

Droughts are extremely stressful because of the toll they take on animals, pastures and finances. This can be particularly hard on farmers because we usually work alone and because many of us were brought up to be staunch and to keep our worries to ourselves.

Fortunately, attitudes are changing and if you are finding it hard to cope, there are now some excellent resources and advice available. Some tips:

- Network with other deer farmers
- Share your worries with them or a friend
- Eat well, go easy on alcohol, get enough sleep
- Get exercise off the farm by playing sport, biking, swimming, tennis, tramping, hunting etc
- Have fun and laughter with family and friends
- Talk to your doctor if stress-related issues are not going away

Talk to your local Rural Support Trust, Freephone 0800 787 254. They can put you in contact with personal and business advisers, and can negotiate with your bank if you are in financial difficulty.

The Beef+Lamb Dry Toolkit (link below) has some excellent advice on managing stress.

More >>

Deer feed requirements: deernz.org/feeding

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

Managing drought on deer farms: www.deerfarming.co.nz

MPI, Dealing with Drought Conditions: bit.ly/MPI-Drought

Beef+Lamb Extreme Dry Toolkit: bit.ly/Beef-LambDry



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