

Macalister Demonstration Farm

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NEWSLETTER 19

Monday June 1st 2009



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

BIG NEWS!!

MDF WINS FUNDS FOR CARBON EMISSION PROJECT

The Macalister Demonstration Farm has been announced as one of 46 successful applicants across the nation for funds under the Australian Government's Farming Future FarmReady Industry Grants Program.

See the back page for a full report.

Second Tuesday Session @ MDF – June

IT'S BUDGET TIME – MDF BUDGET AS A BUSINESS HEALTH MONITORING TOOL

When times are tight it's more important than ever to keep a check on how your business is travelling. The MDF structures its finances around a strong budget process that helps us to analyse business performance at any time throughout the year. This model is applicable to any dairy farm - come and see how it works

Tues 9th June 10.30am - 12.00pm

LUNCH PROVIDED RSVP: Neil 0400 806 246 or 51 411 712

Yellow Rag Bit

Jason McAinch Dairy Advisor DPI Maffra

Consider another option for cash flow this spring - think about supplying colostrum!

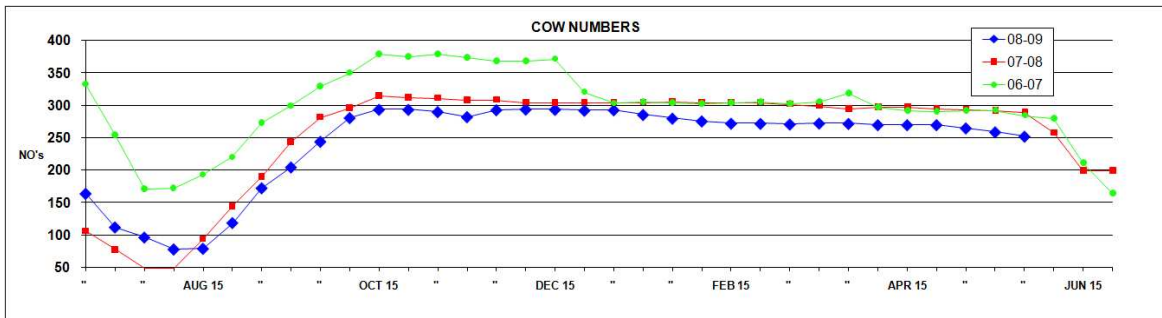
Supplying colostrum this spring could provide a welcome increase in milk payments given the predicted milk price. A report of \$90/cow for 2 days of colostrum is worth thinking about. It is a practice that is associated with risk due to its potential to impact on calf health and on-going mastitis/dry cow treatment (see below).

If you are considering supplying colostrum this season, – ask yourself the following questions, if you answer YES to all of these questions then colostrum could be suitable for your system!

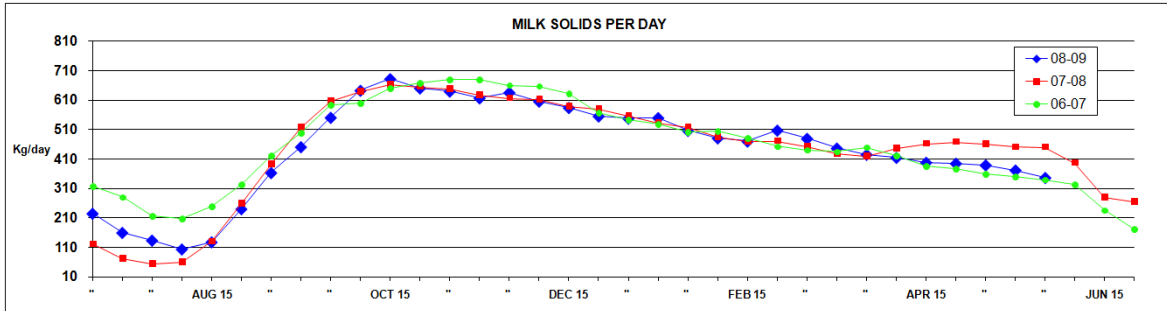
1. Do you have a compact calving? (at least 4 fresh cows per day) Y / N
2. Do you have a low cell count? Y / N
3. Have **NOT** used a long acting dry cow product? (Ceprevin DC or Bovaclox DC) Y / N
4. Have not had calf health problems in the past? Y / N
5. Have not had salmonella outbreaks in calves? Y / N
6. Have access to an extra refrigerated vat? Y / N
7. Are you willing to collect the first 4-5 milkings from the suitable cows? Y / N

There may be a little extra work in collecting colostrum. You may only wish to do it for a few weeks. Discuss the risks to your business with an advisor and your vet, to ensure the short term increase in cash flow is really a profitable return.

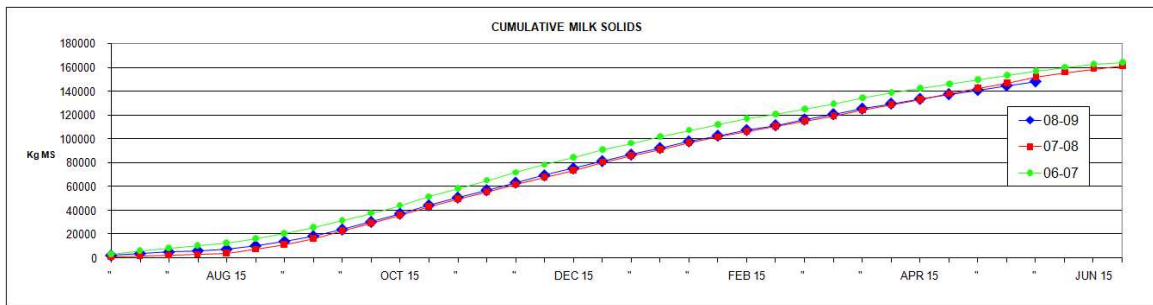
Macalister Demonstration Farm Production and Feeding Profitability



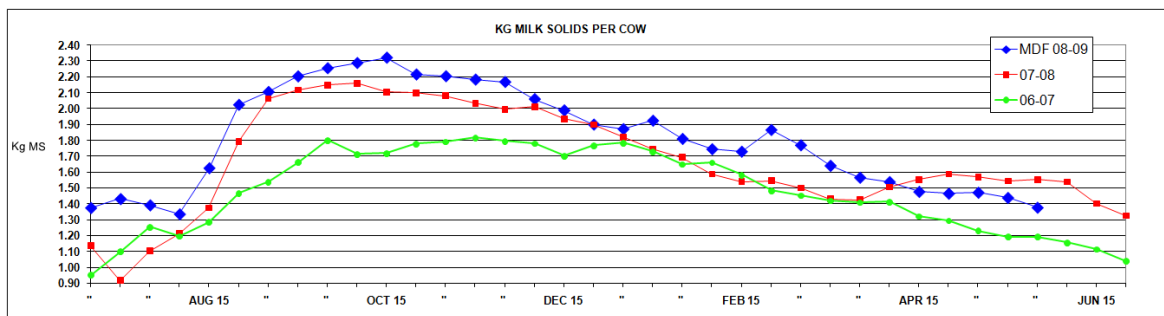
Except for July and early August, we have milked fewer cows and are currently milking 252 compared to 290 this time last year.



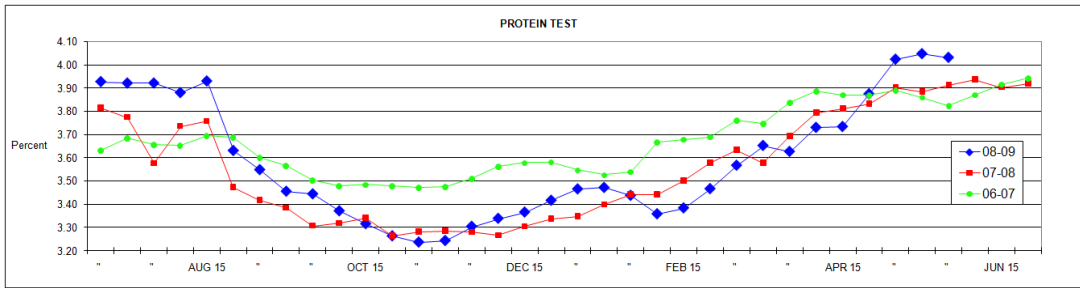
They are producing 340 kg MS per day compared 450 kg MS per day this time last year.



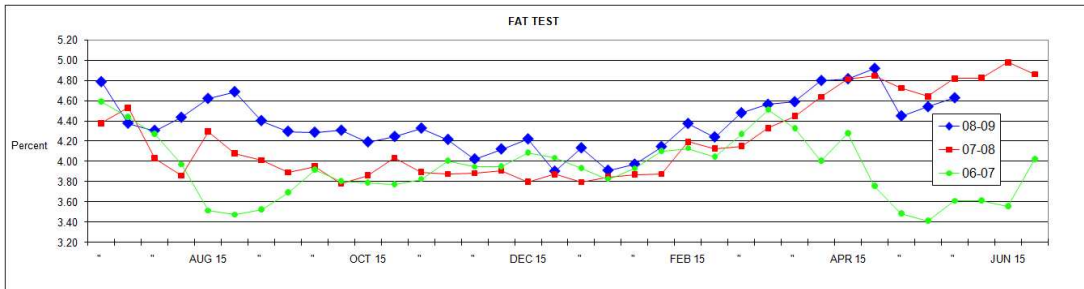
So, we are now unlikely to reach last year's total production.



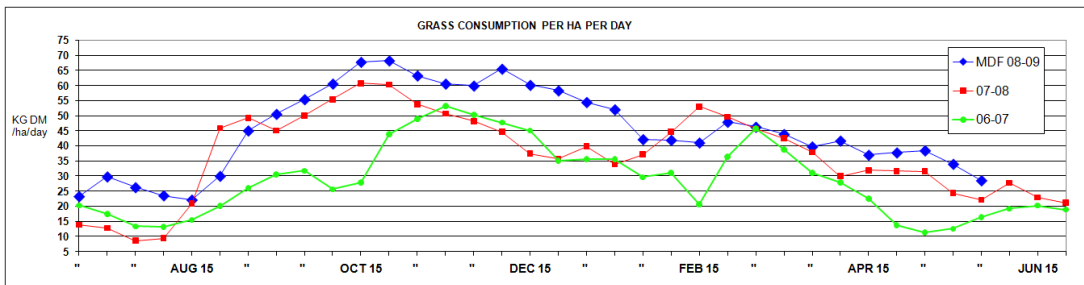
For most of the year, milk production per cow has been above last year, but since early April it has been below last year's. Since the milk price drop in February, when deciding the level of supplement, we tended towards "feed less supplement", whereas last year it was all "feed more". More grass available this year has maintained milk production to some extent.



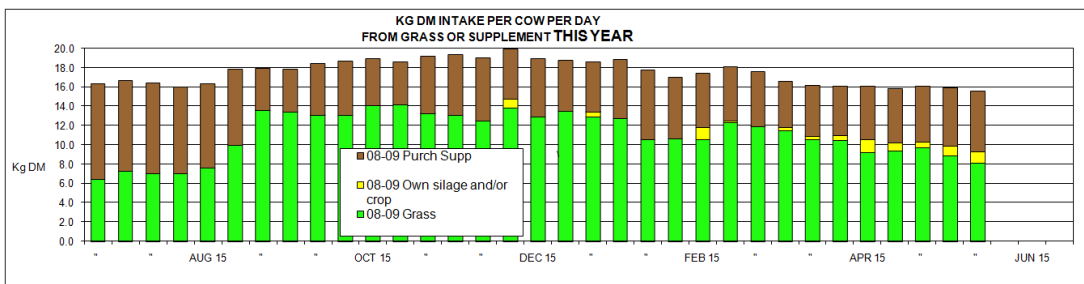
Protein test is currently higher than last year.



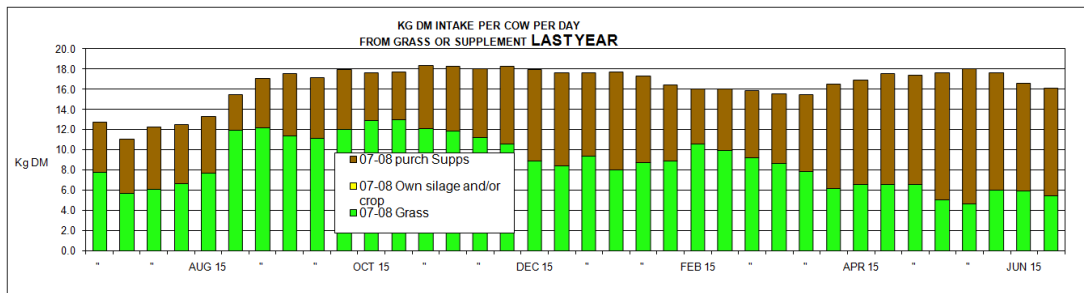
Whereas fat test is below that of last year.



Grass consumption per grazed hectare is higher than last year.



Grass consumption per cow is a lot higher than last year (compare above and below), but supplement per cow is a lot less. Total intake per cow is 2.4 kg DM lower.



SUB-SURFACE DRIP IRRIGATION PROJECT UPDATE

The 2009 Season Update FieldDay was held on Tuesday May 12th. To mark the end of the first season we have produced an Update Information Sheet that outlines the performance of the project to date. If you would like a copy of the Update Information Sheet just give me a call or an email and I can send you a copy. Following is the second of three extracts from the update that will appear in the newsletter.

HOW DID THE SYSTEM PERFORM IN ITS FIRST SEASON?

Apart from some early teething problems that will be discussed in the next newsletter, the hardest element to come to terms with was the absence of water at the surface. Irrigation takes place underground so there is no water to splash through and only a few visible wet patches on the surface – surely the grass can't be getting enough water? However, pasture growth was one of the highlights and could only be described as stunning.

Irrigation on the lasered flood paddock and fixed spray paddock was according to the typical farm schedule, while the sub-surface drip irrigation paddocks were typically watered every third day for six hours in pulses of 3 by 2 hours to better disperse moisture between the tapes, all adjusted for rainfall.

After an excellent seed strike pasture growth proceeded as expected until the first dry period. Pasture growing over the dripline continued to grow strongly whilst those plants between tapes showed signs of water stress and could barely hang on. This resulted in a banding pattern in the pasture (Fig. 1). Pulse irrigating helped and the banding was less obvious following rain and later in the season when the gaps between the rows seemed to close.

Fig. 1 Banding pattern prior to first grazing in January 09

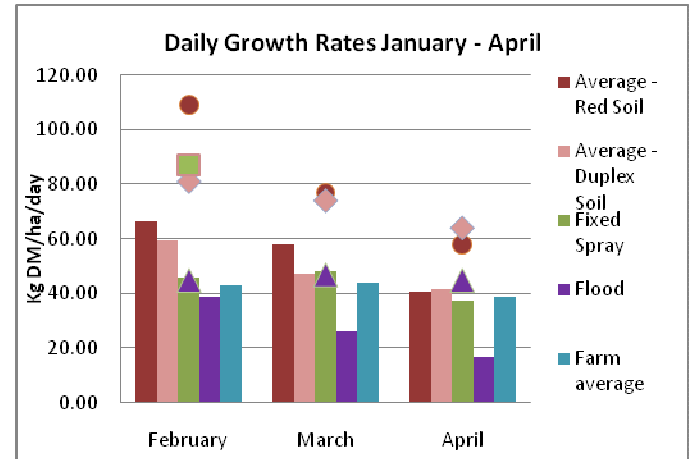


Feed tests were carried out on the pasture to look for any difference in nutritional value. Pasture grown over the drip lines had 16.7% DM, 12.0% ME, 25.3% CP and 42.0% fibre while pasture between drip lines had 17.8% DM, 11.5% ME, 28.2% CP and 44.2% fibre. Good feed by any measure.

Measurements using a plate meter were made immediately before and after grazing on each of the four sites (lasered flood, fixed spray, SSDI – red soil, SSDI – duplex soil) to

calculate the average growth rate in the period between grazing. Growth rate is compared in Fig. 2.

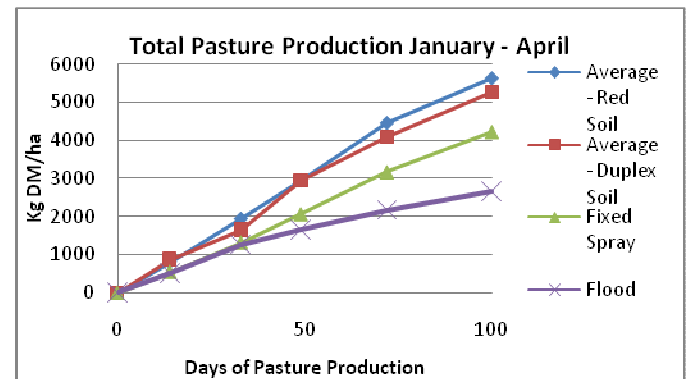
Fig. 2: Comparative growth rates (Growth rate for the best patches in each paddock marked as a point)



Average growth rates were strongest in the paddocks under sub-surface drip irrigation and lowest in the flood irrigated paddock. The greatest difference was in the hottest months – pasture under sub-surface irrigation showed few signs of water stress on even the hottest Jan/Feb days. Growth rate in the best patches of each of the paddocks was also measured with the highest growth rates occurring in February in all paddocks (Fig. 2).

Total DM production over 100 days in Jan-April for sub-surface drip irrigated pasture was 30% higher than for pasture under fixed spray and 104% higher than pasture under flood irrigation (Fig. 3).

Fig. 3: Total Dry Matter production



So why has the pasture performance under sub-surface drip irrigation been so strong? Is it all to do with the new irrigation system? Typically there are four factors that impact on production:

- Pasture species – all paddocks were sown to perennial ryegrass so there is no pasture species difference;

- Grazing management – the MDF manages grazing under Pastures for Profit principles, aiming to graze pastures mostly at the three leaf stage. Strong growth in sub-surface drip irrigation paddocks forced a shortened rotation to be grazed at just over 2.5 leaves. Over January/ February rotation length in sub-surface drip irrigation paddocks was less than 20 days when the rest of the farm was at 30 days.
- Soil fertility – All of the comparison blocks were cultivated and resown as part of the demonstration so all blocks benefited from the release of nutrients following stir up. No fertilizer was added at sowing. Two thirds of the sub-surface drip irrigation paddocks had effluent spread over the surface just before cultivation in spring. Soil tests in April 2009 indicate high levels of nitrate in the soil at a level almost twice that of the fixed spray paddock and 3-4 times higher than the lasered flood paddock. Over the summer period all flood and fixed spray paddocks had Nitrogen and Potassium applied immediately after grazing at a rate equivalent to 1.5 kg elemental N/ha/dy. The sub-surface drip irrigation blocks had only two applications since sowing in November - in February at 1.5 kg elemental N /ha/dy then down to 1 kg elemental N /ha/dy in March after the stock developed symptoms of nitrate poisoning. This was further evidence of high nitrogen levels. It seems clear that soil fertility has contributed to pasture growth under sub-surface drip irrigation.
- Soil moisture – Data shows that soil moisture levels in the root zone (20cm) for the sub-surface drip irrigation blocks moved outside acceptable limits (-40 centibars) on just a few occasions and remained there for only 2-3 days at a time. The pattern is the same for readings at 10cm, even though the surface generally appeared to be dry. At this

consistent moisture level the plants could not be regarded as stressed – this is consistent with paddock observations. Readings from the fixed spray paddock indicate that up until mid-February moisture levels in the root zone were outside acceptable limits for about half of the time. Readings at 10cm indicated that satisfactory moisture levels were maintained for only 2 days following watering. From mid-February the duration of fixed spray watering was increased but frequency was maintained. This resulted in soil moisture levels in the root zone being maintained at an ideal level for the rest of the season. This was reflected in pasture growth rates that were very similar to those in the sub-surface drip irrigation paddocks in the same time period. Moisture logger data is not available for the flood irrigation paddock.

What does this mean? Clearly the growth rates for the pasture under sub-surface drip irrigation are stunning. However, it seems that both the high nitrate levels from the effluent as well as very good soil moisture levels in the root zone have contributed to this performance. What is not clear is the impact of the irrigation system alone, although the absence of surface evaporation made it easier to maintain optimum soil moisture levels with the sub-surface drip irrigation system. As nutrient levels drop over the next six months the irrigation impact will become clearer in the next irrigation season. The take home message from the work this year is that if soil moisture levels in the root zone can be maintained within ideal limits, no matter how they are irrigated, then there can be a significant increase in pasture growth rate.

Neil Baker 51 411 712 neilbaker@aapt.net.au

MDF WINS FUNDS FOR CARBON EMISSION PROJECT

The successful 'Carbon Ready Dairy Demonstration' project uses the Macalister Demonstration Farm as a case study to undertake a carbon emissions audit of on the farm to identify the source and extent generated by normal operations. This information will then be used to develop a Carbon Emissions Reduction Plan for the property that includes strategies to minimise or offset carbon emissions and an analysis of the financial impact of the plan on the farm business. This will be completed by October 2010 with a review of the plan in March 2012 against any changes in the 'rules' for carbon emissions. All of this process will be documented with all of the tools and advice 'road tested' during the project on a commercial dairy farm. The result will be a series of templates, guides and advice to other farmers attempting to reduce carbon emissions as inclusion in a carbon trading scheme draws near.

This proposal was driven by the shortage of understandable information and mis-information in farming communities about carbon emissions and the proposed Carbon Pollution Reduction Scheme (CPRS). Whilst there are many sources of accurate information, that information needs to be in a practical format so that it is easy for farmers to assess their position and make informed decisions about their investment in carbon emission reduction or offset.

MDF WINS FUNDS FOR CARBON EMISSION PROJECT (Cont.)

The project will also deliver a series of workshops to 'walk through' the process undertaken by the MDF and to discuss emission reduction and offset opportunities. Topics will include 'Assessment of on-farm carbon emissions' (Sept 2009), 'Emission reduction strategies – costs and benefits' (April 2010), 'Emission offset strategies – taking whole-of-farm and off-farm approaches' (October 2010) and 'Investment in carbon emissions reduction' (March 2012). These workshops will give farmers the opportunity to discuss, clarify and test ideas well before the CPRS is introduced in 2015.

A Project Reference Group of six dairy farmers will be formed to ensure that the message is focused on the needs of dairy farmers. Two meetings have been scheduled in 2009 and three meeting have been scheduled in 2010. Any dairy farmer interested in joining the project should contact Project Coordinator, Neil Baker on 51 411 712 or neilbaker@aapt.net.au by June 12th 2009.

SENDER:



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