



# Dairy Effluent

June 2009

**Legislation and social responsibility requires all effluent be contained on property and reused in a way to minimise harm to the environment. Poor systems and management can result in many problems, not least contamination of waterways, loss of productive farm land and animal metabolic issues.**

Dairy effluent includes all the contaminated material from the dairy shed and from stock crossings and feedpads. Generally runoff from non intensive areas is not defined as effluent.

Effective effluent systems are composed of several components generally a solids management component, a storage component and distribution mechanism. The most common and generally most effective solids management is a sludge pond (or 1st pond). Mechanical filters or solids traps can be used but are effective against larger solids.



Storage ponds need to cope with winter volume and should be kept clear of solids to allow for irrigating.

Both ponds should be adequately sized to cope with current and future requirements and to avoid poor performance.

Distribution networks vary from smaller sprinklers to injection into pivot irrigators . For most effective operation these require a relatively clean, solids free liquid stream. An adequate area should be covered during application although some crops will uptake higher volumes.

Generally it is poor practice to use effluent as irrigation water volume as the nutrient concentration will be too high. Often potassium is the limiting nutrient and over application can result in animal health issues, loss of pasture production, unpalatable feed and weed infestation.

**HEYTESBURY FOCUS PROJECT**  
**PRODUCTIVITY, RESILIENCE AND ENVIRONMENT**



# Dairy Effluent

## Effluent Pond Nutrients

Effluent pond nutrient levels vary between different ponds and even seasonally. An effluent nutrient test should be undertaken to determine application rate before irrigation. Effluent ponds are high in all the major nutrients. Additionally nutrient loads will be concentrated if a reuse system (for yard washing) is in place.

A megalitre of effluent liquid (from a second pond) will typically contain:

Nutrient	Equiv: Kilograms
Nitrogen	300
Phosphorus	52
Potassium	490

This data is an average from a number of effluent ponds in the Heytesbury District and is only an indicator value.

## Settling (First) Ponds

Most systems will use a settling pond to remove the solids from the effluent stream. These generally have bacterial activity that changes the effluent to a sludge that settles at the bottom of the pond. This will need to be cleaned out every few years. These bacteria are different bacteria to those that eat dead foxes and other animals. A crust on the pond may be an indicator of an undersized settling pond.

## System Volume

When sizing an effluent system the most important consideration is the volume of water entering the system. This will include washing water, rainfall on the yards and ponds and may include rainfall catchment. Roof areas, track runoff and other areas draining to the yard or the ponds will need to be factored in. Divert runoff away from the system if possible.

## Key Messages:

- Ensure adequate irrigation area is available to avoid excessive nutrient load.
- Have adequate pondage area available for current and future requirements including dairy, holding yards, feedpads and other catchments
- Have an effluent management plan in place dealing with annual irrigation requirements and also emergency contingencies like flash flooding and equipment failures.

Heytesbury District  
Landcare Network

PO Box 69 Timboon Vic 3268 Phone: 5598 3755  
Website: [www.heytesburylandcare.org.au](http://www.heytesburylandcare.org.au)



CARING  
FOR  
OUR  
COUNTRY