

FARM DAIRY EFFLUENT MANAGEMENT COMPLIANCE OR FIT FOR PURPOSE CANTERBURY

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The South Island has experienced significant growth in the dairy industry over the last decade and this has been accompanied by an increased focus on the environmental effects of dairy farming in New Zealand. While there has been significant research around potential effects, there has been limited availability of sound impartial advice for farmers about how to decide on what type of Farm Dairy Effluent (FDE) system will best suit their farming operation. This has led to some FDE systems being designed and installed, with resource consent compliance being the only design brief.

While it is relatively easy to install an FDE system that complies with regulations today, using a minimum standard as a benchmark for system design increases the risk of a minor legislative change in the future causing major costs for a system upgrade.

What are the rules?

The RMA (Resource Management Act) directs environmental standards and regulations at a national level. Under the RMA, you are required to apply for resource consent from Environment Canterbury if you wish to do something within Canterbury that is not permitted by the district or regional plan.

The Canterbury Natural Resources Regional Plan is the regional plan to sustainably manage the region's natural and physical resources. It is complemented by a number of specific catchment or location-based plans and water conservation orders. It has been developed with significant input from the community over a number of years. In coming years the plan will continue to change to reflect community driven priorities, in particular priorities developed through the Canterbury Water Management Strategy and the local water management zone committees.

Currently there are 5 main rules related to FDE management in Canterbury, these focus mainly on application to land, storage, standoff areas and proximity to high risk areas. All of these rules give the freedom to design a fit for purpose FDE system that will be the most efficient for each farm. They are rules WQL 23 through 27 and the following are the main points.

- Application Rate 10mm/hr.
- Application depth 15mm/day.

- No ponding after 2 hrs.
- Nitrogen loading to be no more than 200kg/N/ha/yr and no more than 100kg/N/ha/yr within 3 months.
- Adequate sealed storage.

The storage requirement of FDE will vary slightly on every farm and this subject has caused some confusion in the past. Amongst other conditions, rule WQL26 states:

The total volume of effluent or waste organic matter stored on a property:

- a) Shall not exceed 1500m³
- b) Shall include sufficient capacity to store:
 - At least the maximum volume of effluent or waste produced in any consecutive three day period; **and**
 - The volume of storm water runoff from any collection area draining into the facility from a one in five year rainstorm event.

Storage and application rates have been highlighted as the most common causes of non-compliance in Canterbury. They are the two of the most discussed FDE topics and yet there still seems to be a considerable amount of misinformation around these subjects.

To alleviate this, the NZ dairy industry is now encouraging a shift away from “rules” based design to a more accurate “fit for purpose” design.

What is ‘Fit For Purpose’?

Fit for purpose is defined as; that which is appropriate, and of a necessary standard, for its intended use. There is no one practice that is best for everyone in every situation, therefore when applied to FDE each system should be designed specifically for each farm. Using site specific data, system designers can accurately identify the potential risks and design a reliable FDE system in order to mitigate those risks. A fit for purpose FDE system should be designed in such a way that

Notes:

finds the balance of efficient nutrient management, environmental responsibilities, ease of use, reliability and capital investment.

Science has highlighted the fact that dairy effluent is a valuable source of nutrient for pasture and FDE systems must have the ability to store and apply that nutrient in the most efficient way for the farm and the environment.

Conclusion

A fit for purpose FDE system will minimise environmental impact, comply with all current regulations and give the best chance of future compliance.

References

Canterbury Natural Resources Regional Plan (2009, partly operative).
(FDE) Design Code of Practice (Feb 2011).