Fertiliser Uptake and Dry Weather

Where there has been little rainfall or fertiliser has been applied later there may be some concern that the grass will not have taken up the nitrogen and may still be present as nitrate.

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In some parts of the country the prolonged dry spell has resulted in a soil moisture deficit. In Grass check GB's last bulletin (1st August 2022) they recorded an average soil moisture content of 105.8 centibars (cb) in Scotland. The guide for soil moisture is <10 = saturated soil and >60 = potential for restricted growth.

The reason for minimising the nitrate-N content in forage is that it cannot be used as a nitrogen source by the animal. Nitrates in ensiled silage are converted to ammonia which increases the pH resulting in a slower, poorer fermentation which will affect palatability. High levels of nitrate may be converted to nitrite in the rumen which is toxic to animals.

The normal recommendation to avoid this is to allow the grass time to safely utilise all the nitrate it has absorbed. A general guide is a daily utilisation of nitrate of 2.5 kg /ha (2 units/acre) per day from the date of application to the date of cutting. This means if 28kg of N was applied it would need 11 days to be fully utilised or 32 days if 80 kg of N was applied.
However, this assumes active uptake of N is possible. Nitrate-N is generally present in grass at around 0.05 - 0.15%, concentrations of 0.4% and above may be toxic to livestock. Note: the target at silage cutting for nitrate N is below 0.15%.

If you suspect a high nitrate risk, then there are a few specialised forage labs that can carry out a nitrate test, this is an inexpensive test, however the time between sampling, posting and testing may result in an unrepresentative nitrate level due to the delay. So ideally post fresh samples as soon as possible and avoid sending them on a Friday.

The other option is to test on farm, you can buy nitrate test strips, these can be sourced via various online retailers (e.g. ebay, amazon, etc. – where you get about 50 strips for £15-£20). The method used for these, is to squeeze the plant juices from the base of the stem on to the test area on the strip. You then wait a short period of time and monitor the colour change on the strip. However, this method can be tricky to read results as the green colour from the grass' juice can dye the strips making it difficult to interpret.

Another option for on farm testing is purchasing a nitrate meter, these are in the region of around £400-500, more expensive but is useful if you need to analyse multiple samples from several fields and provides instant results.

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