

Each of the station's seven dams holds about 20,000 cubic metres. Photos: Sarah Rowland

LEGUME POWERS PRODUCTION

Lucerne is underpinning a significant change in a South Canterbury station's pasture curve and farm system. **Sandra Taylor** explains.

Early in November the feed supply on Caberfeidh Station in South Canterbury's Hakataramea Valley would be best described as an embarrassment of riches.

The second half of spring has been exceptional in the valley, which is better known for being particularly summer dry with unreliable autumns. While this year has been an aberration, the management team on the Lone Star-owned farm is putting strategies in place to replicate this season in terms of feed supply, irrespective of the climate.

Lucerne and lucerne mixes are underpinning what has been a significant change in Caberfeidh's pasture curve and farm system.

Farm manager Andrew Harding says the biggest risk to the farm used to be feed deficits; now the challenge is dealing with feed surpluses.

Aaron Meikle from Beef + Lamb New Zealand pointed out that by using lucerne, Caberfeidh had turned the problem of having too many mouths around to not having enough which was, of course, a better problem to have.

At a Beef + Lamb Central South

Island Farmer Council field day, Lone Star general manager Boyd MacDonald explained how they developed a five-year strategy for the station by reviewing production and looking at where they believed they could take the property.

They also undertook a SWOT (strength, weaknesses, opportunities and threats) analysis and it became evident they had the potential to significantly increase production without any extra irrigation (400ha is already under irrigation).

"In this environment ryegrass is a poor cousin."

Growing an extra 3 million tonnes DM/year would allow Lone Star to run an extra 6000-6500su and a 1% increase in pasture utilisation would add an extra \$50,000 to the bottom line.

The extra feed will come from pure stands and lucerne-based pasture mixes which, according to Professor Derrick Moot from Lincoln University, will produce an average of 40% more drymatter than ryegrass pastures in any

dryland environment.

The improved utilisation will be a result of Lone Star's \$500,000 investment in fencing and stock water.

In line with improved pasture production and utilisation is improved stock production and MacDonald says a 15% gain in lambing percentage would add \$600,000 to Lone Star's balance sheet.

Caberfeidh covers 6000ha with 5300ha effective. It has excellent balance with most of the land in valley flats and easy country, while the steeper hill blocks act as a safety valve for capital stock over summer.

In the summer the soil temperatures can reach 20 degrees and ryegrass and white clover pastures simply shut down, hence the move to more heat-tolerant forage species such as lucerne, fescue and cocksfoot.

In the past two years 200ha has been sown in lucerne, bringing the total area in lucerne and lucerne mixes (fescue and cocksfoot) on the station to 751ha. By 2015, Lone Star intends having 2508ha in what is often referred to as the "King of Forages".

MacDonald acknowledged that with

so much of the farm planted in lucerne, Caberfeidh is at risk should a disease affect the crop in the way root nematode did in the 1970s. He says the pay-back period for a lucerne stand is two years and the risk, which he believes to be low to medium, is well and truly outweighed by the benefits.

One of the weaknesses of Caberfeidh is dry autumns and this is where lucerne plays its part. Harding says lucerne has shortened winter by a month at either end as it can be grazed in autumn and starts growing again in August.

Last August the traditional ryegrass and white clover pastures on the farm were producing 7kg DM/ha/day while the lucerne-fescue pastures were growing at 41kg DM/ha/day.

"In this environment ryegrass is a poor cousin."

The number of early lambing ewes will be increased again next year.

Harding says they strive to get the lambs from the later lambing ewes tailed and the lambing mobs boxed up and on to the lucerne as quickly as possible to make use of the available feed. The ewes and lambs on the pure stands are stocked at 33su/ha while those on the lucerne-fescue mixes are stocked at 27su/ha.

He adds that one of the advantages of lucerne is that it can be sold standing. This year dairy farmers are buying it with several paddocks already sold.

Harding admits staff were initially nervous about grazing lucerne, but have found it has reduced their workload because the breaks have to be moved only every five days.



In August the straight lucerne stands were producing 20kg DM/ha/day, in September cooler temperatures slowed growth to 10kg DM/ha/day, but in October some stands were producing 90kg DM/ha/day.

Moot explains that unlike ryegrasses, where growth is dictated by soil temperatures, lucerne is driven by air temperature, hence the growth rates in August when soils may still be cold but the air temperature is higher.

This early drymatter production has necessitated a change in the lambing date on Caberfeidh; this year 500 ewes lambed two weeks early to utilise the feed. Harding says they had been waiting too long to get ewes and lambs on to lucerne with their September 10 lambing date, hence bringing some ewes forward.

Moot cautions about the danger of forcing lambs to eat the stalk of the lucerne plant, which contains little feed value. It can result in lambs gorging on subsequent breaks and suffering health problems.

"These are not animal health issues, these are grazing management issues."

Harding says Caberfeidh does lose a few lambs to redgut every year, but these losses are more than offset by the extra weight lucerne puts on their lamb crop.

Adding fibre to the diet will reduce the risk of redgut. This can be done by offering hay as a supplement, grazing on

and off the stand, or slowing the rotation.

Harding says they always have salt available to stock grazing lucerne as the plant has poor ability to transfer sodium to the above-ground part of the plant.

Team plans ahead

In establishing pure stands and lucerne mixes, Caberfeidh Station's management team plans well ahead to earmark which paddocks to use.

Ryecorn is then used as a development crop.

Dryland agronomist Julie Kearney says lucerne needs a pH of 5.8-6 and as it takes time to shift pH levels, it is important to plan ahead.

The management team on Caberfeidh applies a total of 5t/ha of lime to earmarked paddocks in the two years before establishment. In autumn the paddocks are sprayed out with metsulfuron and glyphosate as this is a more effective time to kill root mass and conserve moisture. One month later ryecorn is direct-drilled.

The following autumn the paddock is sprayed again, left in winter fallow and

sprayed once more before the lucerne is drilled in spring.

Caberfeidh had been using a Cross Slot drill but this has been replaced by a lighter Allen air-seeder.

Kearney also stresses the need to drill lucerne with phosphate in order to ensure establishment.

Harding says that once the lucerne has established, they don't worry about weeds for the first 18 months because they are merely cosmetic and don't affect the plant.

These weeds are sprayed out in the second winter and the stand will then remain clean with maintenance sprays as required.

Annual fertiliser applications are based on soil tests and herbage analysis.

With the fescue and lucerne mixes the management team has been sowing

fescue at 8kg/ha and lucerne at 7kg/ha but has found the fescue tends to dominate.

Farm manager Andrew Harding says they are playing around with dropping back the rates of fescue and spinning the lucerne into the rows to try to get a more balanced mix.

They are also trying lucerne mixes on the hill country to replace ryegrass and clover.

One of the big advantages of lucerne is its longevity and Moot predicts the stands on Caberfeidh could last up to 20 years if well managed. This significantly reduces the cost and time associated with pasture renewal.

"If you continue with ryegrass and white clover in a dry environment you will continue to regrass every three to four years," he says.



Caberfeidh carries around 32,000 stock units which includes 15,500 mixed-age and two-tooth ewes, 4000 hoggets, 400 breeding cows and trading stock. Half the ewes are Perendales and the rest are Romney Texel crosses but neither breed is performing to expectations, with lambing percentages sitting at 135%.

Lamb stocking rate crucial

Lambs need to be offered 2.5-3.5kg DM/day of lucerne to be growing 35-45kg liveweight lambs at an average 300gm/day.

That's assuming an MJME of 12/kg DM consumed says Wayne Nicol, an animal nutritionist with PGG Wrightson Seeds.

For example, running the lambs on to a stand with 2500kg DM/ha on offer with the intention of leaving residues of 1000kg DM/ha leaves 1500kg DM/ha to be grazed.

At 70% utilisation this equates to 3kg DM/head/day. This would allow lambs to be stocked at 70/ha for seven days.

For higher allowances and growth rates a head, the stocking rate can be reduced to 50-60 lambs/hectare and another class of stock used to clean up residuals.

On Caberfeidh, cattle are also grown out on lucerne and to prevent animal-health issues are given bloat capsules, a

10-in-one vaccine, and straw as a fibre supplement.

Harding stresses the importance of using the vaccine and says they did lose two cattle beasts over spring because they didn't vaccinate early enough.

Farm manager Andrew Harding says the two-tooths have been disappointing and this year scanned 130%, despite the fact that they went to the ram weighing a respectable 62kg.

MacDonald and Harding believe the ewes are slower to mature, hence the poor two-tooth breeding performance. They are looking to change the genetic mix of their ewes to increase lambing percentages and do justice to the high-octane pasture mixes they are growing.

This season they used a Headwaters ram (a composite with some Finn) over their Perendale ewes and a Lamb Supreme terminal sire across the Romney Texel

ewes. MacDonald says they are aiming to be consistently lambing 150% from their ewes without having to flush them in autumn, and finishing the lambs to an average 17-17.5kg, with most finished by January 30.

They would also like to be able to mate 75-80% of their hoggets, something which they have been unable to do with their slower maturing ewes.

"We want our ewes to be biologically efficient and financially efficient."

While the reproductive performance of their existing ewes has not been outstanding, they are hardy ewes and produce lambs with good meat yields, so MacDonald says it is about building on the strengths of what they have.

Cast ewes have also been a problem on Caberfeidh and it is hoped a change in genetic direction may help reduce the problem.

Thinking about your forage options this season?

Then talk to the forage crop specialists

Freephone 0508 SEED FORCE (0508 733 336)

100% Researched • Forage Brassicas • Ryegrass • Cocksfoot • Tall Fescue • Clover