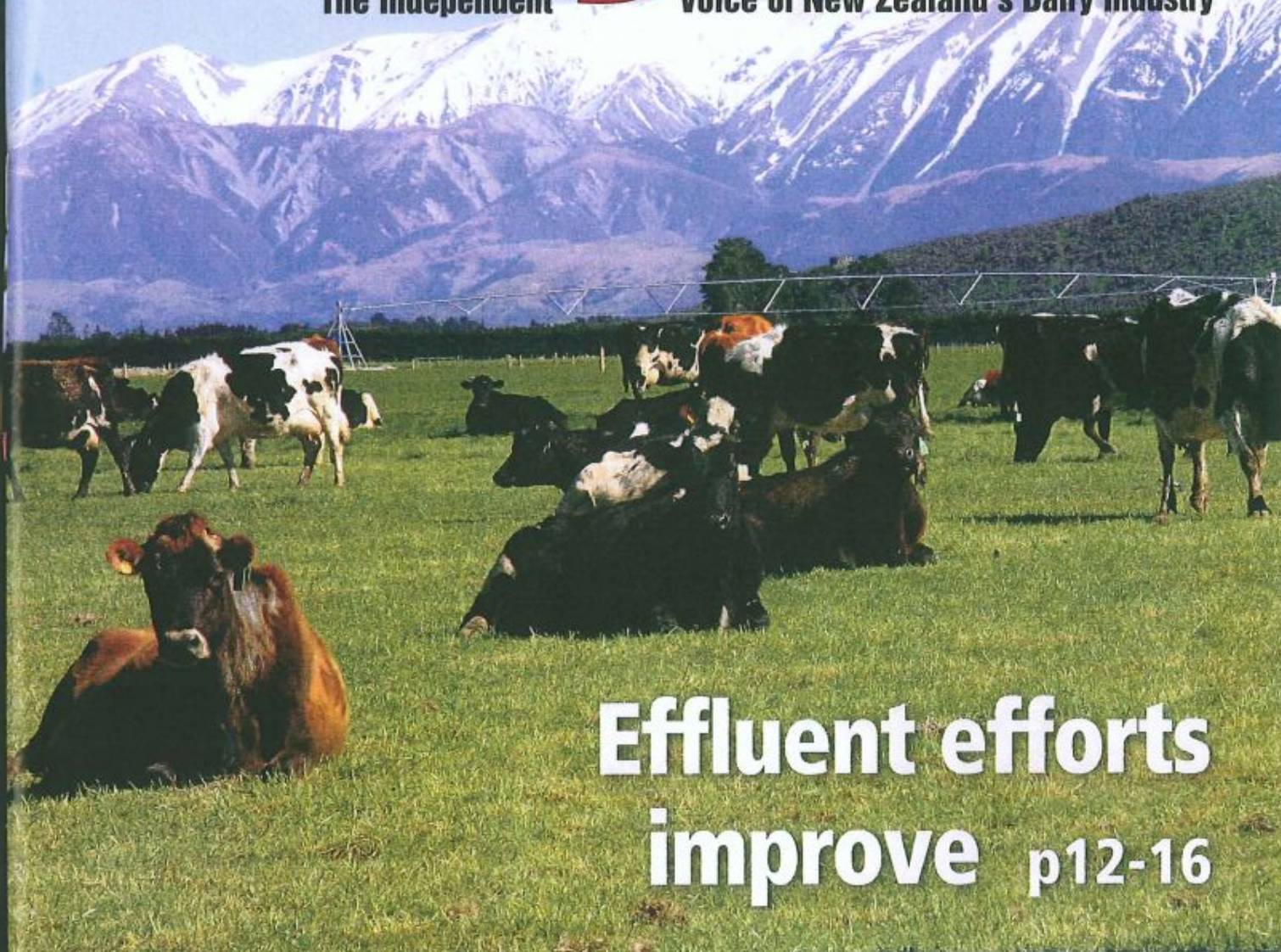


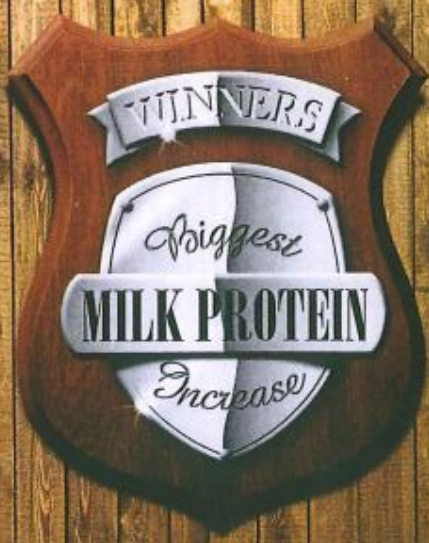
August 2010

The Dairyman

The Independent Voice of New Zealand's Dairy Industry



Effluent efforts improve p12-16



When it comes to getting the most from your herd, Rumensin is a clear winner. Improved rumen feed efficiency provides more energy for the team with a **proven increase in milk protein yield and protein/fat ratio**. The result is more milk protein and a higher effective milk solids price for you.* And with over 2300 scientific papers to its name, there's plenty of evidence that Rumensin will have your herd taking the honours all season!

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• continued from page 25

Digest-it for Dairies helps to correct this by creating and maintaining a balanced microbial environment in effluent ponds, stimulating microbial digestion of organic matter.

The fermented microbial culture contains a rich source of vitamins, minerals, proteins, enzymes, amino acids, carbohydrates, dor-

mant organisms and growth promoters. Depending on the thickness of the surface crust, a number of physical and chemical changes can be observed in ponds within four to six weeks of treatment.

While digest-it for Dairies has a number of other uses, including waste water treatment environments and septic tanks for dairy farmers its use in animal bedding is of

particular interest.

Non-toxic to animals, Digest-it for Dairies can be safely added in a diluted solution to new, semi-permanent or used bedding where it will reduce/mitigate ammonia, reduce/mitigate odour and reduce the growth of disease pathogens.

That was something Mr Haswell said was "very good for young animals such as calves, helping with their digestion and growth rate".

Another product BioAg produces that complements Digest-it for Dairies, is RumiMate. A nutritional supplement for ruminants and other animals, RumiMate is formulated to stimulate microbial activity in the animal's digestive tract.

RumiMate enhances the natural replenishment of digestive microflora that occurs through grazing. The fermented microbial culture contains a rich source of vitamins, minerals, proteins, enzymes, amino acids and carbohydrates.

RumiMate can be administered by oral drench, mixed with feed rations or mixed with drinking water. It is suitable for lead feeding stock before ration changes or continual use for intensive animals.

Mr Haswell said the two products together "make a great pair".

For more information on BioAg products phone 0800 224 624 or visit www.bioag.co.nz

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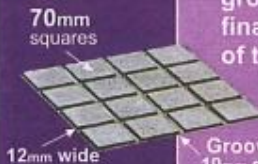


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Constructing lined effluent ponds - Part III

By VAUGHAN PODBIELSKI

PICKING up from the end of last month's article, there are just a few more important issues to consider when planning your new effluent pond (EP) or rehabilitation of your existing pond.

Stirrers and Agitators

Many will say stirrers should never get close enough to the Geomembrane to cause damage. However, accidents do happen, like the prop contacting the liner or from small stirrer footings (Figures 1 & 2).

Stirrers should preferably have skids as opposed to small feet. Therefore, by taking some simple logical steps, this risk can be mitigated. One such method is to cast a concrete slab, onto an off-cut piece of underliner, below where the fixed stirrer would rest if it was lowered far enough.

This also ballasts the liner and prevents Geomembrane upliftment from the swirling action which can cause other problems. Tyres filled with concrete could also be used by carefully positioning, on top of off-cut underliner, as stirrer protection as well as ballasting. Another less aggressive method of agitation is injecting air into the slurry effluent.

Available storage vs Pond Maximum Design

One key point to keep in mind is the volume "lost" due to freeboard and sludge, which can account for 35 per cent or more of your maximum total storage volume.

Most councils recommend a 500mm freeboard in an EP, which is considered your emergency buffer, and also prevents wave action spillage, caused by high winds. This equates to an average 20 per cent loss of storage in average sized ponds, this varies according to depth and shape.

Since EPs are rarely, if ever, pumped completely empty (to retain bacteria, avoid stirrer damage to liners and to act as ballasting)



ABOVE: Figure 1. BELOW: Figure 2.



another "loss" from available storage averaging between 10-15 per cent is experienced, due to just 500mm of sludge.

Therefore, actual "usable" storage = (max design capacity) minus (freeboard volume loss) minus (sludge sediment loss) i.e. the gap between the freeboard and sludge is the effective actual storage. Although the freeboard is technically still "available storage",

this should only ever be used in absolute emergencies (Figure 3 overleaf). Area in blue is effective storage area.

Technically speaking, since "sludge" will accumulate slowly and build each year, the amount of actual sludge in the early stages of a pond will be low. Therefore "sludge" should rather be referred to as unrecoverable liquid, which will be approximately 500mm. In the first year of your EP operation, the actual sludge may be as low as 50mm; you should still factor in at least 500mm of "unrecoverable" liquid in order to get your volume requirement calculations as accurate as possible.

Volume calculations factoring in these losses are available, free of charge, to assist you in planning your effluent management system.

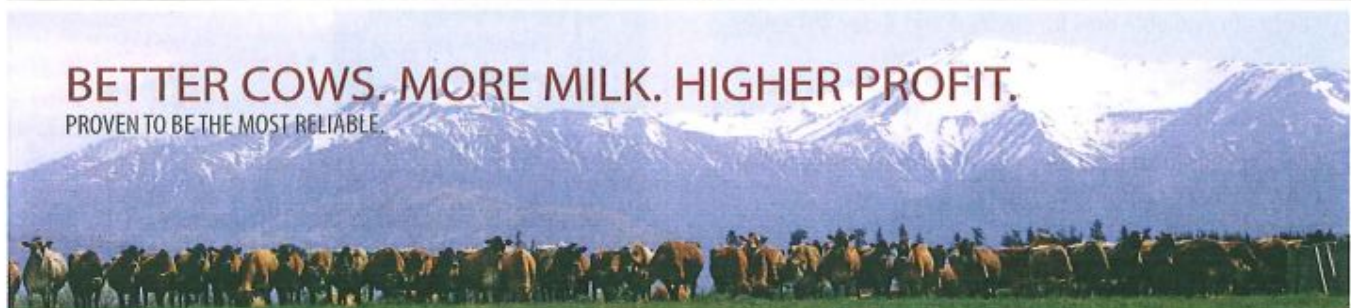
Safety measures

Once the effluent pond Geomembrane has been installed, a few precautions should be taken. The site should be fenced off prior to filling, due to the danger of children drowning as well as preventing livestock and wildlife (goats/pigs) falling into the pond and damaging the liner.

• continued page 80

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PRODUCTS

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It is also an idea to attach rope ladders to a solid post half way between the corners, i.e. four ropes. Since the corners are the easiest place to exit a pond, placing the rope ladders midway along the batter will provide eight possible escape routes. In the event that someone does fall into the pond, a rope is nearby to assist escape. One also needs to bear in mind that some plastic liners are generally more slippery than rubber liners, which therefore may require more escape

ladders or more subtle batters which can be walked up more easily.

Another addition to the pond is a rodent escape ladder for rats, possums or rabbits, which could chew through liners if they fall into the pond. This could consist of some old bunched up shade cloth or windbreak cut into 500mm wide strips and dangled into the pond, away from anything it could become entangled with.

NOTE: These guidelines are only a summary of some of the design and construction

issues which need to be considered when constructing and lining a pond. A design professional should be consulted for specialist site specific advice. A more in detailed design manual called "Firestone Installation Guideline" is downloadable free of charge at the following site: <http://www.cosio.co.nz> or available as a summarized "Pocket Guide", upon request.

• *Vaughan Podbielski is Firestone EPDM Liners Product Manager for Cosio Industries. Contact him on 021 280 7266*

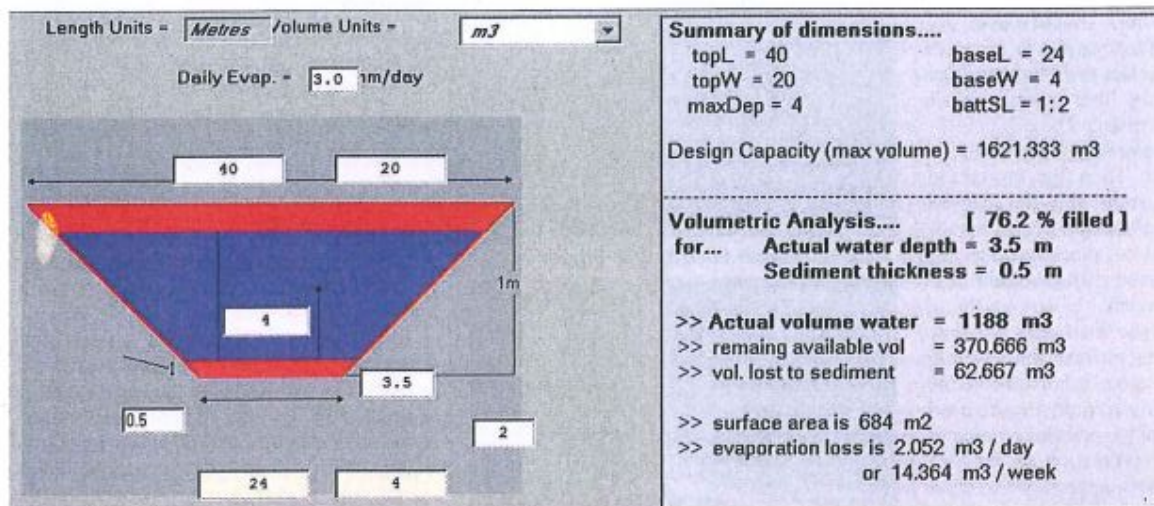


Figure 3.

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