

# Managing the benefits and risks of fertigation

*New environmental standards are encouraging farmers to think more creatively about how they add fertiliser to their crops and pastures. Many are finding that using their irrigation system can be an effective and efficient way to get nutrients to where they're needed. But what do you need to look out for with fertigation and effluent spreading?*

With synthetic nitrogen use on farm now capped at 190 kg per hectare each year, farmers wanting to add nutrients are asking themselves two questions: “How can I spread my fertiliser in the most effective way possible?” and “How can I make the best possible use of the natural fertiliser my farm produces in animal effluent?”

It's similar to the question Canterbury farmers have been dealing with for some time regarding the application of another scarce resource – water. And the answer may be by using the same system – your irrigator.

## Fertigation

The application of synthetic nutrients mixed with irrigation water through an irrigation system is known as fertigation. The major fertiliser suppliers sell specialist products designed for fertigation use.

In most cases, these products will count towards your nitrogen cap. But they will allow you to be more precise in your nutrient use, meaning you should be able to grow more with less, saving money on fertiliser and reducing leaching.

## Effluent injection

Effluent injection is already common practice on many dairy farms in Canterbury. It involves directly injecting filtered effluent into the base of your irrigator, and applying it with your irrigation water through the same line.

The advantage of effluent injection is that you can be as efficient with your nutrient dispersal as you are with your irrigation.

## Managing environmental risks

When practicing fertigation and effluent injection, a loss of pressure in your irrigator could cause the nutrient-enriched water to flow backwards into the source. That's why you'll need some form of backflow prevention.

There are three types of backflow prevention – an air gap, chemigation valve, or reduced pressure zone device (RPZ).

Air gaps function by literally creating a space where there is a vertical air gap in the water flow, which when water is flowing in the desired direction, will be overcome by gravity.

In the case of a loss of pressure, the water won't be able to flow back past the gap.

Chemigation valves and RPZs function through springs that automatically cut water flow when pressure drops, creating a physical barrier to backflow.

The type of backflow prevention device you require will depend on your system. See our webpage ([ecan.govt.nz/backflow-prevention](http://ecan.govt.nz/backflow-prevention)) for more details.

Farmers with effluent ponds know it's a high-risk activity and needs to be managed carefully. Storing fertiliser for fertigation is no different. Our fertigation webpage ([ecan.govt.nz/fertigation](http://ecan.govt.nz/fertigation)) contains guidance on how to safely store fertiliser on your farm.

## Our advice to farmers

Fertigation and effluent injection can be useful methods of boosting crop and pasture growth and farm productivity. Done well, they can also reduce nutrient leaching.

But, as with any activity using hazardous substances, the risks need to be very carefully managed.

On our Farmers' Hub ([ecan.govt.nz/farmers-hub](http://ecan.govt.nz/farmers-hub)) we have published a full guide to the Government's Essential Freshwater regulations, and what you need to know and do.

You'll also find new guidance on both fertigation – including effluent injection – ([ecan.govt.nz/fertigation](http://ecan.govt.nz/fertigation)) and backflow prevention ([ecan.govt.nz/backflow-prevention](http://ecan.govt.nz/backflow-prevention)).

## Where to go for more information

Our Farmers' Hub contains a wealth of information on planning for fertigation and effluent injection – including obtaining resource consent, managing risks, and incorporating the practices into your Farm Environment Plan (FEP).

Irrigation NZ's fertigation guide is available to download from the INZ website ([irrigationnz.co.nz](http://irrigationnz.co.nz)). If you are part of an irrigation scheme, contact them for information on fertigation.

Your farm consultant and fertiliser provider can also give you information on fertigation and how to approach it.



# Get your plan in place for a wet winter grazing season

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*With soil conditions already very wet in many parts of Canterbury, it's more important than ever to get your intensive winter grazing plan well-prepared.*

*Environment Canterbury's Regional Lead, Implementation, Tami Woods, says having a clear plan to protect your soil and any nutrient loss to waterways is the best way to tackle what might be very wet ground conditions this winter.*

## **Wet, wet, wet**

Intensive winter crop grazing is always a high-risk environmental activity, but this year the pasture is quite sodden in many places, which could make ground conditions worse. Early autumn soil moisture levels were above the long-term median across Canterbury. North Canterbury has the highest soil moisture levels, especially east of the Southern Alps between the Waimakariri and Waiau Toa (Clarence) rivers, but many other areas are also wetter than normal.

What this means is that farmers need to be well-prepared to take action to avoid pugging, run-off and sediment loss. No one likes to see the worst impacts of winter grazing in a wet year.

## **Getting prepared**

It's now expected that you plan well ahead for where and how you're going to carry out intensive winter grazing on your farm. This is to ensure any environmental risks are identified and managed to industry-agreed Good Management Practices (GMP). Your plan doesn't need to be complicated and you can follow an existing template, such as MPI's Intensive Winter Grazing Module – Template ([mpi.govt.nz](http://mpi.govt.nz)).

Having something documented will give others, whether it is an FEP Auditor or a compliance officer, greater confidence that you have planned sufficiently for the season. It also helps with your own planning, management and making sure you've thought about every aspect of your intensive winter grazing. It can be as simple as completing a template or including a basic plan within your existing FEP.

## **What should be in your plan**

Your winter grazing management plan is all about recognising how to manage the risks to your soil and waterways and preparing management practices to mitigate the risks of soil damage and nutrient loss.

Cattle and deer can create a greater risk than sheep. This can be mitigated with strategic grazing practices, grazing top down, and protecting critical source areas or swales.



Stock movement is an important risk factor that farmers can manage. The time stock spend moving on the paddock can be reduced by having well-fed stock, using back fencing, using portable water troughs and carefully planning baleage placement.

On/off grazing, where the animals are taken off after they have filled their bellies, allows them to get their daily ration of winter feed, and to graze or rest in a more spread out area and to reduce soil damage and sediment losses.

### What about the new rules?

As you will know, the Government's National Environmental Standards for Freshwater regulations contained new rules on intensive winter grazing.

Our advice on this new regulation can be found on the intensive winter grazing page of our essential freshwater advice for farmers, at [ecan.govt.nz/winter-grazing](http://ecan.govt.nz/winter-grazing).

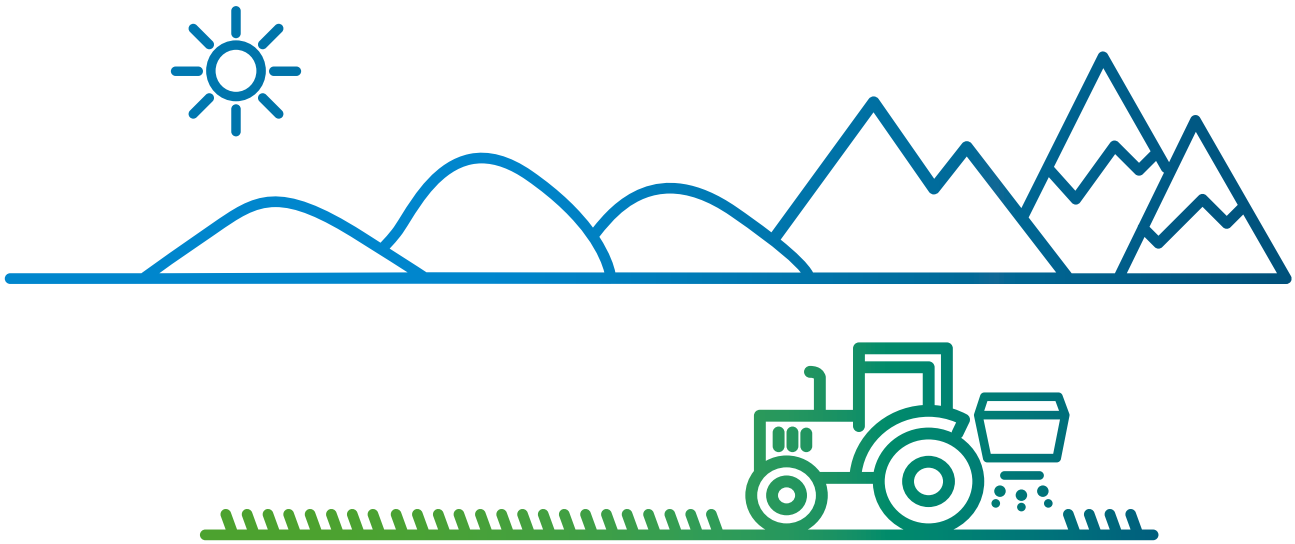
Last year, the Government sought feedback on its new intensive winter grazing rules, and it is now considering amendments to support effective implementation and achieve improved environmental outcomes, especially considering regulations that can be difficult to comply with on-farm, or ones that are dependent on weather conditions.

If accepted, the updated regulations would take effect from the proposed date of 1 November 2022.

In the meantime, our advice is that you need to continue to follow existing rules and best practices around intensive winter grazing.



If you need some extra guidance and information on intensive winter grazing, you are welcome to get in touch with a land management advisor on 0800 324 636 or visit our Farmers' hub at [www.ecan.govt.nz/farmers-hub](http://www.ecan.govt.nz/farmers-hub)



# Synthetic Nitrogen Fertiliser Limit

## What farmers need to do

To help protect and improve our waterways, a limit now applies to the amount of synthetic nitrogen fertiliser applied to pastoral land. This was introduced as part of the Essential Freshwater package.

Carefully managed, fertiliser is a useful farming tool. However, it can contribute to nutrient loss into soil and waterways, impacting water quality and in-stream life.

## All farmers

- The amount of synthetic nitrogen fertiliser you apply to pastoral land cannot exceed 190 kilograms of nitrogen per hectare per year

## Dairy farmers

- Report your synthetic nitrogen fertiliser use to Environment Canterbury annually
- Submit your first report by **31 July 2022** - we'll be in touch soon about how to do this

## We're here to help

For more information, visit [ecan.govt.nz/synthetic-nitrogen-cap](https://ecan.govt.nz/synthetic-nitrogen-cap) or contact us on 0800 324 636.