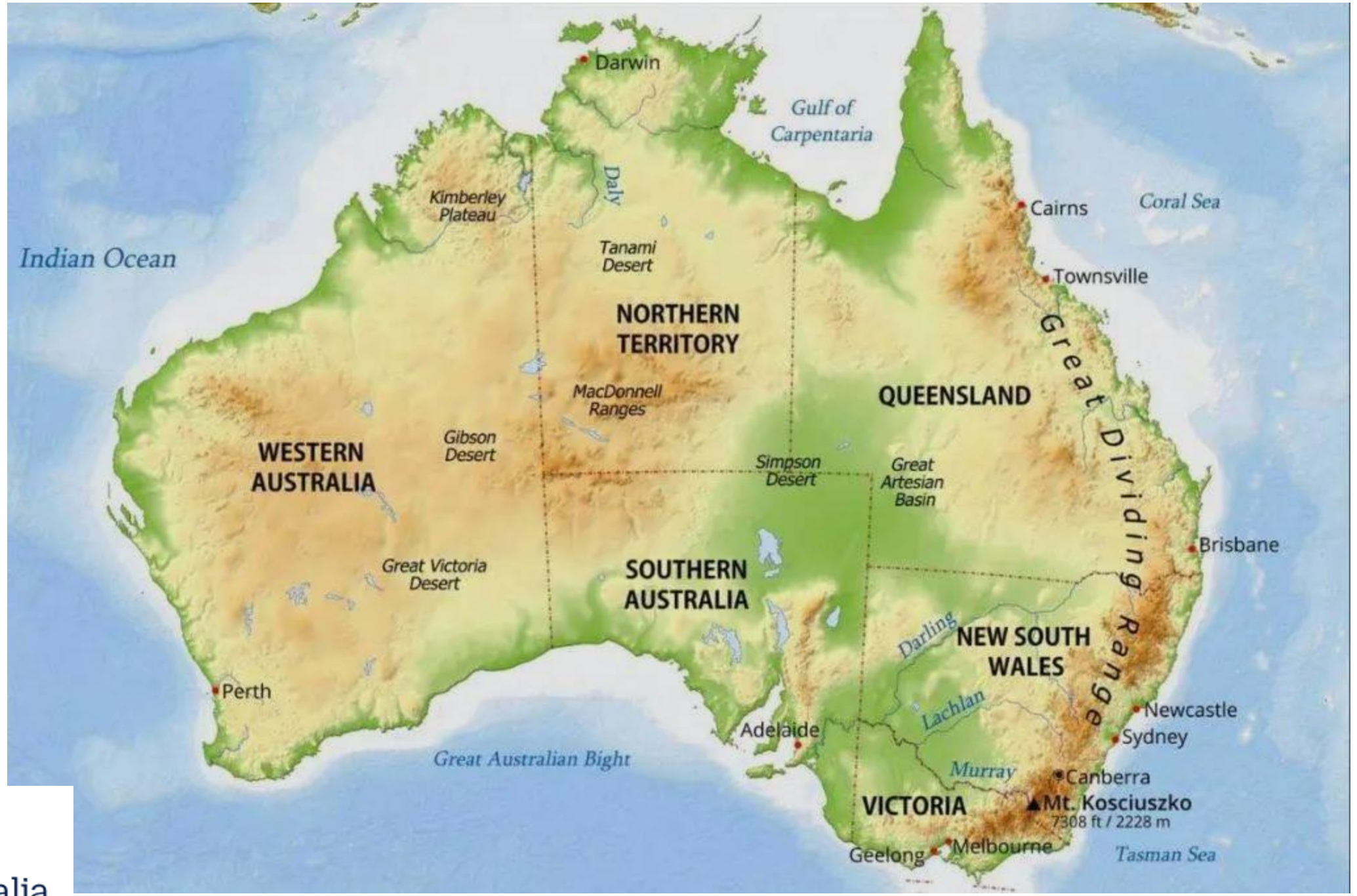
Mark Lambert,
Sunnyside, Tasmania.

- 570 Jersey Cows
- Farming Organically and Regeneratively

Dairy Australia



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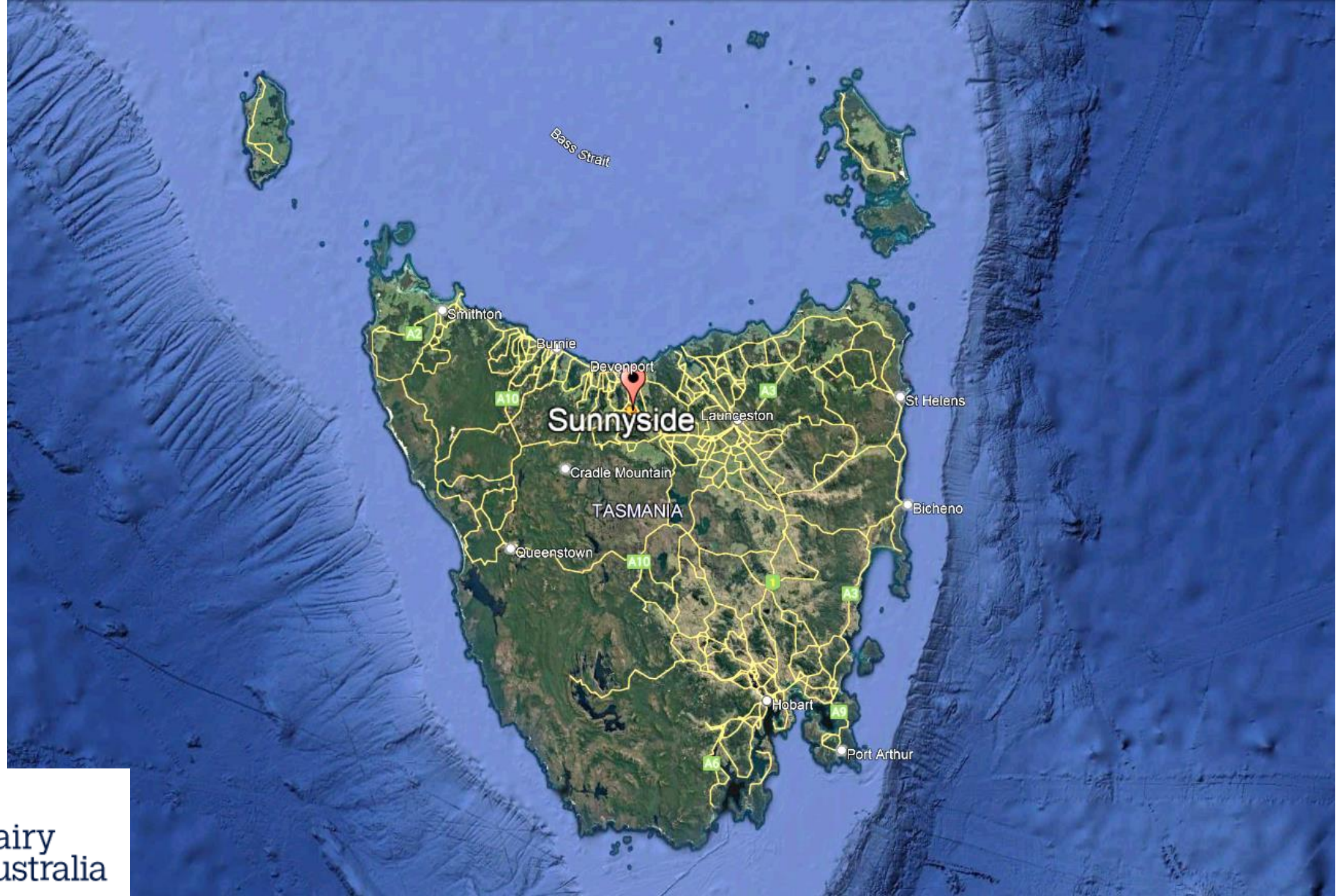

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415Ha / 1025ac in Total.

212Ha / 523ac Milking Platform, 73% irrigated. Grain free, Zero bought in feed.

Dairy Australia

2006 Dairy Farm Check List

- [x] Milk Cows Twice a Day
- [x] Feed large amounts of grain, for maximum production *Somewhat*
- [x] Use the cheapest N.P.K.s and apply regularly
- [x] Use Urea to maximize grass growth
- [x] Graze at 3 leaf stage for maximum pasture growth and quality
- [x] Multispecies = 3 different types of ryegrass plus a white clover
- [x] Whole farm boom spraying for weeds
- [x] Conserve high quality fodder
- [x] Use the vet to get antibiotics for sick cows
- [x] Blanket dry cow therapy
- [x] 6 weeks AI
- [x] ~~Friesian Cows and John Deere Tractors~~

Dairy Australia

I started questioning everything

Wow, That's a lot of lucerne flea...

Why can't I grow red clover?
What is the Calcium to Magnesium Ratio on my soil test?

Where's my clover?

Why do I have so much milk fever and grass tetany?

Where's all the worms?

Where's that hammer, I need it to get the temporary pegs in.

Fertilizer Rep:
"Studies show you don't need to apply magnesium to grow grass..."

Me:
"Yeah, but it sure makes the plants and animals healthier..."

Me, commenting on a soil test:
"Why does the pH always say satisfactory", and also "low Magnesium may lead to grass tetany?"

Fertilizer Rep:
"You could apply lime, but hey, our products have a much better response to grow grass!"

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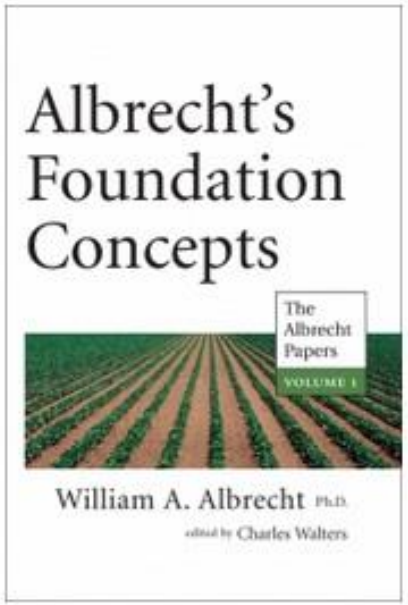

Dr. Albrecht was one of the premier soil scientists of his day, and still is to this day. *The Albrecht Papers* comprise a classic study of soil fertility and its relation to crop health and animal health. The value of Dr. Albrecht's work is being increasingly appreciated by growers today.

After many years, *The Albrecht Papers Vol. 1* is back in print. Through Dr. William Albrecht's experiments with growing plants, soils and their effect on animals, he sustained his theory and observation that declining soil fertility, due to a lack of organic material, major elements, and trace minerals was responsible for poor crops and in turn for pathological conditions in animals.

Nature gave up her rare secrets to Dr. Albrecht simply because he was a curious farm boy who liked logic and adventure. Through his extensive experiments with growing plants, soils and their effect on animals, he sustained his theory and observation that a declining soil fertility, due to a lack of organic material, major elements, and trace minerals – or a marked imbalance in these nutrients – was responsible for poor crops and in turn for pathological conditions in animals fed deficient feeds from soils. These papers addressed to scientists, and especially to farmers who worked with nature are as valid today as when they were first written.

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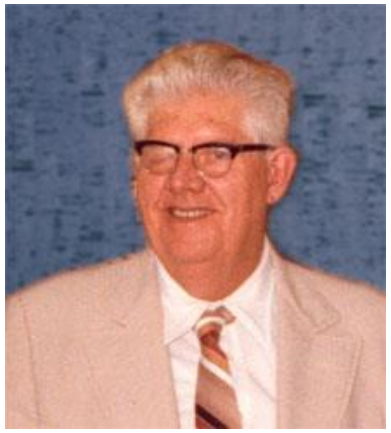
Dr Carey Reams

THE RENEGADE PHYSICIAN
1903-1985



- physician and agronomist
- undergraduate degree in chemistry
- medical degree, completed in England
- Independent of the AMA (American Medical Association)
- perceived “disrespect” from medical authorities who objected to his nutritional healing and nutrition-based, preventative medicine.
- simple approach successfully cured several major diseases,
- Californian jail term for rebuttal of drug-based mainstream medicine
- severely injured in landmine explosion during World War II
- suffered serious spinal injuries leaving him a quadriplegic
- Five years later, received miraculous healing at a Christian service, and was able to walk and function normally.
- His healing greatly influenced later work.
- He saw nature as both divinely ordered and holistic, in stark contrast to pigeon-holing, specialist approach of conventional science.

Dairy Australia

Extracts from **'Liming Pastures and Forages'** a presentation by **Barry Rowe, 2008.** Elliott Research Station, Tasmania.

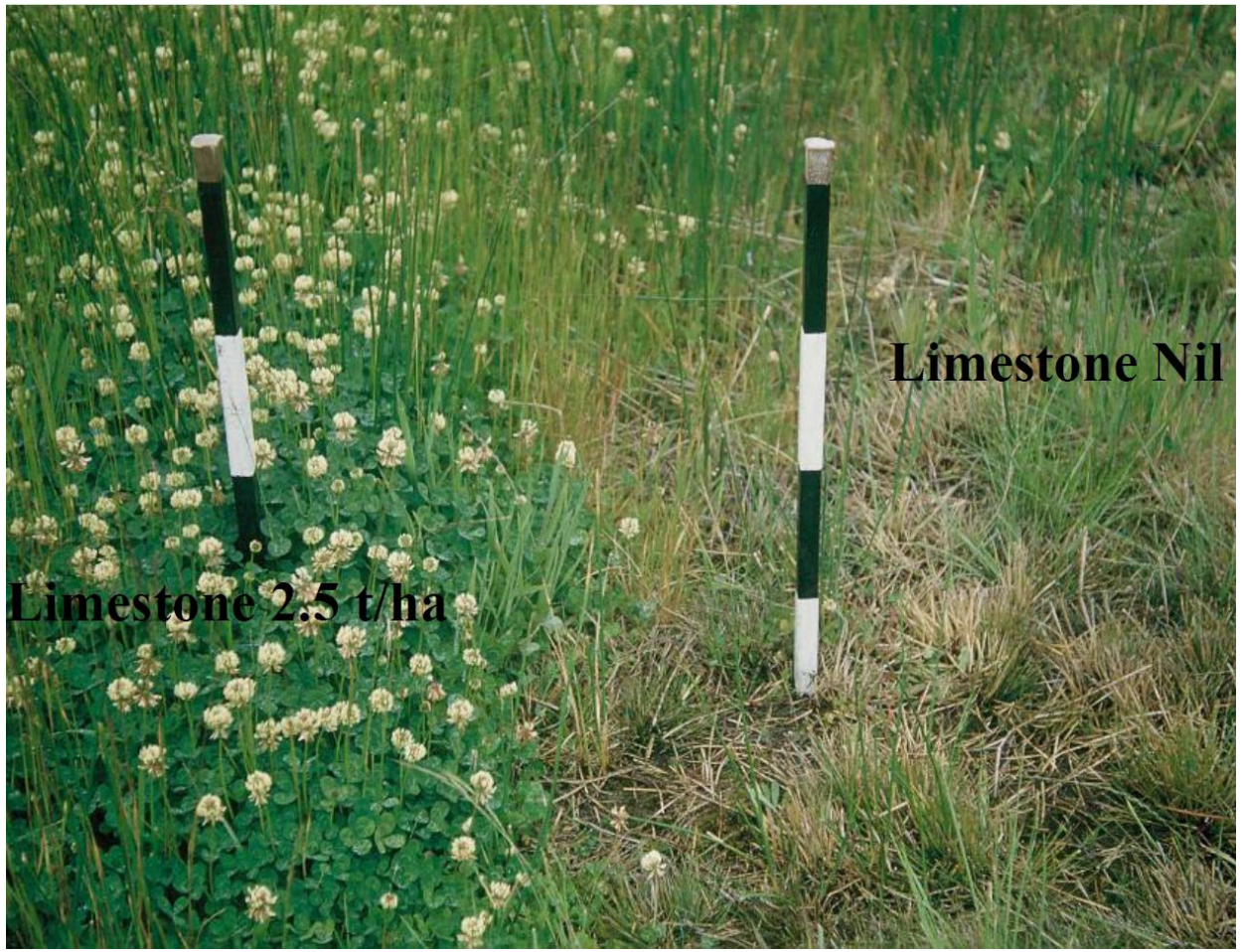
Note: Krasnozem soils have a high cation exchange capacity and high potential Aluminium, Iron and Manganese toxicity

Trails on Heavy Liming of Zrasnozem soils

- 15t/ha of Lime applied in Total in 6 applications over 8 years
- Super @ 250kg/ha/yr, Potash @ 125kg/ha/yr

Effects on Pasture Production

- Significant yield increases once soil pH was raised above 6.3
- 7.5% more DM with extra growth outside of the spring flush
- Autumn increases upto 50% DM
- Annual increases upto 1.7t DM/Ha
- At 15t/Ha lime, long term yield increases
- Lime+Super @ 250kg/ha > Super @ 500kg/Ha
- Manganese and Aluminium toxicity vastly reduced even at 300mm depth
- Reduces phosphorous leaching
- 10% Return on investment
- Improved soil aggregation
- Clover growth and nodulation improved dramatically
- Pasture peristance improved



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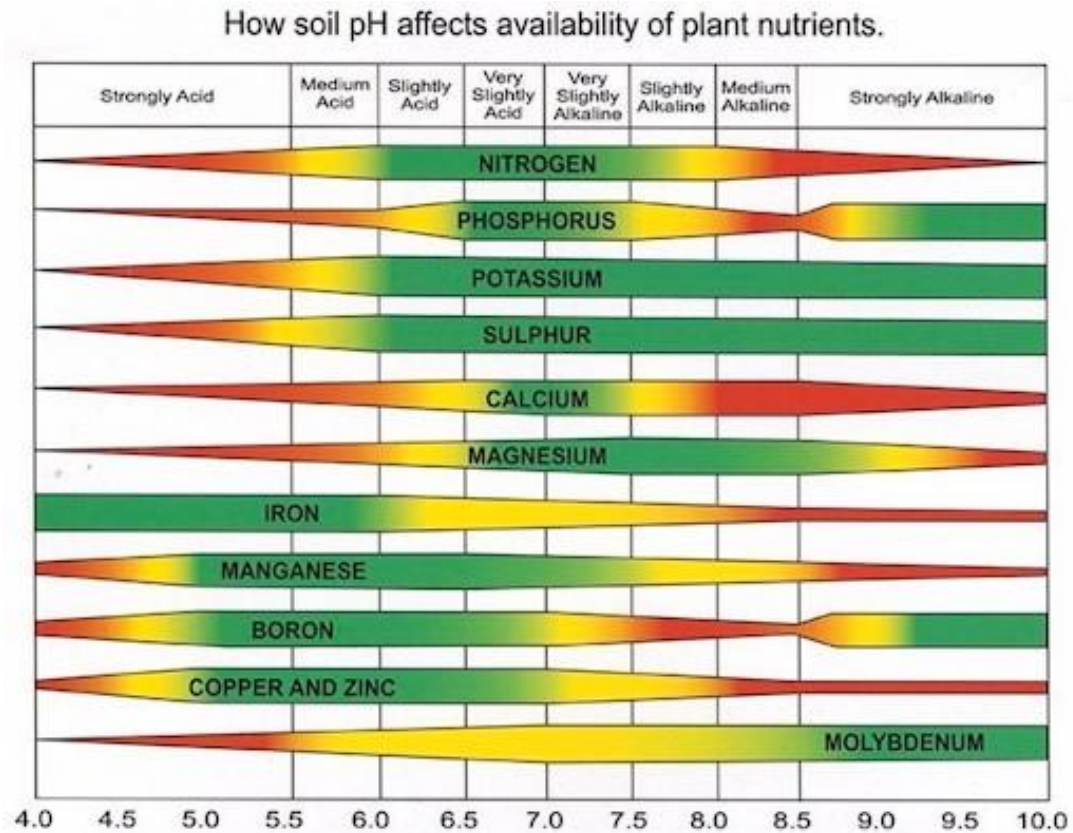

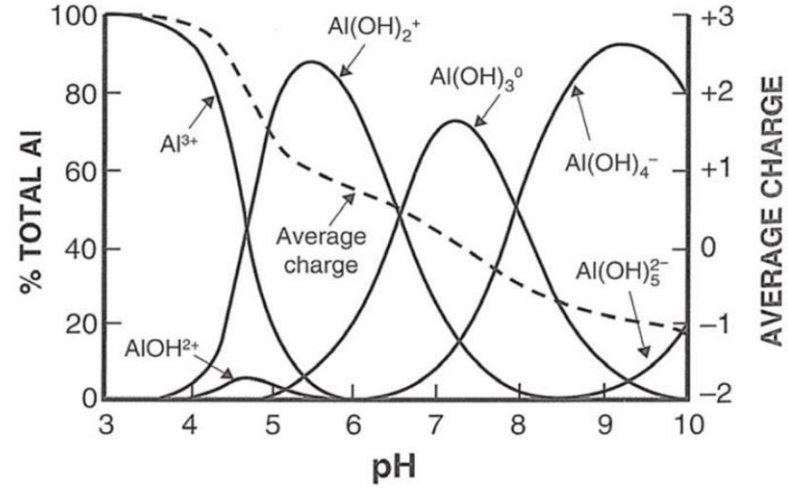

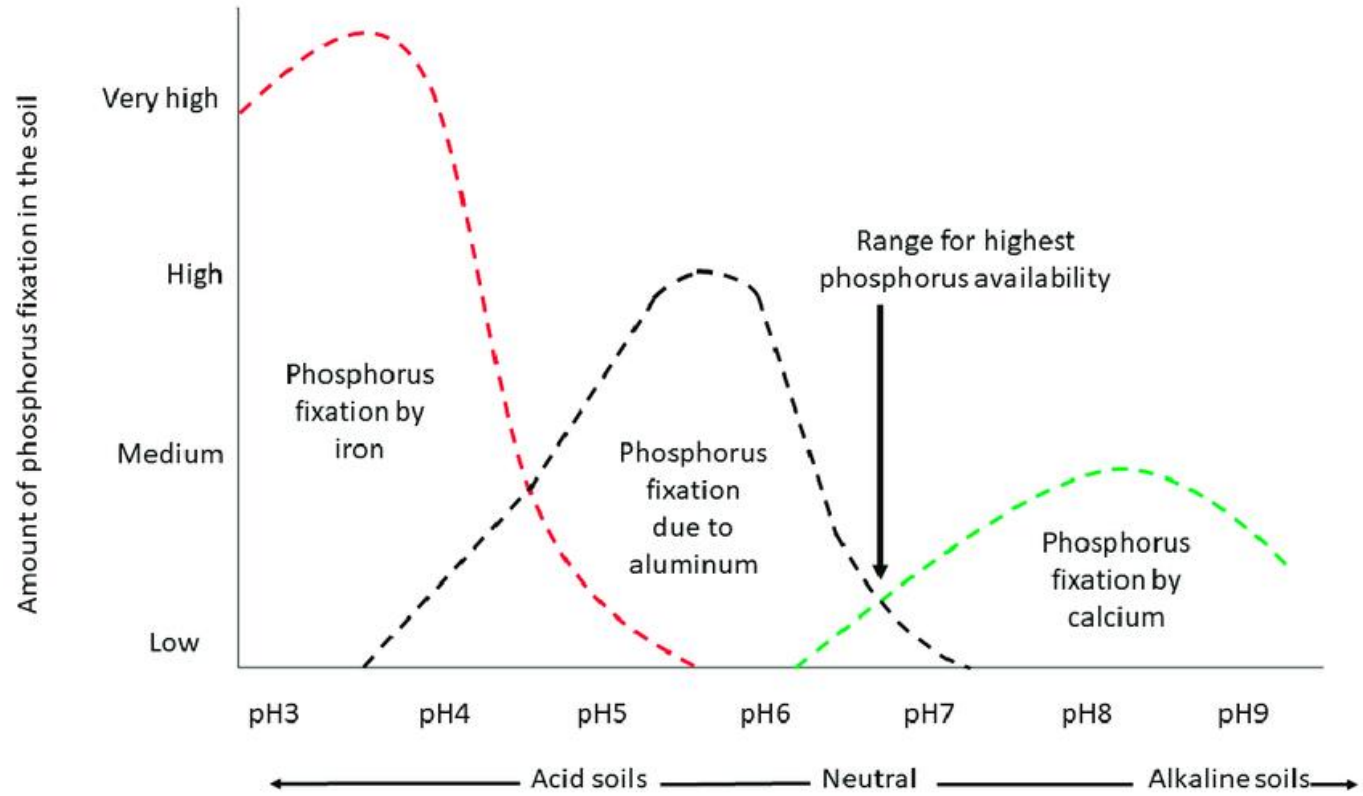

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Aluminium and acidity suppress microbial activity and biomass in acidic forest soils

- The exchangeable calcium (Ca) and magnesium (Mg) concentrations decreased significantly with decreasing soil pH
- The aluminium (Al) concentration… increased exponentially with decreasing soil pH…
- Showed that *microbial activity was suppressed by a combination of exchangeable aluminium, Iron and from a low soil pH…*
- These results suggest that Al toxicity and acidity repressed soil enzyme activities, leading to suppressed microbial mediated nutrient cycling
- and that Al and Fe binding may *inhibit the organic matter recycling activity.*

Soil Biology and Biochemistry, Vol 97, June 2016.

Fertilizer Budget.

Urea $80,000	SoA $50,000
DAP $80,000	SSP $20,000
MoP $20,000	SoP $30,000
$180,000	Lime $60,000
	Dolomite $20,000
	$180,000

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Photo’s showing Ragwort response to Liming 2012 2025

[30]. McCallum et al. [31] also observed that diversity and abundance of earthworms are very low in soil having a pH near 4.5. Most of the studies reported that earthworms can tolerate a pH range of 5.0 to 8.0 and an abundance of earthworms increase as pH was shifted from acidic or basic to neutral. De Wandeler et al. [16] also observed that the earthworm’s abundance and diversity in soil increased with an increase in pH from acidic to neutral and maximum earthworm abundance was found near pH 7. The EC also plays a vital role in

Singh, S., Sharma, A., Khajuria, K. et al. Soil properties changes earthworm diversity indices in different agro-ecosystem. BMC Ecol 20, 27 (2020).

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Organic

- 100% Reliance on natural processes
- Took time for natural soil nitrogen cycle to recover (~9months)
- Unmasked the problems that are dealt with using drugs and chemicals
- Revealed what caused weeds
- Not all weeds are bad
- Revealed what causes mastitis problems on our farm
- The grass still grew just as well as before, if not better.

If soils need a kick start for biology I use

- Seaweed liquid (500ltrs)
- Fish emulsion (500ltrs)
- Sea water (1000ltrs)
- Microbial tea (500ltrs)
- Covers 60ac

First Year of organic Farming 2016

Dairy Australia

Sickness sorts out priorities.

It helped change the focus of how we farm

We introduced

- Even less reliance on fertilizers
- Once a day milking
- Standing Hay for dry cows, bulls and heifers
- Extended Grazing Rotation
- Multispecies

Leading to

- Less Irrigation water used

And an increase in

- Worm and soil life
- Insect and bird life
- The love of dairy farming

We started farming organically in 2015, and I'm so glad we did, now that we understand the trouble toxins can cause in life, having a low tox farm living environment and foods direct of the farm has been a tremendous help.

Mould is very serious bad stuff when contained within a house, and is not taken seriously enough by the majority of people or their support people.

2500 years ago, mould is mentioned in the Bible in Leviticus. It essentially says:

- **Step 1**: Vacate the house and get everything out of it.
- **Step 2**: Clean the mould.
- **Step 3**: If the mould comes back, remove and repair that section of the house.
- **Step 4**: If the mould still comes back, destroy the house.
- And if you go in the house during any of this time, you must have a shower and wash your clothes.

I think this list is still as relevant today!

Dairy Australia

Taranaki Daily News - 7 Nov 2008

First, become a farmer of grass

ONE of the oldest concepts of farm management is of letting your land rest every now and then....known as sabbatical fallowing, the land is allowed a year off every seven years, to enable rejuvenation. Shutting up your entire farm for a whole year without stock isn't practical, but shutting up part of it is...

By changing which seventh of the farm is rested each year, over a seven-year cycle, the entire farm has had its year of rest.

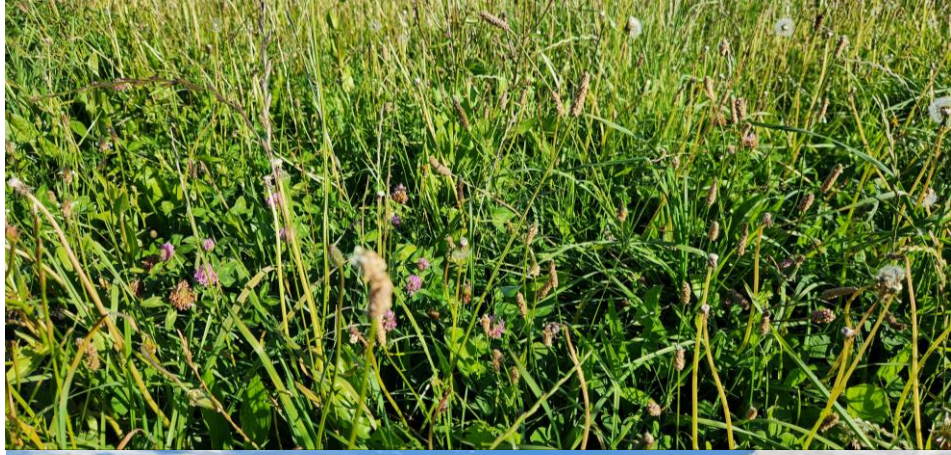
The benefits of resting your land are many. While initially having to reduce stock to do this, you may find you can increase beyond your initial numbers of stock with the extra food produced from this system.
John Earney of Avonstour Organic Heritage Farm near Stratford says ...The key... is to shut the gate and walk away. "Normally we shut a paddock up on the shortest day, and that's when most farms run out of grass, so then you're starting to graze your grass that you fallowed last year, so it's like a hay-shed of grass sitting there in the middle winter.''

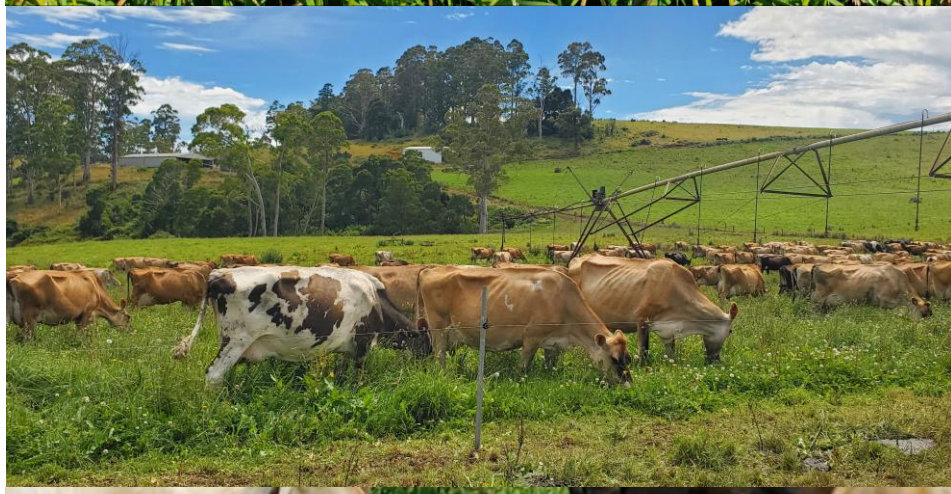
Standing Hay

Dairy Australia

Extended Grazing Rotation

- The rotation length has increased by about 50%, to about the 4.5 ryegrass leaf stage.
- Irrigated pasture is grazed 6-7 times per year with rotation lengths from 33 to 120 days.
- Dryland pasture is grazed about 4-5 times per year, with rotation lengths of 36 – 200 days.





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Multi-species

- General Rule of thumb:
  3 grasses 3 clovers 3 herbs

- A Perennial example that we use,
- with 4 of each: (includes short lived species, that self replace in a pasture sward)

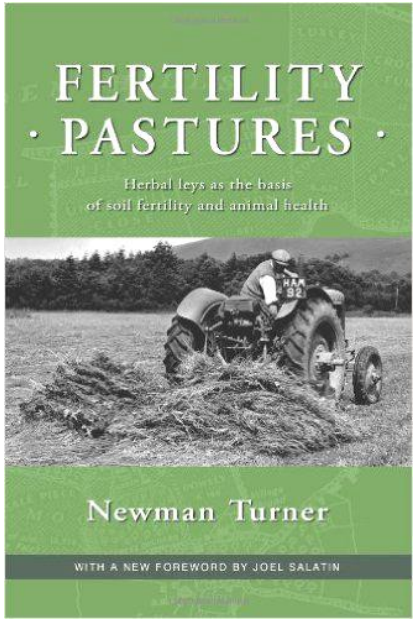
- Ryegrass, Cocksfoot, Prairie Grass, Timothy

- Red Clover, White Clover, Sub Clover, Strawberry Clover

- Sheeps Burnett, Chicory, Plantain, Yarrow

- And what about those naturalized “weeds”.

- If they eat it, it’s a herb…
- Dandellion, Dock, Cats Ear, Buttercup



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We use less Irrigation Water

- We appear to use about 15% less water to irrigate the farm
- Why?
- A combination of extended grazing rotations and multispecies

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Soil Health Has Improved

- A very active soil compost layer
- Increase in worm activity
- More species of dung beetles
- Less weeds
- Improved natural Nitrogen cycle
- Worst paddocks are a lot better performing
- Best paddocks are still my best

Dairy Australia

2025 Dairy Farm Check List

- ~~Milk Cows Twice a Day~~
- ~~Feed large amounts of grain, for maximum production~~
- ~~Use the cheapest N.P.K.s to replace exported nutrients~~
- ~~Use Urea to maximize grass growth~~
- ~~Graze at 3 leaf stage for maximum pasture growth and quality~~
- ~~Multispecies = 3 different types of ryegrass and white clover~~
- ~~All weeds sprayed, for a nice looking, neat farm~~
- ~~Conserve high quality fodder~~
- ~~Use the vet to get antibiotics for sick cows~~
- ~~Blanket dry cow therapy~~
- ~~6 weeks AI~~
- ~~Friesian Cows and John Deere Tractors~~

Does that still make me a dairy farmer?

I do these things...

- ☑ Produce milk
- ☑ Primary focus on pH, Ca, Mg on soil tests.
- ☑ Standing Hay
- ☑ Extended Grazing Rotation
- ☑ Multispecies
- ☑ Improved water use
- ☑ Healthy soil life
- ☑ Healthy farm life
- ☑ Reduced Costs
- ☑ Improved Profits
- ☑ Enjoy dairy farming

Yes Mark, you are still a dairy farmer

Dairy Australia