Issue 46 | January 2022

Milk Manager NEWS

Farm Advisory Service
National Advice Hub
T: 0300 323 0161
E: advice@fas.scot
W: www.fas.scot

Contents

This month's editor:
Lorna MacPherson

The European Agricultural Fund for Rural Development
Europe investing in rural areas

SAC CONSULTING

Scottish Government
Riaghaltas na h-Alba
gov.scot

Milk Manager NEWS

Market Update

UK Wholesale Dairy Commodity Market

- Fonterra's latest on-line GDT auction (4th January) resulted in a small increase of 0.3% in the weighted average price across all products, reaching US $4,247/t. The biggest movement was for cheddar (+4.9% to $5,487/t) with skim milk powder and butter milk powder also showing small price rises (SMP +1.0% to $3,773/t and butter milk powder +1.0% to $3,654/t). Full results are available at https://www.globaldairytrade.info/en/product-results/

- Apart from bulk cream, average prices for UK dairy commodities in December were still higher than November, despite the seasonal dip that tends to be seen just before the Christmas shut down period. Prices have continued to be supported by tight milk supplies and with high spot milk prices, less milk was processed into cream, butter, SMP and cheese.

Commodity	Dec 2021 £/T	Nov 2021 £/T	% Difference Monthly	Dec 2020 £/T	% Diff 2021-2020
Bulk Cream	£2,054	£2,139	-4	£1,150	79
Butter	£4,660	£4,380	6	£3,000	55
SMP	£2,750	£2,600	6	£1,970	40
Mild Cheddar	£3,600	£3,440	5	£2,940	22

Source: AHDB Dairy - based on trade agreed from 22nd Nov - 22nd Dec 2021. 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.

- Cream prices fell back by 4% on the month, although the drop was not as much as expected. The butter price continued to climb, with very little available for trade on the spot market.

- SMP price remained firm as very little product was manufactured during the trading period, due to more milk tending to be sold as liquid. The average price of £2,750/t for SMP is the highest price since the beginning of 2014.

- Mild cheddar prices continue to rise due to very little spare product available and strong demand. The average December price is the highest recorded price since 2000 (with no records before 2000).

- The market indicators AMPE and MCVE also continued to rise, with AMPE up 2.42ppl on November, mainly down to increases in the butter component (up from 20.78 to 22.08ppl) and SMP component (up from 20.45 to 21.52ppl). Butter milk powder only makes up a very small proportion of the AMPE price, which moved up from 1.05ppl in November to 1.10ppl in December.

- The majority of the MCVE price is made up from the mild cheddar component, which contributed 35.64ppl to the December price, with significantly less contributions from whey powder and whey butter of 3.35ppl and 2.00ppl respectively. Note that the December prices now incorporate updated production costs, taking into account increases in labour and energy costs.

	Dec 2021	Nov 2021	12 months previously	Net amount less 2.4ppl average haulage – Dec 2021
AMPE	44.70ppl	42.28ppl	29.05ppl	*42.30ppl*
MCVE	40.98ppl	39.22ppl	31.94ppl	*38.58ppl*

Source: AHDB Dairy

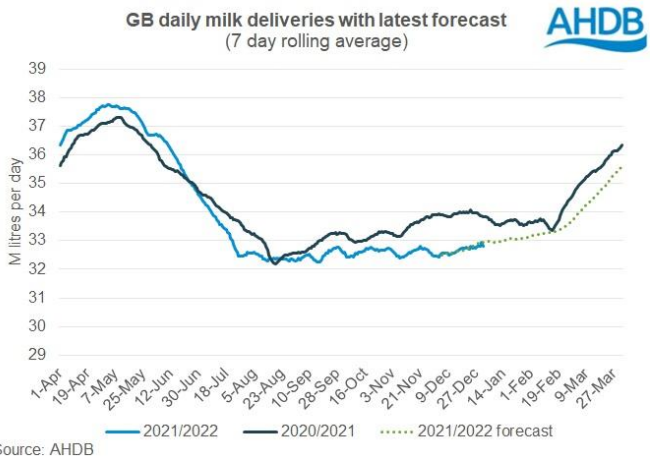
- For the week ending 8th January, spot milk was trading between 43-46ppl delivered, which is back to pre-Christmas levels, having dropped to 25-30ppl delivered over the Christmas period. Bulk cream has also risen after the holidays, up to £2.18-£2.20/kg and around 10p/kg higher than at the end of last year.

UK Milk Deliveries and Global Production

- For the week ending 1st January, milk deliveries were up only 0.2% on the previous week, with a daily average of 32.80 million litres (see following graph). Deliveries are now 3.1% less than the same week in 2020 (equivalent to 1.04 million litres).

- Global production was down in October 2021 from the key six milk producing regions, with deliveries back 0.5%, equivalent to 3.9 million litres/day less compared to October 2020. Daily deliveries for October 2021 were estimated at 828.4million litres. Much of this loss was due to lower production in New

Zealand (-3.3%), with declines also in the UK, EU-27 and Australia.



Source: AHDB

Monthly Price Movements for January 2022

Commodity Produced	Company Contract	Price Change from Dec 2021	Standard Litre Price Jan 2022
Liquid & Cheese	**Arla Farmers UK**	+0.9ppl liquid +0.9ppl manufacture	36.14ppl liquid 37.58ppl manufacture
Cheese, Liquid & Brokered Milk	**First Milk**	*+2ppl*	34.0ppl manufacture
Cheese	**Fresh Milk Company (Lactalis)**	*+2.33ppl liquid +2.42ppl manufacture*	33.33ppl liquid 34.7ppl manufacture
Liquid & Manufacture	**Grahams**	*+2ppl*	32.0ppl
Liquid & Manufacture	**Müller Direct**	*+3ppl*	32.75ppl (includes 1ppl direct premium and -0.25ppl Scottish haulage charge)
Liquid & Manufacture	**Müller (Co-op)**	*No change*	32.08ppl
Liquid & Manufacture	**Müller (Tesco)**	*No change*	33.36ppl
Liquid, Powder & Brokered	**Yew Tree Dairies**	*+3ppl*	33.5ppl Standard A litre price

Other News

- Farmers supplying milk to Marks & Spencer with a Müller aligned contract have seen their milk price rise by 1.29ppl to an all-time high of 37.19ppl for a liquid standard litre from 1st January.

- Müller announced in mid-December that it is targeting its direct suppliers to reduce their emissions by 30% by 2030. There are three main areas that Müller have identified that will help farmers reach this goal:
  - Reduce or eliminate soya from rations.
  - Use more natural fertiliser.
  - Increase focus on use of genetics to select for more efficient and environmentally friendly cows.

  These aims are part of their Advantage Programme which 99.5% of direct farmers signed up to in 2021, and again will be incentivised for participation in 2022 with an additional payment of 1ppl to be paid quarterly.

- The Sainsbury's Dairy Development Group have announced a 0.23ppl increase from 1st January, taking their liquid standard litre price up to 33.10ppl for a Müller supplier, similar to many of the non-aligned contracts. This price is based on the latest cost review from Oct 21 to Dec 21. Their pricing model has not yet taken into account the most recent inflation costs as the 0.23ppl increase for feed, fuel and fertiliser is based on historic data up to October 2021:
  - Feed (11.84ppl, -0.07ppl) - based on average feed cost data over a 6-month period up to October.
  - Fertiliser (1.15ppl, +0.24ppl) - based on the average price of ammonium nitrate in the 12-month period up to October. As the price has risen by over 200% since July, the next quarterly price change will see a more significant rise in the fertiliser contribution to the overall new quarterly price.
  - Fuel (0.84ppl, +0.06ppl) - based on the average price for red diesel over a 3-month period up to October.

  The above changes in the 3 F's make up the 0.23ppl increase.

- Defra announced that the UK farmgate milk price for October was 32.55ppl, which was 0.98ppl more than September (+3.1%).

- For those Müller direct suppliers that opted to fix a proportion of their milk with Lidl for three years at 29ppl, Lidl have offered a 4ppl increase as of 1st January, taking the liquid standard litre price up to 33.0ppl. The 4ppl price increase will be reviewed again in spring 2022.

- In a drive to cut down on wasted milk, Morrisons are scrapping Use-By dates on 90% of their own branded milk and replacing with Best Before dates, which means that the milk will be safe to use after this date but may not be at its best. On the other hand, Use-By dates relate to food safety and should not be exceeded. It is hoped that this move will save out of date milk being poured down the drain unnecessarily. Given that the UK is only around 77% self-sufficient in milk production, reducing waste will help improve our level of self-sufficiency and reduce food airmiles, giving an environmental benefit.

lorna.macpherson@sac.co.uk; *07760 990901*

Straights Update

Straights prices for delivery in artic loads as of early January are as follows (varies depending on location):

£/T for 29t loads delivery + £8/t haulage to central belt	Jan 22	Feb 22	Mar 22 - Apr 22	May 22 - Oct 22
Proteins				
Hipro Soya	440	432	424	406
Rapeseed Meal	353	353	353	M-J 347 A-O 278
Wheat Distillers Pellets	322	322	322	-
Starch				
Wheat	228	229	230	215
Barley	218	218	219	204
Maize	261	261	261	260
Fibre				
Imported Sugar Beet Pulp	266	266	266	269
Soya Hulls	269	269	265	230

Sources: SAC Consulting, Straights Direct, Cefetra, AHDB and Graintab. Barley and wheat prices are based on delivery to central belt (for North-East, deduct £5/t for wheat), courtesy of Mark Bowsher-Gibbs, Senior Consultant, SAC Consulting. Prices do not include seller's margin.

Global News

- Dry weather in South America is a concern for soyabean and maize prospects this year with drought conditions in the southern parts of Brazil and Argentina. This has led to an upward trend in soybean futures prices since December, coupled with lower global ending stocks. Big crops out of south America will be required to alleviate dwindling global stocks but if the dry weather continues, it is likely that prices will climb further. The crop condition report to 30th December in Argentina has rated soyabeans at 56% "good to excellent", which is down from 71% the previous week. Maize crops ratings have also fallen with 58% of the crop rated "good to excellent" (down from 76% in the previous week).

- The global wheat market was well supported at the end of 2021 on the back of the USDA's condition ratings for winter wheat. Ratings fell steeply in a number of states, including the two top producing states of Kansas and Oklahoma due to lack of rain. In Kansas, the percentage of crops rated "good to excellent" fell from 62% in November to 33% as of early January, with "good to excellent" ratings in Oklahoma down from 48% to just 20%. However, price pressure is coming from the good wheat harvest in Argentina, which is over 90% complete and estimated at 21.8mT. As well as having the cheapest world wheat available for export, Argentina is the 2nd largest maize exporter and the early estimate for the 2021/22 crop is 57mT which would be a new record.

UK and Scottish News

- Grain prices have slid back from the highs seen over the last quarter of 2021 despite a tight global supply and demand balance. Some of this is allied to the Argentine and Australian harvests nearing completion allowing USDA to complete their expectations for the global wheat supply for 2022. Both countries are anticipated to have much better than average harvests hence the relatively lacklustre markets over the festive period. It is unlikely these falls will have translated into more competitive feed prices just yet.

- It has been a slow start to the year for the feed barley market here in the UK; demand appears to be limited both for home use and export and indeed there does not appear to be a sizeable

barley stock left on farm. New crop feed barley has seen little activity yet from buyers or sellers. If pricing feed contracts forward, keep an eye on harvest developments in the Southern Hemisphere as if weather deteriorates, markets may well spike again in the short-term.

- The UK is expected to have a surplus of wheat for the 2021/22 season of 557kT. This surplus is however 59% lower than the five-year average as a result of the wheat opening stocks in July 2021 being the lowest since 1999.

lorna.macpherson@sac.co.uk; 07760 990901
mark.bowsher-gibbs@sac.co.uk; 0131 603 7533

Management of Sick Calves

Winter tends to see an increase in calf health issues, with scours and bovine respiratory disease being the main problems. At this time of year many calves are born into an environment where the temperature is well below their thermal comfort zone. More energy is required to maintain body temperature, with less energy available for growth and the immune system, making them more susceptible to disease. This is where changes to the milk feeding regime can help.

Energy intake in the first two weeks of life is crucial and many calves could be underfed depending on the environmental temperature, what level of milk they start on and how quickly that is built up to their maximum allocation. Often the cause of ill health is feeding insufficient milk to provide the energy the calf needs to maintain a healthy immune system.

Calves should be built up to their maximum allocation of milk by seven days of age. It is not uncommon for calves to lose birthweight initially during colder conditions and this is often due to insufficient milk being fed and not building this up quickly enough. At SRUC's Crichton Royal Farm, calves are fed calf milk replacer or CMR (after a single feed of colostrum) at three litres twice a day for the first week of life, after which they are allowed up to seven litres through automatic feeders at a concentration of 15% (1050g of powder).

The benefit of feeding CMR over whole milk is that the concentration can be stepped up without necessarily having to feed more litres. It is good practice to increase concentration from 12.5% to 15% inclusion (150g in 850ml water) in the winter months. With a daily intake of six litres, this increases CMR intake from 750g to 900g. This is really important for extra energy as calves do not eat sufficient levels of starter feed in the first three weeks of life to contribute significantly to energy intake.

Any calf that is scouring will be dehydrated to some extent, even if there are no clinical signs of dehydration. If the calf is scouring, electrolytes are essential to aid rehydration and should ideally be fed in between milk feeds (at an equal interval between milk feeds), as these are not a substitute for milk or milk replacer. While some products are suitable for including with CMR, the water intake is just as important to help with rehydration as the electrolytes are. They should be mixed according to instructions as if too concentrated, this can make scours worse. Consider administering pain relief, as scours can be not just uncomfortable for the calf but painful as well. Milk should not be withdrawn when calves are being treated with electrolytes. Always follow manufacturer's recommendations and if in doubt seek veterinary advice.

While nutrition is a big part of getting calves back on their feet again, the environment is also important. Any sick calves that are carrying an infectious disease should be isolated. Warmth is important so adequate bedding is essential (see figure below) and heat lamps and/or calf jackets will also be a benefit. If the calf shed is draughty, look to create more enclosed areas with straw bales and boarding as a covering to create a warmer/draft free enclosed area in the pen.

If the incidence of calf diseases is higher than target levels then review colostrum feeding and management, as well as CMR feeding rates and vaccination policy in both cows and calves.

FIGURE 1 Nesting scores

Nesting Score 1
Legs entirely visible

Nesting Score 2
Legs partially visible when lying

Nesting Score 3
Legs generally not visible when lying

Source: University of Wisconsin Madison – School of Veterinary Medicine

lorna.macpherson@sac.co.uk; *07760 990901*

New Slurry and Silage Regulations

On 1st January 2022, The Water Environment (Controlled Activities) (Scotland) Amendment Regulations 2021 will start to come into force. However, within the amendment there are a number of "transitional provisions". This means that not all the regulations will be applied at once. The main points are summarised below:

1st January 2022
From this date, all producers will need a Risk Assessment for Manure and Slurry (RAMS). This should include a map showing areas that spreading should not take place and the level of risk associated with other areas. This would be in the context of proximity to water features and slope of the ground.

If a new silage or slurry store is to be constructed, or an older store substantially reconstructed or enlarged, SEPA should be notified 30 days prior to the commencement of works. The current rules only ask for SEPA to be informed 28 days before the new store comes into use. Storage of draff or energy crops will also come under the silage regulations.

1st January 2023
Slurry must now be applied using "precision equipment". This means using a dribble bar, trailing shoe or injector will be necessary. At this point, using a splash plate will not be allowed. Swivelling spout type attachments are not classed as precision equipment. These rules will also apply to contractors.

The splash plate will become a thing of the past

Source: Irish Farmers Journal

However, the amendment allows producers with 100 milking cows or less to continue to use a splash plate until 2027. With the average Scottish dairy herd now over 200 cows, those able to take advantage of this exemption will be in the minority. In other sectors, those with 200 beef cattle livestock units will also be exempt. One beef livestock unit is any animal over two years of age. Animals younger than two years will count as 0.5 beef livestock units. These exemptions do not extend to rain guns or raised splash plates, the use of which will be prohibited.

1st January 2024
Slurry stores and silage pits built after 1991 must now meet current standards. This generally means that they should be fit for the purpose of containing their contents. Above ground slurry stores must have a lockable, double sluice valve and silage pits should have adequate storage for effluent. Where effluent is collected and pumped to another store, the sump should have an overflow alarm to indicate pump failure. Silage pits with sides other than earth construction must

not be filled above the level of the walls (after compaction).

1st January 2026
Slurry stores that were built prior to 1991 must now meet current standards. Units with cattle on a slurry system must now have storage for 22 weeks and those with pigs require 26 weeks of storage. This figure is calculated using the NVZ guidance: manure planning part 1 https://www.gov.scot/publications/nitrate-vulnerable-zones-guidance-for-farmers/

1st January 2027
Any exemption from the use of the splash plate has now ended.

With this legislation being so new, there are still some aspects of it that may require clarification. For further information, refer to the Farming and Water Scotland website: https://www.farmingandwaterscotland.org/know-the-rules/new-general-binding-rules-on-silage-and-slurry-whats-changed/

alasdair.scott@sac.co.uk; 01555 662562

Methane Production - What Can We Do About It?

The amount of methane a dairy cow produces a day varies greatly depending on her size and the nutritional make-up of the diet but has been estimated at up to 500 litres/day (research by AFBI-Hillsborough).

It is important to understand the factors that can affect methane emissions, not just because it is a greenhouse gas, but because these emissions can make up between 45 to 50% of a dairy farm's carbon footprint (CFP). The vast majority of methane emissions come from enteric fermentation – the natural process of digestion in the rumen.

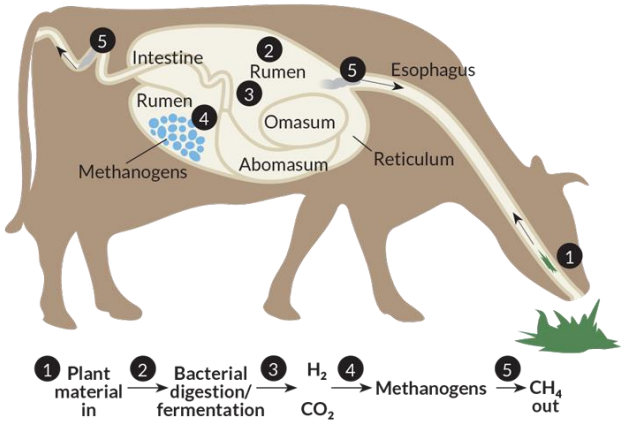
CFP is a measure of total emissions of the three greenhouse gases; carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4), which are converted to carbon equivalents (CO_2e) based on the length of time they spend in the atmosphere. Carbon equivalents are expressed per kg of milk output (usually fat and protein corrected milk or FPCM). Therefore, anything that can be done to raise milk output will reduce CH_4 per kg of milk.

Some measures that can help reduce CH_4 emissions are discussed below:

1. Increasing concentrates – if it is safe to do so in terms of rumen health and still maintain sufficient forage in the diet. The type of concentrate fed can also affect CH_4 production. For example, concentrates with a higher NDF (fibre) content such as sugar beet pulp and soya hulls will produce more CH_4 than starchy cereals. Starchy feeds produce more propionate in the rumen, with less hydrogen available for methanogenesis, the process of methane production in the rumen (see diagram below). More fibrous feeds produce more acetate from rumen fermentation, producing more hydrogen and hence more CH_4.

2. Forage digestibility – the higher the forage quality and its digestibility, the less CH_4 is produced. Higher quality forage has a lower fibre content and so produces less CH_4 during rumen fermentation. In addition, it also enables higher intakes (with a faster passage rate through the gut) leading to higher milk yields and less time in the rumen for CH_4 production, and so less CH_4 per kg of milk. Cutting date will have the biggest influence on forage quality. Substituting grass silage for wholecrop or maize silage will also reduce CH_4 production due to the high starch content of these forages. The same principle applies to grazing in ensuring that grass quality is optimal, something that can be more easily controlled and managed in a rotational grazing system compared to set stocking.

The process of methanogenesis in the rumen



Source: https://water.unl.edu/article/manure-nutrient-management/reducing-carbon-footprint-cattle-operations-through-diet

3. Methane inhibitors – a very hot topic at the moment. There are various essential oil-based products on the market claiming to reduce CH_4. There has also been considerable research into seaweed supplements although these studies have reported mixed effects and products specifically for inhibiting CH_4 production are not yet commercially available. A synthetic inhibitor called 3-NOP (nitro-oxypropanol) will be available for use sometime in 2022 for dairy cattle and has been extensively researched and proven to reduce CH_4 production by around 30%. If you are feeding a supplement that claims to reduce CH_4, this should be taken into account in the tool you are using to assess your farm's CFP.

4. Age at first calving – this can have a significant impact on total herd emissions as dairy heifers will be producing CH_4 but have no milk production to spread their emissions over. Getting these animals into the milking herd as close to 24 months as possible can help and research by AFBI showed that reducing the age at first calving from 27 to 24 months reduced the CPF by 7% for a typical moderate input herd in Northern Ireland.

5. Replacement rate – according to Professor Phil Garnsworthy from the University of Nottingham, reducing the replacement rate in a 100-cow herd from 33% to 25% through improvements to cow health and fertility, lowers average herd CH_4 emissions by around 21%, due to less replacement heifers required. Longevity would also improve, as a 33% replacement rate means a cow lasts for three lactations, but this increases to five lactations with a 20% replacement rate.

Not only will these changes to nutrition and management help reduce emissions and the farm's CFP, as measured by kg of CO_2e/kg FPCM, they should also bring financial benefits to the business (the only unknown being the cost of the methane inhibitor 3-NOP and whether it brings about a performance benefit as well).

lorna.macpherson@sac.co.uk; *07760 990901*

Rolled Field Beans for Lactating Dairy Cows

Introduction

A focus on environmental efficiency and the use of locally grown feed resources has rekindled research interest in the value of field beans (*Vicia faba*) in dairy cow nutrition.

Recent research in Northern Ireland and Denmark supports the feasibility of incorporating field beans into dairy diets up to approximately 20% of diet dry matter (DM) (Johnston et al., 2019a and b; Hansen et al., 2021). For example, Johnston et al. (2019b) compared 0, 19 and 38% ground beans in diet DM. There was no significant effect on milk yield, and milk protein concentration was only reduced at the highest inclusion level. However, in this work dietary crude protein (CP) concentration was over 18.5% of DM, higher than general commercial practice.

To build on these data, researchers at SRUC evaluated rolled field beans at 20% of DM in a moderate protein diet designed to just meet the calculated requirement for metabolisable protein (MP).

The experiment

Two TMRs (A. Control and B. Test) were compared, both containing 40% grass silage and 26% wholecrop wheat silage (DM basis) and both formulated to supply 100g MP/kg DM (CP concentration was just over 16% DM).

The test diet (B) included field beans at 20% of diet DM, substituting for rapeseed meal, maize dark grains and protected rapeseed expeller. To maintain constant ME and starch concentrations, crimped wheat was removed and the inclusion of sugar beet pulp increased.

The beans were grown in north Cumbria and rolled on arrival at SRUC's Acrehead farm, Dumfries by a local contractor using a Wakely 1240 roller mill.

The experiment was a crossover design using 24 cows blocked according to stage of lactation and milk yield. Within block, cows were allocated at random to a sequence of either AB or BA, with each diet offered for 28 days. Feed intake, milk yield and milk composition were measured, and N use efficiency (milk N output / N intake) was calculated.

Results

The test diet maintained milk protein yield, but with slightly higher milk protein concentration and numerically lower milk yield, compared with the control diet. Consistent with the higher milk

protein concentration, milk urea was higher when cows were fed the test ration. Other parameters did not differ between treatments:

	A. Control	B. Test	SEM	P
Dry matter intake (kg/d)	23.9	24.1	0.17	NS
Milk yield (kg/d)	30.2	29.8	0.27	NS
Milk fat (%)	4.70	4.88	0.07	NS
Milk protein (%)	3.64	3.73	0.02	<0.05
Milk urea (ppm)	169	211	0.44	<0.05
Fat yield (g/d)	1415	1436	17.5	NS
Protein yield (g/d)	1099	1101	10.3	NS
N use efficiency	0.281	0.279	0.003	NS

Discussion

Rolled beans were included at 20% of total diet dry matter without major effects on cow performance: beans were palatable, with no difference in feed intake, and levels of production were generally well maintained.

The increase in milk protein % when beans were included can only partly be explained as a consequence of the small numerical decrease in milk yield (a concentration effect) and is not consistent with other results. Johnston et al. (2019a and b) and Hansen et al. (2021) all reported non-significant trends for lower milk protein concentration when beans were included at levels similar to that used in this experiment. Using the Feed into Milk model, the control diet was predicted to be a better source of methionine than the test diet (2.1 versus 1.9% methionine in MP) while being marginally lower in lysine (6.9 versus 7.0% lysine in MP). However, the methionine to lysine ratio did not appear to be limiting to milk protein production in this experiment.

One factor that may influence milk protein concentration is the site of starch digestion. Compared with the wheat starch it replaced, a higher proportion of bean starch is likely to have been digested post-ruminally (Hansen et al., 2021). This may have exerted a small influence on nutrient partitioning, favouring slightly lower yields of slightly more concentrated milk. Beans were exposed to heat during the rolling process, which may have influenced the ruminal degradation and bypass properties of both protein and starch. It is noteworthy that Hansen et al. (2021) found that heat-treated (toasted) beans performed less well, in terms of milk yield and protein %, than beans that had been simply ground. Research results may therefore be specific to the processing methods used and should be extrapolated to practice with caution.

Conclusions

Field beans were easy to process (roll), store and use in a TMR for lactating dairy cows. Milk production was largely unaffected, and these results are consistent with other studies suggesting that field beans can be included to at least 20% of diet DM.

The small improvement in milk protein % was unexpected and merits confirmation in further studies.

Efficiency of N use in the cow was not different between the two diets. Efficiency of N use in the combined crop production and animal nutrition system would be expected to be higher for the test ration containing beans, due to N fixation during bean growth.

References and diet formulation details available on request.

john.newbold@sruc.ac.uk; 0131 603 7532

Hock Scoring – An Important Welfare Indicator

Hock scoring is used as an indicator of cow welfare for many dairy farmers on supermarket aligned contracts. While rubbed hocks with hair loss may be unsightly, it might be easy just to see a bald patch on a hock and think so what?

However, it is important to see the bigger picture and what poor hock scores actually represent. Cow comfort is a hugely important area affecting cow health and productivity and hock rubs serve as an indicator of how comfortable the cow is in her cubicle and can point to an abrasive lying surface and whether bedding provision is adequate. Poor cow comfort will affect lying time which will in turn affect milk production. Reduced lying times and increased standing times will also increase the risk of sole bruising and sole haemorrhages.

Hocks should be scored on a scale of 0-2 using the AHDB Dairy system which assesses hair loss and lesions on the hocks as follows:

Score 0
Lesions or hairless patches smaller than 2cm in diameter or no hair loss or lesions.

Score 1
One or more hairless patches greater than 2cm in diameter. Scars should only be included if they are at least 3mm wide.

Score 2
One or more lesions (areas of skin damage, wound or scab) larger than 2cm in diameter. Scratches or cuts should only be included if they are at least 3mm wide.

Source: AHDB Dairy

A normal, healthy hock should have no hair loss, lesions or swelling and any signs of these are indicative of an uncomfortable lying surface which is abrasive. The risk with lesions is that infection can occur, resulting in discomfort, swelling, pain and eventually lameness.

The goal should be for over 95% of the cows assessed to be a score 0, and less than 5% score 1. Ideally score 2 cows should be 0% according to guidance from Cornell Cooperative Extension. The effect of any changes made to the cubicle surface/bedding can be assessed at future scoring events to monitor improvements.

Hock lesions and lameness are closely associated, with hock lesions can lead to lameness and lameness can lead to hock lesions. If a lesion is accompanied by swelling, it is painful and difficult for the cow to walk normally. If a cow is initially lame from a sole ulcer or digital dermatitis lesion, she will likely lie down for longer periods, increasing the likelihood of a hock injury from more friction between the lying surface and the sensitive hock skin. This is why lameness and hock lesions can often occur together.

To reduce the risk of hock lesions and injuries, increasing the amount of bedding can help, with the depth of bedding thought to be more important than the type of bedding. Research has shown that moving to deep-bedded stalls reduced the risk of hock lesions by 95% and farms that have poorly bedded surfaces like mats and mattresses tended to have higher levels of hock lesions. Other factors that also helped lower the incidence of lesions included access to grass during the dry period, not using automatic scrapers for cleaning passageways and clean bedding. Well maintained cubicles with a smooth, level concentrate base also tended to have less hock injuries (Barrientos et al, 2013).

Reference:
Barrientos, A.K., Chapinal, N., Weary, D.M, Galo, E. and von Keyserlingk, M.A.G. 2013. Herd-level risk factors for hock injuries in freestall-housed dairy cows in the northeastern United States and California. Journal of Dairy Science, 96: 3758-3765.

lorna.macpherson@sac.co.uk; 07760 990901

Dates for Your Diary

- 13th January - **Dumfries and Galloway: Calf Health and Management**. Hetland Hall Hotel, near Dumfries, DG1 4JX. Time: 10.00. To book your place please visit: https://commsahdborguk.ctml2.com/ahdblz//EventMgr_BookEvent1.aspx?eID=485

- 17th - 19th January - **DIY Artificial Insemination (AI) Course**. Castle Douglas. For more information and to book your place please contact Embryonics on t: 01606 854411, email: courses@embryonicsltd.co.uk

- 18th January - **Agronomy Roadshows 2022: Growing a Profitable Crop**. On-line event. Time: 10.00-13.00. For more information and to book your place please vist: https://www.fas.scot/events/event/agronomy-roadshows-2022-growing-a-profitable-crop/

- 19th January - **Are Robots for You?** On-line event. Time: 12.00-13.00. To book your place please visit: https://register.gotowebinar.com/register/8099199881559901710?source=Webpage

- 20th January - **Agronomy Roadshows 2022: Enhanced Agronomy**. On-line event. Time: 10.00-13.00. For more information and to book your place please vist: https://www.fas.scot/events/event/agronomy-roadshows-2022-enhanced-agronomy/

- 25th January - **The British Cattle Breeders Conference**. On-line event. For more information please visit: https://www.cattlebreeders.org.uk/conference/

- 26th January - **Agronomy Roadshows 2022: Growing for a Sustainable Future**. On-line event. Time: 10.00-13.00. For more information and to book your place please vist: https://www.fas.scot/events/event/agronomy-roadshows-2022-growing-for-a-sustainable-future/

- 27th January - **Safe use of Veterinary Medicines**. On-line event. For more information and to book your place please contact Embryonics on t: 01606 854411, email: courses@embryonicsltd.co.uk

- 28th February - 2nd March - **Herdsman Foot Trimming Training Course for Farmers**. Ayrshire. For more information and to book your place please contact Embryonics on t: 01606 854411, email: courses@embryonicsltd.co.uk

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

Lorna MacPherson (Dairy Consultant)
SAC Consulting
Ferguson Building
Craibstone Estate
Aberdeen
AB21 9YA
Email: lorna.macpherson@sac.co.uk
Tel: 01467 530445
Mobile: 07760 990901

Funded by the Scottish Government and EU as part of the SRDP Farm Advisory Service.