Agriculture Notes

Dairy effluent: Boosting winter growth with dairy effluent

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Introduction

Dairy effluent application to land is being increasingly used by dairyfarmers as they strive to meet the new improved environmental standards being set by the community and industry.

Farmers who need to store effluent in ponds can boost winter pasture growth by applying effluent before winter sets in.

Background

In many areas of Victoria climatic or ground conditions do not enable farmers to safely apply effluent to pasture all year round. For example in western Victoria in the high rainfall Heytesbury area a winter storage period of 6 months is recommended from May to October inclusive to avoid the problems of applying effluent to waterlogged pastures. Other areas have lesser storage periods.

Storage ponds should be emptied by late autumn each year, as they are not designed to overflow directly to land. A storage pond is the second of a two-pond system or a single pond.

Recent changes to design criteria now make these ponds much bigger than previously and take into account water use at the dairy, storage time, rainfall, runoff from other sources, recycling and so on.

The effluent can be applied to land as soon as it is safe and practical to do. This is generally late spring when the chances of runoff are reduced and paddocks are not waterlogged. Many farmers apply effluent to paddocks after cutting for silage and hay. This helps restore nutrients taken away with the harvested crop and helps prolong summer grazing. Similarly summer crops can be started or boosted with effluent.

Boosting winter pasture growth with an autumn application is one way of using the effluent to increase its effectiveness and value to the farm operations.

Advantages

1. The storage pond is emptied before winter so there is no danger that overflow will occur from the storage. This is the current approach where it is recommended storages be emptied before winter.
2. Late autumn is relatively quiet on many dairy farms, enabling the shifting of pipes and irrigators to be done more leisurely and correctly.
3. Effluent tankers are less likely to compact soils or get bogged.
4. Paddocks receiving effluent do not need artificial fertiliser, thus saving time and money. (This may need to be checked with soil tests.)
5. Effluent applied paddocks will get a good spell before grazing (minimum 3 weeks) enabling them to generate good leaf area, which should help overall grazing management over winter. The spell is to ensure the pasture becomes palatable and also reduce pathogen levels.
6. The water content of the effluent may be as beneficial as the nutrients. In trial work in the western district, Frank McKenzie, Warrnambool DPI, showed that responses to autumn applications of nitrogen fertiliser were limited by moisture stress.

Disadvantages

1. If something goes wrong there is less time to fix it before it gets too wet or you run out of time with calving. This could then lead to the pond overflowing during the late winter spring period..
2. The nitrogen content of effluent is variable in total N content and available form. Testing the effluent before application will enable sufficient nutrients to be applied without overloading the soil. Some recent NZ work showed that effluent was almost as good as fertiliser in boosting growth, when applied at the same rate of nitrogen. Application rates should not exceed the accepted standards of 50kg N/ha and 60 kg K/ha per application. Total application of applied nitrogen should not exceed 200kg/year. Research evidence shows there is increased leakage to groundwater of nitrogen withhigher application rates.
3. Grazing transition (close to calving) cows on recently applied effluent paddocks can induce metabolic

problems causing loss and worry. Both the nitrogen and potassium content have an effect on reducing magnesium and calcium levels in the herbage. Farmers with calving cows may need to adjust their grazing and feed management at this time. (See agnote xxxooo managing Potassium for more details).

Further information

Further information on effluent management is available from the following officers in DPI.

Contact	John Kane,	Warrnambool
	Sam Dunbar,	Colac
	Barrie Bradshaw,	Ellinbank
	Scott McDonald,	Kyabram
	Andrew Crocos,	Wodonga