

Technical Update - Fertiliser

Information correct as at 09:00am on 12.11.2021

Background

Over the last few months, we have seen a perfect storm which has sent gas prices surging. Stocks were already tight for the time of year and the amount of gas coming into Europe via the Gazprom pipeline is the lowest it has been for many years just as global demand was picking up as economies recovered from COVID.

Back in September we had a period of settled weather, so the renewables were not producing much electricity and one of the cables supplying electric from France went down due to a fire. This resulted in more gas demand for electricity production here in the UK. Day ahead gas prices shot up to over 270p/therm in early October, thankfully they have eased slightly, but are still nearly four times what they were in the spring.

Natural gas is the major raw material for ammonia manufacture and the Haber Bosch process is also a very energy intensive process, so we saw the major fertiliser manufacturers cutting back production and shutting plants down all over Europe.

One of the bi-products of fertiliser manufacture is CO₂ and the crisis in supply there has meant that deals have been done between government and domestic manufacturers to ensure supply so some fertiliser will continue to be produced.

Key Issues

- Make sure that every kg of fertiliser does as much as possible.
- Forage costs are going to go up, but on a relative feed value basis they are still very competitive compared to purchased feeds.

There has been quite a bit of research done across the globe looking at kg of grass DM produced per kg of N applied. Returns are very variable across the season so to getting maximum bang for our buck means feeding grass when it is going to give us the best response. Therefore, early applications to ensure good crops of grass when the natural growth curve is at its peak make sense.

The table below looks at the break even for different fertiliser prices and different response rates in terms of kg DM/kg of N applied assuming a forage cost of £130/t DM (number needs to be greater than 1 to be cost effective).

	N £/tonne										
N £/tonne	250	300	350	400	450	500	550	600	650	700	750
N£/kg	0.72	0.87	1.01	1.16	1.30	1.45	1.59	1.74	1.88	2.03	2.17
Response Rate kg DM/kg N applied											
5	0.90	0.75	0.64	0.56	0.50	0.45	0.41	0.37	0.35	0.32	0.30
10	1.79	1.50	1.28	1.12	1.00	0.90	0.82	0.75	0.69	0.64	0.60
15	2.69	2.24	1.92	1.68	1.50	1.35	1.22	1.12	1.04	0.96	0.90
20	3.59	2.99	2.56	2.24	1.99	1.79	1.63	1.50	1.38	1.28	1.20
25	4.49	3.74	3.20	2.80	2.49	2.24	2.04	1.87	1.73	1.60	1.50

Grass Productivity

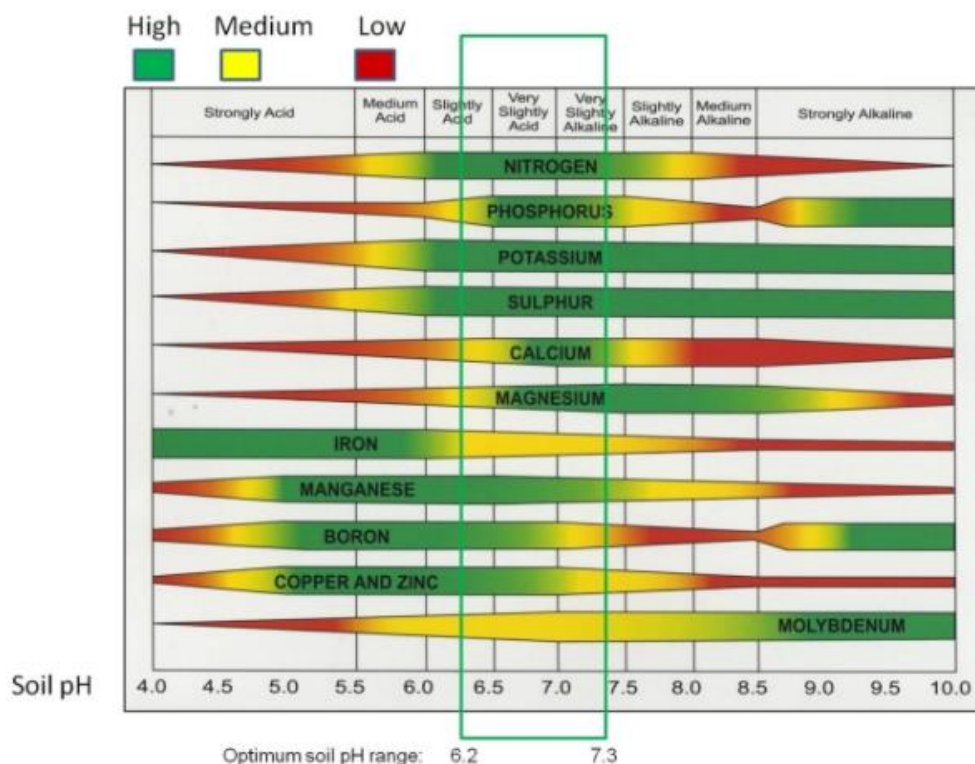
We know that newer leys have significantly higher yields and respond to fertiliser much better. There is not much we can do in the short-term as far as reseeding is concerned, but there will be mileage in adjusting inputs based on sward capability. Generally, a blanket approach is adopted, but if fertiliser is in short supply, it will be better utilised in newer leys so a more specific approach makes economic sense.

Going forward we need to record grass productivity and make reseeding decisions based on the poorest contributors. We will need to look at the N supply that we can get from clovers and maybe look at overseeding legumes next summer where weed control strategies allow.

Top Tips for Next Spring

- Make sure that the pH of soils is right- getting out with the lime spreader will potentially be very beneficial in terms of nutrient uptake

How soil pH affects availability of plant nutrients



- RB 209 recommends a pH of 6 for mineral soils for grassland, but Teagasc recommend 6.3. Both suggest liming to achieve a pH 0.2 points above the recommended level, go with the Teagasc figures.
- Using grid sampling is better as an overall pH for a field will hide significant variation.
- Look after your soil and minimise compaction and damage during the early part of next year
- Slurry will be our friend next season so getting the most out of it will be crucial.
- Get it tested before spreading (It is very rare to see samples come back as per book value)
- Spread as accurately as possible.
- Using dribble bars/trailing shoes will increase N availability by 5%.

Based on current prices (1st November 2021) and RB209 book values 1m³ of slurry is worth about £4.50 in terms of nutrients available to the following crop so a 2500-gallon tanker is worth around £50. For FYM the numbers are around £9/t, but much of this is for the Potash so slurry with its higher available N is going to be golden child next spring.

Slurry Inoculants

Various “slurry bugs” have been available for many years, but as with many micro ingredients not all of them are equal. The claims made are significant in terms of increased nutrient availability, therefore, if ever there has been a year to consider them this is probably it, provided the product is backed by good research.

Advance are reviewing products and will have recommendations very soon.

Availability of Fertiliser

Not all the UK plants are working and many of the EU factories are also running at less than 100% capacity so overall supplies are potentially going to be tighter. There is likely to be a reduction in application rates across the arable sector reducing demand, but probably not enough to put us in a surplus position in the short-term.

Anecdotally there is fertiliser already made and in storage at ports/manufacturing plants. With production limited and the general haulage situation the danger is that farmers end up with nothing on the yard to spread in the spring if there is a surge in demand as prices ease back from their peaks of a few weeks ago.

The recommendation is therefore to ensure that you have enough N to cover early season requirements so that the spring growth peaks are covered. Going into next winter with a shortage of forage or forage of inferior quality and high feed prices is not a good strategy. Depending on attitude to risk, it may be worth holding off purchasing later season requirements until the peak demand is over next spring. Requirements are probably going to be easier to cover once peak gas demand diminishes.

Tack Sheep

Many dairy farms will have tack sheep on over winter to tidy up grassland. Getting them away can sometimes be tricky. Although the money is useful, if sheep are not off the farm early the losses in yield will far outweigh the cheque for the sheep keep. They should be gone by early January at the latest.

Unnecessary Operations

If there is a need for rolling or chain harrowing then this should be done as required. Avoid “recreational rolling” and “cosmetic chain harrowing” as each operation will hamper grass growth. It may only be necessary to treat individual fields or parts of fields.

Maize

Fields that grown maize year after year will tend to have a legacy of N, which when combined with organic N applied as efficiently as possible will mean that few fertiliser inputs will be required.

The MGA offer an individual field Nitrogen Predictor which is well worth using and recent reviews of N applications based on this have shown that requirements are often lower than book values suggest.

There is also the option of using foliar applications of N later in the season when requirements can be judged depending on establishment.

For further discussion or to help with any questions that you may have, please contact Consultant Support on consultantsupport@kiteconsulting.com or 01902 851007 / 07542 403225