

Fact Sheet 9:

Pond De-sludging

Key messages

- Maintain effluent ponds to achieve the maximum life and effectiveness of the pond.
- Avoid having rubbish enter the effluent system.
- Be vigilant for signs the pond may need to be de-sludged.
- Stirring or agitation prior and during de-sludging are important to achieve a uniform effluent product, and to remove all of the sludge from the bottom of the pond.
- Pond sludge is a nutrient rich valuable product which has a rapid financial return (3-6 months) on the investment of de-sludging and applying it back to the farm.

Keep rubbish out!

Effluent ponds should only receive effluent; any rubbish such as carcasses, wire, ear-tags, gloves, syringes etc. entering the pond are going to cause problems during desludging and irrigation of effluent.

Place grates over drains to prevent any rubbish from the dairy entering the drain.

It is best practice to prevent as much non-effluent material entering the system as possible.

Pond maintenance

The length of time between desludging events for your pond depends on:

- The size of the pond,
- The number of cows being milked and the proportion of time that the herd spends on a collected area,
- The use of feedpads,
- The effectiveness of the t-piece or liquid transfer system between the first and second ponds, and
- The presence of any other solids management facility in the system such as solids trap or mechanical separator.

Worsening water quality in the second pond, including gas bubbles rising to the surface, are indicators that there may be too much sludge in the first pond which can cause solids to carry-over into the second.

For a single pond, too much sludge starts to reduce the amount of effluent storage that's available to cope with wet periods. If you've noticed a reduction in the amount of storage you have in a single pond, then it is probably overdue for desludging.

If you've had a pond system designed recently, then the plan should give you some indication for how frequently it needs to be de-sludged.

Emptying the pond

If you get a contractor to empty your pond for you, it is important that you are very clear about where you would like the effluent spread, and at what rate you would like it to be applied. Generally the thicker and darker the sludge in the pond, the lighter you want to apply it to land. If applied too heavily, you can get a smothering of some pasture plants and risk runoff of solids after rain.



The nutrient value of effluent solids

The nutrient content of sludge varies with depth and stirring. To get a representative sample, the sludge has to first be agitated and mixed, so it is generally not possible to get results back from a lab before the contractor is finished applying it to the farm.

But unless you've made significant changes, you are better off using the nutrient concentrations tested during your last de-sludging as they are still more accurate than using your neighbour's results or industry averages. You can have more confidence that you know just how much nutrient is being applied from the sludge and that it is worth the costs incurred in recovering it.

It can be an expensive operation to de-sludge a pond and spread it on pasture. But the increases in pasture growth, found in Department of Environment and Primary Industries experimental work, shows that the pasture response and result in milk production pays for itself in the first three to six months after application. While it might seem a lot of money at the time, the responses in the short and longer term pay for the contractor reasonably quickly.

Maintaining effluent ponds to prevent solids build up is the best way to keep the pond functioning. Getting a good contractor who can fully stir the pond before pumping it out and applying it to land, will help to realise the nutrient value of the effluent, and ensure a rapid productivity response on the investment.

References:

Dairy Soils and Fertiliser Manual, Chapter 13 Using Dairy Effluent. <http://fertsmart.dairyingfortomorrow.com.au/dairy-soils-and-fertiliser-manual/chapter-13-using-dairy-effluent/>

[View Pond de-sludging on dairy farms video](#)

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Be sure to advise the contractor of any water courses or areas to avoid, and try not to apply the sludge to paddocks near roads or neighbours to avoid complaints.

Ask the contractor how much liquid needs to be retained in the pond to assist in agitating the sludge. Removing any excess before the contractor starts will reduce the amount of time the contractor is on site.

Thorough stirring or agitation of ponds before they are pumped out is important to ensure a constant effluent product is removed from the pond, and all solids are re-suspended into the effluent liquid. Most commercial systems will extract sludge at 8–10% solids content. If ponds are not stirred properly, you may be extracting sludge with only 2–4% solids, this makes de-sludging a lot slower, more expensive, and potentially less effective.

