Milk Manager NEWS

Milk Market Update

Dairy Commodity Markets

- Fonterra's latest on-line GDT auction (7th January) resulted in a 1.4% decrease in the weighted average price across all products, reaching US $4,029/t. This follows a 2.8% drop at the previous auction on 17th December. Both butter and cheddar were up 2.6% and 1% respectively, while skim milk power and whole milk powder fell 2.2% and 2.1% respectively. Full results are available at: https://www.globaldairytrade.info/en/product-results/

- The pressure on wholesale prices of fats has eased slightly, with average prices for bulk cream and butter down 1% and 2% respectively for December. The improved milk supply, both domestically and in the EU is impacting prices, although supplies of butter are still said to be tight. Prices for cream and butter were stronger in the first part of the reporting period (November) but both fell back throughout December, with sales of butter varying by as much as £1000/t over the month.

Commodity	Dec 2024 £/t	Nov 2024 £/t	% Difference Monthly	Dec 2023 £/t	% Diff 2024-2023
Bulk Cream	3,016	3,059	-1	2,054	+47
Butter	6,470	6,630	-2	4,620	+36
SMP	2,100	2,100	0	2,230	-6
Mild Cheddar	4,080	4,190	-3	3,510	+16

Source: AHDB Dairy - based on trade agreed from w/b 18th Nov - 22nd Dec 2024. Note prices for butter, SMP and mild cheddar are indicative of values achieved over the reporting period for spot trade (excludes contracted prices and forward sales). Bulk cream price is a weighted average price based on agreed spot trade and volumes traded.

- There was no change in the average monthly SMP price, with sufficient stocks but rising demand for protein powder keeping prices firm.

- On average mild cheddar declined by £110/t from November. The market was reasonably quiet, with buyers unwilling to purchase too much product at high prices and sellers reluctant to drop their cheese price on the back of strong milk prices.

- Given the declining wholesale prices for dairy commodities, both market indicators AMPE and MCVE fell in December by 0.83ppl and 1.09ppl respectively. The Milk Market Value has dropped for the second month in a row, back 1.04ppl for December to 44.6ppl and it was also down 0.74ppl in November to 45.64ppl.

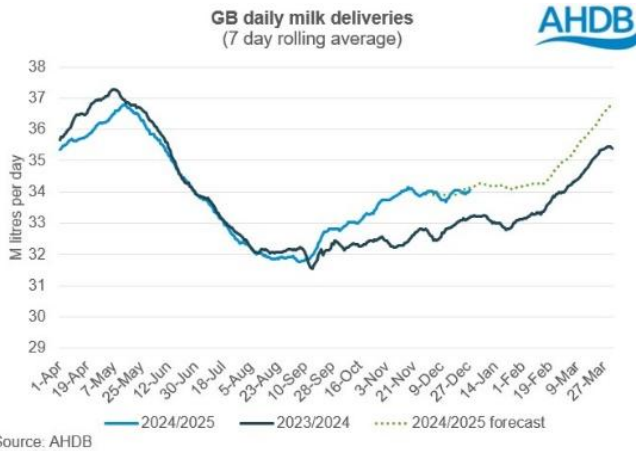
	Dec 2024 ppl	Nov 2024 ppl	Dec 2023 ppl	Net amount less 2.4ppl average haulage - Dec 2024 ppl
AMPE	45.39	46.22	37.95	42.99
MCVE	44.40	45.49	36.54	42.0

Source: AHDB Dairy

- The Defra farm-gate milk price for October was 45.17ppl, which was 2ppl more than September's price. Their November and December price will be released towards the end of January but forecasts from The Dairy Group indicate that the Defra farm-gate milk price will rise for November and December to 46.7ppl, before easing slightly for January to 46.3ppl.

GB Milk Deliveries and Global Production

- Daily deliveries for the w/e 28th December were 34.06 million litres, which is 0.1% more than the previous week and 2.6% higher than the same week last year (an extra 860,000 litres/day). AHDB's December forecast is for GB milk production to reach 12.43 billion litres for the 2024/25 milk year, which is 0.9% higher than the previous year. Strong milk prices on the back of a shortage of butter and cream and a more favourable milk price to feed price ratio has helped drive volumes in the second half of the year, along with more favourable grazing conditions in the autumn. Milk production for November was up nearly 4.5% on November 2023.



- Rabobank's latest forecast is for global milk production to increase by 0.8% in 2025. Growth is expected in all seven main exporting regions (US, EU, Australia, New Zealand, Brazil, Argentina and Uruguay). The main driver for this is better margins with improved farm-gate milk prices and lower feed costs compared to 12 months ago. Chinese demand for exports is expected to increase by 2% in 2025. This is in response to a slowdown in their domestic milk production, estimated to fall 1.5% in 2025 on the back of falling milk prices and heat stress in quarter three last year leading to more farmers ceasing production.

Monthly Price Movements for January 2025

There was no change in milk price for the main Scottish milk buyers from December into January.

Commodity Produced	Company Contract	Price Change from Dec 2024	Standard Litre Price Jan 2025
Liquid & Cheese	**Arla Farmers UK**	*No change*	46.58ppl liquid 48.54ppl Manufacture
Cheese, Liquid & Brokered Milk	**First Milk**	*No change*	45.35ppl manufacture
Cheese	**Fresh Milk Company (Lactalis)**	*No change*	44.72ppl manufacture
Liquid & Manufacture	**Grahams**	*No change*	40.0ppl
Liquid & Manufacture	**Müller Direct**	*No change*	42.25ppl (includes 1ppl direct premium. Does not include haulage charge)
Liquid & Manufacture	**Müller (Co-op)**	*No change*	41.13ppl
Liquid & Manufacture	**Müller (Tesco)**	*No change*	40.44ppl

Other News

- Amazon founder Jeff Bezos is to award a £7.3 million grant to the Pirbright Institute and Royal Veterinary College to help develop a potential vaccine that could reduce methane emissions from livestock by more than 30%. The project aims to try and identify the mechanism that could be used for a potential vaccine by investigating the development and colonisation of the methanogen microbes in the digestive tract of calves and what antibodies are required to effectively target these microbes to reduce their methane producing ability. The Bezos Earth Fund, set up in 2020, has also supported other projects to reduce emissions on farms through low-methane genetics, feed and improved farm management practices.

- Denmark has announced plans to introduce a tax on greenhouse gas emissions from livestock from 2030. It has also pledged to reduce nitrogen emissions from 2027 by 13,780 tonnes/year. The measures to be put in place include a €16 payment per tonne of CO_2 and methane emitted from 2030, and that tax will rise to €40 per tonne in 2035. For both dairy and beef farmers, it is predicted that the tax will work out at around €130/cow/year and in time, the consequences of these regulations is that livestock businesses will increase in size and become more intensive.

- The UDSA's veterinary services had confirmed the presence of bird flu (H5N1) in 266 dairy farms in California in the last 30 days (as of mid-December). The Centre for Disease Control states that the risk to humans is low and that symptoms of the disease are similar to mild flu. While the disease is not fatal in dairy cows, it does reduce milk production.

- Did you know that India has the largest herd of milking cows in the world (including cows and water buffalo) and is the largest milk producer? In 2025 the national herd is expected to reach 62 million head of cattle, which is 0.8% up on 2024 numbers. Their milk production is forecast to increase to 26.5mmt in 2025, with more milk being marketed, as well as increases in butter and skim milk powder production. Some of their liquid milk is exported to Bhutan, Singapore and UAE, and their butter exports are increasing to the Middle East. The growth in milk production is due to more disposable income in a country where the population is still growing, along with government grants to support the industry and high milk prices.

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Cereals Update

UK Cereals Market Update and Global Impacts

Globally, and since the high prices of 2022, wheat markets have followed a bearish trend for more than two years. However, markets are cyclic. Low prices do not last forever, and a change of trend can occur at any time. Weather, geopolitics and currencies are all having more and more influence on our markets. This will certainly continue in 2025, with unpredictable positive and negative impacts on prices.

There are reasons to believe that wheat prices could move higher in 2025. The main reasons being slower Black Sea supplies, stronger demand for EU origins and tightening world stocks. The USDA recently published the global wheat consumption figures as well as the wheat end stocks which stand at 258Mt, which is 10Mt down on last year and wheat consumption is at a record level usage of 803Mt.

Southern Russia has had a long dry summer and autumn which has led to a drop in soil moisture. This has resulted in delays in planting and 37% of their winter crops have not germinated or are in poor condition compared with just 4% last season. Just 31% are rated as in good condition, the worst on record compared with 74% last year. Slower Black Sea exports along with accelerating EU exports will be a trigger point for wheat and indeed the firming of wheat prices as 2024 closed out reflected the uncertainties about the impact of adverse weather on crops in key producing countries.

The UK continues to import wheat at pace, up 80% in 2024, with the majority originating from the EU, notably from Germany, Denmark, Poland and France. Conversely only about a half of the volume of barley has been exported this season so far compared to last year, as the tightness of the domestic wheat market reduces export appeal.

Barley prices have been on a downward trend since October and the price discount to wheat has narrowed. Animal feed usage is expected to be higher due to its relative price to wheat, although the price gap is reducing but demand by brewers maltsters and distillers is also lower. Aside from wheat and barley movements, maize imports are running 19% higher against the seasonal five-year average.

As for harvest 2025, Scotland looks to see a diminished wheat area once again, down 3% on 2024 and the smallest area for five years. The swing to spring cropping continues with the spring barley area expected to increase 2% to 274,000ha, the largest area for over 10 years. Winter barley and oats are anticipated to increase in area too, up 3% and 12% respectively whilst the demise of oilseed rape is set to continue, falling 25% in area compared to 2024.

£ per tonne	Jan '25	May '25	Nov '25
Feed wheat	198	204	194
Feed barley	175	179	171
Malt. dist. barley	205		
Oilseed rape	424	428	397
Feed beans	224		

Source: Hectare and AHDB

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The Importance of Sugar in a Dairy Ration

The sugar content of dairy diets is often not given much consideration, with more focus usually given to energy, protein and starch levels. While the sugar content of the ration can vary greatly depending on the sugar content of the forage, it can have a big impact on rumen function and therefore milking performance.

The target is for the ration to be around 6% sugar on a dry matter (DM) basis. The sugar content of grass silage can be extremely variable, depending on the variety of grasses in the sward and the dry matter of the silage. Wetter silages tend to have a lower sugar content, due to losses in effluent and more sugar being used up during the fermentation process to produce lactic acid. Data from SAC Consulting on analysis of grass silages this year showed that the sugar content ranged from 0.2% to 13.0%, with an average of just 3.0%, well below the dietary target of 6%.

However, the sugar content is critical for good rumen function, acting as a feed source for the rumen bugs to support their growth. Sugar is particularly beneficial for fibre-digesting bacteria, helping increase the rate of fibre digestion, enabling a higher dry matter intake. It also provides an

energy source for the rumen bugs to make microbial protein.

With many instances of lower silage quality made last year, with a higher NDF (fibre) content, rations could benefit from a sugar source as these forages are harder for the rumen bugs to digest. The addition of sugars can therefore help improve fibre digestion and enhance passage rates through the digestive tract, leading to higher dry matter intakes and hence more milk. This is where the addition of feeds such as sugar beet pulp, bakery by-products, biscuit meal, molasses or liquid whey can help. However, note that high levels may have to be fed to raise the dietary level to the target when feeding a low sugar silage. This can be costly and at the expense of cheaper, home-grown cereals.

Typically including 1.5kg of sugar beet pulp could raise the protein percentage in a typical grass silage-based ration (with grass silage at just 3% sugars) by 1.4% points (i.e. from 3.9% to 5.3%). The inclusion 1kg of a standard molasses product (e.g. 70% dry matter and 56% sugars) could raise the sugar content of the diet by around 1.9% points (from 3.9% to 5.8%). The other benefit of a liquid source of sugars is that it takes up less space in the diet, can help reduce diet sorting and improve overall dry matter intake.

The inclusion of more sugar can actually help reduce the risk of acidosis through various mechanisms - perhaps not what you would expect when the sugars are very rapidly fermented in the rumen. For example, if sugar replaces a source of starch in the diet, sugars are converted to butyrate in the rumen, whereas starch is converted to propionate. Butyrate production generates one hydrogen ion whereas the production of propionate generates two hydrogen ions – leading to a more acidic environment. Also, rumen epithelial cells are stimulated by butyrate to improve the absorption of volatile fatty acids from the rumen, reducing rumen acidity.

Canadian research shows that replacing some of the maize grain with sugar to produce diets with either 3% or 6% sugar, had a positive impact on rumen pH and milk output (see Table 1). Another benefit is the effect on milk components. Sugar increases the concentration of butyrate in the rumen, which is the key pre-cursor for milk fat synthesis.

Table 1. The effect of sugar on milking performance and rumen pH.

	3% Sugar Diet	6% Sugar Diet
Milk yield (kg/day)	24.1	26.4
4% fat corrected milk yield (kg/day)	21.9	24.2
Milk fat(%)	3.35	3.53
Daily minimum rumen pH	5.44	5.66
Daily maximum rumen pH	6.81	6.98
Average rumen pH	6.17	6.34

Source: Penner et al, 2009, J. Dairy Sci.

Positive responses to raising the sugar content of the ration are more likely to be seen in high yielding cows to help meet their energy demands, especially in herds where the prevalence of ketosis is high. If you are interested in general dairy nutrition advice or reviewing the sugar content of your rations, please contact the FAS advice line on 0300 323 0161or email advice@fas.scot

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Should you be Using Genomic Testing?

Genomics uses a young animal's DNA to estimate their genetic potential and aims to provide dairy farmers with the information and the confidence to make informed breeding decisions with their youngstock. Genomic testing has been increasing in popularity over the last decade, with AHDB now estimating that over 100,000 dairy heifers are tested annually, a figure which is growing by around 15% per year.

How does genomic testing work?

The farmer's part in genomic testing is relatively simple. A sample of the animal's hair or tissue is collected and sent off to a laboratory via the farmer's chosen genetics company. DNA is extracted from the sample and an electronic version of the DNA (known as a SNP-Chip) will then be sent off to geneticists at Edinburgh Genetic Evaluation Services (EGENES). EGENES develops this into a SNP-Key which translates the DNA sequences into a genomic index, expressed as a Predicted Transmitting Ability (PTA). PTAs predict the extent to which a given trait will be passed on to an

animal's offspring. They do not predict the offspring's actual performance, which will vary widely depending on their environment and management.

Table 1 - Predicted Transmitting Ability categories and their associated traits.

PTA Category	PTA traits
Production traits	• Milk • Fat • Protein • Persistency
Health, welfare and fitness traits	• Somatic cell count • Mastitis • Fertility index • Lifespan • Calf survival • Locomotion • Lameness advantage • TB advantage
Management traits	• Temperament • Ease of milking • Calving ease • Maintenance • Dairy carcase index
Type traits	• Composite type • Linear type

Selection indexes
Selection indexes are used by farmers and semen companies as a quick and easy way to compare bulls. Selection indexes represent the additional monetary profit in pounds sterling that a bull is expected to transmit to his average daughter over her lifetime, compared with a bull with an index of zero.

£PLI (Profitable Lifetime Index) – this is a within breed genetic index, which means that different breeds are not comparable. The indexes are expressed as a financial value, indicating the additional profit which the daughter of the £PLI bull is expected to earn over her lifetime versus that of a daughter sired by a bull with a £PLI of zero.

£SCI (Spring Calving Index) – this is an across breed genetic ranking index, which means that different breeds can be compared. This index was developed to breed cows that produce a lower volume of milk but of a higher quality. The Spring Calving Index is also targeted at herds which are spring calving and are on grazing focused systems.

£ACI (Autumn Calving Index) – this index is also an across breed genetic ranking index. The index was developed to serve Autumn block calving herds, and the weighting of the different PTA traits are weighted to account for the costs of feeding for winter milk production and the higher milk price per litre received at the time of year.

Benefits of genomic testing
Genomics can be used to achieve many different aims, depending on what Indexes the business uses and what PTA's the business is looking to prioritise. According to recent AHDB analysis completed for the 2023 calendar year, herds that test 75–100% of their heifers have an average PLI of £430. In comparison, herds that only test 0–25% of their heifers have an average PLI of just £237. This is a difference in PLI of £193, which can lead to a theoretical difference in profit for a typical 175-cow herd of £19,300. However, analysis of actual business accounts shows that testing 75-100% of your heifers can lead to a difference in profit of over £50,000.

In addition, genomics and the improved genetic gain which can result from this have the ability to meet several other goals of the dairy sector such as reducing carbon emissions and antibiotic use through targeting health, wealth and fitness traits.

Furthermore, management PTA traits such as temperament can be utilised to improve cow behaviour and improve safety for people working with the cattle.

Further information
- https://www.nuffieldscholar.org/reports/gb/2018/how-can-uk-dairy-farmers-use-genomics-breed-better-herd
- https://ahdb.org.uk/knowledge-library/genomics-dairy-industry
- https://ahdb.org.uk/knowledge-library/dairy-breeding-and-genetics

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What to Use if Draff is Unavailable?

Draff has become an important feed source within the dairy industry over the years, providing a good source of digestible energy and protein. The typical crude protein content of draff on a dry matter basis is between 16.0-22.0% and it has a metabolisable

energy (ME) content of between 11.0-11.7MJ/kg DM. Draff is a highly palatable, moist feed which can be fed in large quantities (typically 8-10kg per head for milking cows) and is a relatively low-cost feed at between £40-£50 per tonne depending on distance from the distillery. The type of energy source provided by draff is high digestible fibre and it is low in starch, which reduces the risk of acidosis in the rumen.

Draff availability is not always guaranteed throughout the winter months due to a variety of reasons, including a higher demand for anaerobic digestors. Therefore, draff may be unavailable and you may need to consider alternative ingredients to supply those energy and protein levels within the ration. Determining the best alternatives will depend on availability of the products being delivered to your area and price per tonne, as well as their nutritional value and recommended inclusion rate. Alternatives that could be considered to replace the draff element of the diet include, but are not restricted to, brewers grains (or other moist distillery co-products e.g. Vitagold), distillers dark grains or soya hulls.

Brewers grains is another palatable, moist feed which is a co-product from the brewing industry. Like draff, it has a high crude protein content of 20.0-26.0% and an ME content of 11.7 MJ/kg DM. Brewers grains can be fed in similar quantities so if draff is unavailable, brewers grains can be fed like for like in the ration.

Table 1. Nutritive value of draff on a dry matter basis and alternative options.

Feed Source	ME (MJ /kg DM)	CP (%)	Oil (%)	Starch (%)	DUP (%)
Draff	11.0 - 11.7	16.0 - 22.0	9.0	1.7	6.7
Brewers grains	11.7	20.0 - 26.0	7.0	4.0	7.5
Distillers dark grains	13.5 - 14.0	28.0 - 34.0	7.0 - 11.0	4.5 - 5.0	-
Soya hulls	11.8	11.7	2.5	1.7	4.4
rape-seed meal	11.8	37.5	5.0	5.7	11.3

Distillers dark grains are another palatable, dry feed which are high in protein and energy, and can be in pellet or meal form. Typically, they have protein levels of 28.0-34.0% and an ME typically between 13.5-14.0 MJ/kg DM which is higher than draff, and with the higher dry matter of around 90%, quantity fed per head is lower (typically 2-3 kg per head for milking cows). Distillers dark grains come in two types, maize or wheat. A portion of the protein is rumen undegradable protein which by-passes through the rumen into the small intestine to be digested. Due to their palatable nature, distillers dark grains can stimulate intakes of less palatable feed and improve milk yields. Products from the distillery industry tend to contain yeast fractions which stimulate rumen activity, promote fibre digestion and overall feed efficiency.

Soya hulls are very palatable and typically used to bulk up a ration. They are reasonable in ME at approximately 11.8 MJ/kg DM. This energy source is rich in digestible fibre which assists in maintaining rumen pH and reducing the risk of acidosis. In contrast to draff and other distillery co-products, soya hulls have a lower protein content of 11.7%. Therefore, soya hulls would need to be fed alongside a protein rich feed like rapeseed meal (crude protein content of 37.5%) and it is a good source of undegradable protein that will by-pass the rumen during digestion.

Any changes to the diet should be discussed with your nutritionist to ensure that the alternatives for draff are providing the same quantity and quality of protein and energy sources to minimise the impact on milking performance.

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Outwintering Dairy Heifers

Outwintering dairy heifers can make significant savings on bedding and labour and with good planning and nutrition, growth performance should not be compromised. There are a number of things to consider when outwintering heifers to ensure that their nutritional needs are met.

Nutrition

Supplementary forage, typically baled grass silage (but hay and wholecrop may also be suitable), should make up around 50% of total dry matter intake, but can be as low as 30% once cattle are fully transitioned onto the crop. Brassicas are low in

fibre so supplementary forage is important for rumen function, especially when grazing fodder beet which will be riskier for acidosis issues due to its high sugar content. It is worth getting your forage crop analysed (and the supplementary forage) for nutritional value. It may vary greatly from book values and having an idea of its quality, along with allocated intakes can help your nutritionist advise on any supplementary feeding required to achieve target growth rates. Remember that energy requirements will be increased for outwintering by around 10%, so this should be factored into any required supplementary feeding.

Dairy heifers grazing fodder beet at SRUC's Crichton Royal Farm

Remember, heifers will also require mineral supplementation and particularly for iodine if grazing rape, kale, turnips or swedes. Typically iodine requirements double when grazing brassicas. A trace element bolus may suffice but it is best to seek advice to ensure that requirements for major minerals and vitamins are also met.

Tips for grazing forage crops

Livestock should always be introduced to a forage crop slowly, with access for one to two hours a day initially and building up to full time access over a period of 7-10 days. Strip grazing with an electric fence is the best way in which to maximise utilisation of the crop, while minimising waste through trampling. Ensure that all animals can graze the strip at the same time, i.e. try to graze long narrow strips, again this will minimise trampling and wastage. If the field is on a slope, try to graze the cattle downhill. Always make sure there is access to fresh water. This will help maximise intakes and growth performance.

If adverse weather conditions persist and animals are underperforming have you got a plan to deal with this? i.e. can you split the group and provide additional feed to those struggling with growth/body condition? Also, can you provide straw bedding if conditions are very wet to provide a dry lie?

Potential health issues

Some health risks to be aware of include red water (or kale anaemia) when grazing kale, photosensitisation and sudden death. With red water, affected cattle will appear weak and pass red urine. This is due to excess levels of the amino acid compound S-methyl cysteine sulphoxide (SMCO). SMCO levels are higher when soil phosphate levels are low, and nitrogen and sulphur levels are high. Babesia infection, which is spread by ticks, would be another reason for "redwater".

While sunshine is usually lacking at this time of year, there are compounds in brassicas that can cause skin sensitivity to sunlight. Affected animals will show peeling, red, sore skin, which can progress to ulceration and bleeding in extreme cases. The condition tends to occur when rape or kale is grazed when it is still growing. Therefore, it can be prevented by only putting stock onto mature plants. Note that skin lesions may also be seen with copper toxicity, other plant toxicities (e.g. bog asphodel), or malignant catarrhal fever in cattle. Bluetongue virus can also cause reddening of the skin and so it is worth getting affected animals examined by your vet to determine the cause.

There are many reasons for sudden death associated with forage crops, including clostridial disease, nitrate toxicity, staggers, acidosis and bloat. When grazing fodder beet, the high sugar content increases the risk of acidosis and clostridial enterotoxaemia (or pulpy kidney), and so all cattle should be given a full course of a multivalent clostridial vaccination and boosters to prevent deaths. Nitrate toxicity can be minimised by avoiding the use of high nitrate fertilisers. Forage crops are low in magnesium, therefore cattle may require supplementation to avoid issues with staggers. All sudden death cases should be fully investigated by your vet.

For more information on outwintering, have a look at SAC Consulting's Outwintering Strategies for Livestock booklet available here: https://www.sruc.ac.uk/media/ionjjj3r/outwintering-strategies-booklet-497866-sep-2022.pdf

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Spring Sulphur Applications to Boost Grass Growth

Sulphur is an essential nutrient often overlooked by livestock farmers. It plays a vital role in nitrogen use efficiency and protein formation. Although light sandy soils are most vulnerable to sulphur losses, research suggests that deficiencies can also occur in heavy textured soils in early spring. The application of sulphur can boost dry matter yields by 10-15% (AHDB), but more notably, will improve grazing and silage quality.

Where are sulphur deficiencies most likely to occur?

- Light textured soils.
- Areas with high rainfall.
- Multi-cut silage systems and rotational grazing systems.
- Farms applying large amounts of nitrogen fertiliser.

The leachable nature of sulphur means that soils with low levels of organic matter are most at risk of losses occurring. However, significant winter rainfall will wash sulphur from the soil before it can be utilised by the crop.

Sulphur works in conjunction with nitrogen in the formation of plant protein. Therefore farms using high levels of nitrogen fertiliser and/or achieving above-average DM yields will require additional sulphur applications.

Table A. Sulphur deficiency risk categories

Soil type	Winter rainfall (Oct-Mar)		
	Low (<175 mm)	Medium (175-375 mm)	High (>375 mm)
Sands and shallow soils	High		
Sandy loams	Low		High
Other mineral soils	Low		High

Source: FAS Technical note TN685, 2017

Tissue analysis

Sulphur deficiency can often be mistaken for nitrogen deficiency. The yellowing of young leaves is typically seen in a sulphur-deficient crop, whereas the yellowing of mature leaves is seen where there is a shortage of nitrogen.

Due to varying levels of sulphur in the soil throughout the year, plant tissue analysis is preferred over soil sampling to determine sulphur deficiencies. It is advisable to carry out tissue sampling less than 10 days before cutting for silage. Critical levels of sulphur occur when the N:S ratio is greater than 13:1, or the total S in the dry matter is less than 0.25%.

How much sulphur should be applied?

Where a deficiency is expected, RB209 recommends:

- Silage – 40kg SO_3 before each cut.
- Grazing – 20-30kg SO_3 for each 100kg N/ha that is applied.

The most common form of inorganic sulphur is ammonium sulphate (60% SO_3). Care should be taken to avoid over-applying sulphur during the growing season to prevent copper and selenium deficiencies in livestock. Small and frequent applications are advised on grazing fields.

Sulphur from manure

Manure is a valuable source of sulphur. However, due to the slow mineralisation of S within organic matter during the spring, it is unlikely that it would supply enough sulphur to meet crop demand. RB209 states that 45% of SO_3 would be available to grassland after a spring application of cattle slurry. If 30m^3 per hectare of 6% DM cattle slurry was applied to a field, approximately 9.6kg SO_3 would be available.

Manure	Total SO_3 (kg/m^3)	Availability	Available SO_3 (kg/m^3)	Total SO_3 available per 30m^3/ha
6% DM Cattle Slurry	0.7	45% (spring applied)	0.32	9.6kg/ha

Figures from RB209

Conclusion

Mineral soils with multi-cut silage systems are likely to require sulphur applications to improve forage

quality and yield, particularly after an unseasonally wet winter. This is worth bearing in mind for this year's silage season, especially if protein levels in grass silage were lower than expected last year. Sulphur fertiliser should be applied in addition to slurry and FYM where deficiencies are expected.

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Dates for Your Diary

- 12th - 14th January - **Semex International Dairy Conference**. Radisson Blu Hotel, 301 Argyle Street, Glasgow, G2 8DL.

- 20th - 22nd January - **British Cattle Breeders Club Conference**. Telford Hotel and Golf Resort, Shropshire, TF7 4DT. For more information please visit: https://www.cattlebreeders.org.uk/conference/

- 29th January - **The Calf Conference 2025**. Easterbrook Hall, Crichton Estate, Dumfries, DG1 4TL. Time: 9.15 - 15.30. To book your place please visit: https://www.eventbrite.co.uk/e/the-calf-conference-2025-tickets-1098120410709?aff=oddtdtcreator&fbclid=IwY2xjawHNE0VleHRuA2FlbQIxMAABHRVehCdhtNe3Sb16onpTlElgBpWkK9bcqiFdRIuavG6QqmXFFcuXFzboGA_aem_QEHzH40_dl3K3I87SedwlQ
  - Time

- 30th January - **FAS Conference 2025 - Farming for the Future**. Time 10.30-15.30. Perth Racecourse, Scone Palace Park, Park Place, Perth, PH2 6BB. For more information and to book your place please visit: https://www.fas.scot/events/event/fas-conference-2025-farming-for-the-future/

- 5th February - **Dairy-Tech 2025**. Time: 8.00-17.30. Stoneleigh Park, Warwickshire, CV8 2LZ.

- 5th February - **NVZ and Nutrient Management Workshop**. Maitlandfield Hotel, 24 Sidegate, Haddington, EH41 4BZ. Time: 11.00-14.00. To book your place please visit: https://www.fas.scot/events/event/nutrient-management-workshop-edinburgh/

- 14th - 15th March - **UK Dairy Expo**. Borderway Mart, Rosehill, Carlisle, CA1 2RS.

For any further enquiries regarding the information in this newsletter please contact:

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