



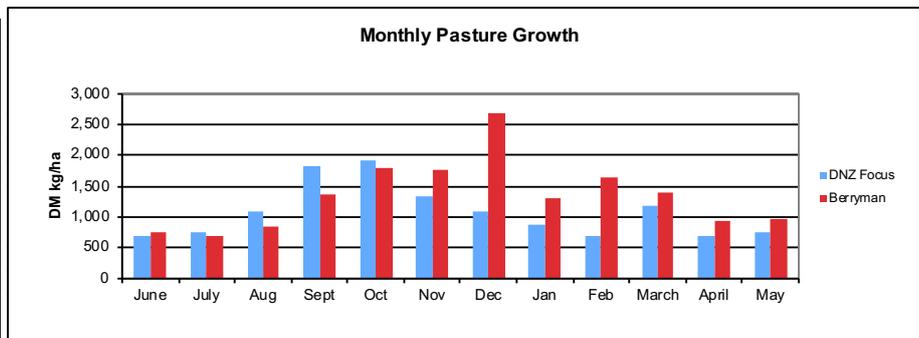
## Filling the spring energy deficit

The following graphs and growth figures are from 2008 – '09 season however they remain valid today. The 25.6% increase from the Berryman property is close to the 30% increase in total yield that has been measured in the cage-cut data from later seasons as well as the tomato trial results.

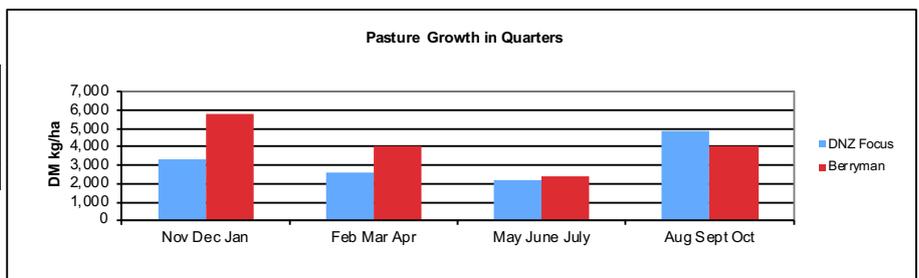
We expect the difference between the growth from a urea driven system compared to that from a Functional Fertiliser total nutrient programme to have widened since 2009 due to the following:-

- DoloZest/CalciZest based programmes result in **carbon being steadily sequestered** providing increased potential for total growth.
- Programmes reliant on synthetic N for growth will be **steadily losing carbon** and growth will be declining over time.

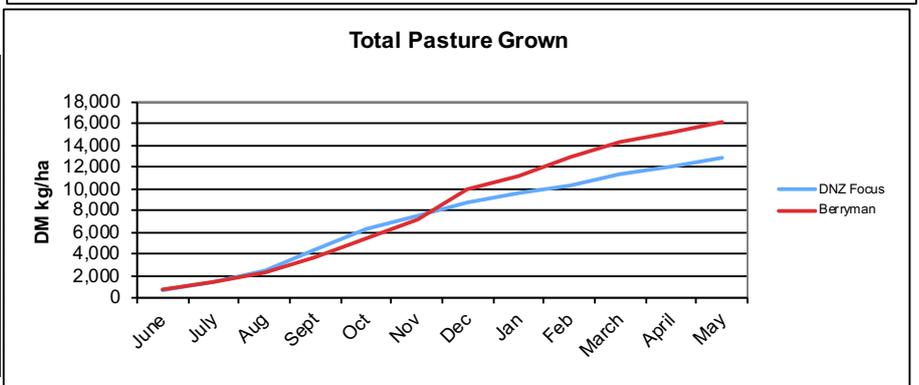
2008/09	DNZ Focus	Berryman
June	700	765
July	750	704
Aug	1,080	859
Sept	1,830	1,380
Oct	1,922	1,783
Nov	1,350	1,755
Dec	1,080	2,672
Jan	868	1,321
Feb	690	1,644
March	1,175	1,389
April	700	951
May	750	964



2008/09	DNZ Focus	Berryman
Nov Dec Jan	3,298	5,748
Feb Mar Apr	2,565	3,984
May June Jul	2,200	2,433
Aug Sept Oct	4,832	4,022
	12,895	16,187



2008/09	DNZ Focus	Berryman
June	700	765
July	1,450	1,469
Aug	2,530	2,328
Sept	4,360	3,708
Oct	6,282	5,491
Nov	7,632	7,246
Dec	8,712	9,918
Jan	9,580	11,239
Feb	10,270	12,883
March	11,445	14,272
April	12,145	15,223
May	12,895	16,187



The period during which growth is less on the Berryman property is during the early season when sunshine hours are lowest.

Pasture grown during this period will necessarily be low in energy relative to the requirements of high-performance lactating animals and more of the same will not fill the deficit.

What is required is high energy feed and sufficient long fibre to ensure full digestion of whatever is eaten as there is a limit to the total quantity of feed that can be consumed in a twenty-four-hour period.

The best high energy long fibre feed for grazing ruminants is high quality meadow hay, and the graphs and charts show that there is an abundance of pasture grown in December that can be harvested in January/February to help cover the spring deficit.

DoloZest/CalciZest based total nutrient programmes **work with nature** maximizing the natural resources of nutrient, moisture, and sunlight efficiently converting energy in the form of sunlight via photosynthesis to usable sugars.

The ME (metabolisable energy) test is more a measure of digestibility than energy. Rapidly growing early season pasture has a high ME relative to high quality hay.

Hay contains significantly more energy but is less digestible and a combination of the two provides best performance.

How much hay is required depends on the energy content of the pasture and animal requirements which will be constantly changing given the amount of sunlight.

When hay is made freely available the requirements of each animal can be met with



**Grass Grub.** Recent feedback indicates a lack of grass grub damage in areas to which DoloZest/CalciZest mixes have been applied. Long-term clients have substantiated that claim.

We're keen to hear from anyone with relevant observations.

only enough to meet their individual needs being eaten.

**Brix** is the most useful energy measure available and by taking multiple readings throughout the day with a hand-held refractometer a feel for the dynamic nature of a natural growing system can be appreciated.

**Feed models** are essentially flawed when based on crude protein levels calculated from the nitrogen content of feed.

Excess crude protein necessarily consumed by stock on nitrogen forced rapidly growing early season pasture must be excreted by stock if it is not to limit production due to excess pressure on the liver.

Milk and meat production is designed to provide people with most important component of their diets, protein.

To convert crude protein to full protein requires energy and DoloZest/CalciZest based nutrient programmes do this more effectively and efficiently than any synthetic N based one.

**Methane.** Our understanding is that where carbon is being steadily sequestered there will be no net increase in methane emissions. Methane exists and will continue to cycle however being a carbon gas, properties using FF programmes will not be increasing atmospheric methane levels.

May 13 email from Stuart Pritchard, Forest Lakes  
Hi Peter and Coralie

I had to send these photos of healthy pasture, 6 weeks growth ready for grazing next 7 days. The farm is just a picture book of health, the dandelions/chicory growth is very strong along with many different species and we have not spotted any grass grub or porina caterpillar – this must be due to Functional Fert healthy soil now. It's all very healthy and will produce top quality stock and profit. Meat flavour, texture and taste outstanding, this is all due to you with natural fert, thanks again – we do not use chemical or nitrogen, we just leave it to nature and grazing management.

Regards,

*Peter*  
*Coralie*