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DoloZest® News

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Functional Fertiliser Ltd

Standing the test of time

A summary of the following data was presented in conjunction with staff from Lincoln University at 4 different SI venues in November 2018.

It was stated at the time that there is no other comparable data available from any research organisation, and it is unlikely that there ever will be due to the costs involved for a commercial operation.

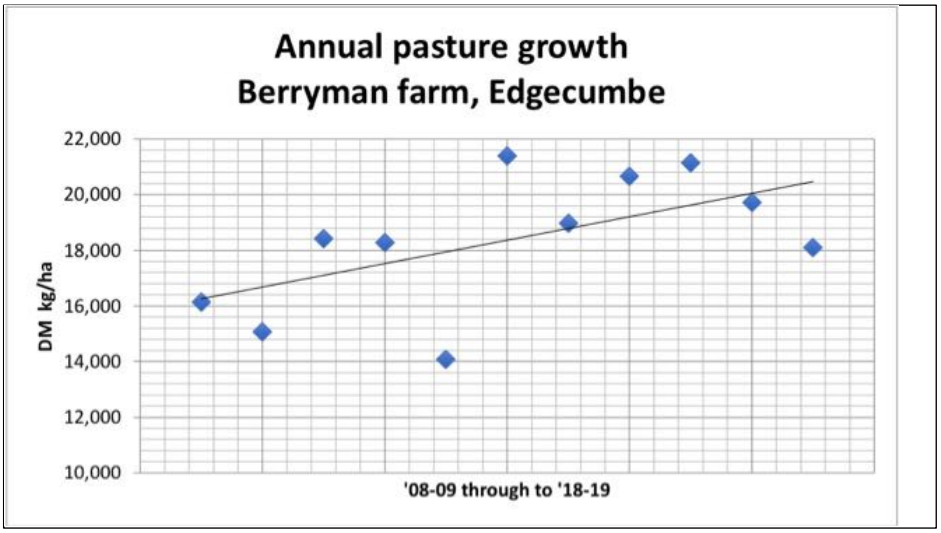
Our commitment to research is an endeavour to understand the performance parameters of the full nutrient programmes provided by Functional Fertiliser in order to provide best possible advice to clients.

Fifteen years of continuous monthly cage cutting has provided a wealth of information which we regularly share with clients, and there's been some fascinating findings.

We are indebted to the support of Peter and Robin Berryman and their share-milkers Liz and Danny Henman.

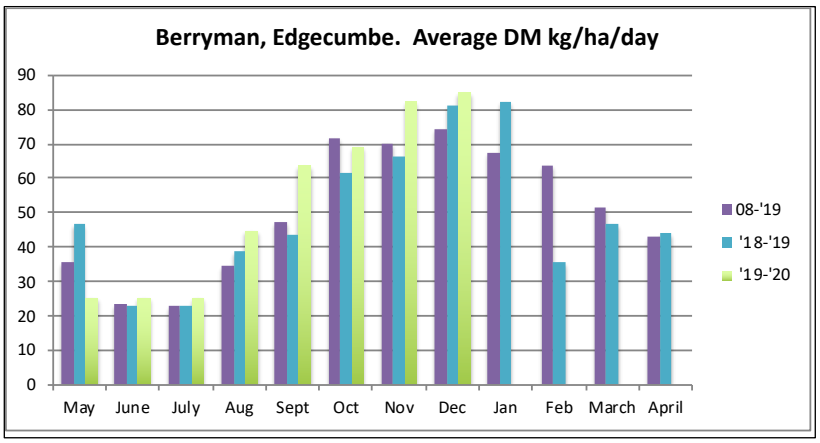
As a reference, the highest growth from permanent pasture was 18,250kgDM/ha recorded at 2 sites, one at Cambridge on Horotiu Sandy Loam, and the other at Tirau on Tirau Ash, from 1978 – 82, prior to the use of nitrogen fertiliser. Those results were from monthly cage cuts carried out by MAF staff. The figures from the Berryman property have been undertaken using the same method and are therefore comparable.

The highest annual figure recorded at Berryman's is 21,397 for 2013-14, and the lowest 14,066 in 2012-13 in an officially declared drought season.



The average, at Berryman's is 18,364kgDM/ha for the 12 full seasons to date.

At a recent farmer meeting in the Edgecumbe/Whakatane area there was general agreement that district pasture production is now somewhere between 12,000 – 14,000kgDM/ha annually.



Cage cut results are conservative

When the 2011 production data from the Berryman farm was entered into the FARMAX model the cage cuts were shown to be conservative i.e. the model showed more pasture had been grown.

Quality v quantity

The quality of feed lifts as pasture production increases due to stronger plants having more root mass utilising more nutrient and moisture, while

greater leaf surface area ensures more energy and full protein is created.

Spring growth

The monthly growth graph shows that it is late September before pastures hit top gear.
September growth is variable based on winds swinging to the south and although daylight hours increase, soil temperatures may not lift accordingly.
December is a reliable growth month with figures of between 70 – 80kgDM/ha/day.

Making hay

A property with 3 cows/ha being fed 20kgDM/cow/day will have a genuine surplus of feed and when January growth is favourable there's sufficient to make high quality hay, the very best supplement for early season production.

What's possible?

Seasonal growth significantly above 18 tonne DM is possible however weather conditions must be favourable throughout.
Grazing management has a significant effect on the amount grown and again we have Danny and Liz Henman to thank for their astute management.

Improved resilience

Given pasture species and weather variability it may be prudent to budget on 18 tonne in this instance, and as carbon is being continuously sequestered and moisture and nutrient holding capacity increases, there's less impact from excessively dry or wet conditions.

Galatea growth figures from the Oliver property

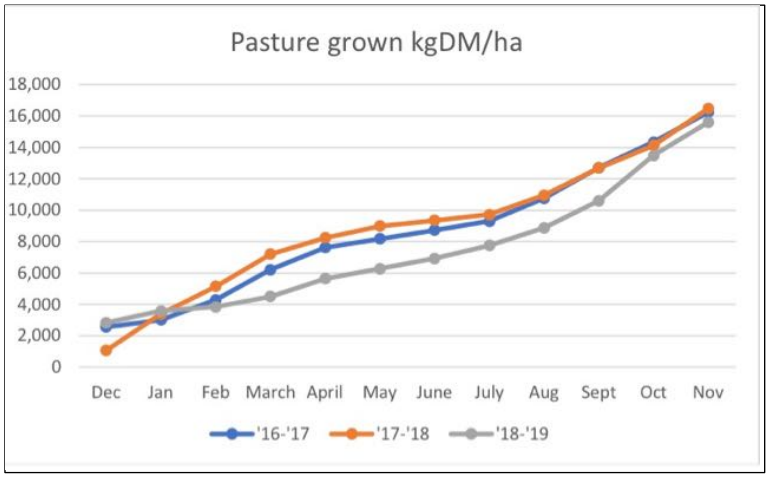
Due to winters being much colder and soils pumice-based with less moisture holding capacity, total annual growth is less than that recorded at Edgecumbe.

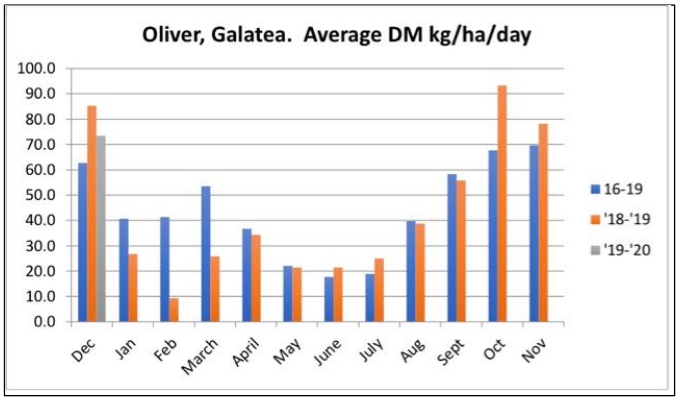
A fascinating insight comes from the pasture production for last season 2018-19. A particularly hot dry summer resulted in February growth rate of 9.3kgDM/ha/day, well below the norm.

With insufficient autumn rain to drive growth prior to winter it was not until August that growth rates lifted to above long-term average for the district.
The figures for Sept, Oct, Nov, have been exceptional with total growth for the season within 4% of the previous 2 years.

A benefits of healthy supply of supplement

There's an old saying that a farmers best insurance is a shed full of hay.
Whether it's hay, balage, silage, or a combination of, having a decent buffer reduces anxiety levels when inevitably weather conditions conspire against.





Is climate change having an impact

Each season is different and over a twelve-month period nitrogen fertiliser will make little if any positive difference.
Attempting to shift growth from one part of a season to another comes at a cost.

From our records an increase in early spring growth over the last 15 years is difficult to detect. The greatest variability between seasons results from a dry January February period.

When autumn rain is late and there's insufficient time to build a wedge of feed prior to winter the effect, as shown in the data above, does linger, however most of the lost production appears to be recoverable.

Well-structured , biologically active soils that are continuously sequestering carbon provide long term sustainable growth that can be banked on.