

Learning from a crisis

Michael Fagan describes steps taken with the Newford Farm herd to deal with the huge fertiliser price increases.

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One of the first things we did as a farm management team was to take soil samples to ensure we were putting the right amount of fertiliser in the right areas. It turned out that 18ha had low pH (<6.3).

We prioritised these fields because we know that by improving the pH you get a better return from nutrients applied. You also get greater natural release of nutrients from the soil itself. We applied 3.75t/ha of lime in late January. Also, the soil samples revealed which fields were low in P and K. Most of these fields were the silage ground fields, so we targeted

slurry and farmyard manure at them. Again, we were applying the nutrients available to get the most value for money.

We used low emission spreading system (LESS) of slurry across the farm. This resulted in less valuable nitrogen being lost to the atmosphere. Research has shown that LESS machinery can result in an extra 3.5kg N/10m³ (3 units N/1,000 gallons) being made available from cattle slurry.

With protected urea costing us over €1,000/t at the start of the year, this is a useful bonus over splash-plate application. We used protected urea due its ability to hold onto nitrogen longer and make it available to the growing plant.

On 4 March, we blanket spread 62kg/ha of protected urea (38% N) and a further 90kg/ha on 26 March. From then on, we spread fertiliser at six week rather than four week intervals as we had done in previous years.

Clover

During April and May 2021, we had oversown 8ha of the farm with white clover (Buddy and Aberherald) at a rate of 6.5kg/ha with a 6m Einbock Tine harrow air seeder.

Two and a half hectares were also reseeded in 2021 with Abergain and Aberchoice at a sowing rate of 37kg/ha, with Buddy clover at 4kg/ha.

These 2.5ha of clover paddocks received 210kg of protected urea/ha during March and April 2022 and were grazed five times before an additional 25kg/ha of protected urea was applied in early August

White clover has many benefits and research has shown that a pasture containing more than 20% white clover leads to an increase in animal production.



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White clover itself is very digestible and a high-quality plant which is very suited to Newford Farm requirements. A major benefit is the reduced need for nitrogen during the summer months. This proved a huge advantage for us in 2022. The benefit of clover is that it takes nitrogen from the air and makes it available to the growing pasture. Reducing artificial nitrogen fertiliser actually helps to increase the clover content in the swards.

During the summer months, we spread 25kg/ha of protected urea on paddocks when they need it. The key point was to turn animals into those paddocks at pre-grazing covers of 1,000kg/ha. This ensured the clover did not get suffocated in high covers and we walked each paddock once and sometimes twice a week.

While paddocks were rich with clover, we kept a close eye on grazing

animals, though we never had any issues with bloat.

Up to the end of July 2022, we had spread 110kg of protected urea per acre (38% N and 7% S) compared to 167kg of protected urea per acre for 2021 for the same period. We had reduced our application by 57kg per acre of protected urea up to end of July 2022, so what did that really mean for the farm?

Financially, it meant a difference of 9.6t less fertiliser, or roughly a saving of €9,600 for the farm. This saving is directly connected to two things – clover and lime.

Over the last five years, the average amount of grass grown was 6.9t to mid-August for each year and this year's average tonnage to mid-August was 6.45t DM per ha.

This 0.45t decrease in growth was accepted as the consequence of the lower amount of nitrogen spread.

Stocking rate

One key issue for us on the Newford Farm in 2022 was to draft as many

beef animals as possible off grass.

In early August, we drafted 20 in-spec beef heifers at 17 and a half months of age, with a further draft to take place at the end of August. By slaughtering these heifers at 18 months of age off grass, we reduced the need for additional fertiliser in the autumn.

Also, this early drafting of heifers shows that it is possible to finish heifers off grass without any meal feeding, while simultaneously reducing the farm's GHG emissions.

Having these heifers gone off grass will release more grazing ground and help to build up grass covers for the Newford weanlings as we enter into the autumn.

It will also reduce the farm's stocking numbers for the year and lower our fertiliser requirement.

In previous years, we would have sold these heifers at an average age of 20 months after supplementing them with concentrates for a period pre-slaughter.

In 2023, we will continue this practice of drafting in-spec heifers at 16-18 months, along with drafting the Newford steers at an early age off grass.

Table 1: Total amount of N, P, K and S spread per ha to mid-August for each year.

Year	Total N kg/ha	Total P kg/ha	Total K kg/ha	Total S kg/ha
2022	103	1	2	12
2021	138	6	15	17
2020	127	5	19	15
2019	142	12	25	7
2018	126	5	10	4

Silage ground

We closed the first-cut pit silage ground on 16 April and it was cut at the end of May. It had received 35 m³/ha (3,000 gallons/ac) of cattle slurry and a top up of 75kg/ha protected urea (38%N). We were fortunate that



we only needed one cut of pit silage as there was a full pit of silage left over from last winter.

To date, 240 round bales have been taken out as surplus bales from paddocks and a further 110 round

bales were taken out for first-cut and second-cut silage.

Future planning

Roughly 42% of the Newford Farm paddocks have clover in them and

our plan is to over-sow a further 6ha with clover next year. These 6ha were treated for docks in June and if these paddocks need to be treated again, they will get a further spray in September, so that when April 2023 comes these paddocks will be ready for over-sowing.

Additional information

Newford Farm was planning to hold an Open Day on 13 September, but unfortunately this has been postponed due to an outbreak of TB on the farm. Once the herd is clear, it will be rescheduled in 2023.

Table 2: Annual tonnage of grass grown per year up to mid-August.

Year	Grazing (kg DM/ha)	Silage (kg DM/ha)	Total (kg DM/ha)
2022	3,787	2,666	6,453
2021	4,508	2,345	6,853
2020	4,338	2,583	6,921
2019	4,985	1,997	6,982
2018	5,719	1,374	7,093

The Newford Farm is a suckler-to-beef demonstration farm consisting of 175ac in four blocks at Teagasc Athenry, Co Galway. The farm was established in 2015 by Teagasc and Dawn Meats with the support of the *Irish Farmers Journal* and McDonalds.

The Newford herd consists of first – cross Aberdeen Angus and Hereford cows bred from the dairy herd. The

95-cow herd is supervised by Michael Fagan.

The aim of the demonstration farm is to generate a high profit from a grass-based suckler-to-steer and heifer-beef production system using five-star terminal AI sires. This can only be achieved by grazing high-quality grass over a long growing season.

It became apparent in spring 2022

with the high fertiliser price that it was not economically sustainable to achieve these high grass yields using high levels of artificial nitrogen.

Newford Farm is part of the Future Beef programme and the Signpost programme and there is a clear focus on reducing environmental footprint while increasing profitability.

