

Management Notes



Christopher Breen

Dairying

Nutrient management

Reduce your fertiliser bill this spring by making the best use of soil nutrients and available slurry, but still grow good crops of grass for silage and grazing.

As fields have been unfertilised since mid-September and free of applied slurry or farmyard manure from the end of October, they are in an ideal state for soil sampling. Now is the last opportunity to carry out sampling before planned spring slurry application.

You should take samples from each field. If the field is more than four hectares, sample each four hectare block within the field. When sampling a grass field, walk in a 'W' pattern, taking at least 25 cores with the 75 mm auger at regular intervals. Avoid sampling headlands, dung pats or areas around gates and water troughs. Mix the samples

thoroughly before putting 300 g of mixed soil in a sample bag.

You will receive your soil analysis results within a week and your local CAFRE Development Adviser can help you interpret them. The results can be entered onto the CAFRE Crop Nutrient Calculator to calculate specific field requirements, whilst keeping within the Nutrients Action Programme Regulations. The Calculator takes account of the time and method of slurry application when calculating how much fertiliser nitrogen to apply for first cut silage.

As a general rule, grazing fields have phosphate and potash recycled by grazing cattle. Therefore apply slurry to land that is used for silage, targeting slurry spreading onto fields that tested low for phosphate and potash. This makes the best use of the soil and slurry nutrients and helps avoid nutrient shortfalls where the demand is greatest.



Target slurry spreading onto silage fields that have tested low for phosphate and potash

Allow for the nitrogen in slurry when deciding how much nitrogen fertiliser to apply for first cut later in the spring. There is unlikely to be a yield response to applying a total of more than 120 kg of nitrogen per hectare for first cut. If you use a trailing shoe or shallow injection system to apply the slurry, you will almost double the efficiency of nitrogen use.

The optimum index of 2+ for phosphorus (P) and 2- for potassium (K) will maximise crop yield from the most economic use of inputs. Further applications of P or K to soils with above optimum indices are not cost effective. In addition, applications of phosphate above the recommended rates in most cases will be in breach of the Nutrients Action Programme Regulations.

February jobs checklist

- The first potential day for spreading slurry was 1st February. Ensure slurry is not spread on waterlogged ground, when raining heavily or when heavy rain is forecast within the next 48 hours, where the ground has a slope of 20% or more, is frozen or covered in snow. During February the buffer zones for slurry spreading are increased from 10 m to 15 m of any waterway and from 20 m to 30 m for lakes. Maximum application rates are reduced from 50 m³ per hectare to 30 m³ per hectare (4,500 to 2,700 gallons per acre).

- If using chemical phosphorus fertiliser, phosphorus rich manure, such as some poultry manures, pig farmyard manure or anaerobic digestate, soil analysis results must be available and a fertilisation plan prepared and kept up to date.

- Review soil analysis results and plan nutrient requirements based on soil status and crop requirement.

- Complete any maintenance on cow tracks and paddock fencing in preparation for the grazing season.

- If you operate under a Nutrients Action Programme Derogation submit your 2020 fertilisation account and application for 2021, if required, to NIEA using www.daera-ni.gov.uk/onlineservices.

Management Notes are prepared by staff from the College of Agriculture, Food and Rural Enterprise (CAFRE). CAFRE is a college within the Department of Agriculture, Environment and Rural Affairs (DAERA).

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Robert Edwards

Environment

1st February 2021 saw a change to the current Nutrients Action Programme 2019-2022 (NAP). From this date all agricultural contractors employed to spread slurry must use Low Emission Slurry Spreading Equipment (LESSE). This is part of the gradual introduction of LESSE use and follows the requirement to use LESSE while spreading anaerobic digestate introduced on 1st February 2020. A third requirement to use LESSE will be introduced on 1st February 2022.

- 1st February 2022:** slurry to be spread using LESSE on cattle farms with 200 or more cattle livestock units and pig farms with a total annual livestock manure nitrogen of 20,000 kg or more.

While there are benefits to both air and water quality by spreading slurry this way, the farmer also benefits. When spreading slurry

using an inverted splash plate, nitrogen is lost to the air as ammonia. Using low emission slurry application will reduce this loss providing more nitrogen to the crop.

The available methods of low emission slurry application are:

- Dribble bar/trailing hose** - slurry is pumped through hoses, which are equally spaced and of equal dimension, placing the slurry directly on the ground. This method of slurry spreading can reduce ammonia emissions by 30%. Best results are achieved by trailing the hoses along the ground - this reduces the time that slurry is in contact with the air.

- Trailing shoe** - similar in principle to the trailing hose, however, metal 'shoes' are attached to the trailing end of the



hose. These part the vegetation, allowing the slurry to be placed directly on the soil. It reduces contact between the slurry and air, reducing ammonia emissions by 60%. This system allows grazing up to 60% faster than fields spread by inverted splash plate due to the reduction in forage contamination with slurry.

- Slurry injection** - this system injects the slurry below the soil surface. Injection applicators are equipped with discs that cut slots in the soil allowing the slurry to be pumped into the ground. The depth of injection can vary from 5 cm to 30 cm. This variation results in ammonia reduction potential ranging from 70% - 90%.

Stabilised urea an alternative source of nitrogen fertiliser

Urea is a chemical nitrogen fertiliser which has a nitrogen, phosphorus, potassium ratio of 46:0:0. While urea is a less expensive form of nitrogen fertiliser, per unit of nitrogen, it is not recommended for use in warmer weather. This recommendation is based on the loss of nitrogen that can occur during warmer weather to the air in the form of ammonia.

This loss of nitrogen can be reduced by the introduction of an additional chemical, an inhibitor, which stabilises and protects the urea from excessive nitrogen loss. Stabilised or protected urea products are gaining popularity with Northern Ireland farmers. Research shows that ammonia emissions are reduced by 78.5% when stabilised urea (urea with NBPT inhibitor) is used instead of conventional unstabilised/unprotected urea. The use of stabilised urea has also been shown to achieve crop yields similar to Calcium Ammonium Nitrate (CAN).

The inclusion of an inhibitor can be achieved by its addition within the fertiliser granule or coated on the outside of the granule. Use of a proven inhibitor slows the breakdown of urea to ammonia. This better matches the demand of the growing crop. This allows it more time to utilise the available nutrients, thus reducing nitrogen lost to the atmosphere.



Nigel Gould

Beef and Sheep

BEEF

Finishing spring born bulls

Some producers finishing spring born bulls are currently moving them onto an ad-lib concentrate diet for the final 100-120 days before slaughter. Continental bred bulls are generally changed when they are 200-250 kg off final finished live weight. This reduces to 150-200 kg for traditional bred bulls, when offering ad-lib concentrates, it is very important to gradually increase the level for up to three weeks at the start of the finishing period. This gives the rumen time to adapt to the new diet and limits the risk of acidosis and laminitis. Split feeding between morning and evening will also help the adaption period. A good source of forage fibre, such as

straw or hay is also advised to maintain a healthy rumen. A constant supply of fresh, clean water is key in maximising feed intake, which in turn will drive weight gain. A rule of thumb is that a bull requires six litres of water for every kilogram of ration consumed.

A bull on an ad-lib concentrate diet will typically consume 10-12 kg of concentrate per day. Ensure high quality ingredients such as barley and maize are the main components in the concentrate and that crude protein is in the range of 12-14%. To meet target fat scores, a high energy content of 12.5-13 MJ/kg dry matter and a starch content of 35-40% is required in the final finishing ration.

It is important to speak to your processor before deciding to finish males as young bulls, to ensure there is a market for your produce and specifications are agreed. Generally, processors prefer carcasses around 380 kg and a fat score of three. Penalties may apply outside the limits agreed between you and your processor.

SHEEP

Prepare for lambing

Mid-season lambing flocks will be coming into their busy period in March and April. Being prepared now will free up labour and reduce stress during the busy period. Prepare facilities and ensure you have the necessary items in stock. Lambing pens should be at least 1.2 m by 1.8 m and allow one pen for every eight to ten ewes. Flocks with a shorter lambing spread will require extra pens. Necessary supplies include: iodine solution for navels, lubricant, gloves, lambing aids, colostrum (frozen cow's colostrum or powdered substitute), stomach tube and/or feeding bottles. A lamb warming box is also a useful piece of equipment to reverse hypothermia in newborn lambs. It works by circulating warm air within the box. Regularly monitor the temperature within the box and aim for a temperature of 38.5°C.

Adequate intake of high quality colostrum by lambs as soon as possible after birth will



increase lamb survival rate. Colostrum provides a vital source of energy to the newborn lamb. It also facilitates the transfer of passive immunity from the ewe to her newborn lambs. Good ewe nutrition in the final six weeks of pregnancy is key to maximising colostrum quantity and quality. Newborn lambs require 50 ml of colostrum per kilogram of body weight within the first four to six hours of birth and 200-250 ml per kilogram of body weight within the first 24 hours. The latter is equivalent to approximately 1.0 litre for a typical twin lamb weighing 4-4.5 kg.

End of the closed spreading period

The closed spreading period in Northern Ireland ended on 31st January. Spreading of slurry, farmyard manures and chemical fertiliser is now allowed, however, only when weather and ground conditions are suitable. In all cases, do not spread on frozen or waterlogged soils. For the month of February (and the period from 30th September to 15th October), the minimum distance allowed between the area spread and a waterway increases from 10 m to 15 m. For lakes, the distance is increased from 20 m to 30 m. In addition, for these time periods, the maximum permitted quantity of organic manure spread at one time decreases from 50 m³ per hectare to 30 m³ per hectare. This equates to approximately 4,500 and 2,700 gallons per acre of slurry respectively. Ideally, target the spreading of slurry and farmyard manure on fields showing low phosphate and potash indices.



Liz Donnelly

Pigs

Feed price increase

Over the last few months raw materials prices have increased. Soya has rocketed, increasing to over £500 per tonne. The increase in soya price was due to several reasons, including drought conditions in South America, a strike in Argentina and a growth in demand. The global demand for soya in 2012 was 257 million tonnes, in 2020 it was 370 million tonnes, an increase of 113 million tonnes in eight years! As raw materials and feed prices increase the feed cost per pig also increases. Every \$10.00 per tonne increase adds just over £3.00 to the cost of feeding a pig to slaughter. However, for some farms this could be a lot higher if feed wastage is occurring.

It is now more important than ever to optimise feed efficiency by minimising wastage. Wastage is often due to poor adjustment of feeders. Check feeders regularly and adjust if there is too feed in the trough. One teaspoon of feed spilled per pig

per hour results in a 5% deterioration in FCR. Feeding the wrong diet to the wrong age of pig can also cause wastage. Review feed strategies with your nutritionist or feed supplier, ensuring the diets, timing of diet changes and quantities of each diet fed correctly match pig flow and age of pig. Also consider feeding a lower protein diet if you are not already doing this.

White washing pig houses

The benefits of washing, disinfecting and allowing pens to dry before a new batch of pigs is moved in are well known. An effective programme of washing and disinfection removes bacteria and viruses left behind by the previous batch of pigs. This results in a reduced disease challenge, healthier pigs, lower antibiotic use and improved performance.

In the past the use of hydrated lime as a disinfectant was quite popular, with farmers



whitewashing livestock houses. However, as more effective disinfectants that are easier to use became available whitewashing declined in popularity. Pig farmers have started to use hydrated lime again and are now using machines to whitewash pens. The whitewashing machines automatically mix the lime and water and allow you to spray the walls and floor/slates making the job much safer, easier and quicker. Whitewashing farrowing pens is particularly popular, with farmers seeing less scour and joint ill in suckling pigs as a result of this extra level of disinfection. After whitewashing allow pens to fully dry before moving pigs into them.

New antibiotic targets

The increasing resistance of bacteria to antibiotics is a major problem, with infections caused by these bacteria harder to treat. The

importance of having effective antibiotics for the treatment of bacterial diseases in humans has never been more evident than at present, as COVID-19 continues to dominate everyday life.

Resistance can be caused by the misuse and overuse of antibiotics. The good news is that the Northern Ireland (NI) pig industry has made huge strides in reducing antibiotic use. Over the last five years the level of use in the United Kingdom has decreased by over 60%, a fantastic achievement! Many farms in NI have made significant reductions and on some farms the level is now in single figures. Changes made include improvements to biosecurity, increased levels of hygiene and disinfection, reviewing the need for in-feed antibiotics, introduction of new vaccination regimes and improved water quality. However, for the industry, the pressure is still on to make further reductions, especially on farms where levels are high. New antibiotic reduction targets have been set, with the aim of reducing use by a further 30% over the next four years.

What is a high level of use and is your farm in this category? A farm with a high level of use is one that is in the top 5% of farms recorded by the Electronic Medicine Book (eMB). If you are not sure about the level of antibiotic use on your farm, login into the eMB. It will tell you if the level of use on your farm is low, average or high and how the level compares with similar types of production.