

Targeted soil nutrition will benefit the whole farm

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Opting for a nutritionally balanced prescription fertiliser as opposed to a straight nitrogen application on grassland this season could see several key metrics across the farm improve, and crucially a bigger return on the investment.

Intro

Applying prescription blended fertilisers to counteract soil nutrient deficiencies will help improve factors including forage quality, plant nutrient uptake and animal growth rates, and farmers should be looking at the wider benefits that prescription applications can bring.

The focus on securing straight nitrogen supplies for this coming season will have inevitably taken precedent but making the most of any fertiliser application will be essential this year, as Peter Scott, technical director at Origin Fertilisers, explains.

“A balanced fertiliser grade targeting key nutritional areas within the soil, rather than a straight ammonium nitrate (AN) application, offers significant benefits for the availability and uptake of many key nutrients, as well as helping to improve nitrogen use efficiency (NUE).

“With current fertiliser prices high, many farmers may resort to a straight nitrogen application to help reduce input costs, but our data shows using a balanced fertiliser which considers more than just nitrogen, will result in better quality forage.

“Nitrogen can’t grow quality grass on its own and the addition of other nutrients such as sulphur, manganese and molybdenum help to improve nitrogen uptake from the soil into the plant.”

Targeted nutrition

Many farms are now regularly taking soil samples, and this data can be used to enhance the soil nutritional balance, and blended fertilisers can play a key role in targeting the specific nutrient shortages within the profile.

“By using broad spectrum soil analysis, the full nutrient reserves within the soil are assessed as opposed to looking at only phosphate, potash and magnesium. Adding both macro and micronutrients to the fertiliser blend can correct deficient areas and ultimately create a more rounded nutrient profile in both the soil and the forage,” says Mr Scott.

“This is where targeted nutrition is so effective as the additional nutrients create a synergy – the supply of one deficient nutrient improves the availability and uptake of others.

“For instance, we know that sulphur can increase dry matter yield and raise protein content. Including this in a prescription fertiliser application can help farmers reduce the kg/ha of nitrogen applied, as plants will use nitrogen more efficiently with the help of additional nutrients.

“While not required by the grass sward, adding sodium to the fertiliser will improve palatability and digestibility of the forage, encouraging livestock to graze tighter for longer,” adds Mr Scott.

Wider benefits

Getting the soil nutrients correct will have direct advantages for plant uptake and availability, which will contribute to better quality forage, healthier animals, and less wastage as a result.

Prescription matching is essential to having key nutrients available at the stage the animal requires them the most. Boosting sodium reserves within the soil profile will help make the forage more palatable and will contribute to improved forage intake, while enriched crude protein levels can have direct influence on growth rates.

“Farmers should be thinking of fertiliser as not only a food source for grass, but for the animals, too. It is the cheapest form of feed for livestock, so by feeding the soil to achieve the right forage quality, costs of supplementary feeds will reduce further down the line,” explains Mr Scott.

“If there is a need to buy in minerals to finish off animals, farmers will be selective as to what is included to improve certain growth or nutrient factors, but with the right soil nutrition, these nutrients can be available to the animal earlier and have a greater influence at critical growth stages.”

Feeding the soil with a full range of nutrients as opposed to feeding the animal directly has the added benefit of building nutrient reserves within the soil that are retained within the profile for future seasons, adds Mr Scott.

[BOX]

Prescription fertiliser increases lamb growth rates and reduces nitrogen usage

A practical on-farm study showed that a targeted soil nutrition programme, such as Nutri-Match prescription fertiliser from Origin Fertilisers, as opposed to a straight Ammonium Nitrate (AN) application, has increased soil fertility, forage quality and lamb weight gains substantially.

The trial at Lemmington Hill Head Farm in Alnwick, Northumberland, was a split field set up with one half applied with Origin’s Nutri-Match fertiliser 23-11-0 + 8Na + 9SO₃ + Mo + Zn + Mn + Se, developed specifically for the trial based on the deficiencies in the soil’s profile, while the other half had a straight AN application.

Key findings showed that by prescription matching fertiliser inputs to soil requirements it is possible to reduce nitrogen application by 15% and at the same time achieve a 20.7% higher growth rate from lambs. All lambs involved in the trial were Aberfield crosses and reared as twins, so growth rates were representative across the board.

“We included seven additional nutrients compared with the straight AN application and reduced the overall nitrogen content in the blend by 15%,” says Abby Kellett, nutrition agronomist covering Northumberland at Origin Fertilisers.

“However, considering the nitrogen drop across the Nutri-Match treatment, there was over 30% more nitrogen in the forage and the liveweight gain per kilogram of nitrogen applied was 50% higher on the Nutri-Match area.”

Lamb weight gains

During the first 8-weeks of life, lambs grazing the AN treated area gained on average 330g/hd/day, which led to an 8-week average of 23.51kg/hd, while the blended treated pasture registered 358g/hd/day which translated to 25.28kg/hd.

“The 8-week weight is a key performance indicator as lambs that have underperformed up until this period tend not to recover this additional weight gain later in the year,” says Miss Kellett.

“It was most beneficial in influencing lamb growth rates at 8 weeks and older, as from this point onwards, grass makes up more than 80% of their diet as opposed to milk from the ewe. It is reasonable to suggest that as the mother is grazing the same pasture, the milk quality is also improved.”

A farmer’s perspective

James Drummond, who farms at Lemmington Hill Head Farm, was pleased with the results and the forage produced on the Nutri-Match area was better quality, yielded more, and contributed to better lamb growth rates. This offers farmers like Mr Drummond greater flexibility when rearing lambs.

“The early live weight gains are so important to reduce days to slaughter and achieving this higher output will also translate into healthier and better-quality ewe lambs for the following year.

“The extra weight gain I can get into lambs earlier in the season offers more options. By adding better soil nutrition, I could be selling more breeding lambs per year, which is added value on the bottom line. If I can get fat lambs through my system quicker to reduce food costs and free up pasture, then I’m saving in multiple areas,” says Mr Drummond.

“Having options during the season is key and if we are seeing better live weight growth at a younger age, then I have the option to wean earlier. I’ve always wanted to be as productive as I can from a forage-based system and produce forage in an environmentally sensitive way that is good for the animal and offers a good return on my investment.”