

Macalister Demonstration Farm

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NEWSLETTER 56

Monday September 19th 2011



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

FREE MEAL!

Macalister Demonstration Farm Annual General Meeting & Dairy Industry Dinner

with special guest

Minister for Water, Minister for Agriculture & Food Security

Hon. Peter Walsh MLA

'Water policy in the Gippsland region and the future of the 2030 Modernisation Project'

TUESDAY 18TH OCTOBER, 2011

Duart Reception Rooms, McLean St, Maffra

Pre-dinner savouries at 6pm, MDF Annual General Meeting at 6.30 pm followed by a complementary dinner at 7pm and the presentation of the RF (Bob) Pitman Award. Drinks at bar prices.

Places are still available to anyone associated with the dairy industry

RSVP to Neil Baker at mdf@wideband.net.au, PO Box 87, Maffra 3860 or phone 0488 175 366

Yellow Rag Bit

Bree Walshe, Dairy Advisor DPI Maffra

Juggling the act of spring

Spring is a critical time of year for juggling several important facets of your dairy farm. It is a tiring time of year, if you lose concentration for just a moment you have dropped a ball and may struggle to get back into a rhythm.

Many farms are beginning their irrigation season at the moment and keeping soil moisture at field capacity is critical for maintaining pasture growth, as leaf appearance rate is dependent on both soil moisture and soil temperature. You need to remain in control of your soil moisture. During spring the farm has the potential to grow 40% of the years feed in 3 months, how you capitalise on these growth rates is up to your management.

Scheduling irrigations is critical for maximising potential growth. There are many tools that you can use to help with scheduling. Evapotranspiration figures are a good place to start, the irrigation team put out a weekly flood irrigation and spray irrigation interval email. Or alternatively, you can calculate it for your own farm, or use soil monitoring equipment to make informed decisions.

Allowing pastures to dry out during spring, is just like letting one of the balls drop and the whole juggling act comes to a halt. The quality of feed your cows are consuming is affected, not to mention how much they have to eat, as well as any potential silage conservation opportunities.

Another factor to juggle in this balancing act, is capitalising on the nutrients from your effluent pond. After good rainfall in early winter and a flood or two for some, there are many effluent ponds in the district that probably could do with

being emptied. Effluent contains N, P, K and S that you have already paid for, as well as organic matter and of course water. Effluent can be a great tool to use in early spring to boost growth of pastures. However, caution needs to be taken with cutting silage too quickly after an effluent irrigation, reducing the risks of high nitrates and potassium levels in the silage, as well as avoiding contamination.

As you juggle the act of spring management, ensure you keep an eye on each ball so that the whole act doesn't come crashing down.

For further information please contact your trusted agronomist or a member of the Maffra DPI Dairy team on 5147 0800.

BVDV (Pestivirus) at the MDF

In 2008 BVDV (Bovine Viral Diarrhoea Virus) was first diagnosed in calves that were sold off the MDF. A decision was made to investigate the role of BVDV in the lactating dairy herd. The reason for starting to investigate this is that management were not happy with the fertility performance of the herd and although efforts to improve this were being instigated they thought it prudent to investigate this infectious cause of reduced fertility.

In the previous newsletter the many and varied strategies that the farm is employing to improve fertility bit by bit in the herd were reported. As most would agree, this is a significant challenge given the trend of reducing fertility performance of dairy cattle not only in Australia but in other countries around the world and to a lesser degree in New Zealand.

Although the fertility effects of BVDV are more widely documented when an animal is exposed to BVDV via contact with an animal shedding the virus it will also result in immune suppression. Therefore they are more susceptible to the pathogens (bugs) in their environment. This may result for example, in calves, despite good colostrum management, nutrition and housing conditions suffering from calf scours or respiratory conditions. Studies on many different continents have also shown a reduction in milk production in herds where there is circulating BVDV virus. A comprehensive study in New Zealand estimated that affected herds were losing \$87 per cow per year.

Step One of the Investigation: A decision was made was to take a bulk milk sample to determine whether there were any active BVDV infections in the herd. This sample was positive so the next step was to try to find those animals that were positive. Positive in this case means those that are shedding the virus; another name for these are PI (persistently infected) animals as they are actually born with the virus and will shed it for their whole life. Most PI animals die or are culled within the first 2 years of life but certainly some will enter the milking herd. If they reach the milking herd they can affect fertility and performance of other cows. This affect is much greater if the cows have not been exposed to the disease before, that is, they are naive to the BVDV infection. Fertility effects can include early embryonic loss, abortion, and dead or weak calves being born.

Step Two: We took blood samples from the forty lowest Production Index two and three year old heifers in the herd. Samples were firstly pooled and tested and then two individuals were found to be positive. They were retested and then sold.

Step Three: We then took ear notch samples (a comparatively cheap and easy way to test for BVDV) from young stock. No more PIs (BVDV Virus positive animals) were found.

Ongoing Management

All bulls brought onto the farm are ear notch tested for BVDV. One problem with eliminating this virus from the herd is that they then, over time, become susceptible to infection if the virus is re-introduced inadvertently. If the herd is remote or well removed from the chance of re-infection (from nose to nose contact) then it is possible to remain a negative herd. However this does become a significant as the risk is higher as the impact of BVDV is always far greater in herds that have not been exposed to the disease for some time. In the case of the MDF, heifers are raised off farm sometimes with or at least in close contact with other (non-MDF) stock. The only way to properly protect them is to vaccinate the herd and heifers prior to first mating. This was not done initially. Subsequent to our initial investigations three more poor doing heifers were presented to management prior to mating for the first time. A decision was made to cull the three heifers but before they went they were tested for BVDV and all three were positive to BVDV. This means that they were infected whilst they were in utero and will be infected for life; that is a persistently infected (PI) animal.

As it is difficult to be confident that heifers or cows will not be exposed to a PI (persistently infected BVDV) animal across the fence, or at another property whilst not in the milking herd all animals will be vaccinated against BVDV. Ongoing screening of all replacement heifers will be done to check that BVDV PI animals are not being raised.

For more information on BVDV go to: www.controlbvd.org.nz, www.swansvet.com, www.bvdaustralia.com.au

Your Local Veterinarian

Mark Humphris at the Maffra Vet Centre

Sub-surface Drip Irrigation Project 2011 Update

In the last issue of the newsletter we looked at water and energy use efficiencies for the sub-surface drip irrigation system. While there were some positive benefits to the system, these had to be weighed against establishment or capital costs and running costs. So, is SSDI a worthwhile investment for water use efficiency, productivity and profitability?

While the information raised in the previous newsletter might seem like an endorsement of SSDI for dairy pasture on duplex soils, at the relatively low cost of water (\$9/ML) and dry matter production valued at \$100/tonne the monetary gain from improved water efficiency is small and the payback period very long. However, if the cost of water was to rise significantly or if the amount of water available was limited by drought or the like then the equation balance can change quickly.

Even though the project design incorporated both the Denison duplex soil and the Tinamba red soil, from the outset it was always assumed that flood irrigation offered the cheapest and most cost effective method for heavier duplex soils. While it is true that on the duplex soil SSDI produced the most dry matter, 25% more over the 2009-10 season than for the flood irrigated paddock, the running costs more than offset the increased production as was expected.

However, the key question was about finding a more efficient and effective means of irrigating the Tinamba red soil. The free-draining nature of this soil makes it difficult to irrigate using flood irrigation because losses to deep drainage are high and the spray alternatives have a combination of high installation costs, high electricity running costs or high labour costs. At the beginning of the project SSDI seemed to offer lower running costs and lower labour input costs because so much could be automated, notwithstanding the acknowledged higher installation costs. What has emerged from this project is that the observed positive benefits of the system are not sufficient to tip the balance for us to recommend the use of SSDI at an 800 mm tape spacing on the soils of the MID.

What would we do differently next time?

Like all new systems there have been a few teething problems that point to things that should have been done differently:

- Dripper tape spacing – The initial tape spacing of 800mm was a compromise between the 1-1.2 metre spacing used on lucerne crops and 500mm to make an even emitter grid (with a 500mm gap between emitters along the tape). We now realise that the most important thing is to match dripper line spacing to soil type. As it turned out, a 800 mm spacing on the Tinamba red soil is too great while a slightly wider spacing might have been just as good on the duplex Denison soil. What we would recommend for anyone considering SSDI under pasture is to work with a system designer/manufacturer to undertake a trial by preparing a section of paddock and laying just two dripper lines but with one end spaced 1.5 metres apart and the other 200 mm apart. With pasture sown over and a month or two of irrigation you will soon see what the ideal spacing for your soil type is at the point where the ridges in pasture growth merge. At this point you can better work out the cost and make a more informed decision about the viability of the investment required.
- Depth of drip line – laying the drip line at a consistent depth was not easy, especially at the end of each run (and would be even harder in a rough paddock). The ends of some of the drip lines are less than 20cm deep close to where they connect to the sub-main risers. Unless installation is closely supervised by either an experience contractor or a vigilant farmer there is the risk that these tapes will be cut in normal farm operations, leaving a long-term problem that will be nearly impossible to fix.
- Blow outs – too much time has been spent fixing blow outs of joiners that were installed when a new roll was laid into the line. If the lines were under tension or cross-threaded they invariably blew out. It would have been better for the lengths of rolls of drip line to be in multiples of the length we needed or even sacrificed tape at the end of a run to avoid these in-line joiners.
- Uneven paddock - now that the soil in the paddock has settled after cultivation the paddock has become quite corrugated with a depression along the drip line. This will make tractor work like topping pretty uncomfortable. We talked about a light grade after installation but we're not sure that even this would have worked. It might settle a bit more over time.

A couple of activities are either underway or being considered for the future at the MDF:

- Monitoring of the new section with a tape spacing of 500mm will continue against adjoining sections with a tape spacing of 800 mm in the 2011-12 season and the results reported in the MDF Newsletter and in an update Information Sheet in May 2012;

- Validation of plate meter measurements against cut and weigh assessment of pasture dry matter will be undertaken to determine the impact of pasture ridges above the dripper tape on dry matter measurement.

Key findings

- Active supervision is required to ensure that the system is installed according to specifications.
- Optimum tape spacing to match soil type is the key to maximizing pasture production and water use efficiency but this needs to be balanced with the extra material and installation cost as tapes are moved closer together.
- High level performance of the system requires careful monitoring of soil moisture levels in the root zone and irrigation management matched to soil type characteristics.
- While SSDI has the potential for high levels of pasture production at a lower than district average irrigation water usage, the magnitude of production levels or water savings are not sufficient to justify the high capital investment in SSDI in the MID at a tape spacing of 800mm.

Neil Baker 0488 175 366

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