

Limited grazing plugs N loss

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ON-OFF GRAZING

could help dairy farms in limbo under looming nitrate loss limits, judging by research presented at last week's Grassland Association conference in Gore.

The work, by Massey University PhD student Christine Christensen and colleagues as part of the cross-industry funded Pastoral 21 project, found that limiting cows to four-hour grazing blocks morn-

The on-off grazing system, probably because of slurry application, grew less grass which would cut milk production, Christensen conceded when questioned about milk production in the trial.

However, she suggested "tweaking" the timing of the effluent application could actually increase pasture production in the on-off system, in which case there might be an opportunity to increase stocking rate.

Less treading damage on the on-off paddocks would be another benefit.

trials into version 6 of the model.

They found the model's predicted leachate losses correlated well with their collections from drains under the plots. However, Overseer's prediction of run-off losses was poor, coming out at zero for both grazing systems.

In reality, 3.2kg N/ha

was lost to run-off under conventional grazing, and 2.9kg N/ha under on-off grazing. "The difference was very slight, not significant."

In contrast, total N loss over the three-year trial was significantly reduced, from an average 22kg N/ha in leachate and run-off combined under conven-

tional grazing, to 14kg N/ha under on-off. Within those annual figures, rain amount and distribution caused leaching loss timing and amount to range from 13 to 26kgN/ha/year under conventional grazing, and 7 to 14kgN/ha/year under on-off.

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Christine Christensen

"It's a significant reduction and one farmers can use to help mitigate nitrate in water issues."

ing and evening reduced total nitrogen loss 36% compared to continuous grazing. That result was despite off-period effluent being collected and spread back onto the grazing plots.

"It's a significant reduction and one farmers can use to help mitigate nitrate in water issues," Christensen told delegates.

Milk production from the mobs wasn't measured, but pasture growth and cow intake was. "We assumed if they eat the same amount of pasture they would produce the same amount of milk."

"It's an option for people who've got an issue with nitrate leaching. Our [loss] numbers are relatively small compared to some farms' but the main story is the reduction, not the actual numbers."

If a farm is losing 60kgN/ha through leaching and run-off under conventional grazing, Christensen said under an on-off system that might be halved.

Recognising that regulators and farmers will likely use the Overseer nutrient management model to calculate losses, Christensen et al plugged the numbers from their

IN BRIEF

More N for less P

APPLYING MORE nitrogen and taking resultant pasture as silage could reduce risk of phosphate loss where the latter nutrient is in excess, research presented by Agresearch and Lincoln University's Rosalind Dodd shows.

"Target your silage cuts to these paddocks and increase the nitrogen application and you can get a significant reduction in whole farm P losses," she told last week's Grassland Association conference.

While the technique didn't work on an allophonic soil site, it did on brown soil and pumice sites.

As phosphate is otherwise slow to decline, harvesting the nutrient in this way could speed a reduction to levels which present less of a pollution risk.

There was no increase in nitrate leachate even when 300kg N/ha was applied.

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