Can Farmers use Technology to Improve Profit?

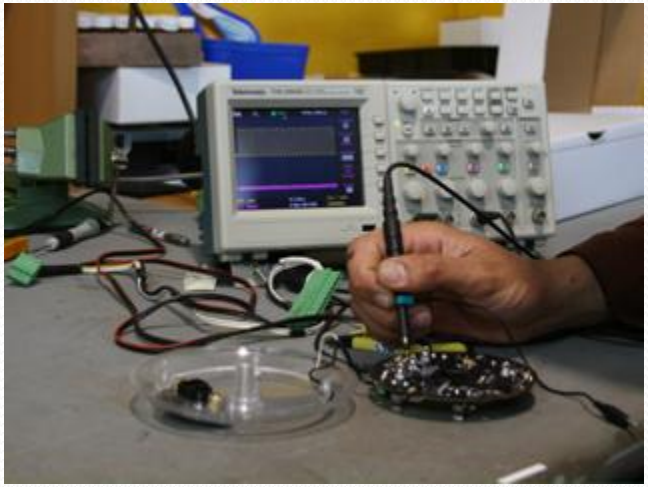
Graham Lynch
Novel Ways Limited

1935 to 2011

Novel Ways
ELECTRONIC PRODUCT DEVELOPMENT

What we do

- Novel Ways design and produce prototypes for clients
- We are also involved in niche manufacturing
- We have developed two products for NZ farmers



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Reduce Costs With New Tools

Our Batt-Latch portable gate timer for example, can save

- 200 hours a year in time
- 70% of dairy herd lameness
- fuel and vehicle costs

  - while making your workplace more enjoyable!

"Your Batt-Latch is up there with the electric fence and herringbone shed".
Robert Stuart, Te Awamutu

"These are absolutely brilliant and we love it to bits".
Michelle Eade, Manaia.

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Simple things add profit

- Use a basic thermometer to monitor soil temperature.
- Soil temperature can help predict grass and crop growth, suggest post-grazing residual levels, warn of facial eczema risk, mark sowing times/germination, allow fertiliser applications, and is a powerful timing predictor for stock purchasing and selling.

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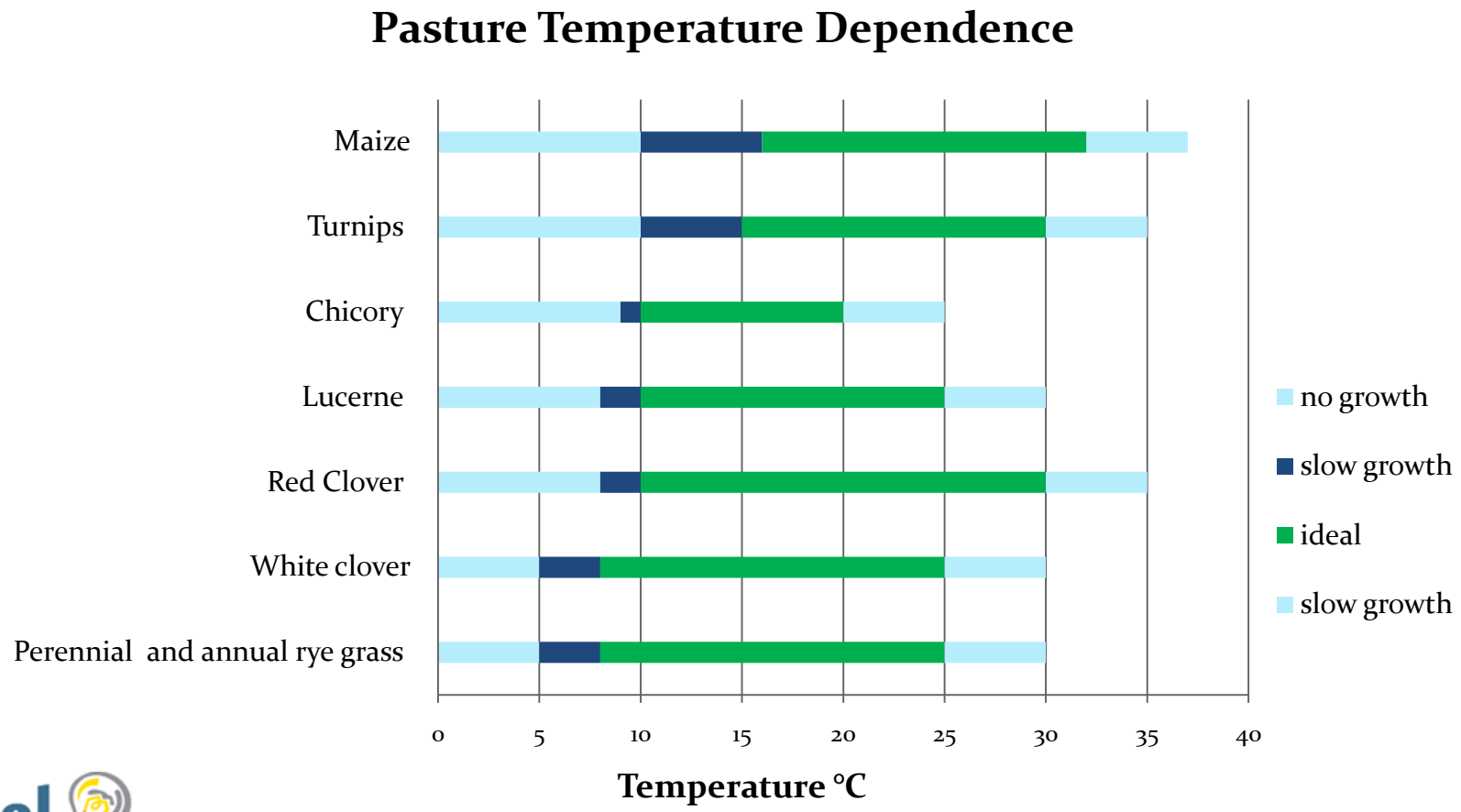
How different fodder crops respond to soil temperature



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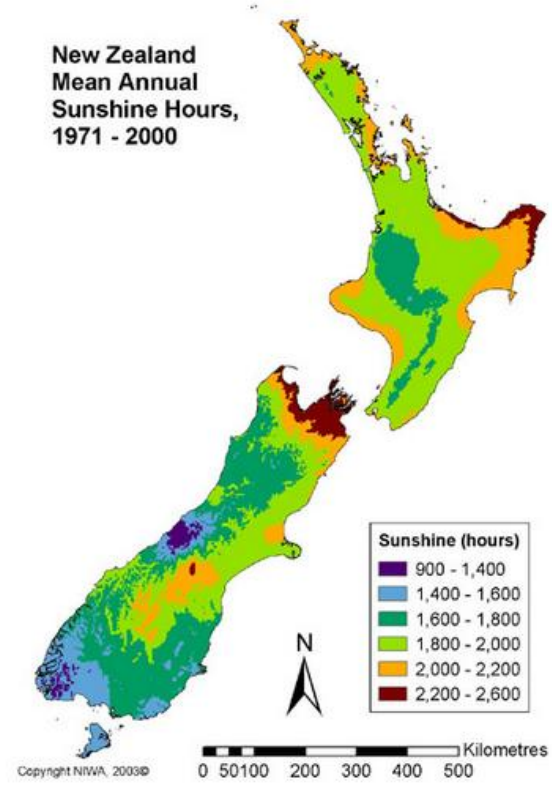
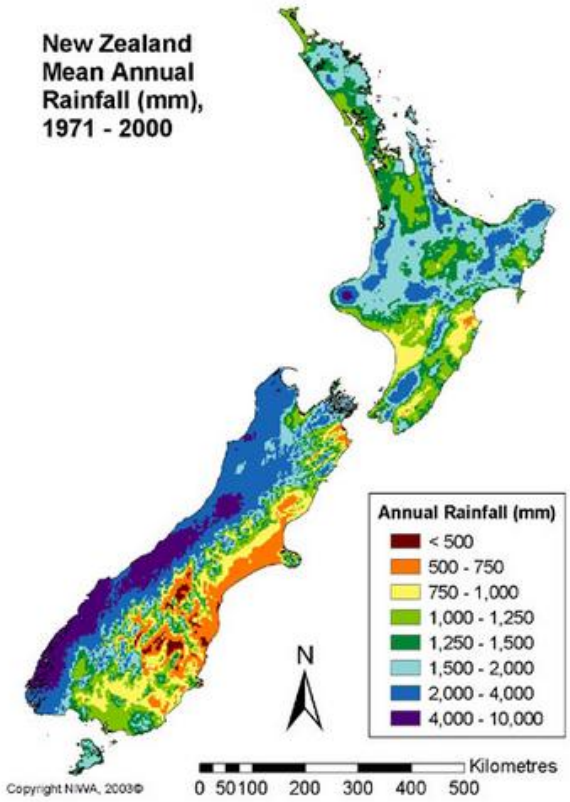
Natural Resources



http://www.niwa.co.nz/education-and-training/schools/resources/climate/overview

Waikato:

- 1900 hours of sunshine per year
- 1500 mm of rain per year



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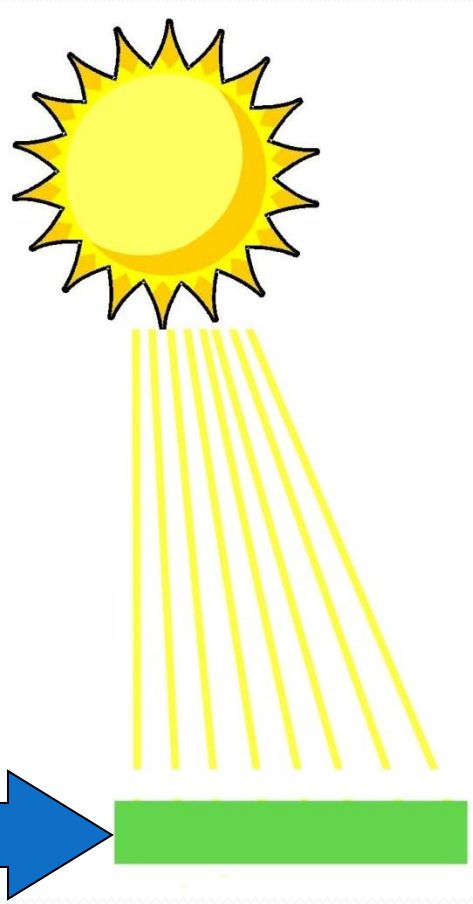
Farming the sun

- Every year, 13 million kilowatt hours of sunlight (blackbody radiation) hits every hectare.
- That is 2.6 million dollars* (retail) of free energy per hectare, $260 per square metre

*Electricity costs 20c per kWHr



1300 kWhrs of sun per square metre every year

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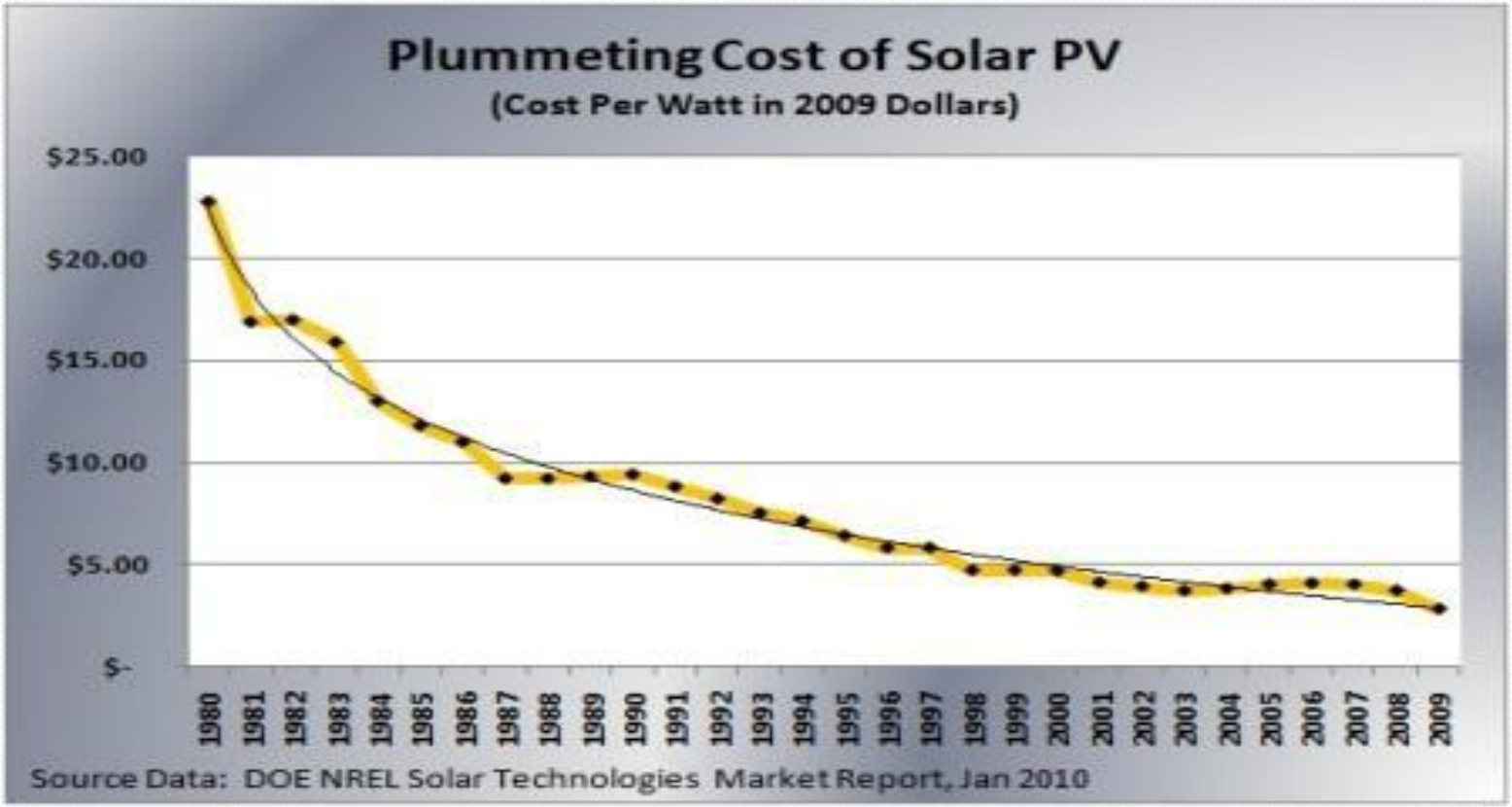
Solar farms becoming feasible

- PV Panels approaching $1 a Watt



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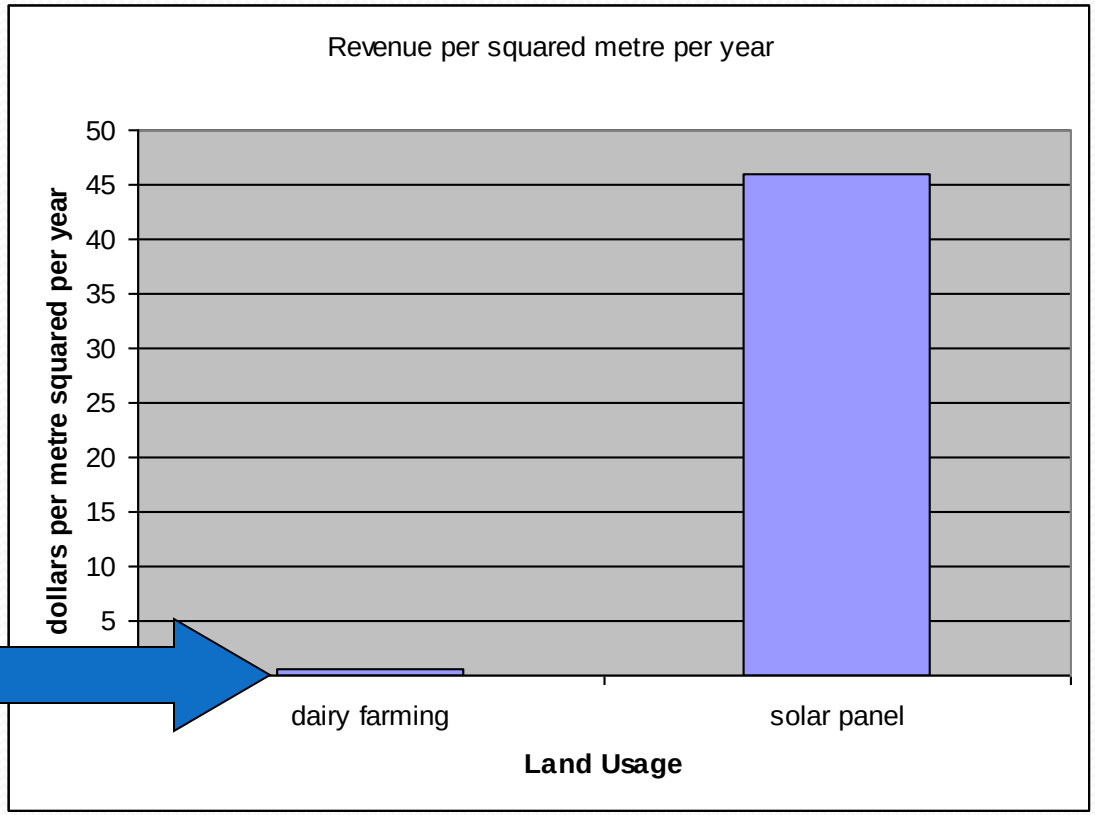
Dairying vs Solar Farming

- Solar panels cost about $600 per square metre, a large capital cost
- However the cost of solar panels is decreasing each year

A dairy farm achieves 60c-$1.40 income per square metre, per year



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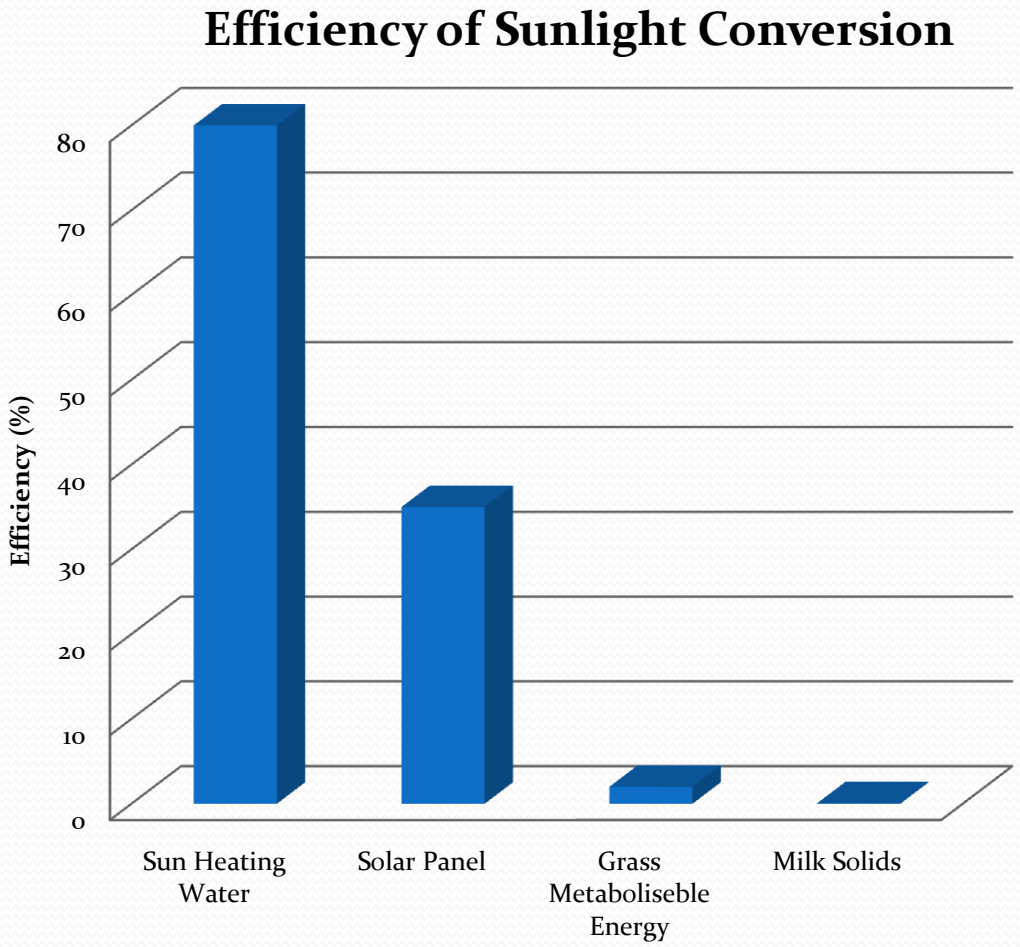
How can we improve this

- Need to improve efficiency of farming and reduce costs
- Grass only converts 2% of sunlight into usable energy



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Is Biodiesel the future

- Algae produces 18,500 litres of biodiesel per hectare
- Corn produces only 2,300 litres of biodiesel per hectare
- Can be grown on land unsuitable for food production

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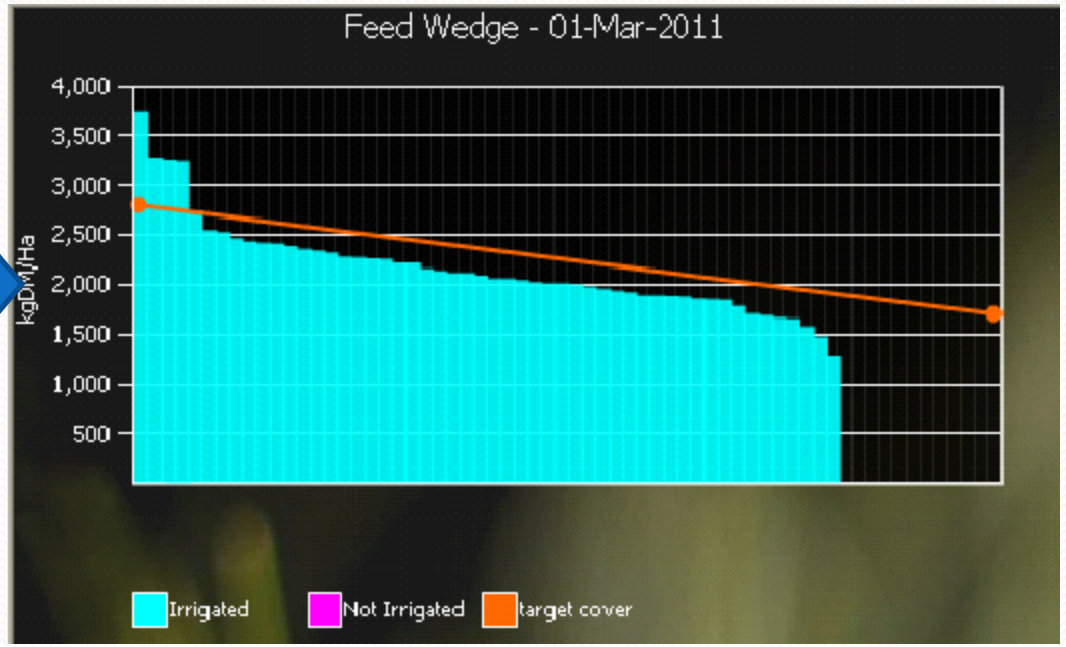
Make some attempt to measure drymatter often

- Dry matter meters, various types, e.g. GrassMaster
- Use predictors like the Feed Wedge



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Use a Brix meter to evaluate grass and crops (sugar in sap)

- A cheap portable device to measure sap sugar
- Looks to be accurate, in our trial
- May have great uses on-farm
- Waiting for scientists to catch up
- Linked to biological farming practice

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Biological farming - are we looking past the obvious

- Encourage soil biology, more lime, less Nitrogen
- Improves plant root depth, humus levels, water storage
- Reduces FE, improves animal health
- Monitor with Brix meter
- Some farms - stunning results

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Barriers in retail

- How do small manufacturers get their products stocked with rural supply stores?
- Retailers are concerned with stock turnover and the cost of stocked items.
- Often products that are very useful for farmers will never reach the retail shelf consistently.

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Evaluating farm equipment

- Industry-good bodies should test all equipment on behalf of farmers, and report back on efficiency, ROI
- Net benefit to farmers could easily reach several hundred million p.a.
- Lobbying needed

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