



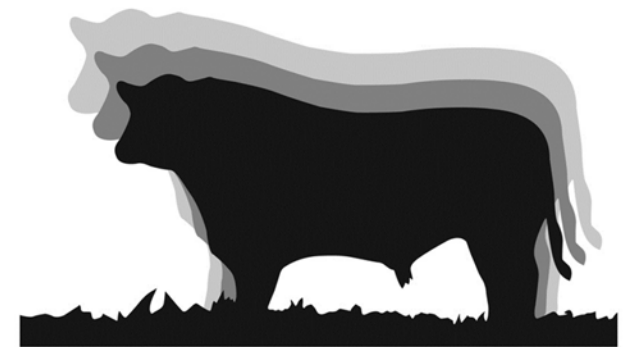
# **AGRICULTURAL LIME APPLICATION**

**CLOUDBREAK LOWLINES**

**&**

**EUNGELLA BEEF**

**[www.lowlinecattleqld.com.au](http://www.lowlinecattleqld.com.au)**



**LOWLINE**

# Cloudbreak

- **Purchased in 2010 from original family**
- **Grass-fed, Beef Cattle breeding and finishing**
- **Ex-dairy**
- **215 Acres, hilly terrain**
- **Predominately Kikuyu and Clover pastures**
- **Altitude of approx. 800 metres, a cool climate, and average rainfall of 2.1 metres**
- **Bounded by Crediton Creek, and Eungella National Park**





# Australian Lowlines

- **Bred from pure Aberdeen Angus genetics**
- **Developed in Australia to suit sustainable and lifestyle properties**
- **Compact frames, with excellent feed efficiency**
- **Low impact on paddocks and fences**
- **Early maturing – the ability to finish on grass from 24 months old**
- **Naturally polled**
- **Docile Temperament**





# End Product

- **We market sustainable, grass-fed, stress-free, free-range animals**
- **Superior quality ethical beef**
- **Nurtured from our paddock to your plate, with low food miles.**
- **Providing local people with local produce;**
- **Educating people about where their food comes from, and how it is treated.**
- ***‘The highest quality sustainable beef from our cool green hills at the top of the world’***





# Agricultural Lime Trial

**To trial the application of Agricultural Lime (Calcium Carbonate) to a degraded Paddock to change the pH**

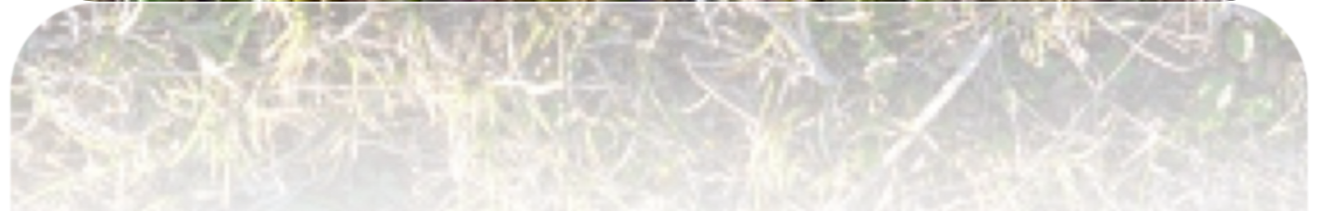
- **to improve the soil,**
- **and therefore the pasture,**
- **to improve cattle nutrition,**
- **and decrease erosion,**
- **and the need for fertilisers.**





# Changing the pH

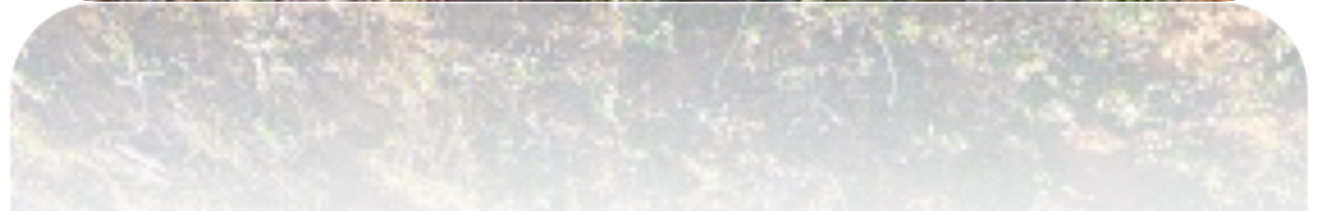
- **utilise the Lime to neutralise acidity in the soil,**
- **freeing up trapped nutrients that are currently locked up by the acidity,**
- **getting rid of the aluminium toxicity in the soil,**
- **improving the establishment, yield, and persistence of pasture,**
- **allowing the growth of legumes such as white clover for greater nitrogen fixation through nodules.**





# Improved carrying capacity

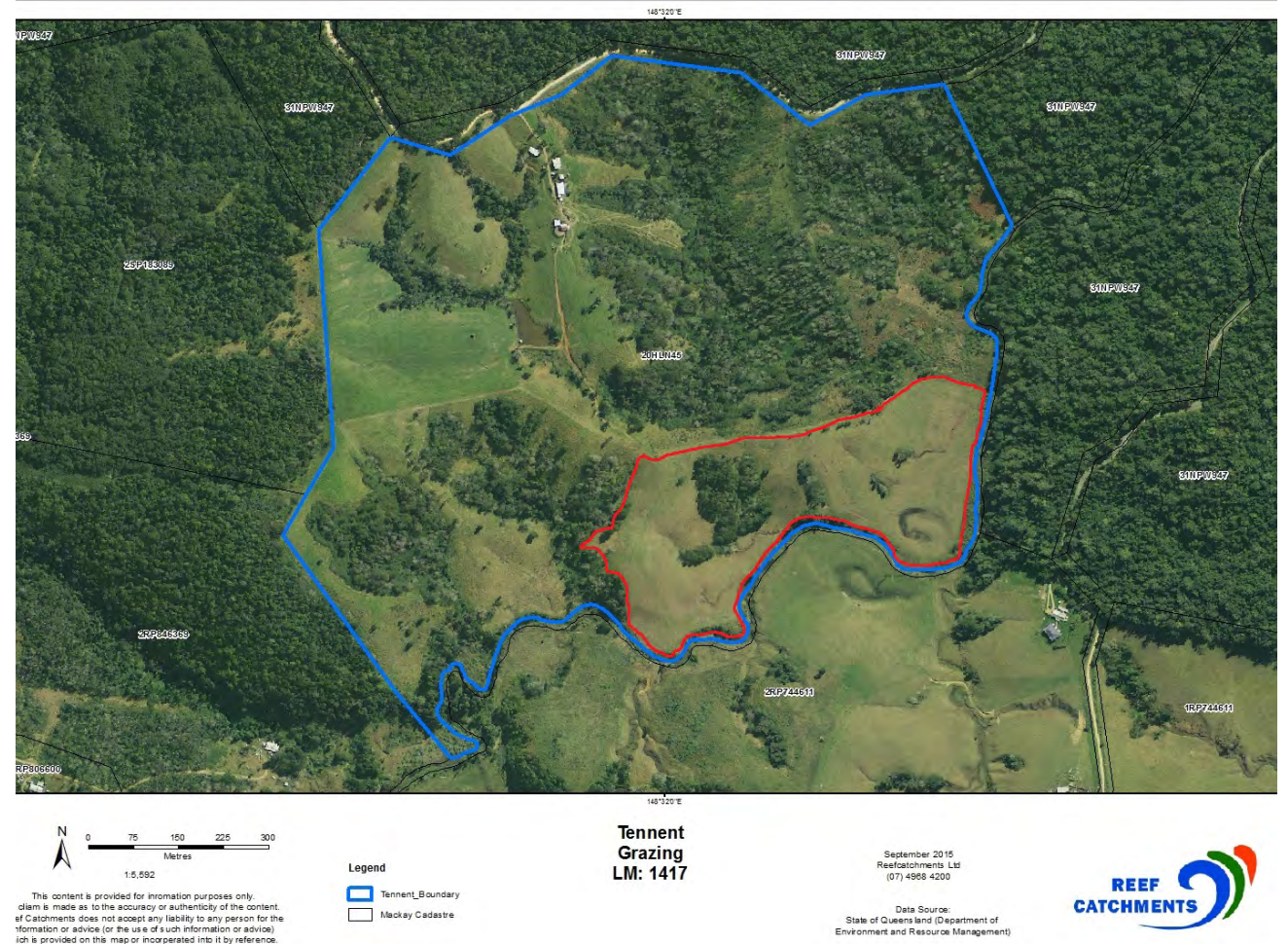
- **improve the carrying capacity of the paddock,**
- **and provide a higher protein content in the feed.**
- **more clover = less nitrogen fertiliser needed,**
- **working towards the goal of having a perfect balance of legumes and pasture.**
- **improved groundcover with will also significantly lesson particulate run-off**





# Trial Site

- **The ‘Gallows’ paddock, of approximately 35 acres, in the SE corner of ‘Cloudbreak’.**
- **The ‘Gallows’ paddock is bounded on two sides by Crediton Creek, and is made up of sloping hills, and creek flats.**
- **During past intensive dairying activities over the years, the only things added were most likely super, and urea.**





# Trial Details

- **Apply 2 tonne per acre Agricultural Lime, as recommended by agronomist.**
- **Approximately 35 acres in 'Gallows' paddock, therefore allow 70 tonnes.**
- **Ag Lime comes in 33 tonne lots in truck and quad dog, therefore work on 66 tonne.**
- **Have soil tests done before, during and after trial.**



# Lime choice

- **Chose to use a FNQ supplier near Townsville.**
- **They supplied crushed limestone, rather than the locally-available product being more like dolomite.**
- **The FNQ lime had a higher calcium content.**
- **The FNQ lime had a higher reactivity ie ability to change pH.**

REPORT ON SAMPLE OF LIME			
FILE NO :	1504111245	DATE ISSUED :	1/05/2015
MIRRIWINNI LIME PO BOX 2 MIRRIWINNI, QLD 4871		CLIENT ID :	MIR010
		PHONE :	07 4067 6133
SAMPLE ID :	CA LDQ-1	DATE RECEIVED :	29/04/2015
ANALYSIS REQUIRED :	Lime quality (LDQ-1)		
ITEMS	ABBREVIATION	UNIT	RESULTS
Results of analysis on sample on dry weight basis:			
pH (1:5 Water)			9.2
Electrical Conductivity	EC	µS/cm	153
TOTAL CALCIUM	Ca	%	39.8
TOTAL MAGNESIUM	Mg	%	0.205
TOTAL SODIUM	Na	%	0.00347
CALCIUM CARBONATE	CaCO <sub>3</sub>	%	99.5
	(Calculated from Total Calcium)		
MAGNESIUM CARBONATE	MgCO <sub>3</sub>	%	0.72
	(Calculated from Total Magnesium)		
MOISTURE CONTENT	MC	%	16
MATERIAL > 2mm		%	0
MATERIAL 1.00 - 2.00 mm		%	0
MATERIAL 0.85 - 1.00 mm		%	32
MATERIAL 0.30 - 0.85 mm		%	7
MATERIAL 0.075 - 0.30 mm		%	34
MATERIAL < 0.075mm		%	27
NEUTRALISING VALUE	NV	%	100.35
EFFECTIVE NEUTRALISING VALUE	ENV	%	68.64



**June 2016**

















# Soil Test June 2016

Report No.	HTS1874491-21072016			Date of Report	22/07/2016	
Field Information						
Crop	Pasture	Soil Texture	Loam	Irrigation Type	None	
Variety		Soil Structure		Treatment Area	0	
Crop Stage	Tillering	Soil Colour		Yield Goal	0.00	
Method	Element	LOD	Result	Units	Optimal Range	Comment
4A1	pH*+		5.2		6 - 6.5	Low
3A1	EC (1:5)*+	0.002	0.05	mS/cm	0.1 - 0.25	Medium-low
6A (Other)	Organic Carbon*+	0.06	2.48	%	2 - 3	Optimal
HTSCALC	Organic Matter (OC)		5.46	%		
7B1b	Nitrate - N * +	0.6	15	mg/kg	40 - 60	Medium-low
9G1	Phosphorous (BSES)*+	0.4	40	mg/kg	50 - 200	Medium-low
9B1	Phosphorous (Colwell)*+	1	31	mg/kg	50 - 100	Medium-low
15D3	Potassium (exchangeable)*+	5	168	mg/kg	78 - 156	High
15D3	Calcium (exchangeable)*+	32	653	mg/kg	1100 - 3300	Medium-low
15D3	Magnesium (exchangeable)*+	5	178	mg/kg	200 - 480	Medium-low
15D3	Sodium (exchangeable)*+	5	13	mg/kg	90 - 230	Low
12A1	Zinc (DTPA)*+	0.08	0.96	mg/kg	2 - 5	Low
12A1	Copper (DTPA)*+	0.03	1.02	mg/kg	0.3 - 3	Optimal
12A1	Iron (DTPA)*+	0.7	73.0	mg/kg	20 - 80	Optimal
12A1	Manganese (DTPA)*+	0.05	38.1	mg/kg	4 - 8	High
	Boron		0.05	mg/kg	0.2 - 0.5	Low
5A	Chloride *		16	mg/kg	10 - 120	Optimal
10B	Sulfate - S		14	mg/kg	30 - 50	Medium-low

The methods of chemical test(s) included in this document are derived from:  
 GE Rayment and FR Higginson: Australian Laboratory Handbook of soil and water chemical methods, Inkarta Press Melbourne, 1992  
 GE Rayment and DJ Lyons: Soil Chemical Methods - Australasia, CSIRO Publishing Collingwood, 2011  
 Rayment, GE, & Lyons, DJ (2005) Soil Chemistry: Physical and Chemical Principles, Methods and Applications, 2nd Edition, CSIRO Publishing, Melbourne, Australia.

# Soil Test November 2017

		Payment Status		To Be Billed	
HTS1889510-09112017		Date of Testing		03/11/2017 2:47PM	
ation for GALLOWS PADDOCK					
Pasture		Soil Texture		Loam	
		Soil Colour		Irrigation Type	
Tillering				Water Use	
				None	
Element		LOD		Result Units	
pH*+				5.14	
EC (1:5)*+		0.002		0.039 mS/cm	
Organic Matter (TC)				5.00 %	
Total Carbon *+				2.940 %	
Nitrate - N * +		0.6		8 mg/kg	
Total Nitrogen *+				0.2110 %	
Phosphorous (BSES)*+		0.4		11 mg/kg	
Phosphorous (Colwell)*+		1		15 mg/kg	
Potassium (exchangeable)*+		5		101 mg/kg	
Calcium (exchangeable)*+		32		309 mg/kg	
Magnesium (exchangeable)*+		5		72 mg/kg	
Sodium (exchangeable)*+		5		10 mg/kg	
Sulfate - S				23 mg/kg	
Chloride *				13 mg/kg	
Boron (Hot CaCl2)				0.81 mg/kg	
Zinc (DTPA)*+		0.08		0.32 mg/kg	
Copper (DTPA)*+		0.03		1.10 mg/kg	
Iron (DTPA)*+		0.7		75.0 mg/kg	
Manganese (DTPA)*+		0.05		12.3 mg/kg	
				Optimal Range	
				6 - 6.5	
				0.1 - 0.25	
				3.5 - 5.5	
				40 - 60	
				0.16 - 0.21	
				50 - 200	
				50 - 100	
				78 - 156	
				1100 - 3300	
				200 - 480	
				50 - 72	
				30 - 50	
				10 - 120	
				1 - 2	
				2 - 5	
				0.3 - 3	
				20 - 80	
				4 - 8	
				Low	
				Medium	
				Low	
				High	
				Low	
				Medium	
				Optima	
				Low	
				Low	
				Low	
				Medium	
				Optima	
				Low	
				Optima	
				Optima	
				High	

10/11/17



# Pasture Resilience

- **Increased resilience – frost tolerance, drought, flood**
- **Faster recovery**





# 2017

- **Increased pasture coverage and health**
- **Less weed growth**
- **Increased clover content**
- **Increased nutrient value**
- **Increased carrying capacity**



# Thank-you!

**From Mandy, Kell, Imogen  
and Cassidy Tennent**

**P 07 4958 4601**

**E**

**[moo@lowlinecattleqld.com](mailto:moo@lowlinecattleqld.com.au)**  
**[.au](mailto:moo@lowlinecattleqld.com.au)**

