

Second cut fertiliser applications to improve forage quality

With first cuts well underway and nearing completion in some areas, attention will soon be turning to fertiliser applications to replenish valuable nutrients ahead of second cuts.

There will be a desire to make the most of any inputs given the high prices of bought-in fertiliser this year, and farmers should be looking to make gains, however small, in any areas they can, starting with maximising nitrogen use efficiency, says Alan MacKechnie, sales manager at Origin Fertilisers.

“Helping the plant to achieve a better nitrogen recovery has a quantifiable economic benefit. Not only is more of the applied nitrogen accessible to the plant to increase yields and crop protein, but losses through leaching and volatilisation are drastically reduced.

“We need to be managing what is in our control to make better use of any nutrition applied to the soil. Farmers should be questioning if their fertiliser policy is the right one, as the most expensive fertiliser is the wrong fertiliser.”

Tools such as AHDB’s cost benefit calculator for nitrogen use on grassland can help and can act as a useful guide for farmers who are undecided on fertiliser strategy.

“The calculator from AHDB compares the cost of nitrogen applications with the grasses’ feed value. This will give an indication if it is more cost effective to apply nitrogen fertiliser to grassland or purchase feed,” says Mr MacKechnie.

“However, the calculator has limitations as it doesn’t consider the beneficial effect that sulphur has on increasing nitrogen use efficiency and the importance of maintaining the levels of other essential nutrients within the profile.”

Essential sodium

There is a tendency to cut back on smaller nutrients such as potassium and sodium in favour of straight nitrogen applications when prices begin to rise, however there is a risk that a nitrogen only approach will inevitably contribute to the plants becoming stressed, as Mr MacKechnie explains.

“Potassium uptake increases when the plant is stressed as the nutrient helps to regulate the opening and closing of the stomata and maintains the cell turgor, which is key to prevent plants wilting early during stress.

“However, as a high potassium uptake can increase the risk of hypomagnesemia (grass staggers), sodium is an important nutrient needed to reduce this risk. If sodium levels are low, it is substituted for potassium in the livestock’s saliva and, once secreted into the rumen, it will inhibit magnesium absorption through the rumen wall.”

Silaging removes a lot of essential nutrients with every cut, so ensuring these are replaced will improve grass quality for following cuts. Maintaining the correct ratios of nutrients and applying what the sward requires will help mitigate grass staggers and increase sward palatability, converting grass sugars into more soluble carbohydrates, adds Mr MacKechnie.

“Grass needs to receive high nitrogen and sodium applications to increase DM yield, but nitrogen utilisation and conversion to protein can be low in dry and cloudy weather conditions. The buffering capacity can be increased, causing the fermentation process to slow down when nitrate levels are above 0.10% in a fresh grass analysis.

“High sugar levels, aided by correctly timed sodium applications, will help increase the speed of the fermentation process. Higher sugar content translates into more food for the bacteria to work with so the quicker the pH drops.”

Slurry applications

As well as smaller nutrients within the profile, there will be a drive from farmers to make the most of slurry applications, so ensuring the correct timing and application method should maximise the nutrient value of the product being applied.

“Getting slurry tested to know what you are applying is key and will allow you to gauge what nutrient top up, if any, is required. Slurry applications should take place immediately after harvesting, with an application of inorganic fertiliser a week later in accordance with a nutrient management plan,” says Mr MacKechnie.

“The reason for this is to reduce the risk of denitrification, which occurs when covering nitrogen inorganic fertiliser in slurry. It creates anaerobic conditions and means nitrogen is lost to the atmosphere as nitrous oxide. It is therefore crucial to leave a week between applications and always apply slurry first.”

However, if slurry isn't being applied then an application of fertiliser immediately after first cut is essential to maximise the second cut yield. “A blended fertiliser application based on soil analysis can reduce the number of passes needed after harvesting, and ensure the fertiliser applied is tailored to the soil's requirements,” concludes Mr MacKechnie.