

# TREATMENT CUTS POND METHANE EMISSIONS

## RAVENSDOWN AND LINCOLN

University have discovered a way for dairy farmers to cut methane emissions by about 5%.

They've found an effluent treatment – an additive used in drinking water treatment – can mitigate almost all of the methane produced in an effluent pond.

On most dairy farms those emissions equate to about 4-5% of the farm's total methane emissions.

By 2030 farmers are expected to reduce methane emissions by 10% of 2017 levels.

The EcoPond system due to launch this month with the installation of a commercial-sized system at the Lincoln University Research Dairy Farm, is also being installed on a Canterbury dairy farm.

For many dairy farms the EcoPond system will give them the biggest opportunity currently available to make significant progress in achieving the 2030 target without affecting milk production.

**The system works by inhibiting the growth of methanogens and also creating an environment that's not conducive to methanogenesis – through which methane is produced.**

The discovery by Lincoln University emeritus professor Keith Cameron and Lincoln University professor Hong Di came during additional studies they were carrying out into the ClearTech system they also helped develop.

The EcoPond additive, ferric sulphate is the same additive used in the ClearTech system although the EcoPond system doesn't require a mixing tank.

Instead, the ferric sulphate is mixed with the effluent "in-line" as the effluent flows to the effluent pond.

That means EcoPond doesn't produce clarified water for recycling as yard wash-down water but it does mean it will come at about a third to half the cost of the ClearTech system.

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ABOVE: Ravensdown Cleartech product manager Carl Ahlfeld says the EcoPond system can be retrofitted to existing dairy effluent ponds.



LEFT: Lincoln University emeritus professor Keith Cameron and Lincoln University professor Hong Di discovered the potential breakthrough while working on the EcoPond science behind the Cleartech system.

how the effluent's characteristics might change through the season.

Similar Smart technology to that used in ClearTech will be used in the EcoPond system allowing data to be remotely collected and monitored.

Studies have shown the treatments during the milking period remain effective over the winter or seasonal dry-off while no effluent is being added to the pond.

EcoPond will use similar amounts of the iron sulphate to treat the effluent as the ClearTech system so the annual additive costs will be similar.

Like ClearTech, the level of iron sulphate in the storage tank is monitored using a remote system which alerts the contractor directly that a delivery is required so there's no need for the farmer to monitor or carry out manual ordering.

Both the EcoPond and ClearTech systems provide the methane mitigation benefit and both also slash E. coli (Escherichia coli) levels in treated effluent, reduce ammonia emissions and cut phosphate loss to water by up to 90% on effluent areas.

is produced. Studies by the Lincoln scientists have shown methane emissions can be virtually eliminated with reductions of 99.9% possible in effluent.

ClearTech product manager Carl Ahlfeld says the system has huge potential for all New Zealand dairy farmers as the system can be retrofitted into existing systems.

A programmable logic control (PLC) will automatically control the system, adding iron sulphate to the effluent as it flows through to the pond.

The PLC maintains the right amount of additive going into the effluent no matter what the pond size or effluent volume is, no matter how wet or dry the season is or