

Macalister Demonstration Farm

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NEWSLETTER 27

Monday November 30th 2009



Extension projects at the MDF are funded by Dairy Australia, Sustainability Victoria and Department of Agriculture, Fisheries and Forestry, with support from GippsDairy.

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The success of the MDF Newsletter means that we now send out more than 300 copies in the post - that's a lot of printing and postage! You can help us reduce costs by asking to receive your Newsletter by email.

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If you are happy to receive an electronic copy just send an email to Frank and let him know

ftyndall@ozemail.com.au

Yellow Rag Bit

Bree Walshe, Dairy Advisor DPI Maffra

The hay season is certainly underway, with a decent harvest recorded so far. When shopping around for some hay, or even looking at your own – it is important that you know what you want to use it for. Are you going to feed it to the milkers to fill a feed gap later in the season or is it for the dry cows? Are you going to use it as part of the transition diet or is it for the yearlings or heifers? Once you have decided who you are going to feed it to, you can determine the quality required – milkers and growing animals will require better quality hay than dry cows and transitioning cows.

When sourcing hay this year, remember to look for the following factors:

- Green – the best hay still has some colour – straw-like hay is of a lower quality.
- Leaf – the leaf is where the quality is, so good hay is nice and leafy and not stalky.
- Smell – it should smell good and fresh - like pasture!
- Weeds – look for hay that is free of weeds!
- Damage – avoid hay that is weather damaged or has been wet – signs are mould or discolouration.

The weather also plays a huge role in quality. We experienced two extremely hot and windy weeks in November and plenty of hay was being cut during this period. The conditions were perfect for drying out the cut grass before baling BUT the conditions were so good that in many cases the heat zapped many of the nutrients (quality) from the plant too – leaving you with straw like hay!

The best method of determining value for money is getting the hay feed tested. There has been plenty of cereal hay cut in the northern parts of the state and even though it tests well for energy (approx. 10ME), the grains are too small and will pass straight through the cow – the protein (CP%) has been testing poorly (on occasion) at approx. 4%. You should be chasing leaf NOT head, as the useable energy is there.

When purchasing hay – request a feedtest and an inspection – know what you are buying. Good quality pasture hay tests at approx. 8.5+ MJ of ME/kg DM, 12+ %CP, 40-65% NDF. Good quality cereal hay tests at approx. 8+ MJ of ME/kg DM, 9+ %CP, 50-70% NDF

'What is the cheapest is not necessarily the best value for money' – make the effort and spend the time to know what you are buying.

For a feed test kit and/or to borrow a bale corer, please call DPI Maffra on 5147 0800.

Macalister Demonstration Farm Profitability Project

The method used to analyse and present the MDF's feeding information, productivity and profitability has developed over three years. The information is presented both graphically and in tables containing the detail. Feeding profitability is complex and requires good decisions implemented well. It's unlikely that anyone, including the MDF, could claim, or be sure, that their feeding situation is the most profitable possible. The MDF Profitability Project aims to explain what the farm feeding inputs are, and what the results are; to delve into the information to try to understand how feeding profitability works. And no analysis can ever be perfectly accurate. Overtime more data has been recorded and used, and the calculations refined, aiming to be more complete, more accurate and more meaningful. Comparisons with other years on the one farm, or with other farmers at the same time, are tricky but can be useful.

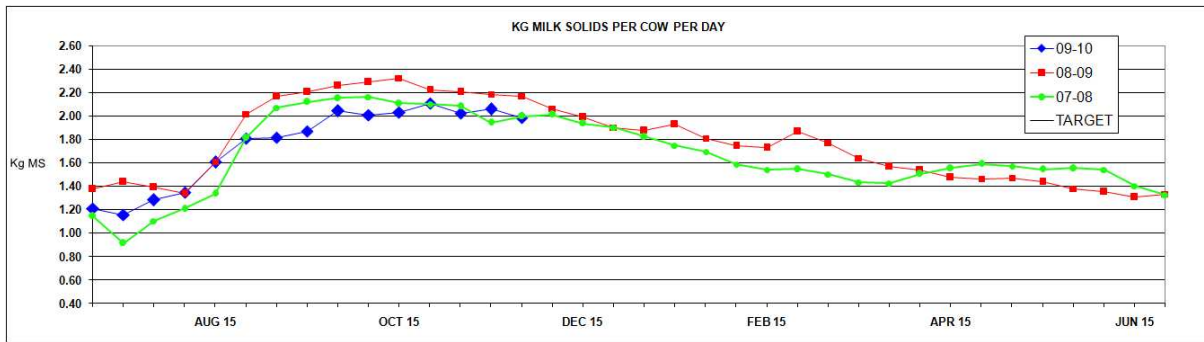
Below is the data input for each weekly analysis, using last week as an example.

| | | | |
|-------------------------------------|---------------|---|----------|
| Date | Fri-27 | Conc 1 name | wheat |
| Milker Average LWT | 550 | Conc 1 price (\$/t as fed) | \$255 |
| Months pregnant | 0 | Conc 1, kg as fed/cow/dy | 5.52 |
| Daily walk distance | 2.5 | Conc 1 DM% | 90% |
| Terrain (Flat: 1, Steep: 4) | 1 | Conc 1 MJ | 12.2 |
| Days in pickup | 1.00 | Conc 1 CP% | 13% |
| mm irrigation water /ha/day | 3.5 | Conc 1 NDF% | 14% |
| PRICE of irrigation water (\$/ML) | \$60 | Conc 1 waste % | 3% |
| Kg N element applied /ha/day | 1.3 | Conc 2 name | Prot mix |
| PRICE of N element (\$/kg) | \$1.22 | Conc 2 price (\$/t as fed) | \$500 |
| Kg P element applied /ha/day | 0.0 | Conc 2, kg as fed/cow/dy | 0.90 |
| PRICE of P element (\$/kg) | \$5.20 | Conc 2 DM% | 90% |
| Kg K element applied /ha/day | 0.46 | Conc 2 MJ | 10.0 |
| PRICE of K element (\$/kg) | \$2.03 | Conc 2 CP% | 18% |
| Renovation (\$/ha/day) | \$0.19 | Conc 2 NDF% | 15% |
| Topping (\$/ha/day) | \$0.45 | Conc 2 waste % | 1% |
| Grazing allocation rate | 30 | Purch PKE name | PKE |
| Average grazing rest time | 28 | Purch PKE price (\$/t as fed) | \$210 |
| Growing days for conserved forage | | Purch PKE, kg as fed/cow/dy | 1.00 |
| Forage Conserved (t DM) | | Purch PKE DM% | 90% |
| Grass MJ | 11.5 | Purch PKE MJ | 11.0 |
| Grass CP % | 23% | Purch PKE CP% | 16% |
| Grass NDF % | 39% | Purch PKE NDF% | 65% |
| Own crop name | | Purch PKE waste % | 10% |
| Own crop price (\$/t DM) | \$100 | CALF LITRES (total for pickup days) | |
| OWN CROP kg DM fed/cow/dy | | NO. of MILKERS (average for pick up days) | 281 |
| Own crop MJ | | MILKING HA | 73 |
| Own crop CP | | Milkers BC Chnge(Lwt/dy) | 0.1 |
| Own crop NDF | | Fat price (Base, Seasonal, Premium 1, Milkcare, less DA & HA levies) \$/kg | \$1.86 |
| Own silage name | | Prot price (Base, Seasonal, Premium 1, Milkcare, less DA & HA levies) \$/kg | \$4.69 |
| Own silage price (\$/t as fed) | \$65 | Announced Fat stepup | \$0.27 |
| OWN SILAGE, kg as fed/cow/dy | | Announced Prot Stepup | \$0.67 |
| Own silage DM% | | Anticipated Fat stepup | \$0.07 |
| Own silage MJ | | Anticipated Protein stepup | \$0.17 |
| Own silage CP% | | Productivity fat (\$/kg) | \$0.08 |
| Own silage NDF% | | Productivity protein (\$/kg) | \$0.20 |
| Own silage waste % | | Litre charge (incl DFSV but not UDV levy) \$/litre | \$0.026 |
| | | Factory litres AM | 7500 |
| | | Factory litres PM | |
| | | Fat % AM | 4.13 |
| | | Fat % PM | |
| | | Prot % AM | 3.28 |
| | | Prot % PM | |

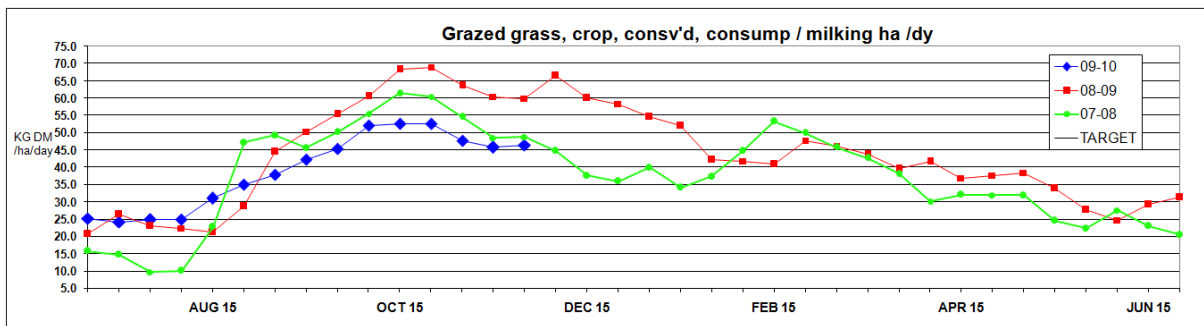
Below is the information and analysis, in table format, showing the comparison for the MDF in late November for three years.

| WEEKLY FEEDING PERFORMANCE | MDF | MDF | MDF | Units |
|---|----------|----------|----------|-------------------|
| Week to date: | 30/11/07 | 28/11/08 | 27/11/09 | |
| Milker graze area | 72 | 61 | 73 | ha |
| Milker nos | 309 | 293 | 281 | head |
| Stocking rate | 4.3 | 4.8 | 3.8 | cows/ha |
| Grazing allocation 1/ | 22 | 30 | 30 | th of graze area |
| Average graze rest time | 22 | 28 | 28 | days |
| Element N/hectare/day | 1.0 | 1.0 | 1.3 | kg element/ha/day |
| mm irrigation/hectare/day | 3.0 | 3.0 | 3.9 | mm water/ha/day |
| Estm'd pasture consmp'n (incl cons'vd forage) | 49 | 59 | 46 | kg DM/ha/dy |
| Pasture consum'd per cow | 11.3 | 12.4 | 12.0 | kg DM/cow/dy |
| Daily spend / milking ha | \$4.64 | \$4.39 | \$5.47 | |
| Estm'd pasture price | \$95 | \$74 | \$118 | \$/T DM |
| Conc supp fed/cow | 7.0 | 5.5 | 5.6 | kg DM/cow/dy |
| Hay/silage supp fed/cow | 0.0 | 0.0 | 0.0 | kg DM/cow/dy |
| PKE supp fed/cow | 0.1 | 1.4 | 0.7 | kg DM/cow/dy |
| Estim'd supp waste | 3% | 5% | 4% | % |
| Conc supp avg price | \$432 | \$450 | \$304 | \$/T DM |
| Hay/silage supp avg price | \$0 | \$0 | \$0 | \$/T DM |
| PKE supp price | \$300 | \$300 | \$248 | \$/T DM |
| Total feed intake/cow | 18.2 | 19.2 | 18.2 | kg DM/cow/dy |
| Estm'd body cond't'n change | 0.00 | 0.10 | 0.09 | kg LWT/cow/dy |
| Litres/cow | 28.2 | 29.6 | 26.6 | l/cow/day |
| Fat test | 3.84% | 4.03% | 4.13% | % |
| Protein test | 3.29% | 3.29% | 3.31% | % |
| Fat per cow | 1.086 | 1.193 | 1.099 | kg/cow/dy |
| Protein per cow | 0.930 | 0.974 | 0.883 | kg/cow/dy |
| MS per cow | 2.02 | 2.17 | 1.98 | kg/cow/dy |
| Anticipated final milk price (less levies) | \$6.51 | \$4.92 | \$3.47 | \$/kg MS |
| Anticipated final milk price (/litre) | \$0.465 | \$0.360 | \$0.258 | \$ per litre |
| Fat return per cow | \$4.43 | \$3.79 | \$2.51 | \$ |
| Protein return per cow | \$9.44 | \$7.66 | \$5.05 | \$ |
| Volume charge per cow | \$0.74 | \$0.77 | \$0.70 | \$ |
| Milk income/cow | \$13.13 | \$10.67 | \$6.87 | \$/cow/dy |
| All feed cost/cow | \$4.15 | \$3.84 | \$3.32 | \$/cow/dy |
| Margin over all Feed/cow | \$8.98 | \$6.83 | \$3.55 | \$/cow/dy |
| MOAF /ha /day | \$38.59 | \$32.82 | \$13.65 | \$/ha/day |
| Farm MOAF per DAY | \$2,778 | \$2,002 | \$997 | \$/day |
| MOAF per month | \$84,744 | \$61,064 | \$30,401 | \$/month |
| Energy density of diet | 11.7 | 11.9 | 11.6 | MJ ME/kg DM |
| Crude protein % of diet | 18.8% | 22.9% | 19.8% | % CP |
| NDF Fibre level of diet | 33.5% | 32.5% | 32.4% | % NDF |
| Tonne feed /day | 5.7 | 5.6 | 5.2 | tonne DM /day |
| Milk Return /tonne feed | \$712 | \$555 | \$373 | \$/tonne DM |
| Average Price of feed | \$225 | \$200 | \$180 | \$/tonne DM |
| Margin /tonne feed | \$487 | \$355 | \$192 | \$/tonne DM |

And here the same information and analysis is presented in graph format, showing the comparison of MS per cow and Pasture Consumption per hectare over three years.



Milk production per cow is still below last year, probably due to lower body condition at calving, feeding less supplement in the previous six months, and feeding less supplement before and after calving. Production has been very steady - around 2 kg MS per cow (about 28 litres) - for the past 60 days.



Pasture consumption throughout spring has been disappointing compared to last year. Currently the farm is delivering a grass consumption of 45 kg DM per hectare per day, 15 kg lower than last year.

Fertiliser application and grazing rotations have been quite similar to last year. The cooler spring, then the sudden hot weather most likely has caused some of the growth reduction. Of all the grass growing management areas, soil moisture is the trickiest to manage. It has been difficult getting uniform application of water on both the bike shift and subsurface drip areas, and both of these areas have underperformed recently. The bike shift has spots that are too wet and spots that are too dry. The sub-surface drip has "striping" where the grass over the irrigation tape is getting water but between is not. Less silage (which does contribute to the consumption figure) has been made this year. Because of the lower milk price we decided to reduce the cost and feed losses of silage making and have been topping to waste more often. Most of the time when we silage a paddock it is not so much because we have a surplus of good food, but because we have a surplus of poor food, stems and residue, that would reduce per cow production if they were forced to eat it.

All the MDF analysis seems to indicate that the major drivers of feeding profitability are pasture consumption per hectare and milk production per cow.

The recent milk price step-ups, and price increases for the last half of the season, are encouraging us to maintain milk production with high pasture consumption, and with more supplement if needed.

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Sub-Surface Drip Irrigation Moisture Profiles

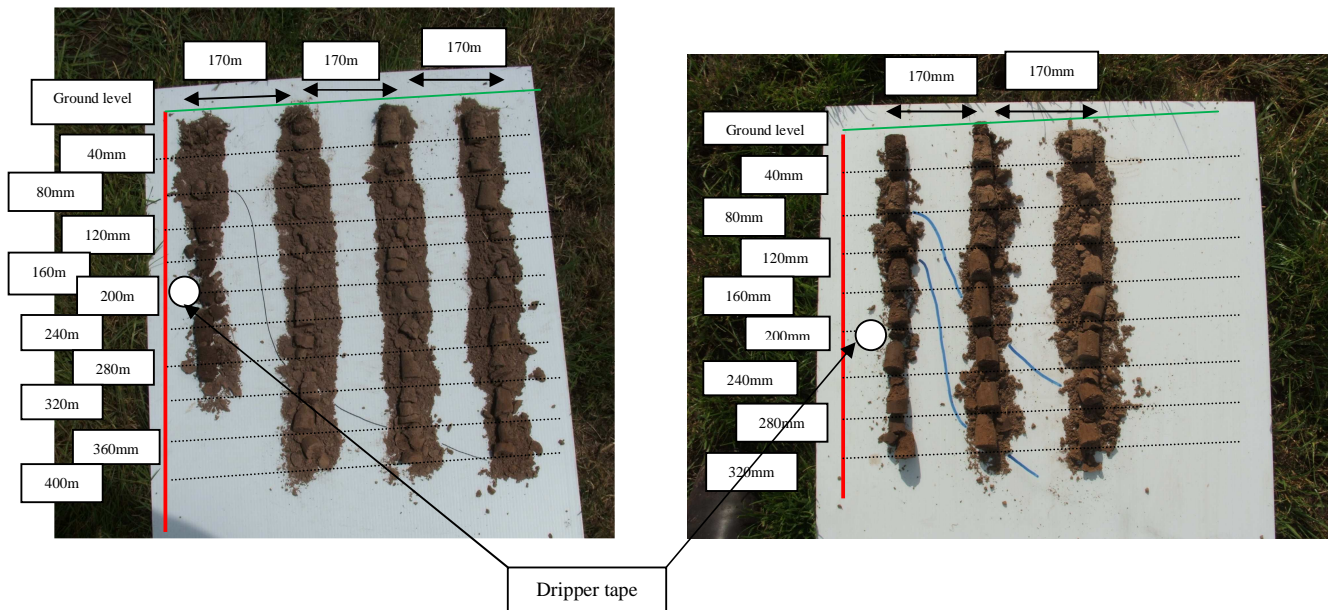
Leading up to the recent string of warm days we noticed that the 'striping' or 'banding' effect was starting to reappear in the sub-surface drip irrigation paddocks and the measured growth rate was much lower than other paddocks on the farm. We saw this last year around Christmas last year as things started to dry off, an indicator that the moisture level between the tapes was too low to support pasture growth.

In response we increased the irrigation rate from three by one hour pulses (7.5mm or 3,75mm /day) applied every second night to three by one hour pulses applied each night (7.5 mm/day) for four nights. There was still no evidence of lateral water movement, probably because we were trying to overcome a deficit as well as meet the moisture needs of the pasture. So the rate was lifted again to three by two hour pulses applied each night (15mm/day) to try and push the water across the gap.

To watch what was happening core samples were taken at a number of points between the dripper tapes where there was evidence of moisture at the surface with the first core taken from directly adjacent to the dripper tape. The dripper tapes are set 800 mm apart. The core samples shown in Fig. 1 and Fig. 2 were taken after only one night at the highest irrigation rate with the drawn line representing cores of similar moisture content.

Fig 1: Block 4 Core Samples (Red soil)

Fig 2: Block 6 Core Samples (Nambrok or Duplex soil)



It's not easy to see in the red soil shown in Fig. 1 but the colour and the form of the core samples nearest the dripper tape show much more moisture is there. The core samples furthest from the dripper tape were generally very dry. Alarmingly, it was not until we reached a depth of 280mm in the second core (only 170mm away and below the level of the dripper tape) that we found a similar moisture level as at 80mm depth in the core next to the tape. The higher moisture level found in the first core at 120mm could not be found in the second core even at 400mm. No wonder we could see banding!

Again, in the heavier soil shown in Fig. 2 you can just make out by the form of the core samples nearest the dripper tape and in the lower part of the second core that there is an increase in moisture, again with the drawn lines linking cores of similar moisture level. You can see in this heavier soil that the sideways movement of the water is a little better but at 200mm deep is only just in the root zone.

In both cases the shape of the moisture profile around the dripper tape seemed to be like a slumped pear, stretching from ground level down to a bulge somewhere below the level of the dripper tape. In both soil types I was able to follow very moist soil in a core next to the dripper line down to 750mm when I gave up. Clearly, there were losses to deep drainage.

Our response was to continue this high level watering to try and push the water across the gap. After three more nights at 15mm/day we reached a point where there was water lying on the ground and the profile was consistently wet at all points between the dripper lines. It appears that we had to fill the soil pores up down to the water table to get the moisture to travel between the tapes. In doing so we have used a large amount of water - largely because we had let it dry out too much. The challenge now will be to continue experimenting with different irrigation schedules to find the technique that will maintain the moisture level in the optimum zone so that we don't go into water deficit again and compromise our pasture growth.

Focus Farm Field Day
Wayne & Dana Saunders - Nordens Lane, Maffra
11.00am – 2.00pm Wednesday December 9th 2009

The Focus Farm project has been running in Gippsland for the last 8 years. The project focuses on a farming family or enterprise and aims to improve operating surplus through improved understanding of operational costs, by maximising home grown feed and by reducing fixed costs. This is achieved by close monitoring of finances, production and family issues. The Focus Farmer sets goals at the start of the project and gets support from an experienced consultant and a support group made up of farmers and local service providers as they work through their decisions.

This is the first of three field days to be held at this Focus Farm over the next 18 months to give everyone the opportunity to track progress as Wayne and Dana work towards achieving their goals. Hear from the Saunders about the journey so far - Why dairying? Where did it all start?; Nordens Lane farm - What did they start with? Where are they today? What is the thinking behind what they have done; production history and farm financials; setting Focus Farm objectives – Finances, Production and Farm Family. This discussion will be followed by a farm walk.

ALL WELCOME

NOTE: This is a BYO lunch event (morning tea provided)

For more information call Neil Baker on 51411712

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