Teagasc
Advisory
Newsletter

BEEF

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Hitting your grass targets

Both weather and ground conditions have been excellent across the country in recent weeks. Air and soil temperatures have been well above normal, and rainfall levels have been below what we would normally expect at this time of the year. With such favourable conditions, many beef farmers have rightly turned some of their cattle out to grass three to four weeks ahead of normal. This is saving them fodder, reducing the amount of slurry they will have to spread, significantly reducing their workload, and improving the daily weight gain in their cattle. The key now for these farmers is to have a reasonable amount of grass regrown on the fields they grazed first that they will be returning to graze in a few weeks' time. Leaving enough time for regrowth is the number one strategy to achieve this, i.e., not finishing the first rotation too soon. With normal grass growth rates, most farms should aim to finish their first grazing rotation no sooner than the first week of April. Keep a close eye in March on how much ground you are grazing per day or week. If you are grazing too much, you will need to slow it down by not turning out any more stock (no matter how good the weather is) or it may mean rehousing some stock.

Getting fertiliser out is the second part of the strategy. With temperatures rising and day length increasing, the economic response to spreading even a small amount of nitrogen (N) increases every day we move into March. The amount you spread per acre will depend on your farm's stocking rate. As we move later into the month, consider spreading a compound fertiliser (such as 18:6:12) on grazing swards where your farm has a phosphorous (P) allowance.

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Delivering European solutions to Irish beef farmers

Between 2020 and 2023, Teagasc co-ordinated a European-funded project known as the Beef Innovation Network Europe (BovINE), that aimed to establish a knowledge exchange network between beef farmers, advisors and others involved in the beef industry across nine European countries. Each year meetings were held in the nine countries to find out what were the main challenges beef farmers had on their farms that were preventing them from becoming more sustainable. Using these challenges as a guide, researchers and farmers across Europe shared research findings and on-farm practices to address these. In contrast to pasture-based systems, some of the solutions exchanged related to managing more intensive indoor systems. An example was the use of an automated weighing system placed in front of a cattle drinker in a feed-lot pen on a finishing farm in northern Italy, which reduced labour requirements and enabled a real-time detection of weight gain. At the core of the BovINE project is a specially developed online digital knowledge repository, known as the BovINE Knowledge Hub (https://hub.bovine-eu.net/), where all the innovations, technologies and useful good practices are stored and shared among the European beef farming community. The knowledge hub is free to all with an interest in beef farming and is open not only to those who wish to search for useful solutions, but also for anyone who wishes to share tips and practices with others.

HEALTH & SAFETY

Check gates and fences

Are your fences stockproof along public roads? Animals getting onto roads is a major hazard to traffic with high potential for serious injury. The Animals Act 1985 places a strong duty on farmers to prevent stock from getting onto roads. March is an opportune time to check fencing along public roads ahead of turnout of stock. Hedging cannot be relied upon to keep stock contained in all cases, so fencing may be needed. If growth conditions are poor at this time of year, a 'hungry period' can arise causing animals to stray. Use of a gate-stopping device (see picture) to stop a gate swinging outwards is also a worthwhile safety device along public roads.

March is undoubtedly one of the busiest farming months, so work organisation and getting adequate rest are crucial to prevent rushing and farm injuries. Take particular care around tractors and machines, and cows calving or with calves.

12 STEPS TO REDUCING EMISSIONS

Over 12 months, the Teagasc advisory newsletters will outline actions farmers can take to reduce their emissions.

Step 3: Optimise soil P and K

How does this reduce emissions?

When soil fertility levels are good (i.e., index 3 for P and potassium (K)) N is used more efficiently in the soil. If N is used more efficiently, there is scope to reduce the quantity that needs to be applied, leading to lower nitrous oxide (N_2O) emissions. Low-P soils have been shown to have significantly higher N_2O emissions. N_2O is one of the main greenhouse gases we need to reduce.

Is there a gain for me?

On many farms, sub-optimal soil fertility is leading to a drop in output and income. Correct your soil fertility and grow up to 25% more grass. Two-thirds of farms are deficient in lime, P or K but this can be easily fixed.

What action do I take?

The starting point to reducing chemical N fertiliser use is to know the fertility status of the farm. Soil sample every two years or more often. Complete a nutrient management plan with your local advisor. This will help you to target fertiliser use where best results can be achieved in terms of grass/crop growth and consequently avoid waste.

Step 4: Make better use of slurry

How does this reduce emissions?

Applying slurry in spring using low-emission slurry spreading (LESS) increases the available N in the slurry by six units per 1,000 gallons compared to summer application with a splash plate. Due to an increased availability of N in the slurry, chemical N can be reduced by a similar amount. Chemical N is a source of N_2O. The use of LESS is also important in reducing ammonia losses during application.

Is there a gain for me?

Where a grass silage crop receives 3,000 gallons/acre in spring using LESS, this will supply 33kg/ha N that is fully available. When applied in summer with a splash plate, this will only supply 10kg/ha N. This offers a chemical fertiliser N saving of ~€60/ha. Other benefits include: quicker return to grazing; more even application; the opportunity to apply slurry into larger grass covers; smell reduction; and, more even distribution of nutrients across spread width.

What action do I take?

Ask your contractor to apply all slurry using LESS. Apply as much slurry as possible in spring under suitable soil and weather conditions. As you capture more N from slurry, reduce chemical N use by the corresponding amount.

RESEARCH UPDATE

Rumen and methane

PAUL SMITH, SINÉAD WATERS and DAVID KENNY of Teagasc Grange and ALAN KELLY (UCD) report on the rumen microbiome and low methane-emitting beef cattle.

Enteric methane originating as a by-product of the microbial fermentation of feed in the rumen accounts for nearly 60% of Irish agricultural-related greenhouse gas (GHG) emissions. To achieve the 25% reduction in total agricultural emissions by 2030, a minimum 10% reduction in ruminant-derived methane emissions has been set. Recent evidence from research led by Teagasc, in collaboration with the Irish Cattle Breeding Federation (ICBF) and UCD, has shown that some cattle can emit up to 30% less methane, for the same level of performance, when ranked on the basis of the residual methane emissions (RME) index. As the rumen is the sole source of enteric methane emissions, researchers in Teagasc and UCD, through the RumenPredict and EU-funded MASTER project, aimed to establish the contribution of the rumen microbial community to inter-animal divergence in methane output. To do so, rumen fluid digesta samples were obtained from nearly 300 intensively finished beef cattle that had previously undergone detailed measurements of enteric emissions and been ranked for RME, and samples were sent for high-throughput next-generation sequencing. There were no major differences in the composition of the rumen microbial community between high and low methane-emitting animals, but a small cohort of rumen microbes accounted for some 20% of the variation in emissions. Among the key microbes identified, low-RME (low methane emitting) animals had an increased amount of bacteria associated with production of lactic acid and its subsequent conversion into the volatile fatty acid (VFA) propionate. No evidence of an increased incidence of ruminal acidosis was observed, with similar ruminal pH reported between high and low methane-producing cohorts. A shift towards a less methanogenically potent community of rumen methanogens was observed in low-RME animals. Results from this study, which were recently published in *Frontiers in Microbiology*, have identified some of the key rumen microbes associated with a low methane emissions phenotype. Working with colleagues in New Zealand, further research has been initiated to assess the suitability of utilising the rumen microbial profile as a proxy for identifying low methane-emitting animals and the potential, through early life intervention, to inoculate the rumen of young animals with some of the key microbes associated with a reduced methane output.

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