

Data driven fertiliser inputs increase milk yields

The dry spring has reduced first and second cut yields across the country, but one Welsh farmer has found a way to improve the quality of his silage and grazing ground this year, whilst increasing daily milk yields in the process. British Dairying reports.

In November 2024, Welsh dairy farmer Clive Breeze tested the soil in three fields on his 105ha Pembrokeshire farm. His aim was to assess the condition and nutrient values in these fields and identify any areas that were limited by a nutrient deficiency.

The results guided Clive to tailor his spring grassland nutrition through a prescription fertiliser to deliver quantifiable returns. Achieving this has been even more significant given the dry spring across most of the country. Clive explains the main results from the change in soil nutrition.

“I’m in no doubt that the grass has responded to the drier conditions better, through continued growth and consistent quality, than it would’ve done in the past. Overall, the milk yield from the silage ground is up 15% compared to usual, and on the grazing fields, I would say our daily yield has increased by 8%.”

Clive farms at Blaenpibydd, Pembrokeshire, and milks on contract for Arla, with 140 cows milked twice a day aiming for high yields around 10,000-litres. His herd of pedigree Holstiens, and 300 followers, are turned out in the day but stay in after the evening milking for Clive to closely control their diet.

Soil data

Clive admits he was fascinated by the soil test results and this data has been essential for prescribing a fertiliser that now accounts for the nutrient deficiencies. However, more importantly, by testing, Clive could understand which nutrients are already at plant available levels in the soil.

“The data showed me that our potassium and phosphorus levels were more than adequate, so there was no need for additional granular inputs of these nutrients as we tended to do in previous years. Our slurry was providing everything the soil required here.”

Slurry is applied in the spring at 2,000-litre/ac as soon as the ground allows travel, with a further 1,500-litres/ac after first cut, and 1,000-litres/ac after second cut. All is applied via umbilical and tanker system, so the slurry is quickly available to the grass.

Further analysis of the soil data identified deficiencies in magnesium and calcium, which was a surprise as Clive has never had an issue with milk fever. Despite this, addressing the soil deficiency was vital to ensure any potential future issues were lessened. Through discussions with Michelle Cross, regional forage manager at ForFarmers, Clive settled on Origin Soil Nutrition’s Sweetgrass protected urea prescription grassland fertiliser to address the nutrient shortcomings.

Guillaume Franklin, nutrition agronomist with Origin, explains how applying the prescription fertiliser has had this effect on Clive’s grass crops.

“Magnesium, refined sodium, sulphur, calcium and selenium are all recorded nutrients in Sweetgrass. These additions are specifically tailored to match grassland requirements, increase palatability, but also improve animal health and ensure consistent grass quality

throughout the season. For example, the refined sodium salt has five times more landing sites compared to traditional agricultural salt, so the grass can access more of it.

“Crucially, it has no phosphorous and only a small amount of potassium, so Clive wasn’t applying nutrients the soil didn’t require, instead, spend was apportioned to improve the levels of the micronutrients,” says Guillaume.

Results

Apart from spraying his grassland to remove dock plants earlier than he typically would, the only thing Clive has changed is the fertiliser inputs. Eradicating the docks earlier would’ve helped the grass access nutrients due to the reduced competition, but Clive says the thicker crop and quick regrowth is down to the fertiliser.

“Even in a dry season such as this, we could’ve cut our silage ground four weeks after first cut, there was that much grass. We aim for three or four big cuts each season to ensure we have enough as our grazing platform increases, and silage area reduces, as the season goes on.”

Results from first cut indicated a 32.7% dry matter, protein at 15.4%, ME registered 9.9% and NDF returned a reading of 42.6%, which has pleased Clive given the season. One of the biggest improvements has been the animals desire to get back out to the grazing ground following morning milking.

Clive keeps the milking herd in after evening milking to control their intake and ensure each animal is getting around 15kg of ration during the evening.

“When we turn them out in the morning onto a new patch of grazing, they are bursting out of the shed and have a desire to eat it,” says Clive. “They’re grazing the grass evenly across the whole field, which makes regrowth consistent. Due to the improved palatability of the grass, the intake across the herd is higher.”

He also said cows sit down shortly after being turned out after milking, which indicates a content animal, while their stools are also consistent.

Next season

The improvements this year have indicated that there is more to come from his grassland, and testing it is essential to understand where improvements can be made.

“In the past, I was applying P and K because I thought the crops needed these major nutrients alongside nitrogen. However, the soil analysis has allowed me to see the full cross section of nutrient levels and if they are accessible to the plant in the soil. Using the data, I can work with our advisors to tailor inputs and get the most from what we spend on soil nutrition,” concludes Clive.

Trial data

Sodium is not held in soils for a long period, so a little and often approach to applications is required to ensure crops have sufficient access to it. Trial work at Bangor University showed how applications of sodium, alongside nitrogen, increased average milk yield by 9.3%. This also translated into an improvement in milk quality of 15.6% when compared to a straight nitrogen application, while significantly reducing somatic cell counts.

Clive Breeze – Sweetgrass case study – June 2025

Better utilisation of grass not only provides animals with improved forage quality to benefit consumption and animal health, but it can also help farmers to deliver more nutrition for the cow's diets through grass alone.



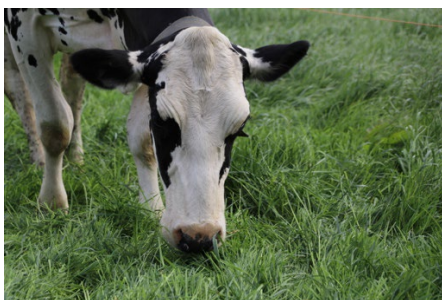
Caption: The prescription fertiliser has meant cows are accessing more nutrients from the grass



Caption: Clive says his herd lays down for periods during the day which is a good sign of contentment



Caption: Clive Breeze says his cows have benefited from the tailored grassland nutrition he has applied this year



Clive Breeze – Sweetgrass case study – June 2025

Caption: Consistent grazing across the platform, and an abundance of grass keeps the herd fulfilled during the day and has increased milk yield



Caption: The silage platform was ready to cut again just four weeks after first cut



Caption: The grazing ground has increased milk yield by 8% compared with previous years