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Milk Manager NEWS

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Milk Manager NEWS

Market Update

UK Wholesale Dairy Commodity Market

- Fonterra's latest on-line GDT auction (1st March) resulted in a substantial increase of 5.1% in the weighted average price across all products, reaching US $5,065/t. This is a new record, with the previous record of $5,042/t made in February 2014 and is the 5th consecutive rise this year. All products on offer increased in value from the previous auction. The biggest movement was for cheddar (+10.9% to $6,394/t) with butter and butter milk powder showing the next biggest rises (butter +5.9% to $7,086/t and butter milk powder +5.8% to $4,217/t). Full results are available at https://www.globaldairytrade.info/en/product-results/

- Wholesale prices of dairy commodities all rose slightly in value from last month, with increases ranging from 1 to 5%. These rises have been driven mainly by short-term demand and stagnant milk production both here and on the continent. It is possible that buyers are holding off purchases for longer-term cover in the hope that milk production will increase with the seasonal spring flush in the next quarter. However, growth in milk production is likely to be subdued with feed, fuel and fertiliser looking to remain high at least in the short-term.

Commodity	Feb 2022 £/T	Jan 2022 £/T	% Difference Monthly	Feb 2021 £/T	% Diff 2022-2021
Bulk Cream	£2,239	£2,155	4	£1,335	68
Butter	£4,930	£4,860	1	£3,150	57
SMP	£3,030	£2,910	4	£2,070	46
Mild Cheddar	£3,960	£3,760	5	£2,940	35

Source: AHDB Dairy - based on trade agreed from 24th Jan - 25th Feb 2022. 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.

- Tight butter supplies in February caused prices to rise as the high cream prices meant less incentive for butter production away from cream. Limited trade in butter has been due to hopes of prices falling in the next quarter as milk supplies typically increase in the spring.

- Energy costs for drying milk into powder, along with limited availability led to skim milk powder prices increasing on average by £120/t from January.

- Mild cheddar showed the biggest percentage rise from January as a result of tight supplies, good demand for young cheeses in the retail sector and continuing confidence in the foodservice sector.

- The market indicators AMPE and MCVE continue to rise on the back of the UK wholesale price changes. However, note that the current figures will give overinflated actual market returns as increases in the December production costs have not yet been accounted for and will be updated in the March figures.

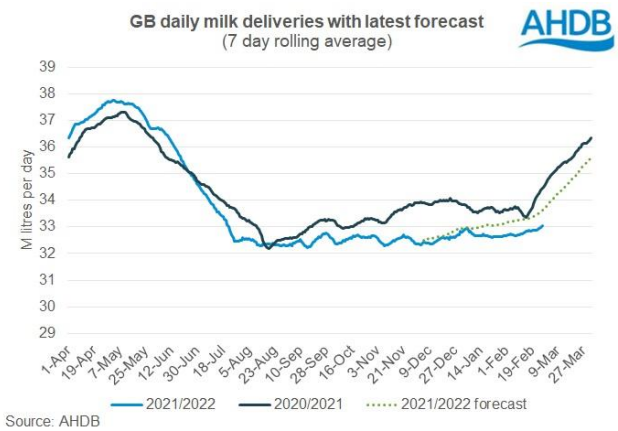
	Feb 2022	Jan 2022	12 months previously	Net amount less 2.4ppl average haulage – Feb 2022
AMPE	48.86ppl	47.31ppl	30.85ppl	*46.46ppl*
MCVE	45.81ppl	43.12ppl	32.47ppl	*43.41ppl*

Source: AHDB Dairy

- For the week ending 4th March, the spot milk price eased slightly with more milk about, trading from 42ppl if processors were needing to sell, up to 49ppl delivered for those needing to buy. Bulk cream firmed up to £2.28 to £2.30/kg ex works, just £0.02/kg higher than the previous week.

UK Milk Deliveries and Global Production

- For the week ending 26th February, milk deliveries were up only 0.5% on the previous week, with a daily average of 33.03 million litres. Deliveries are now 4.1% less than the same week in 2021 (equivalent to 1.41 million litres).



Source: AHDB

- Global production was down in December 2021 by 1.3% year-on-year, with 10.5 million litres less/day. Monthly production was on a par with December 2019 levels, with the main losses from the EU-27 (-1.5%) and New Zealand (-5.0%). The biggest EU producing countries, France, Germany and Netherlands continue to show declines in output.

Monthly Price Movements for March 2022

Commodity Produced	Company Contract	Price Change from Feb 2022	Standard Litre Price Mar 2022
Liquid & Cheese	**Arla Farmers UK**	*+1.74ppl liquid +1.8ppl manufacture*	37.88ppl liquid 39.38ppl manufacture
Cheese, Liquid & Brokered Milk	**First Milk**	*No change*	34.75ppl manufacture
Cheese	**Fresh Milk Company (Lactalis)**	*+0.9ppl - guaranteed minimum for both liquid & manufacture*	35.0ppl liquid 36.41pl manufacture
Liquid & Manufacture	**Grahams**	*+1.5ppl*	34.5ppl
Liquid & Manufacture	**Müller Direct**	*+1ppl*	34.75ppl (includes 1ppl direct premium and -0.25ppl Scottish haulage charge)
Liquid & Manufacture	**Müller (Co-op)**	*No change*	33.91ppl
Liquid & Manufacture	**Müller (Tesco)**	*No change*	34.16ppl
Liquid, Powder & Brokered	**Yew Tree Dairies**	*+1.5ppl guaranteed minimum*	35.5ppl Standard A litre price

Other News

- The effect on global dairy markets from the invasion of Ukraine are yet to be realised but it is thought that the impact on the UK and EU markets will be minimal. The EU and UK have not traded dairy products with Russia since 2014 and the UK only exported just under 300 tonnes of dairy products last year to Ukraine. Most of the dairy products imported by Ukraine come from the EU, but only account for 1.6% of the EU's export volumes (AHDB Dairy).

- M&S have broken through the 40ppl barrier for April, offering another 0.48ppl on their conventional liquid standard litre, bring the price up to 40.03ppl. This is 6.2ppl above the April price in 2021. Some of the main Scottish milk buyers have already declared further increases from 1st April ranging from 1 to 1.75ppl.

- The Sainsbury's Dairy Development Group announced a 0.32ppl increase for March, followed by a further +0.4ppl for April. The April liquid standard litre price for a Müller supplier will be 34.3ppl. Based on their cost tracker for April 22, feed was up 0.19ppl to 12.18ppl, based on feed costs over a 6-month period up to January 22. Fertiliser was up 0.19ppl to 1.9ppl based on the cost of ammonium nitrate over the same time period. Fuel costs rose to 0.94ppl (+0.02ppl), based on the average price of red diesel over a 3-month period up to January 22. It is estimated that their farmers will receive a further 0.35ppl from May.

- Defra announced that the UK farmgate milk price for January was 35.46ppl, which was 0.95ppl more than the previous month (+2.8%).

- Nick Holt-Martyn from The Dairy Group sums up how tough the coming year will be for the dairy industry: "Farmers, processors, retailers and consumers will have to understand that for 2022 a farmgate price of 37.5ppl will be the very least that farmers will need to stay in business. Failure of the supply chain to deliver will result in fewer dairy farmers and a further decline in supply. 2022 and 2023 are going to be challenging for everyone with higher headline prices, but not higher profits".

- According to the Scottish Dairy Cattle Association's latest January press release, the number of dairy farmers in Scotland has fallen to 832, which is 195 herds less than 10 years ago. Despite this, cow numbers have increased by 3023 to a total number of milking cows of 179,361 and an average herd size of 216. Compared to January 2021, there was a net loss of 11 herds.

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Straights Update

Global News

- The Russian invasion of Ukraine has sparked fears about shortages of exportable wheat as Ukrainian ports remain closed (until the end of the invasion) and buyers are looking elsewhere to secure EU supplies. Russia is the world's biggest exporter of wheat, closely followed by Ukraine and combined they account for 29% of global wheat exports. Ukraine also produces about 35% of the world's supply of sunflower oil and disruption of exports means that there is increased demand on other vegetable oils, pushing up rapeseed prices. Ukraine is also an exporter of maize and if the war affects spring plantings which start at the beginning of May, this could have knock-on effects for availability into 2023. The EU is a net importer of maize, with Ukraine being one of its main suppliers. Whether Ukrainian farmers will be able to plant spring crops or apply fertiliser and other inputs to winter crops is currently unknown. With the risk of production being affected, the EU is considering bringing set-aside land back into production which would help increase the cultivated acreage by 10-15%.

- Drought in South America due to the La Niña phenomenon is not helping protein prices, with lowered expectations for soya yields. The USDA has lowered forecasted production compared to the 2021 harvest in Argentina, Brazil and Paraguay by 9%, 7% and 37% respectively, equating to a reduction of around 18 million tonnes.

UK and Scottish News

- There is so much volatility and lack of transparency in the grain market at the moment and no day is the same. Grain traders are of the opinion that there is not an abundance of grain left on farm now. There is a reluctance for growers to sell forward too much new crop grain at this stage of the year with current prices firming so continuously (Nov 22 futures up from £196 to £249 over the last four weeks). It is too tempting not to play the waiting game and see if the upward trend continues.

- The conflict is also affecting domestic barley prices, which have been following the same trend as wheat prices, having risen £30/T during the first week of March. The demand for barley also looks set to continue with the cold wet weather looking like it will extend the winter-feeding period.

- Reasonable recent arable profits and the resulting tax payment liabilities, together with higher than historical prices for 2022's fertiliser due/recently paid, will pressure cash flows and therefore prompt a degree of grain sales for harvest movement perhaps. On the other hand, farmers may be reluctant to sell forward on new crop as the prices keep rising. Feed compounders will be building this bullish market scenario into their winter 2022/23 production costs and so some forward cover therefore on compound feed would be prudent.

- Given the volatility in straights prices at the moment, any indication of forward pricing is impossible with the situation changing daily and companies unwilling to price too far forward. An indication of Scottish barley and wheat prices ex farm as of 9th March are given in the table below:

Period	Feed wheat	Feed barley
March 2022	275	263
April	300	270
May-June	300	270
August (new crop)	231	224

Source: Graindex

- There is limited availability of other energy sources such as biscuit meal, sugar beet pulp and soya hulls, with approximated prices of full loads delivered as of beginning of March being £275/t, £300/t and £290/t respectively. Moist feeds represent good value with draff around £30 to 40/t. Supergrains are reportedly available for March around £58 to 54/t (price delivered to Perth area and will depend on amount).

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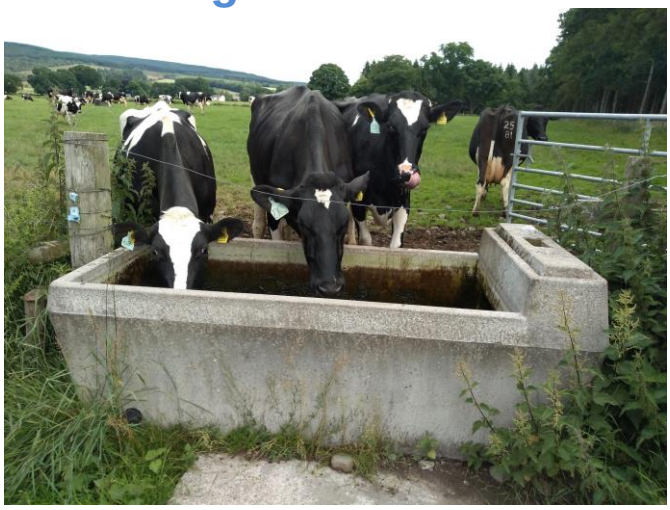
Abnormal Eating Behaviour in Grazing Cows



Two years ago, SRUC Veterinary Services investigated a number of cases of pica in grazing dairy cows in the southwest of Scotland. This condition was most commonly seen in spring block calving, New Zealand style grazing herds during the month of May in 2020. Pica is a condition where cows appear to eat or lick things in their environment that have no nutritional value. For example, in these reported cases cows were observed to be eagerly eating or licking soil and stones and even trying to rip up astroturf on cow tracks. However no other symptoms were seen, and cows appeared healthy.

There are a few theories of what causes pica but the main one is thought to be a deficiency of phosphorus (P), although sodium deficiency and lack of fibre in the diet have also been implicated, as sodium is important for the absorption of most major minerals. Blood sampling some cows from the affected herds consistently showed low phosphate levels and this was sometimes accompanied by marginal magnesium status.

It is thought that cows are more at risk when there has been prolonged dry weather in conjunction with very low overnight temperatures, leading to very low phosphate uptake by the grass. Phosphate is not very mobile in the soil, and cold soil conditions can exacerbate poor uptake, resulting in P deficiency in many crops. The risk of pica appears to be higher in herds maximising the use of grass and has also been linked to low magnesium intake or acidosis, with SARA (sub-acute ruminal acidosis) being a well-known risk in cows on lush spring grass.

With this in mind, as turnout approaches, it is worth reviewing mineral supplementation to grazing cows to ensure that requirements are met. The need for increased magnesium supplementation when lactating cows are at grass to prevent staggers is well known, and many feed companies increase the level of magnesium in their summer cakes as a safeguard. However, P supplementation is not often on the radar and its inclusion in dairy minerals has been gradually reduced over the years due to concerns around P excretion and its environmental impact on water courses. In addition, P inclusion in a mineral is very costly, currently around £40 per 1%. As many low input, extensively grazed herds just rely on mineralised cake to supplement the grass, it may be worth checking with your supplier whether P is added to the cake.

The following tips may help reduce the risk of P deficiency this spring:

- Analyse fresh grass for mineral content and take advice on mineral supplementation. The target P intake for dairy cows is around 0.32 to 0.36% in the dry matter. Grass analysis will also indicate if there are antagonists present that might reduce P absorption in the gut.
- Ensure sodium requirements are met and if unsure provide salt licks (if not already feeding a mineral/block that contains sodium).
- Provide added P in the drinking water or from a high P mineralised bucket over the risk period.
- If grass availability is limited, buffer feeding with silage may help, slowing throughput of grass and silage through the gut, increasing time available for P absorption.
- As pica can be due to reduced dry matter intake from poor availability of grass, increasing cake feeding by 2kg/day will help minimise any drop in milk yield, which may also increase P intake from cake if added.

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Analysing Dairy Carbon Footprints

In 2022, carbon auditing will be as important as ever for the agriculture sector, particularly for dairy producers in order to meet the conditions of milk contracts. The results of carbon audits can teach

us a lot about our businesses and identify areas where we can improve. Summary data from SAC Consulting's Agrecalc carbon auditing tool can also show the effect of different farming systems on the climate, which system is generally more efficient in terms of its resource use and where the emissions are coming from.

Table 1. Summary data for all carbon audits on Agrecalc from 2020

Group	Total sample	AVG CF (kg CO_2e/kg output)
Potatoes, Beet and Root Vegetables	61	0.09
Combinable crops	719	0.46
Beef	680	36.88
Dairy	75	1.35
Pigs	18	7.24
Poultry	13	2.34
Sheep	475	31.65

Table 1 shows that on average, dairy farms had the highest carbon efficiency of the livestock sector, with only the arable sector having greater carbon efficiency. However, it should be noted that carbon efficiency on Agrecalc is measured in terms of kilograms of CO_2 equivalent per kg of output and not in terms of nutritional benefit. So, selling 1 tonne of straw is considered the same as selling 1 tonne of milk. This means that the usefulness of the data when comparing sectors is limited. However, when comparing different systems within a sector it can still teach us valuable lessons.

Table 2. Summary data for dairy carbon audits on Agrecalc from 2020

System	Sample No.	AVG CF (kg CO_2e/kg output)	Lowest CF	Highest CF
All Year Round Calving 8000l/cow	27	1.33	1.01	1.97
All Year Round Calving 9500l/cow	26	1.22	0.77	2.01
Cross Bred System 5500l/cow	10	1.52	1.20	2.23
Traditional System 6500l/cow	12	1.32	1.04	1.62

Table 2 shows that generally the more intensive higher yielding dairy systems are the more carbon efficient, having the lowest average carbon footprint (CF) of the four different dairy systems. However, the results are less clear when looking at the lowest and highest CF, with all systems having some efficient farms and some that are not so efficient.

Table 3. Sources of emissions from each dairy system

Source Of Emission as a Percentage of All Emissions								
System	Enteric Fermentation %	Manure Management %	Fertiliser %	Purchased Feed %	Purchased Bedding %	Fuel %	Electricity %	Other %
AYR Calving 8,000l/cow	41	20	10	23	1	3	1	1
AYR Calving 9,500l/cow	37	17	11	27	1	3	2	2
Cross Bred 5,500l/cow	46	22	13	10	3	3	1	2
Traditional 6,500l/cow	43	21	16	16	1	2	1	1

Enteric Fermentation

Enteric fermentation is related to the digestive process of ruminants; this is the largest source of emissions across all the systems. If you have ruminant livestock, you are going to have enteric fermentation. Therefore, anything that improves the efficiency of your herd will allow the business to reduce enteric fermentation emissions, such as improved health, improved nutrition, improved genetics and a more effective culling policy (removing unproductive members of the herd).

Manure Management

Manure management relates to emissions associated with the handling and management of manure. In the cross bred and traditional systems this is the second greatest contributor, while it is the third greatest source for the all year round calving systems. This can be reduced by utilising precision slurry application technology, covering slurry stores and anything that increases the efficiency of slurry applications.

Fertiliser
Fertiliser is a significant source of emissions across all dairy systems. The production and use of fertiliser is a major source of global emissions. However, it is necessary for productivity, so to reduce fertiliser use and improve its utilisation, precision application technology, increasing legume use and improving soil health can help to keep fertiliser cost and emissions as low as possible.

Purchased Feed
Purchased feed is a necessity for pushing for milk yield and quality. However, improving silage quality and utilising homegrown feeds can help to reduce its use. Accurate livestock rationing and improving genetic merit through breeding can help to reduce this source of emissions.

Purchased Bedding
Bedding is a relatively low source of emissions and as a result recommendations on how to reduce these emissions are relatively few. However, some common-sense measures to reduce bedding use would be improving ventilation in sheds to allow it to dry, as well as ensuring that there are no drainage issues around the buildings to limit water entering during heavy rainfall.

Fuel
Again, fuel is a relatively low source of emissions in the dairy sector. Increasing the efficiency of any machinery operations and the use of add blue both reduce fuel use and its associated emissions.

Electricity
Electricity use is also a relatively minor source of emissions in the dairy sector. However, it is a source that is increasing as farming becomes increasingly mechanised. To reduce electricity emissions renewable sources for self-use should be considered. Solar in particular can be quite a low-risk option to reduce emissions.

Other
Other emissions relate to emissions from crop residues, lime, transport and waste. Lime has emissions associated with its use; however, its benefits far outweigh these emissions. Plastic waste is incorporated in the other section, so reusing and recycling plastic waste where possible can reduce this.

Summary
Carbon footprinting should not be just a tick box exercise, as it can teach us a lot and reveal inefficiencies in our use of resources. Therefore, being proactive and accurate in your data entry while carbon auditing can aid and improve the management of your business, ultimately improving your carbon footprint and your bottom line.

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The Importance of Dynamic Testing

A dynamic test assesses the functioning and efficiency of the parlour during milking, whereas a static test, as the name implies is where the parlour is tested without milking any cows but just moving air through the system. While all farms will carry out a static test annually, very few will perform a dynamic test. The static test will pick up any mechanical faults which can be corrected before carrying out a dynamic test.

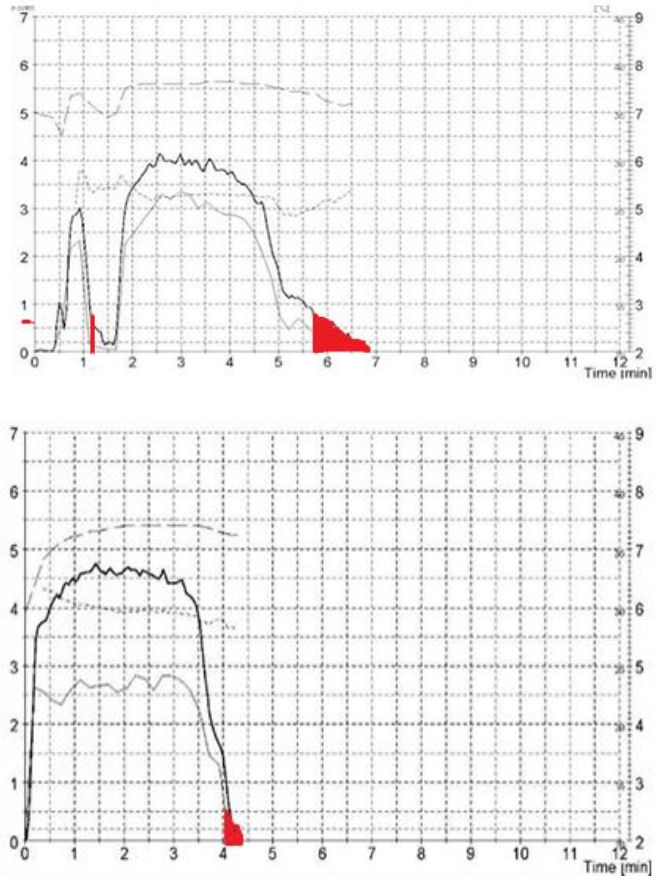
With dynamic testing the following is assessed:

- Preparation of the udder for good milk let down and flow, identifying whether bimodal milking is an issue (see following figure).
- Milk liner slippage and whether the liner fit is appropriate. This is important to prevent excessive air leakage.
- Vacuum levels applied to the teat and milk flow away from the teat end, making sure that milk is not allowed to remain in cluster unit clawpieces, submerging teat ends in potentially contaminated milk.
- ACR settings and risk of over- or undermilking.

Dynamic testing measures the vacuum when milk is flowing through the system and in the cluster at the cows' teats. A vacuum gauge is attached to the clusters to measure vacuum inside the liner, both in the mouthpiece at top of the teat and down in the short milk tube to assess how the vacuum behaves inside the milking machine during milking. This process is repeated with a number of cows for each cluster, and the more the better, as vacuum dynamics can vary from cow to cow due to the size and shape of their teats and depending on the milk flow rate of those cows. Therefore, it is necessary to collect sufficient data from a good cross section of the herd when carrying out a

dynamic test from the point of cluster attachment right through to detachment.

Figure 1. Graphs of milk flow rate against time showing bimodal milking with no teat preparation (top) versus with teat preparation and 60-90 second time lag before attachment (bottom). Note the shorter overall milking time in the bottom graph



Source: Greenham, Advance Milking

Other observations can be made during dynamic testing, such as udder preparation for optimal milk let down, reviewing pre- and post-dipping/spraying effectiveness, cluster alignment and teat end scores to assess the level of damage (hyperkeratosis). Factors affecting cow flow and behaviour in the parlour can also be picked up, such as stray electrical voltage.

As well as improving the efficiency of the milking process, these tests are designed to ensure that udder health and teat end condition are not compromised by inappropriate vacuum levels and ACR settings. Any improvements in these areas can potentially lead to lower somatic cell counts and bactoscans, less risk of mastitis and minimise contagious mastitis spread in the parlour. Where cell counts and mastitis rates are higher than desired, make sure the test carried out also monitors wash temperatures and the effectiveness of plant cleaning with the appropriate chemical concentration.

If your herd is experiencing problems with teat end damage, high somatic cell counts or mastitis rates, a dynamic parlour test would be worthwhile carrying out to detect any issues with either the milking routine or parlour workings and is an important part of any mastitis control plan.

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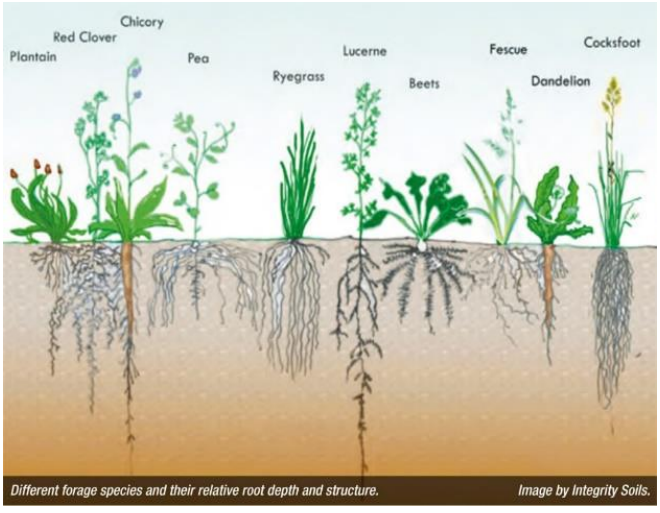
Milking Multi-Species Swards

Increasing fertiliser prices, changing weather conditions and the need to maximise biodiversity has increased interest in multi-species swards (MSS). The inclusion of MSS can allow N applications to be reduced, increase drought resistance due to differing root patterns of the various plants (see figure 1) and increase dry matter production on farm. However, the agronomy of MSS is different to conventional perennial ryegrass, and they need careful management to be established and utilised effectively.

Figure 1. Rooting patterns of common MSS forage plants



Deciding what combination of species to have in your sward will depend on your management aims and soil conditions. Table 1 below shows the key properties of the six most common species.

Table 1. Common grass species and benefits

Species	Spring growth	Summer growth	Digestibility	Protein content	Mineral content	Ideal for:	Not so suited for:
Ryegrass	+++	+	+++	++	+	Spring milk	Drought resistance N fertiliser reduction
White clover	-	++	++	+++	+	Summer grazing	Spring growth
Red clover	-	+++	++	+++	+	Silage Zero-grazing winter milk	Spring growth Heavy grazing
Plaintain	+++	++	++	+	+++	Spring milk Sheep	
Chicory	+	++	+++	+	++	Sheep/Beef Drought	Extended grazing rotations
Timothy	++	+	+++	++	+	Wetter soils Silage	Regular growth

Source: Teagasc

Establishment requirements are similar to a new grass ley with optimum soil pH and nutrient status critical to success. Over-seeding on bare swards may be an option, but success rates are reduced compared with a full reseed due to the competition from existing grasses. There are no herbicides suitable for use on MSS so choosing fields with low weed populations, desiccation of grass and weeds prior to sowing and soil fertility are essential to ensure the plants get a good start and can compete with any emerging weeds. The high level of legumes in the sward allows nitrogen to be captured from the atmosphere and made available to plants. For high legume swards, fertiliser applications should be stopped in the summer months to allow the clovers to work effectively. A study by the University College Dublin showed that when compared with perennial ryegrass, the MSS produced the same dry matter quantity but with 45% less nitrogen.

Grazing MSS takes careful management to ensure they continue to regenerate and paddock rotations should be increased to 25 days in summer to ensure they have sufficient time to recover. MMS cannot be set stocked and winter growth will be lower than a ryegrass dominated sward. Management will differ slightly depending on what species you have in a mix as each species of herb and legume have unique growth habits. A two-year study in France showed that grazing cows on MSS increased dry matter intake by 1.5kg/day, milk yield by 0.8kg/day and milk solids by 0.4kg/day per cow. Similarly, in Ireland, zero grazed MSS increased dry matter intakes, milk yield and milk solids over perennial ryegrass swards.

MSS swards do not have the same persistency as traditional ryegrass swards, lasting three to four years at most under careful management. However, with the changing climate, increased fertiliser prices and pressure from milk buyers and government to increase the sustainability of dairy production, MMS are going to play an increasingly important role on dairy farms.

For more information on how to integrate and manage MSS on your farm see the following links:
https://www.fas.scot/grassland/multi-species-grassland-sward-tool/
https://www.multispeciessward.co.uk/
https://www.teagasc.ie/publications/2020/grassland-re-seeding-how-to-establish-multi-species-swards.php

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The Value of Slurry

Slurry has never been more valuable given the current fertiliser prices. The nutritive value of slurry can be variable depending on the livestock type, their diet and dilution with dirty water or rainwater. Slurry is also likely to vary in dry matter and hence nutritional value throughout storage, depending on whether it is near the top or the bottom of the storage tank, hence emphasising the need for collecting a representative sample for analysis once the tank has been agitated before spreading.

Cattle fed a high forage diet, where forages typically have a low phosphate and high potash content will produce slurry with higher potash levels compared to those fed a higher

starch/concentrate based diet, as cereals are higher in phosphate compared to potash. Therefore, there could be considerable difference in the nutrient value of slurry coming from a 6000-litre herd compared to a 12,000-litre herd. Mineral supplementation can also influence slurry content, with overfeeding phosphorus leading to higher phosphate levels in slurry. Higher N in slurry could also be due to inefficient/overfeeding of protein sources which are not fully utilised by the cow.

The typical analysis of cattle slurry as detailed in the FAS Technical Note 736 – Optimising the Application of Livestock Farmyard Manures and Slurries is shown in Table 1, along with actual analysis of dairy slurry from SRUC's Barony dairy farm as analysed by their contractor's John Deere Harvest lab. This highlights how variable slurry can be from assumed standard values.

Table 1. Variability in slurry analysis

Sample ID	Dry matter %	Total N kg/m^3	Total P_2O_5 kg/m^3	Total K_2O kg/m^3
Cattle slurry standard analysis	6	2.6	1.2	3.2
Barony slurry sample 1	4.1	2.7	1.3	2.8
Barony slurry sample 2	4.9	2.8	1.5	3.1
Barony slurry sample 3	3.3	1.9	1.1	2.3

The contribution of nutrients from slurries 2 and 3 when spread at 30m^3/ha for a grass silage crop by trailing shoe in April are shown in table 2.

Table 2. Contribution of N, P_2O_5 and K_2O from two different dairy slurry analysis

Slurry	Contribution of N kg/ha	Contribution of P_2O_5 kg/ha	Contribution of K_2O kg/ha
2	33.6	45	93
3	28.5	33	69

N availability is 40% for slurry 2 due to the higher dry matter and 50% for slurry 3. Availability of P and K for both slurries are 100%.

Based on a total requirement for 1st cut silage (expected yield 23T DM/ha), of 120kg N/ha, 39kg P/ha and 138kg K/ha, and recent fertiliser prices giving a value of £1.87/kg N, £1.17/kg P and £0.90/kg K, the difference in value of what these two slurries are worth is a significant £45.18/ha.

Another way to look at the cost benefit of analysing slurry is to look at the value of what each of these slurries require as a top up from bagged fertiliser to meet the silage nutrient requirements when spread at 30m^3/ha. This equates to a fertiliser cost of £202.07/ha for slurry 2 and £240.22/ha for slurry 3. Fertiliser costs were based on AHDB's January fertiliser update with AN at £645/T, MOP at £542/T and TSP at £537/T. However, with a very volatile market currently, these costs are changing rapidly.

While slurry can vary greatly in terms of N, P and K content, the method of application and timing only affects how much N ends up being available for the crop and does not affect P or K supply. When planning slurry applications think about where, when and how much to spread:

- Where – spreading and quantity applied should be based on P and K requirements from slurry analysis and soil status determined from soil testing.
- Timing – important to plan applications to maximise kg DM of the growing crop for every kg N applied. Apply when weather conditions are optimal to reduce N losses as ammonia, so cool, damp and overcast conditions.
- How much – based on crop requirements, mainly P and K.

There are considerably lower N losses when using low emission spreading equipment. Research by Teagasc has indicated that there is an extra 3 units of N/1000 gallons of slurry when using a trailing shoe compared to splash plate application. Also, by injecting slurry, N losses could be reduced to less than 10% compared to losses of over 30% via splash plate application.

Given the potential savings the cost of a slurry analysis at around £65/sample to test for dry matter, total N, ammonia-N, P, K, Mg, S and other minerals is money well spent.

Reference:https://www.fas.scot/downloads/technical-note-tn736-optimising-application-livestock-farmyard-manures-slurries/

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Dates for Your Diary

- 12th March - **UK Dairy Expo.** Borderway Mart, Rosehill, Carlisle, CA1 2RS.
- 23rd March - **Using On-Farm Data to Improve Hoof Health**. On-line event. Time: 11.00. To book your place please visit: https://ahdb.org.uk/events/using-farm-data-to-improve-hoof-health
- 24th March - **Dumfries and Galloway: Optimising Forage, Feed and Performance in your Dairy Herd**. Time: 10.00-14.00. Potstown Farm, Lockerbie, DG11 3EP. To book your place please visit: https://ahdb.org.uk/events/dumfries-and-galloway-optimising-forage-feed-and-performance-in-your-dairy-herd
- 28th-30th March - **DIY Artificial Insemination Course**. Dumfries. For more information and to book your place please contact Embryonics on t: 01606854411 or email: courses@embryonicsltd.co.uk
- 31st March - **Safe Use of Veterinary Medicines**. On-line event. For more information and to book your place please contact Embryonics on t: 01606 854411 or email: courses@embryonicsltd.co.uk
- 31st March - **SAOS Conference 2022.** DoubleTree by Hilton Hotel Dunblane Hydro, Perth Road, Dunblane, FK15 0HG. Time: 9.30. For more information and to book online please visit: https://saos.coop/events-and-training/saos-conference-2022
- 4th April - **Dumfries Auction Mart Monthly Sales of Dairy Cattle**. Dumfries Auction Mart, Huntington Road, Dumfries, DG1 1NF. Time 13.30.
- 5th April - **Improving Fertility in the Dairy Herd**. Ayrshire Food Hub, Crossroads, Hurlford, Ayrshire, KA1 5JQ. Time: 10.00-14.00. For more information and to book online please visit: https://ahdb.org.uk/improving-fertility-in-the-dairy-herd
- 7th April - **Dairytech 2022**. Stoneleigh Park, Kenilworth, Coventry, CV8 2LZ.
- 20th April - **Kilmarnock: Calf Health and Management**. The Park Hotel, Kilmarnock, East Ayrshire Council KA1 1UR. Time: 10.00-14.00. For more information and to book your place please visit: https://ahdb.org.uk/events/calf-health-and-management
- 28th April - **Dairy Roadshow - Dumfries**. The Crichton Farm, Dumfries, DG1 4TT. Time: 10.30-15.00. To book your place please visit: https://ahdb.org.uk/events/dairy-roadshow-dumfries
- 28th April - **Safe Use of Veterinary Medicines**. On-line event. For more information and to book your place please contact Embryonics on t: 01606 854411 or email: courses@embryonicsltd.co.uk

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