



## Maximising the potential

Grazing management is the way to get the best out of a DoloZest/CalciZest total nutrient programme. It's now 15 years since the first batch of DoloZest was dispatched and we've learned heaps since then.

In our view it's important to differentiate between pasture and grass. Grass-fed animals may well be in a barn and receive a diet of just grass, which is very different to the diet of an animal on permanent grazed pasture.

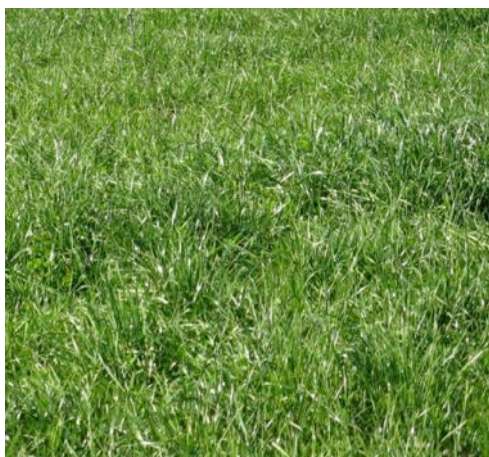
Pastures often contain in excess of 20 different species and that mix will vary throughout the season based on fertiliser inputs, climate, and grazing management, and the meat and milk produced will reflect that. There will also be variations between regions with the mix of plants in pastures in Southland different to those in the Far North.

### Why rotational graze?

New Zealand farmers were, and remain, quick adoptees of new technology. Along with the ability and affinity to innovate, local farmers rapidly took to breaking feeding animals behind electric fences, and this system remains a cornerstone of our livestock industry, for very good reason.

Early research showed that sound rotational grazing increased total pasture production threefold over set stock continuous grazing, i.e. over 3x the former total pasture production could be achieved.

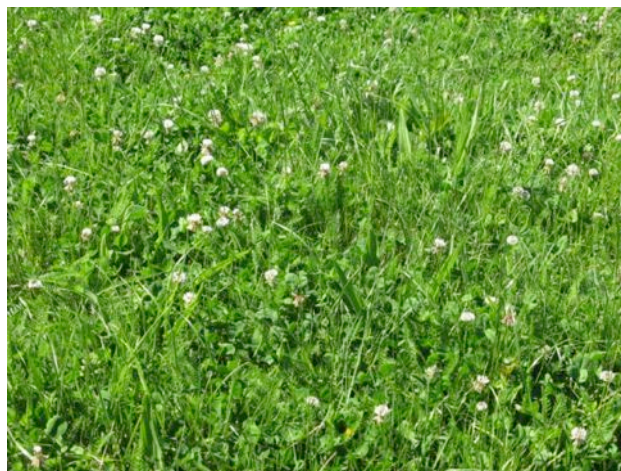
We prided ourselves on being the best in the world at this, however things change. Rotational grazing means different things to different people these days, and it's important to understand the principles that make the practice essential to our success and well-being.



### The wife knows best.

Early work by Andre Voisin showed that dairy farmers in the Elron Valley in Breton knew it was better to feed grass that was a little too long rather than too young. Not only were they aware that more total feed could be grown by allowing pasture to mature, longer feed was also more nourishing and, as a result, total milk yield was higher.

*From a discussion with a farmer in the Valley the following was recorded, "I am short of grass", he said, "and so I am forced to cut a little too soon. That means I will lose some of my grass yield... I am even going to lose milk for this grass contains too much water and is less nourishing. When I don't wait long enough to cut I know quite well that, at the end of the year, my wife will*



*tell me that my grass in the valley didn't produce as much butter for sale as usual".*

To get the best results from pasture the intervals between grazings must vary during the year, depending on the growth rate at the time.

However, the focus should not be a set interval. The most important factor is the length/maturity of pasture at the time of grazing.

The following graph applies to all living organisms. As far as pasture is concerned it shows that after grazing the initial growth is relatively slow.

As more cells develop a plant's ability to convert sunlight via photosynthesis to sugars amplifies, and the rate of growth increases. At a certain point growth begins to slow, and this is the ideal time to graze.

The average cover at which the growth of high fertility pastures lessens may be between 3,500 –

4,000kgDM/ha during the late spring/early summer period when growth rates are often 75–100kgDM/ha per day. If the grazing residual is 1600kgDM/ha the grazing interval may be as short as 20 days.

Some would argue that pasture of that length is too mature, and not digestible enough for optimum animal performance. Our experience over the last 15 years of close observation and measurement is that pasture of this length is close to ideal. Grazing ruminants require fibre in their diet, and pasture of that length usually contains sufficient for good rumen function.

At that stage much of the crude protein/nitrate in the pasture will have been converted to full protein and this will be reflected in weight gain and/or milk production.

There's another important aspect to grazing when plants are at this stage. The plant's ability to produce sugars is maximised, and energy is an essential requirement for top plant performance. Excess sugars are then transferred to the root system for use by mycorrhizal fungi. The fungi extend the root zone of plants several times over, increasing the plant's ability to uptake both moisture and phosphorus.

After each grazing there is some loss of root comparable to the loss of leafage. Repeated grazings that take place in a set stock situation continue to reduce the amount of root, and overall pasture production declines significantly. The root pruning

Regards,



effect and subsequent slower growth is the reason why back fencing is so important. The recovery of plants that have been grazed three times in quick succession is significantly slower than those grazed just once.

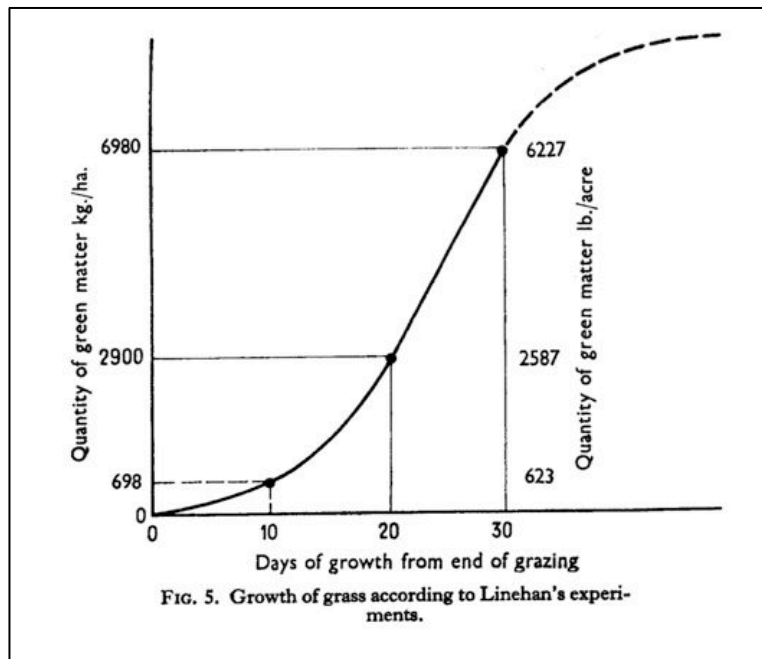


FIG. 5. Growth of grass according to Linehan's experiments.

### Altering the grazing interval

To ensure that pastures are grazed at the appropriate maturity the grazing interval will need to alter, dependent on the growth at the time. If there is a single secret to some operators' ability to grow up to 30% more feed than others, it is this skill.

The interval between grazings can only be shortened **after** the onset of spring growth.

Shortening the interval before results in the situation known as 'chasing your tail' where animals are forced to graze closer to the ground, further slowing growth, until the whole farm resembles a bowling green.

Knowing that growth will slow over summer means that **before** this occurs it is essential to lengthen the intervals and, as a rule of thumb, an interval of 30 days by the end of December works well in most regions. Should excess cover accumulate, one or more areas can be skipped and a light crop of hay made. As yet there is no substitute for high quality hay as a supplement in spring.

Pastures require a rest period, just as animals do. Winter is the natural 'hibernation' time when root renewal takes place, and those that grow the most pasture appreciate this and allocate as little as 1% of the grazing area a day when animals are wintered on farm.

Dairy farmers often ask, how much magnesium should be supplemented at this time of the year? When DoloZest has been applied in autumn little extra is usually required and normally only during prolonged periods of wet miserable weather.

The amount of magnesium found in the leaf of grass-dominant pastures during winter at the ideal grazing height is usually 0.22% - 0.25%, which is sufficient to meet the requirements of fully fed animals.