


Profitable Dairying in a Carbon Constrained Future presents…..
The **Parmalat On-Farm Sustainability Project** Podcast Series

Dairy Australia

Listen-in to live podcast two:

The value of effluent to your Dairy Business

Truths, tips and trade-offs

Podcast Notes & Resources

parmalat

Practical Checks for evaluating whether my system is adequate

- **How big is the reuse area?** Your goal is to see nutrients returned over a large enough area for them to be applied at agronomic rates for healthy soil & plants. There are some 'rules of thumb'; 10% of milking platform, or 5 Ha for every 100 cows. Be aware these are for typical grazing dairies and that a feedpad will increase the area required.
- **Can the system reliably handle solids?** For systems with ponds – do you periodically remove sludge? For systems reliant on pumps – do you experience frequent blockages/breakdowns?
- **Can the system cope with extended wet periods without allowing nutrients to runoff and leave the farm?** Possibly the most contentious area for discussion; ponds and deferred application is usually required to avoid applying effluent to saturated soils but your individual circumstances (soil type, climate, herd size, water use, etc) may mean direct application is possible. Trade off: lower cost (? – generally yes, but not always) but there may be an increased risk of non-compliance.

Approaches that may make handling solids more reliable

- A trafficable solids trap before every pump handling raw effluent.
- Pipelines sized to achieve scouring velocities.
- Two way hydrants for connecting travellers without creating a dead zone.
- Avoid pumping raw effluent if possible (for example - maybe pump from a 1st to 2nd pond instead).
- Designing the 1st pond so that it is able to be cleaned out safely (width/depth, access)
- Contractors- if they are not available in your area consider dry hire from elsewhere or purchasing the right equipment that will allow regular clean-out rather than waiting a number of years.
- Mechanical separators - yes there is a place for these but as they will only remove ~20-25% of solids (gravity is more effective for dilute wastewater), your system still needs to cope with the remaining solids. A screen or another type of separation may reduce pressure on an already stretched system or fit into a system generating a lot of coarse solids (waste feed, bedding) but it is not a silver bullet.
- 'Bugs in a jug' - beware. Ask for a free trial first.

Making the case for change

- **Compliance issue-** If you have a system that is failing and causing pollution it is urgent and a priority. A fine is expensive and regulatory action would impact your business.

This event is funded by Dairy Australia and the Australian Government with proud support from Parmalat Australia.

- You may have some triggers that mean the system is coming under increased pressure (increase in herd numbers, addition of a feed pad). If so, timely to review the system before it fails to cope with the increased load.
- After that: consider if you are recovering the resource value of effluent and sludge; There is Nitrogen, Phosphorus and Potassium value in both effluent and sludge (refer to 'nutrients from effluent and sludge' calculator provided below). There is also value in the water, organic matter and trace elements.
- Potential for reductions in labour, stress/worry etc. Harder to cost but can be significant.
- Potential for reusing properly managed effluent to flood wash yards – reducing clean water requirements and storage pond size.

Where do I start/go for help?

- Talk to your agronomist about where the effluent is most useful – ideally as part of a Fert$mart plan. Have you soil tested the reuse area? If fertility is high, particularly in P & K, why continue applying more nutrients in effluent/sludge. There is no value here and you run a risk of potential runoff and animal health issues.
- Have a sample of effluent and sludge tested. The Fert$mart website contains great material for background knowledge that will help you have the necessary conversation with your agronomist.
- Reviewing the system infrastructure is more difficult. Yes, individual parts can be resolved with your local service providers (irrigation supplier/technician for pumps and irrigators, electrician etc) but it is useful to consider the whole integrated system first. In the past, we've been able to access agency dairy officers for advice. In their absence, we now have accredited private service providers that are increasingly filling the gap (refer NCDE course, attached list of SP's).
- Currently there is no requirement to use an accredited designer/auditor but you can feel confident they understand current industry guidelines and can guide you to a compliant system.

Resources

Don't underestimate the number of resources around to assist in your decision making processes. These are just some of the easily accessible ones.

- **Fert$mart Website-** http://fertsmart.dairyingfortomorrow.com.au/
    - This website and manual are a key resource for both nutrient advisors and farmers
    - Dairy Soils and Fertiliser Manual- Australian Nutrient Management Guidelines Chapter 13- Using Dairy Effluent: http://fertsmart.dairyingfortomorrow.com.au/dairy-soils-and-fertiliser-manual/chapter-13-using-dairy-effluent/

- **Dairy Australia's Effluent and Manure Data-base for the Australian Dairy Industry**
    - A repository of validated technical information supporting system design http://www.dairyingfortomorrow.com.au/tools-and-guidelines/effluent-and-manure-management-database-for-the-australian-dairy-industry/
    - Chapters covering collection & conveyance, treatment & storage, Re-use, Lane-ways, Feedpads & feed storage, Odour, OH&S, Performance & Monitoring, Emerging Issues.
    - Access from here all state effluent guidelines (including NSW)

- **Effluent Management Video Series-** http://www.dairyingfortomorrow.com.au/tackling-specific-issues/effluent/
    - Videos & accompanying fact sheets on all management aspects of effluent

This event is funded by Dairy Australia and the Australian Government with proud support from Parmalat Australia.

- **Nutrients from effluent and sludge calculator –** an excel spreadsheet for calculating appropriate application rates as well as the value of effluent and sludge.
    - http://www.dairyingfortomorrow.com.au/tools-and-guidelines/nutrients-from-effluent-and-sludge-calculator/

- **Effluent Design Systems Certified Service Providers**
    - Please refer to the attached list.

Compiled for the Parmalat On-farm Sustainability Project by:
Marguerite White, ICD Project Services
Dairy Australia NRM Technical Specialist- NSW
mwhite@icdprojectservices.com.au or phone/ text 0447 500 415.

and

Scott Birchall, Ag Systems Design
scottb@agsystems.com.au or phone/ text 0458 210 604

This event is funded by Dairy Australia and the Australian Government with proud support from Parmalat Australia.