

# Drainage options for dairy farms

## Water on, water off...grows more grass

This fact sheet is part of the Profitable Dairying series - *Good business management reduces greenhouse gas emissions.*

Good drainage is a win-win for profitable farming and reducing greenhouse gas emissions.

Well drained pastures are more productive with higher quality feed. High quality feed results in less methane emissions per L milk.

Maintaining aerobic conditions in soils means less nitrous oxide and methane production.

The Australian dairy industry has committed to reducing greenhouse gas emissions intensity (emissions per L milk produced) by 30% by 2020.

### What do you want to achieve with drainage?

The aim of drainage is to:

- Prevent surface ponding
- Create an unsaturated zone in the surface 40 cm of soil that increases aeration allowing for improved plant growth

Achieving this takes thorough planning and investigation of soils and topography on your farm. Different drainage options are illustrated on the following page.

Drainage can reduce waterlogging effectively but at a cost. Other strategies, such as 'on-off grazing', agistment or feed pads might be options for your farm.

### Grazing strategies

- Starting the winter with more grass cover gives more flexibility & greater soil protection
- Low-lying wet paddocks should be grazed early to save having to graze them on a long round in winter.
- Known dry paddocks should be targeted for later grazing.
- Try a later calving date
- Back fence so that cows can't pug grazed areas
- Cows can eat their daily ration within 3 hours. Remove the cows onto a sandy bank, lane way or sacrifice paddock for the remainder of the day.
- Feed out hay/silage on sandy banks
- Sacrifice paddock – follow up with a spring turnip crop or new pasture
- Give the cows a bigger break in wet weather.

Adopt more than one strategy and remain flexible.



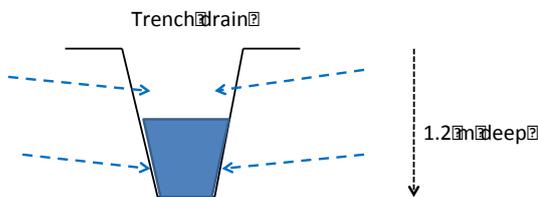
## Illustration of different drainage options used on Australian dairy farms

### Arterial drains and outfalls



Photo courtesy Drain Tech [www.draintech.net.au](http://www.draintech.net.au)

### Surface drains - flowing to arterial drains and outfalls



Hump and hollow (*right*) is land forming for very high rainfall areas. It is essentially deep parallel spoon drains.

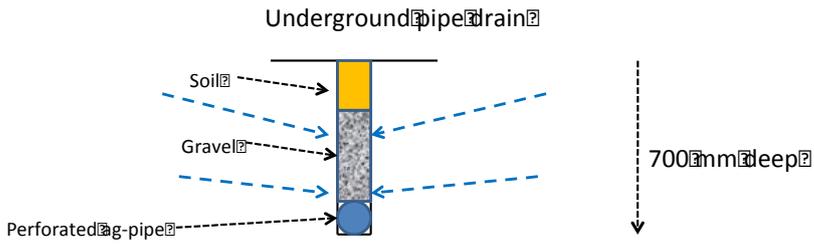


### Drain maintenance



Trench drains should be fenced from stock and machinery. They should be sprayed out in spring and autumn and cleared out with machinery when clogged with growth or silt. If not maintained, drains stop working (*left*).

## Sub surface drains - flowing to a surface drainage network



Installing subsurface drainage with a drain plough. This is the most expensive but most permanent form of subsurface drainage. Location of subsurface drains should be accurately marked with GPS and considered in future farm planning eg installation of irrigation pipes.



Above photos courtesy Tas Land Drainage

Mole drains are a subsurface drainage option for some soil types. They are cheaper to install but may not last as long as underground pipe drains.



### Further resources:

[Fert\\$mart waterlogging and drainage](#)

[Reducing drainage costs and impacts](#)

[Agriculture Victoria Planning farm drainage](#)

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