

Macalister Demonstration Farm

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NEWSLETTER 24

Monday August 21st 2009



Extension projects at the MDF are funded by Dairy Australia and the Gardiner Foundation with support from GippsDairy.

Spring Sessions @ the MDF

Every Wednesday from 30th September to 11th of November 2009

11am – 12.30pm

Macalister Demonstration Farm, Boggy Creek Rd, Riverslea

Week 1 September 30th - **Summer Crops** - Janice Dowe (DPI), Rachael Hopkinson (MG), Peter Norwood (Daly's)

Week 2 October 7th - **Mating - Back 2 Basics** - Mark Humphris, MVC

Week 3 October 14th - **Grain or not to grain - that is the question** - Jason McAinch DPI, guest speaker DA TBC

Week 4 October 21st - **Fertiliser - how much is just enough? Calcium ain't calcium - the role of Lime & Gypsum** - Cameron Gourley & Bree Walshe DPI

BBQ lunch provided by Irwin Stockfeeds

Embracing the future – Farmers and Computers

Come and see internet presentations by your local Industry providers (SRW, DPI, MG Farm, Telstra, Mistro) and consult with them about their new computer programs can make your life easier.

Supported by Maffra Area International at the Geoff Webster Centre, Thomson St Maffra

Tuesday 6th October 9:30 am-2:30pm

Soup and sandwich lunch available.

Yellow Rag

Bree Walshe Dairy Advisor DPI Maffra

Fertiliser costs are often the third biggest expense on a dairy farm. Given tight margins this year soil testing can save you some serious money. Many farms in the MID have adequate fertility and savings on fertiliser can be made, but without soil testing you are flying blind.

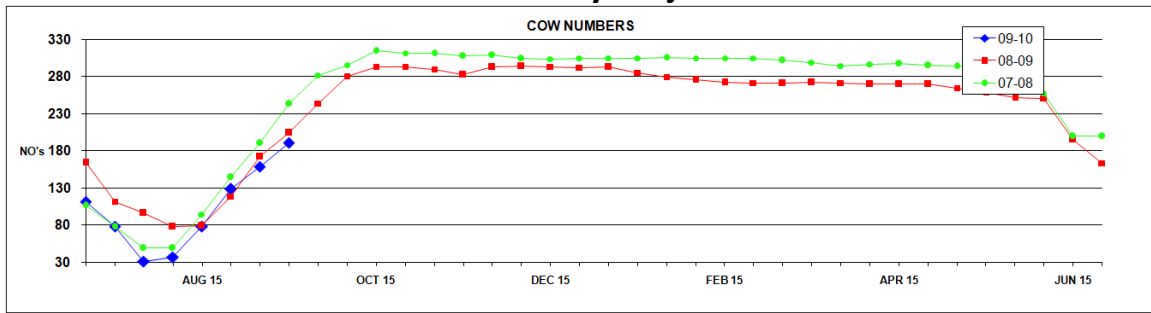
Cameron Gourley's research on 'Better Fertiliser Decisions' based on soil fertility and response to fertiliser, determined that 80% of farmers have greater than optimal Olsen Phosphorous (P) levels in soil, whilst 50% of farmers have twice that of recommended levels. The study found that many farmers have significantly high Potassium (K) and Sulphur (S) levels as well.

Like many things in dairy farming the law of diminishing returns applies to fertiliser use. Once soil fertility has reached its critical value, extra fertiliser applications will see a reduced response. What are the critical values? Come along to the 4th Spring Session on the 21st of October to find out.

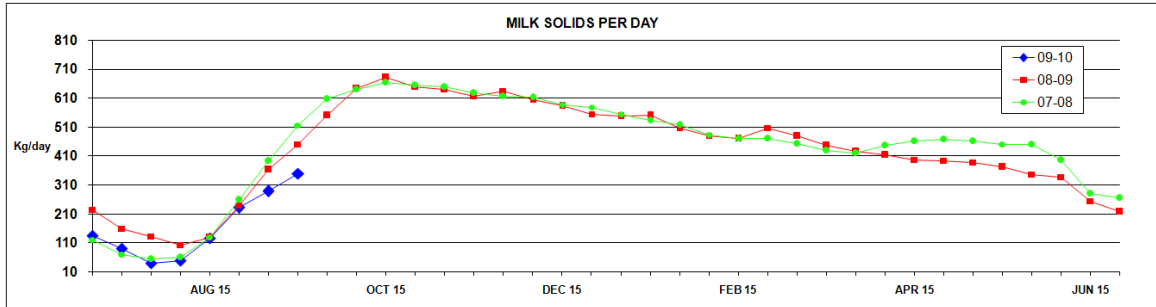
Look at the bigger picture – if pasture is not performing, it may not be a fertility issue, it may be soil structure, a moisture (irrigation/drainage) issue or grazing management. So having a trusted person to review your soil test is critical.

DPI is offering up to 6 soil tests for the price of 3 from an independent lab, \$270 spent on 6 soil tests is well worth it! Already got soil tests but you don't understand them? - Call for an interpretation. Please call DPI Maffra on 5147 0800 or your fertiliser representative for soil testing.

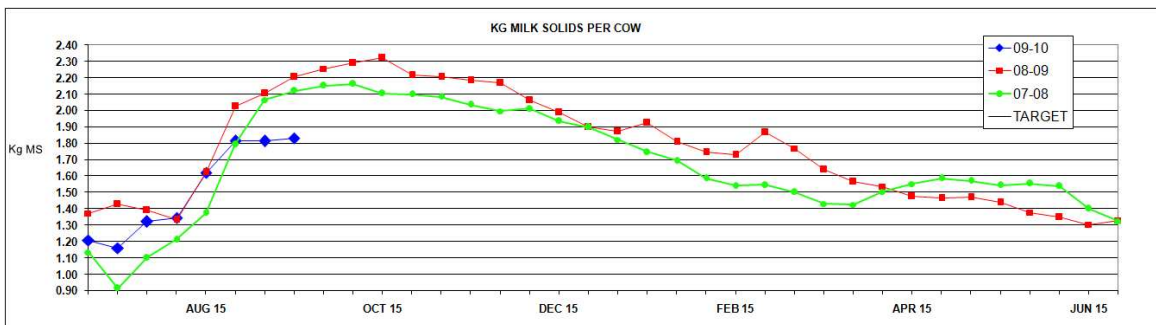
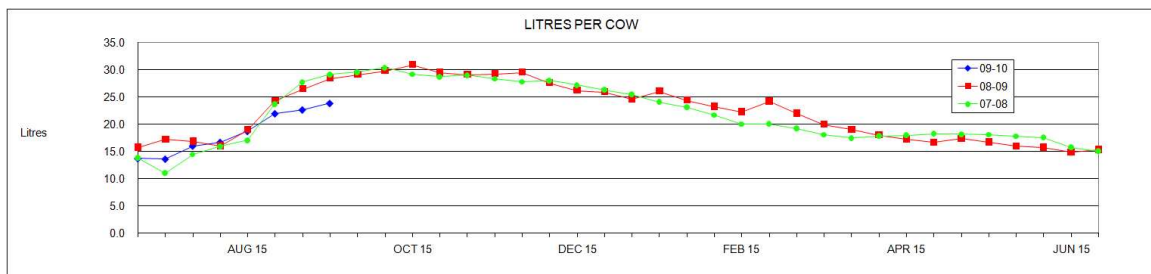
Macalister Demonstration Farm Profitability Project



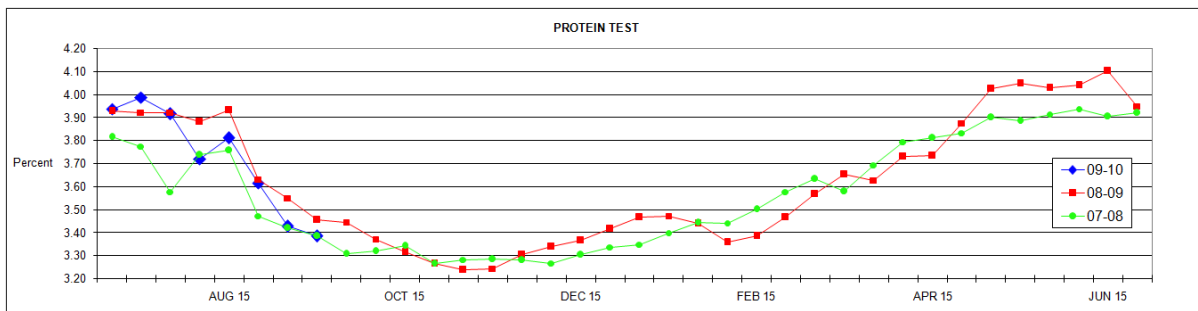
Milker numbers are slightly behind last year. Our start of calving date is August 10 and we are aiming for fewer cows this year. We peaked at 290 last year but plan to peak at 280 this year.



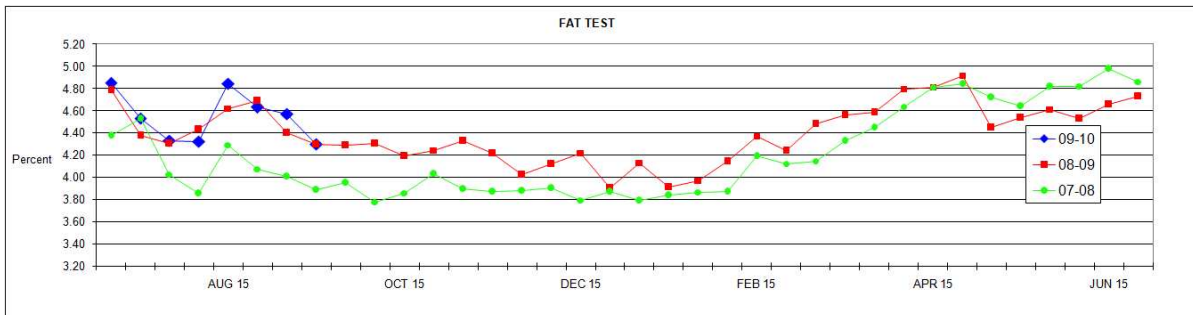
Total milk solids per day is well below last year, due partly to fewer cows but mostly due to much lower production per cow.



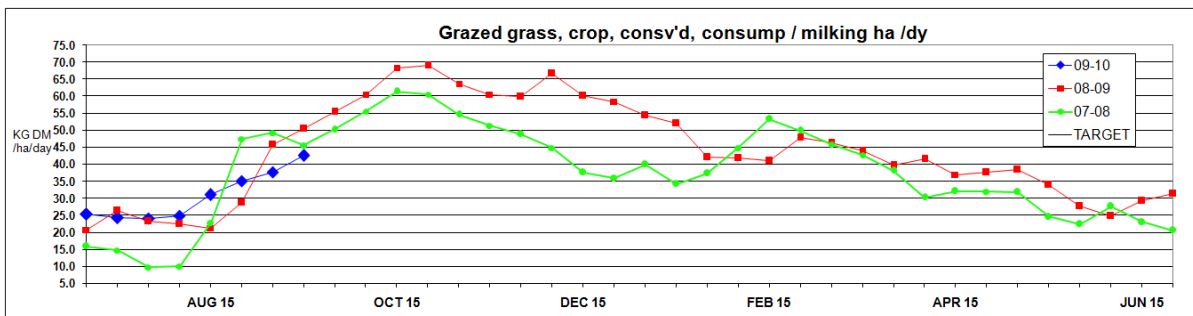
Milk production per cow is well behind last year. They climbed to 23 litres (1.8 kg MS), then flat lined. This time last year they were doing 27 litres and 2.2 kg MS.



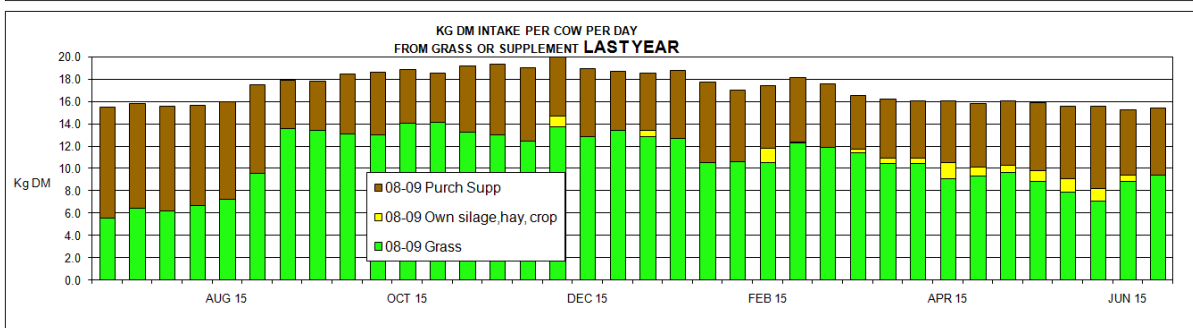
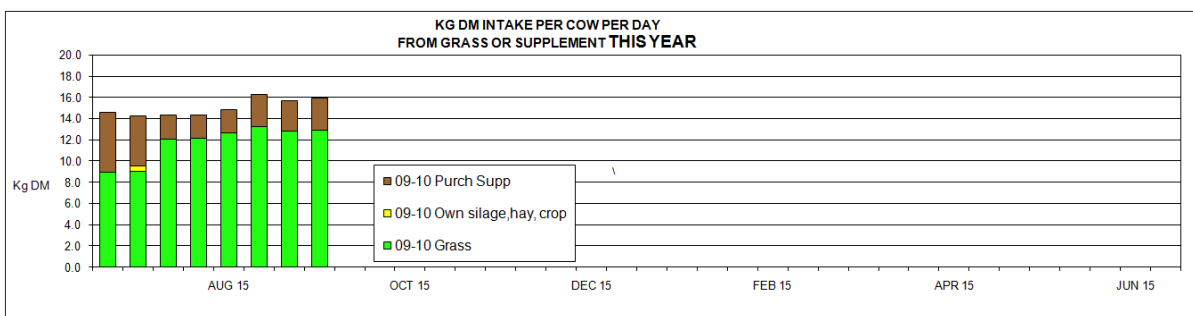
Protein test is not bad but lower than last year.



Fat test is about the same as last year.



Currently the farm is delivering a grass consumption of 43 kg DM per hectare per day, lower than last year when it was 50 kg DM per hectare per day. Some paddocks got a bit dry a few weeks back and we suspect that our nitrogen at 0.9 kg element per hectare per day has not been enough. However, there has been enough grass available to provide each cow with 12.5 kg. (See graphs below). This time last year they were getting 13 kg of grass.



The two charts above show what the cows are eating compared to last year. Currently each cow is eating about 2 kg DM less per day than last year. Most of that difference is the amount of grain (wheat) being fed.

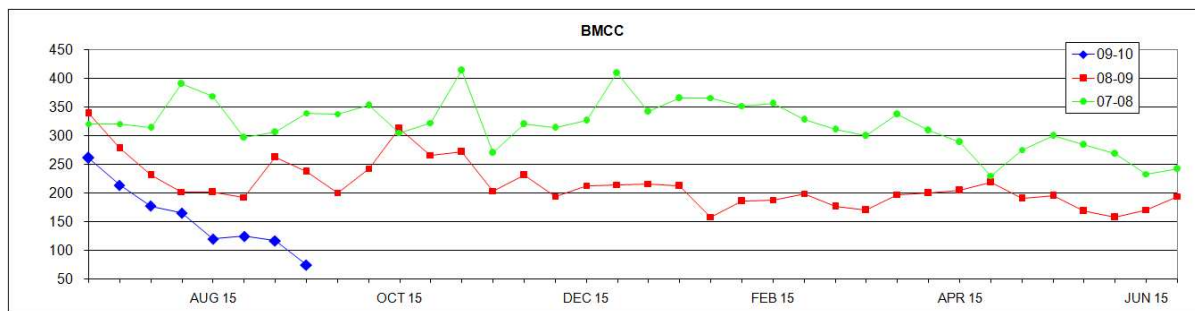
We have been reluctant to feed much grain thinking that it was impossible to get a profitable response because of the low milk price and the high grain price. The litres of milk per extra per kg grain needed would have been around 1.8 litres, which is a very high response. We were aiming to get 18 kg intake with only 2 kg of grain, possibly expecting too much of early lactation cows without the higher dry matter and energy density of grain.

There could be many reasons why the cows are not producing as well as last year, including:

- Body condition at calving, but that has been similar to last year.
- Mineral feeding was stopped in February.
- The transition feeding between springing and calving, but it has been similar to last year and there have very few milk fevers this year.

However, we have come to the conclusion that most of the lower production (4 litres less) is due to the missing 2 kg of grain.

Since Tuesday 15th, because we now expect a high milk response to grain and because grain is now cheaper, we have been lifting the grain by 0.25 kg per day. Grain is now at 3.2 kg “as fed” per cow per day (1.0 kg “as fed” higher) and the cows have lifted to 25 litres or 1.90 kg MS. (Not yet being reflected in the graphs).



The BMCC is still being driven down.

CARBON READY DAIRY DEMONSTRATION PROJECT

- CARBON EMISSIONS AT THE MACALISTER DEMONSTRATION FARM

BACKGROUND

In May 2009 the Macalister Demonstration Farm (MDF) made a successful application to the Australian Government for FarmReady Industry Grant funding to undertake the ‘Carbon Ready Dairy Demonstration’ project. The project will use the MDF as a case study to identify the source and size of carbon emissions generated by normal farm operations.

This part of the project looks at the level of carbon emissions generated at the MDF and the implications for the farm business under the proposed Carbon Pollution Reduction Scheme (CPRS).

CARBON EMISSIONS AT THE MDF

How are carbon emissions measured?

Carbon emissions are measured in carbon dioxide equivalents (CO₂-eq) with the ‘Global Warming Potential’ of each gas measured against the impact of carbon dioxide. For the purpose of the CPRS, agricultural emissions are limited to methane and nitrous oxide; carbon dioxide produced by animals is not included. Carbon dioxide represents 1 CO₂-eq, each unit of methane (CH₄) is 21 CO₂-eq, and each unit of nitrous oxide (N₂O) is 310 CO₂-eq.

The calculation of emissions at the MDF has used the Dairy Greenhouse gas Abatement Strategy (DGAS) calculator developed in partnership between Dairy Australia, the Tasmanian Institute of Agricultural research, the University of Tasmania and the Dept. of Agriculture, Fisheries and Forestry. This calculator will soon be available on the Dairy Australia website.

How much carbon is emitted at the MDF?

Based on the level of production and management system in place the MDF generated a total of 1918 tonnes CO₂-eq over the season (Table 1 and Fig 1).

Less than 12% of emissions are generated in products or feedstuffs before reaching the farm. Under the CPRS these emissions will be the responsibility of the

business that generated them, but only if they are caught up in the CPRS net. On-farm carbon emissions are made up of electricity and diesel emissions – this 8% of farm emissions is also counted against refinery and power generation emissions.

That leaves 1539 tCO₂-eq of emissions or 80% of farm emissions as eligible to be included in the CPRS. More than 72% of the eligible emissions are from methane generated by rumen digestion, 14% by indirect losses of nitrous oxide, 10% generated by losses of nitrous oxide in dung and urine and less than 3% generated by nitrous oxide loss from fertiliser.

Table 1: MDF Carbon Emissions Breakdown 2006-09

	Tonnes CO ₂ -eq/yr		
	06-07	07-08	08-09
Pre-farm emissions			
Fertiliser	38	43	45
Grain	243	205	170
Other feed sources	138	30	11
On-farm emissions – no CPRS liability			
CO ₂ –Energy – Electricity & Diesel	262	177	153
On-farm emissions – CPRS liability			
CH ₄ - Ruminant	1254	1141	1115
CH ₄ - Effluent ponds	21	18	18
N ₂ O - Effluent ponds	1	1	1
N ₂ O - N Fertiliser	31	38	44
N ₂ O - Dung, Urine, Spread	152	147	153
N ₂ O – Indirect*	193	196	209
Tree plantings	0	0	0
TOTAL EMISSIONS	2334	1996	1918
CPRS obligation	1653	1541	1539

*Indirect emissions include later or off-site losses

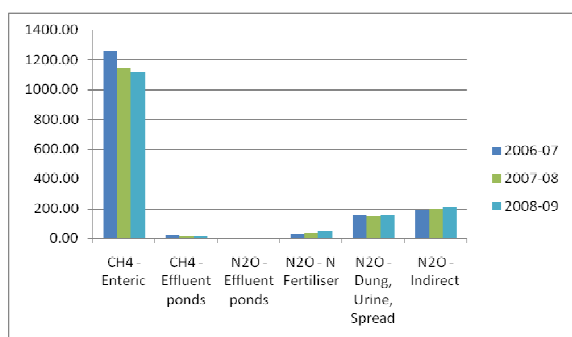
following runoff, loss to the air and leaching of dung, urine and fertilizer; it also includes estimates of loss following soil cultivation.

What does this mean under the proposed CPRS for the MDF?

The Government has not yet decided if agriculture will join the CPRS and has deferred a decision until 2013 for possible commencement from 2015. However, the Government has announced that the Scheme will begin in July 2011 for all other sectors and this will have an impact on the cost of some farm inputs.

To get some idea of how the CPRS will impact on dairying let's imagine that the production figures, cost of production and carbon emissions for 2008-09 are exactly the same as in 2011 when the Scheme begins. What impact will the scheme have?

Fig. 1 Comparison of MDF Carbon Emissions 2006-2009 (tonnes CO₂-eq)



According to the DPI (Vic) the impact of the CPRS on the dairy industry at the commencement of the Scheme (and assuming a carbon price of \$20/t CO₂-eq) will see a rise in feed costs by 1.5%, fertiliser and farm chemicals by 2% and electricity by 16%. However, the cost of permits in the first year has been fixed by the Australian Government at \$10/t CO₂-eq and analysis by the Australian Treasury suggests that the carbon price will be at \$30/t CO₂-eq by 2015. Based on these assumptions the financial impact of the Scheme up to 2015 (with agriculture excluded) is summarized in Table 3. All costs are in 2009 dollars and exclude the effect of inflation.

Table 3: Anticipated financial impact of the CPRS at MDF up to 2015

	Pre-CPRS costs/year In 2010	After-CPRS costs/year In 2015	After CPRS Increase in costs
Electricity	\$19,621	\$24,330	\$4,709
Supplementary Feed	\$307,698	\$314,621	\$6,923
Diesel	\$5,060	?	?
Fertilizer	\$47,247	\$48,664	\$1,417
Farm Chemicals	\$3,707	\$3,818	\$111

A fuel tax adjustment will be introduced at the beginning of the CPRS whereby there will be a 'cent for cent' reduction in fuel excise to compensate for any rise in fuel price due to the sale of carbon permits. Agriculture will be able to access this fuel tax adjustment for three years from the start of the Scheme. This means that there will be no increase in diesel price as a result of the Scheme until July 2014.

There is also likely to be a fall in milk prices as processors drawn into the Scheme. Dairy processors are likely to be classed as Emission Intensive Trade Exposed (EITE) and will receive 95% of permits for free. Detailed emissions data is not available from processors so any estimate would be speculative, but it is unlikely to be a significant cost for each farm.

The total increase in costs as a result of the introduction of the CPRS is likely to be around \$13,160 per year by 2015. Compared to the 2008-09 cost of production of \$1,100,006 this is equivalent to an increase in costs of 1.2% in 2015. This is consistent with an ABARE analysis that suggests an increase in the cost of production in dairying at commencement 0.5% and by 1.1% in 2015 if agriculture is not included in the Scheme.

ABARE also suggests that the cost of production will increase by 2.5% if agriculture is included in the Scheme after 2015 (assumes EITE assistance). This is equivalent to a total increase of \$27,500/year based on 2008-09 production costs or a fall in Earnings Before Interest and Tax (EBIT) of 1c/kg MS. EBIT is also sensitive to the price of carbon permits with EBIT falling by 1c/kg MS for every \$10/t CO₂-eq.

Important Note:

Both the DPI (Vic) and ABARE figures assume that farms make no attempt to reduce emissions.

Where to from here?

The next stage of the project investigates ways to reduce or offset greenhouse gas emissions and to analyse the case for business investment in emission offset or reduction measures.

The above article is a shortened version of an information sheet released at the Carbon Ready field day on September 22nd 2009. The other describes the Carbon Pollution Reduction Scheme and what it means from a dairying perspective and is important reading to understand how the proposed system will work.

If you would like a copy of either of these information sheets please contact Neil Baker on 51 411 712 or neilbaker@aapt.net.au.

MDF Annual General Meeting and Annual Field Day

Thursday October 29th 2009

10am – 2.00pm

10.00 ANNUAL GENERAL MEETING

10.25 Presentation of RF (Bob) Pitman Award

10.35 Project Reports:

11.15 MDF Weather Station

**11.25 "Investing in your second biggest asset doesn't hurt! – Building a Profitable herd"
– ADHIS project launch with HFAA and MDF using the latest tools in bull selection**

12.40 Lunch followed by an optional farm walk with Frank Tyndall

Macalister Demonstration Farm

Boggy Creek Rd, Riverslea

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