

## Good tucker: Lucerne for deer workshop

■ by Mike Bradstock

“Legumes are rich food; in comparison, grass is like cardboard.” – Derrick Moot

Deer farmers should grow more lucerne, Professor Derrick Moot of Lincoln University told the *Lucerne for Deer* workshop at Hawarden on 28 September. He said the many benefits included production of protein-rich feed that retained its high quality for much longer than grass. “It tolerates drought well and once established a lucerne paddock will last for many years without resowing.”

He said that more use of legumes, and especially lucerne, could help the farming industry move away from unsound practices like overstocking and overgrazing when under pressure. “Nitrogen fixation by legumes is the key to increasing pastoral water use efficiency and lucerne can play a key role in transforming dryland farming to be more economically, environmentally and socially resilient.”

However, he said lucerne required sound management. There was a shortage of data on using it with deer and a need for region-specific technical solutions. This view was echoed by Lyndon Matthews of Puketira Deer, describing his experiences with lucerne as part of a whole-farm approach to managing a dry environment. Matthews advocated a “suck it and see” approach to legume trials, and described how he used lucerne. “There’s no hard and fast rule for every situation – it’s a matter of finding out what works best in your environment according to your personal goals on the farm. Legumes drive our farm business in terms of sustainability, viability and profitability.” Lucerne helped him target early lactation in hinds and autumn growth in weaners.

Most research has been done on growing lucerne or feeding it to sheep and cattle, Moot said. In his own nine-year trial of legume performance under the same watering regimes at Lincoln University, lucerne has been a clear winner, producing 28kg DM/ha/mm of soil moisture used, compared with 13 for grass and 20 for grass/clover mixes.

“You have only to look at the thick, rich green growth on urine patches to realise that grass production is severely nitrogen-deficient in spring. Grass can almost always use more nitrogen, and that means using urea made from natural gas, which costs and will continue to become more



Sam Zino, Wayne Allan and Derrick Moot, on a lucerne paddock sown last year at Kanuka Downs. The paddock is half in lucerne, with the rest in grass plus a pine shelter belt and patches of matagouri – great for hinds with calves at foot.

expensive. On the other hand, lucerne fixes its own nitrogen and thus has a tremendous advantage for increased protein production and more efficient water use.”

Matthews said lucerne was known for its hardiness and drought resistance. “For maximum drought resistance it’s best grown in deep soil on lower rather than upper hill slopes, so its deep-rooting growth can become strongly established and continue to produce useful feed after other pasture ceases to grow. Lucerne can extract water from more than twice as far down as ryegrass on some soils.”


However, he cautioned that lucerne was unsuitable for set stocking and required close management. “The key is short rotations with adequate intervals to allow optimal regrowth, and this means the more separate paddocks the better.”

AgResearch Invermay scientist David Stevens said the scale of the decision to use lucerne had a big impact on the process of adapting the farm system. “You could just grow a single paddock for hay, or grow it on a larger scale and make major changes to grazing regimes. The difference is important and you need to clearly identify the feed gap you are filling by using lucerne.

“As a rule of thumb, use a conversion rate of 25kg DM/ha/mm of soil moisture used, and 5kg DM/growing degree day above a base of 4°C below which lucerne will not put on growth. These figures will help predict potential yields.”

The approximately 30 workshop attendees included many farmers who had experience with growing lucerne and there was lively discussion and exchange of ideas under the chairmanship of agricultural consultant Wayne Allan. There was also a field visit to the new Focus Farm properties at Flaxmere and Kanuka Downs, where Sam Zino spoke about the growing role of lucerne in his breeding and finishing operations.

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to match buyers with sellers in an orderly way. Selling New Zealand velvet predominantly by tender is not in the longer-term interests of the velvet industry. It is more difficult to develop strong, deep relationships with customers who want to develop and grow the market for New Zealand velvet. Also, price signals established by a tender with a low number of buyers can undermine the positions of responsible sellers. The one advantage that New Zealand velvet has this year is that supplies will be on the lower side of New Zealand’s velvet production. 

■ Mark O’Connor, Chief Executive, Deer Industry New Zealand



## Things to understand about lucerne

- Lucerne is very different from grass in almost all respects, including food value, composition, the way it grows and re-grows, its rooting system and its longevity. Think outside the “grass square” and seek advice from others who have grown it in a similar situation to yours.
- The deeper the soil, the greater the overall advantage of lucerne over ryegrass: you can expect more than 30 percent higher DM yield and better quality feed.
- Modern cultivars are fairly pest resistant; the biggest problem with lucerne is weeds.
- There are a few widespread myths about lucerne, so seek expert advice – especially local advice so you can assess its likely performance on your land.
- Lucerne is a multi-year investment and not expensive to grow, but it does require management.
- The high, reliable spring feed quality of lucerne enables stock to be drafted to the works sooner, thus improving your feed supply for remaining stock.
- There is a big difference between growing a bit of lucerne for supplemental feeding and using it as a major feedstuff source with a serious rotational grazing regime across a number of paddocks. You can just try the first to see how it grows on your property before deciding whether you want to become more committed.
- You can always start with lucerne then drill in companion plants such as ryegrass, prairie grass or cocksfoot. This produces better-quality grass and a good mixed forage.
- Lucerne hates wet surface conditions but is still worth resowing in areas where it dies back after flooding if the water lying on the surface in puddles was atypical.
- Allow a grazing rotation of 7–10 days. This coincides with the time plants take to start regrowth from new shoots that develop close to the ground. If grazing any longer than this, trampling damage will result. For the same reason, do not clean-up graze after cutting lucerne for hay.
- Only conserve a true surplus of lucerne for winter feed. Lucerne hay is best cut in spring and crimper conditioned to hasten drying of the stems. Silage should be wilted to concentrate sugars. The high sugar content lowers the pH of the silage and inoculating may be helpful. A grass mixture improves lucerne silage by increasing the sugar content.
- Fertiliser requirements of cut lucerne are higher than for a grazed crop. Potassium is a major macro element used by lucerne and can amount to 20kg/ha/tonne DM removed. A recommended fertiliser application in spring is 80kg/ha of 50 percent potash super if the crop is mainly used for hay or silage.
- Lucerne should be hard grazed after the first frosts, then sprayed for weeds 10–14 days later. The plants will have negligible leafy growth left, so broadcast spraying will not harm them. Spray about 8 weeks before spring growth recommences, to keep weeds under control and control insects if necessary. Avoid disturbing the new season's buds at this time.
- New season's growth is influenced by air rather than soil temperature. Top growth is triggered when conditions are above 4°C, at which time it does not matter if the soil is colder. Meteorological data on soil temperature is not useful for predicting growth, because it is based at 10cm deep in the soil. Biomass in the crown and roots of the plant dwindles to a minimum in January then increases again as reserves build up towards autumn.