

Increase yield from home-grown forage and reduce production costs

Ease high-feed-price pain

Pushing grazing this season with increased fertiliser use will make sound economic sense on many units, thanks to continuing high feed prices. We spoke to two leading dairy consultants to find out how you can get more from grassland production.

text Rachael Porter



Andrew Hawkins

Increasing fertiliser use on grassland to offset some of the surge in purchase feed prices and help preserve margins is a realistic option for many producers this spring, according to Promar's Andrew Hawkins.

Using aggregate data from Promar's Milkminster service, Mr Hawkins argues that increasing feed use has been accompanied by a decline in fertiliser applications but the economic situation means a reversal may well be in order. "Since milk quotas ceased to be an effective constraint on production, purchased feed use has increased steadily as producers sought to increase yields per cow and total farm output. For

Milkminster customers the average feed rate increased from 0.32kg/litre in 2002 to 0.37kg/litre in 2010."

While this approach was justifiable when feed was comparatively cheaper during the past 10 to 15 years, it is coming under close scrutiny as rising feed prices have closed the milk price:feed price ratio considerably.

Concentrate prices have risen this winter by more than £40/tonne, which will have increased average feed costs by at least 1.5ppl, and they will continue to rise this summer.

Increase yield

So Mr Hawkins says that many producers need to critically appraise their systems and find ways to reduce production costs. One obvious route is to increase yield from home-grown forage.

"The British Survey of Fertiliser Practice shows the average use of nitrogen fertiliser on British dairy units is now just 120kg/ha – well below the optimum.

"Two main factors have contributed to the reduction in fertiliser use. The first is in the increased awareness of the value of slurry and certainly P and K use has halved during the past 10 years. The second and more important factor has been market conditions.

"The fertiliser market has been incredibly volatile and producers have seen cutting back on fertiliser applications as a way to save costs, particularly when supplies have been scarce and led to price hikes.

"But all the data show that increasing fertiliser N use back to earlier levels will be cost effective even at current prices of around £290/tonne."

Quoting the NIAB GM20 trials, Mr Hawkins explains that on an average site, the dry matter response is 28kg of grass dry matter from each extra kilogramme of nitrogen applied. At 12MJ ME/kgDM that is 61 litres of milk per kilogramme of nitrogen compared to around two litres per kilogramme of feed dry matter.

"The trials show a cost effective response to increasing nitrogen up to at least 250kgN/ha. The average producer could target increasing nitrogen use by 70kg/ha and this would give an extra 1,960kgDM/ha, sufficient to produce 4,350 litres from forage or potentially drive up milk yield per cow for practically no extra concentrate."

For the average 150-cow herd, being kept on 75ha of grass, the additional nitrogen would cost £4,400 at 84p/kgN. The concentrates required to achieve the same yield response would cost around £34,000. |

Nitrogen will squeeze the most out of grassland production



Simon Borthwick

Retaining nitrogen in grassland crops is, in some ways, a more complex issue than in cereals. This is down to thatch or a high organic matter layer delaying or preventing the fertiliser from reaching the soil. Grassland terrain, which is often made up of lighter soils, is particularly prone to gaseous nitrogen loss, technically

known as volatilisation. These conditions demand careful management of urea to minimise the risk of lost nitrogen and reduced grassland production.

So how can these issues be addressed? Koch Fertilisers reckons that by using its new 'Koch Advanced Nitrogen' (KaN) urea-based granular material, producers can minimise this volatilisation risk.

The product contains Agrotain, a globally well-proven technology which effectively retains the nitrogen in the soil to fuel grass production. This urease inhibitor – the only one reviewed and registered by the European Commission – moderates the transformation rate of urea to ammonium. And the result is minimal risk of ammonia gas formation and loss that otherwise may occur.

"In independent grassland trials, the fertiliser concept gave a 76.7% reduction in volatilisation compared to urea," says the company's Simon Borthwick. "With more nitrogen retained in the soil, nitrogen utilisation by the grass was 19.9% better, resulting in a dry matter tonnage increase of 8.8%. Importantly,

the fertiliser provided equal agronomic performance to traditional nitrate-based fertiliser." He adds that this product gives a choice to producers who want simple and effective nitrogen programmes as, being a stabilised product, some of the extra work and worry to manage nitrogen applications is removed.

Fertiliser can be applied when it suits the crop – and the farming schedule – without trying to time the application around the weather and other workloads.

When compared to nitrate fertilisers, the product contains a greater nitrogen percentage per tonne (46% versus 34.5%), so producers need a smaller quantity to meet nitrogen unit requirements.

"This makes it more cost effective per application," says Mr Borthwick.

"The cost per tonne of nitrogen should be the same or between 5% and 10% cheaper than ammonium nitrate.

"And another consideration is that it is not subject to the strict transport, handling and storage regulations that constrain ammonium nitrate use."