

clover

Mike's clover road

Thanks to white clover this Cork farm is on track to dramatically reduce its use of bagged nitrogen.

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Mike Bermingham farms with his wife Tina and their two teenage children near Fermoy, Co Cork. This spring, about 100 cows will calve down, over 80% of them within six weeks. Most will have calved by the time you read this article.

The Bermingham land is around 500ft above sea level and Mike describes it as a reasonably dry farm. The paddocks have grown 13t of grass DM/ha on average over the last few years (12.5t/ha in 2022). The 100-cow herd (EBI €198) delivered about 541kg MS/cow to Dairygold Co-op in 2022.

“Over the last few years, we could see that there are ever greater challenges coming down the tracks in terms of nitrogen,” says Mike.

“So we began taking a closer look at the role white clover can play in replacing nitrogen fertiliser.”

Mike says that the reseeds he has completed for many years have all included clover, but making use of the nitrogen generated by the clover plant wasn't a priority. This journey really began in the spring of 2021, when he joined the Clover 150 programme. The programme targets a total usage of just 150kg N/ha.

“In the first year, I was really nervous about making greater use of white clover, as I was asking myself



John Maher, Mike Bermingham and Padraig McCormack. \ Fergal O'Gorman

‘will the grass grow?’” says Mike. “By year two, I was less nervous about it as doing – and seeing – is believing! This year I am much more comfortable about it.

“Even though the soil fertility on the farm is good, I will continue to focus on P and K, as clover needs these to be right.

“The benefits of white clover really tend to occur from May onwards as the sward's white clover content increases. The main benefits I see of white clover in grass swards on my farm are:

- A reduced need for nitrogen fertiliser application in summer.
- Increased grass quality, especially



during the summer months.

- Higher cow performance – extra milk solids.”

Re-seed or oversow?

“Incorporating white clover in a full reseed is the easiest method of establishing white clover and is the gold standard approach,” says Mike.

“Over-sowing is a simple and low cost method of introducing white clover into swards, but success is very dependent on weather conditions at sowing, soil moisture and competition from the existing sward.”

In 2021, Mike reseeded 12% of the farm and oversowed 20%. In 2022, no reseeding was carried out, but 15% of the farm was oversown. The plan in 2023 is to reseed 11% of the farm and oversow 7%.

By the end of 2022, about 80% of the farm had white clover established with an average level of 18%. This ranges from 8% to a high of 31%. An average annual sward white clover content of approximately 20–25% is desirable for animal and sward production benefits.

Mike says his approach to reseeding with clover is as follows: “I aim to reseed as early in the year as possible



(April/May) when soil temperatures are high. The sward is sprayed off with glyphosate and a minimum of seven to 10 days after spraying is allowed before cultivating with a min-till machine. We prepare a fine, firm seedbed, and about 2kg/ac of clover seed is sown with the grazing mix.

“I have used many varieties of clover, all from the recommended lists. These include Chieftain, Buddy, Coolfin, and Aberherald.”

Mike applies about 2t of lime/ac at sowing. P and K fertiliser are applied using three bags of 10:10:20/ac. The ground is rolled well to ensure good contact between the seed and the soil.

A clover-safe spray is used to control docks. The new reseed is grazed at a cover of about 700kg DM/ha to help encourage the clover plants by allowing light get into the sward. Soiled

water is applied after grazing to help clover development.

“My approach to oversowing has changed a bit,” says Mike. “In the past, I targeted the month of May, but from now I will aim to carry out sowing earlier, at the end of April.

“The paddocks I choose for over-sowing will generally have good soil fertility (index 3 or greater for P and K and soil pH 6.5), good ryegrass content and are a bit more open. They will also be fairly free of weeds like docks.

“Before I go oversowing, I will graze the paddock very tight and try and target damp conditions. I use an Einbock harrow to sow the seed and sow the clover seed at a rate of 2.5kg/ac. I roll it and apply soiled water. I will graze the sward at a cover of 700kg DM/ha and do this for two more

grazings.

“I will continue to graze the paddock well for the rest of year and not allow it reach a high cover. I reduce the amount of nitrogen fertiliser by half during the summer or use dirty water instead of fertiliser.

“The following grazing season, I will graze it early, but I am careful not to damage the paddock at any time. It is important to avoid carrying a high cover over the winter on oversown paddocks, as this does not help the clover.

“I have no problem oversowing a paddock again the following spring if things don't work out as well as they should. I used less than 200kg (160 units/acre) of N fertiliser/ha in 2022 and my aim this year is reduce nitrogen fertiliser further and get closer to the 150kg/ha target,” Mike says.

Establishing white clover

A targeted multi-year approach should be used in establishing a white clover system with a combination of reseeding and over-sowing.

- Reseed approximately 10% per year.
- Oversow approximately 10-20% per year.

Suitable paddocks for over-sowing are those with good soil fertility, high perennial ryegrass content and low weed content.

Paddocks for a full reseed should be identified as early as possible in the process to avoid over-sowing clover on these. Poor performing paddocks,

paddocks that have old swards, swards with weed content etc should be prioritised for reseeding.

Sward white clover content increases through the spring, into summer and generally peaks in August/September. Good grazing management is key to maintaining sward white clover content.