

# **“A Data Driven Approach To Dairy Technology”**



**Will Russell  
“Jelgowry”  
Bega, NSW**



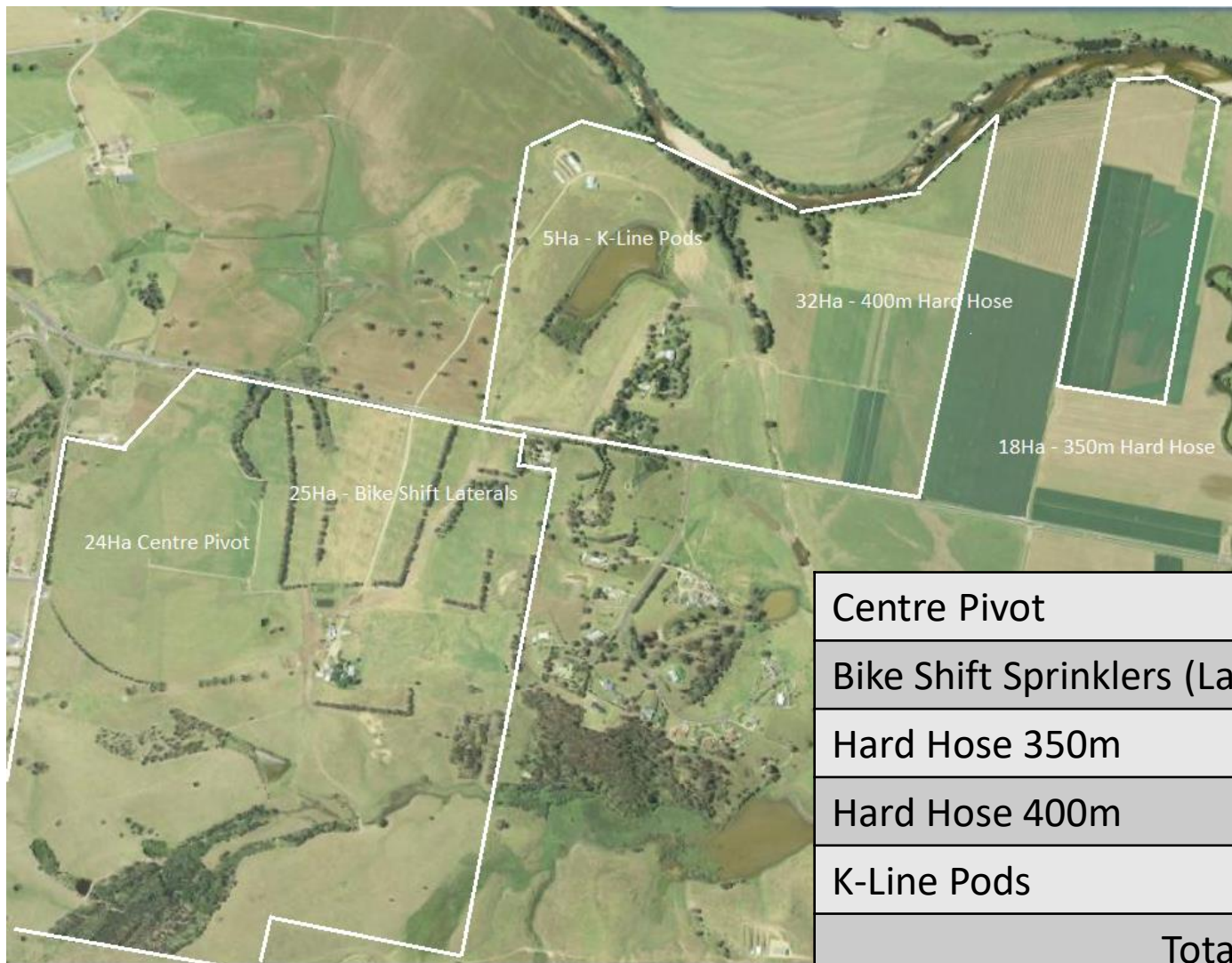
# “Jelgowry” Physical Data

Farm Physicals	2018/2019
Total Area	242Ha
Milking Platform	125Ha (104Ha Irrigated)
Cow Numbers	300 Illawarra Cows Year-Round Calving (345 Lactations)
FeedBase	Kikuyu/Ryegrass Grazing Maize Corn & Lucerne Silage 2.0T/Cow/Yr Concentrate (Manildra DDG/Qualye Pellet)
Heifer/Dry/Beef Blocks	Penuca Swamp - 20Ha Clavering - 170Ha Lowlands - 95Ha (Leased)









Centre Pivot	25Ha
Bike Shift Sprinklers (Laterals)	24Ha
Hard Hose 350m	18Ha
Hard Hose 400m	32Ha
K-Line Pods	5Ha
Total Irrigation	104Ha





# Questions

What crops should we grow, maximise profit? ???

What mixture of crops best suits our calving pattern? ???

How do we minimise our feed gap through the year? ???

Little water. What crop do we stop irrigating? ???

Inputs  
\$/Ha

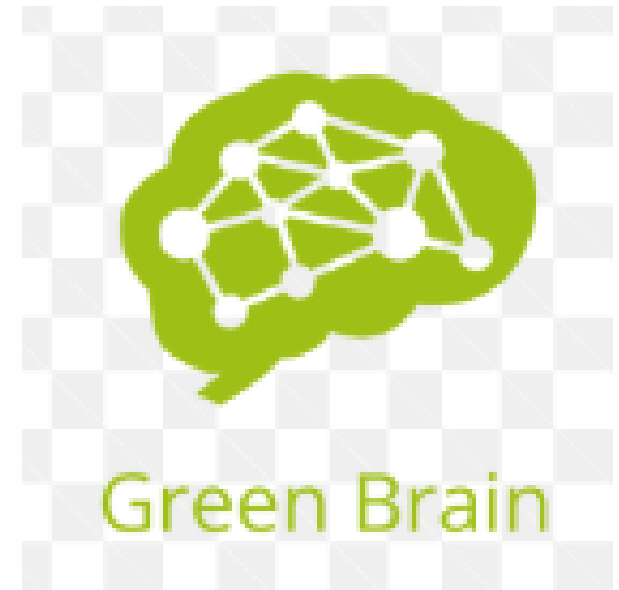


Yield  
DM/Ha



Cost of Feed  
\$/ t DM

# Current On-Farm FeedBase Technology





Free

Easy To Use

Internal Benchmarking

Standard Chart of Accounts

4Hrs/Yr



DairyBase Parameters	Jelgowry	NSW Targets
Homegrown Feed (%)	60%	>60%
Homegrown Feed Grazed (%)	60%	>80%
Nitrogen Applied (kg N/Milking Ha)	150	200-300
50% Water Allocation Use = 500ML	40% - 70%	>90%
Feed Cost (\$/Kg MS)	\$3.30	\$2.50



Free Version

Pasture Management App

Paddock Treatment Records

Records Kg DM/Ha

Maximise Pasture Quality/Quantity

# Paddock Treatment Records

Fertilising

Spraying

Seeding

Harvesting



Jelgowry

Updated 4 days ago

Average Cover +13 ↑ 2061

Average Growth -58 ↓



Dashboard

Paddocks

Fertilisations » 2018-12-18

Input

\* Date of Application

18/12/2018

Preset

Urea

Description

Nutrients

N%	P%	K%	S%	Ca%	Mg%	Mn%	Cu%	Zn%	Mo%	Se%
45.0										

Application Rate<sup>Kgs/ha</sup>

80.0

Fertiliser Cost<sup>\$/t</sup>

300.0

Application Cost<sup>\$/ha</sup>

30.0

Applied Nutrients<sup>Kgs/ha</sup>

N	P	K	S	Ca	Mg	Mn	Cu	Zn	Mo	Se
36.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00

Selected Area<sup>ha</sup>

9.3

Total Fertiliser<sup>Kgs</sup>

747

Total Cost<sup>\$</sup>

504

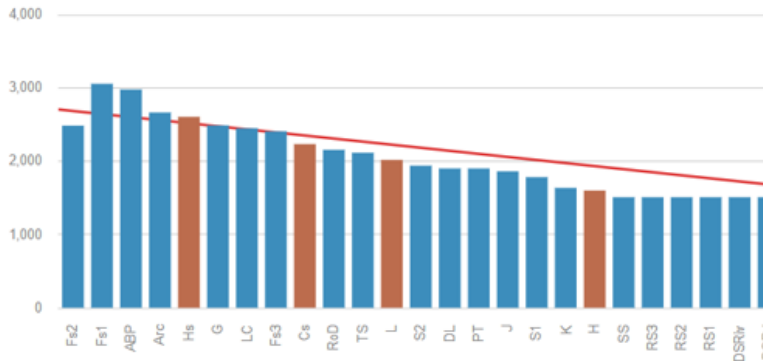
Save Fertilisation



# Pasture Management Software

History		
<div> <div>141 days since grazing</div> <div>206 days since planting</div> <div>185 days since fert</div> <div>0 days since spraying</div> </div>		
Date	Activity	Days between
July 05, 2019	Spraying	
February 14, 2019	Grazing	3
February 11, 2019	Grazing	8
February 03, 2019	Grazing	12
January 22, 2019	Grazing	1
January 21, 2019	Grazing	
January 01, 2019	Fertilisation	
December 11, 2018	Planting	

## Feed Wedge



## Technology 1



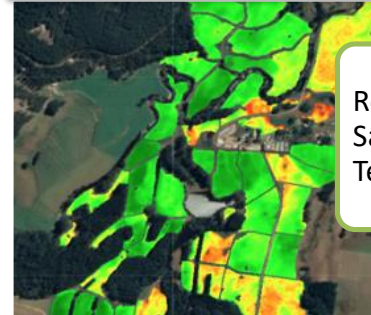
Rising Plate Meter

## Technology 2

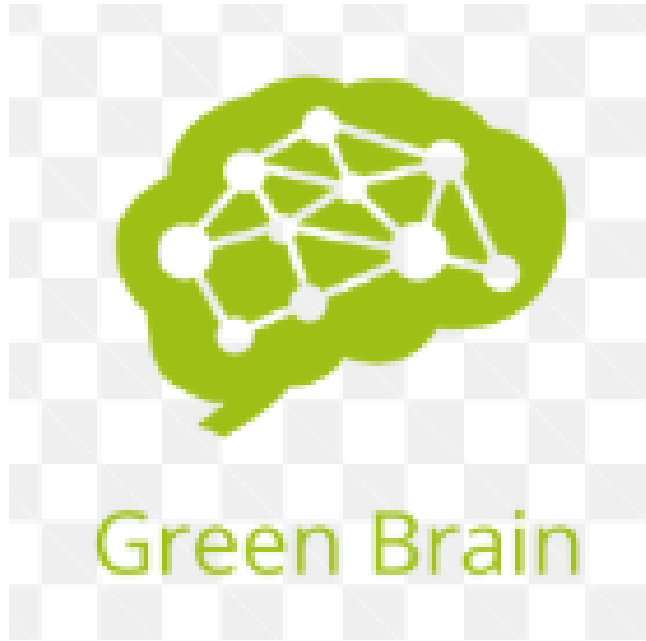


C-Dax Pasture Meter

## Technology 3



Remote Satellite Technology



Remote Soil Moisture Monitoring

\$400/Yr Base Hub Subscription

LLS Funded Upfront Capital Costs

Multiple Dairy Farms/Hub

Up to 63 Sensors/Hub

# Maize 2018/19

## Soil Moisture Probe

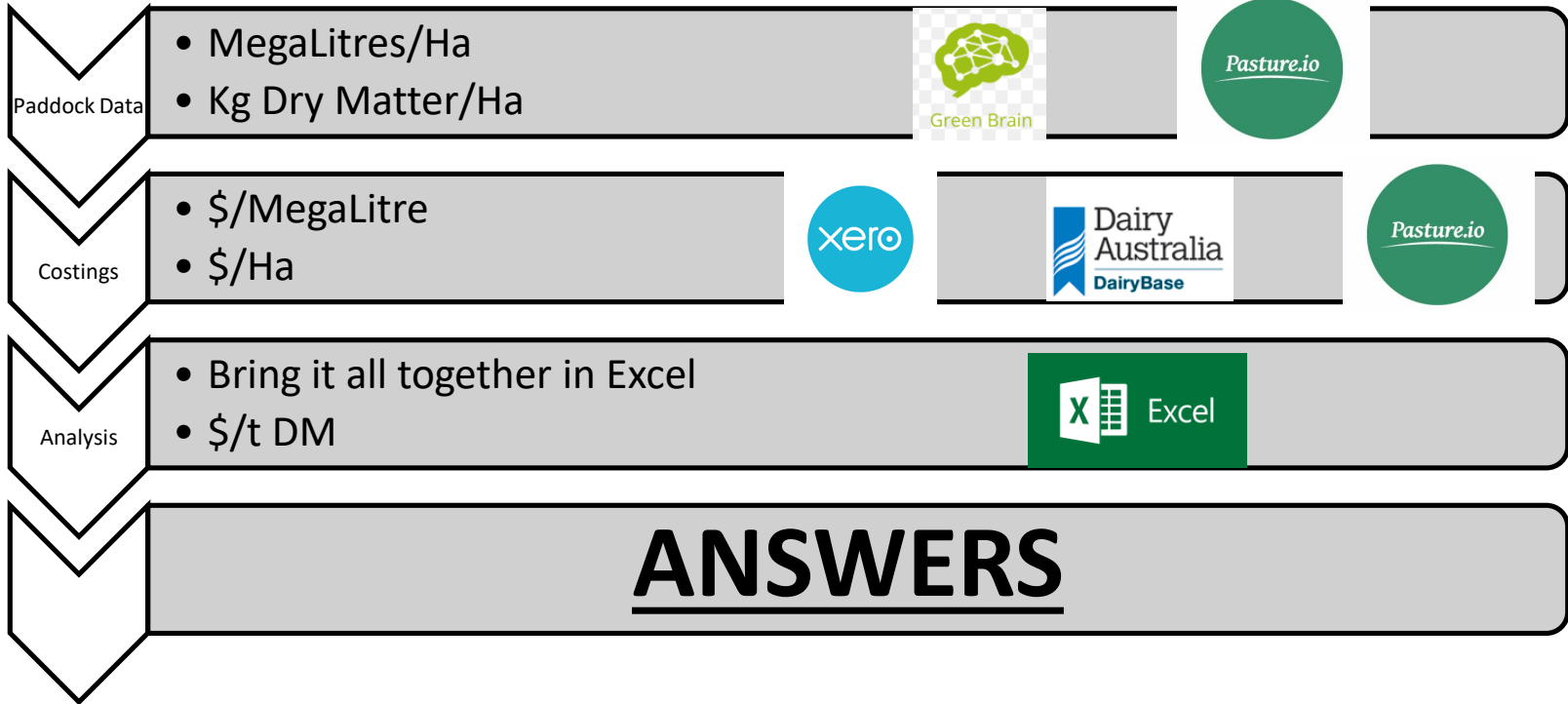


Yield - 67 Wet Tonnes / Ha  
- 23 DM Tonnes / Ha  
Cost - \$175 / t DM in pit

Water Use - 1.5ML / Ha Irrigated  
- 6.0 ML / Ha Rainfed  
Irrigation/Water Cost - \$17/t DM @ \$250/ML



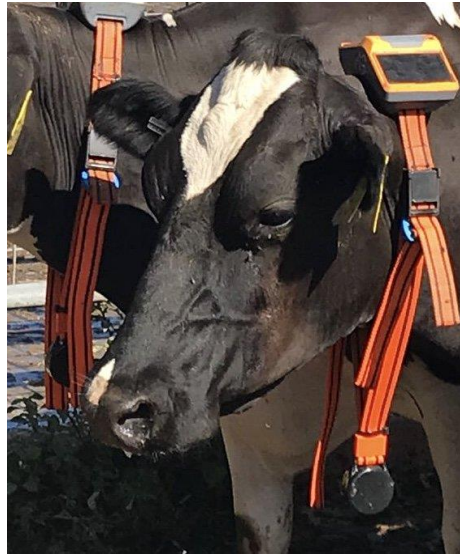
# Valuable Data



# Future On-Farm FeedBase Technology



FutureFeed



Virtual Fencing



NPK Soil Probes

# FutureFeed



CSIRO Developed

Seaweed Cow Feed

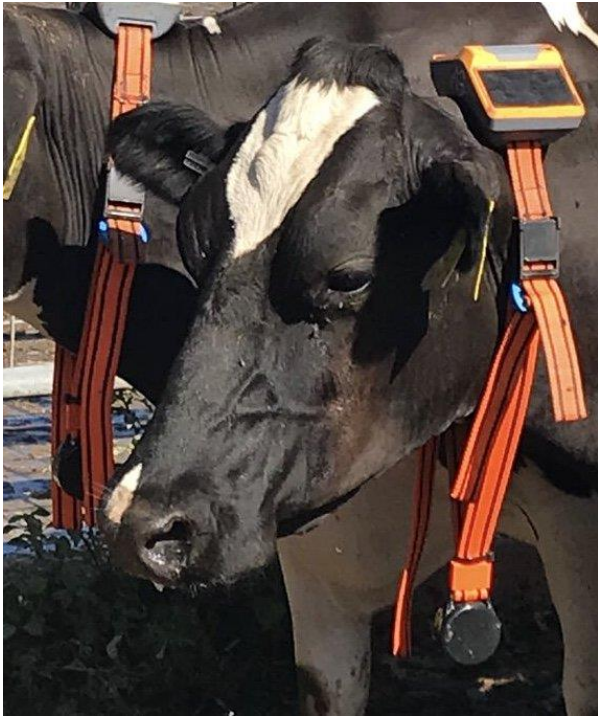
99% Reduction in Methane Emitted

>10% Increase in Feed Efficiency

Social Licence



# Virtual Fencing



CSIRO / Agensens

Eliminates Internal Fences

Precise Strip Grazing

Automated Herding

“All in One” Collar

# NPK Soil Probes



teralytic

Real Time Nutrient Data

Easy To Setup

Precise Fertiliser Application

Reduced Fertiliser Costs

Still Developing.....