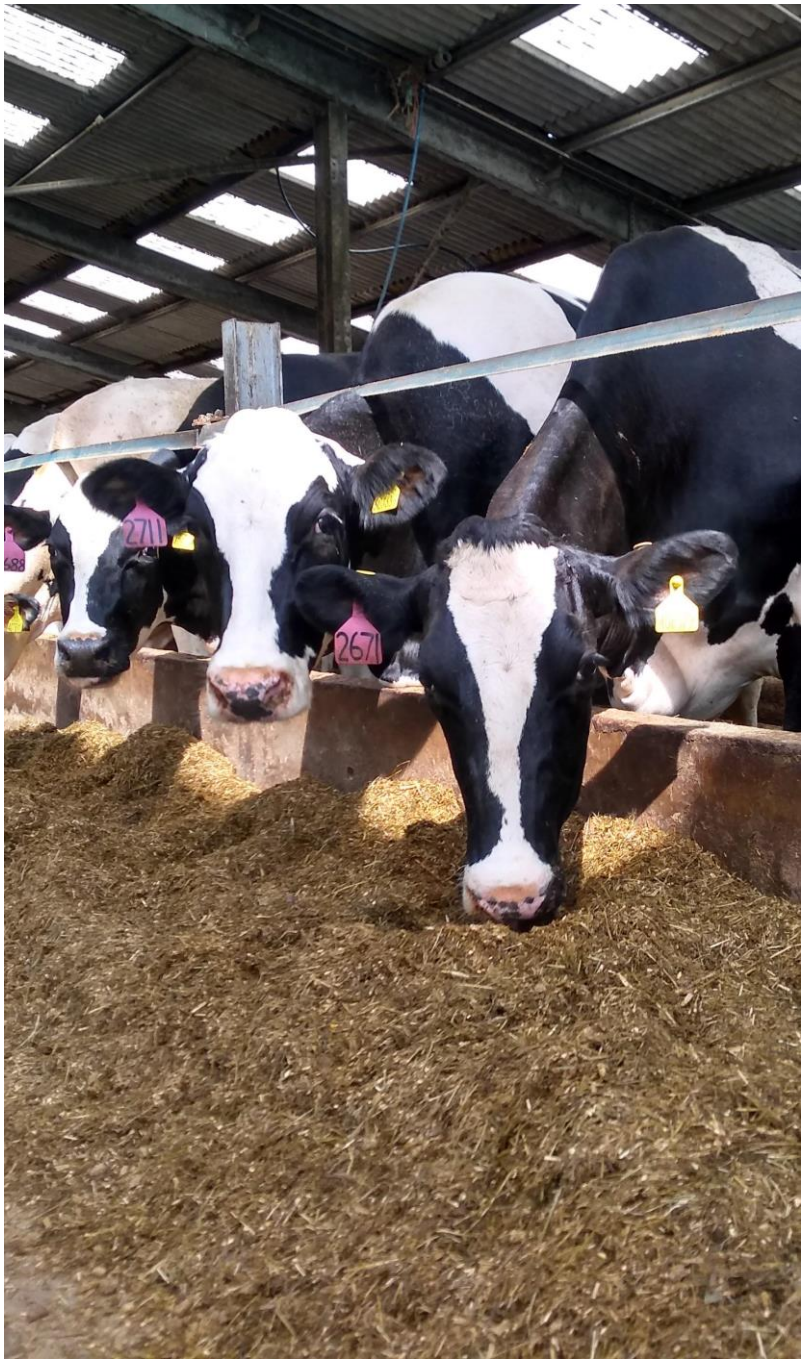
Issue 44 | September 2021

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 (7th September) resulted in a 4.0% increase in the weighted average price across all products, reaching US $3,927/T. This follows a 0.3% increase two weeks ago, these being the first positive price movements since early April. Tonnage sold was 11% (2550T) more than the previous auction, with more buyers (187 versus 180). All products on offer sold at higher prices compared to the previous auction with the biggest movers being skim milk powder (SMP +7.3% to $3,274/T), lactose (+6.4% to $1,167/T) and butter (+3.7% to $4,948/T). Full results are available at https://www.globaldairytrade.info/en/product-results/

- There has been very little movement in UK dairy commodity prices over the summer holiday period with only marginal increases in butter, cream, SMP and cheese throughout the end of July and first three weeks in August.

Commodity	Aug 2021 £/T	Jul 2021 £/T	% Difference Monthly	Aug 2020 £/T	% Diff 2021-2020
Bulk Cream	£1,563	£1,508	+4	£1,480	+6
Butter	£3,290	£3,230	+2	£3,080	+7
SMP	£2,130	£2,110	+1	£1,860	+15
Mild Cheddar	£3,000	£2,980	+1	£2,920	+3

Source: AHDB Dairy - based on trade agreed from 26th July - 22nd August 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 have fared the best, with demand increasing from hospitality and lower than expected milk production supporting prices. Cream peaked at £1600/T in July although only for small volumes due to falling milk production, limited supplies and warmer weather increasing demand for cream and ice cream.

- With better market returns for cream and higher prices for milk on the spot market, less butter has been manufactured, helping support butter prices.

- July saw a low demand for SMP, and prices have generally followed the GDT auction prices. As people returned from holiday the market has picked up slightly.

- The decline in milk production throughout August has also helped mild cheddar prices along with demand for curd increasing.

- AMPE moved up 0.51ppl from July to August on the back of small rises in the butter and SMP component and is 3.86ppl higher than August 2020. Returns for cheese, and whey powder/butter, as indicated by MCVE, showed little change from last month (+0.03ppl) and was 1.92ppl more than the same month last year.

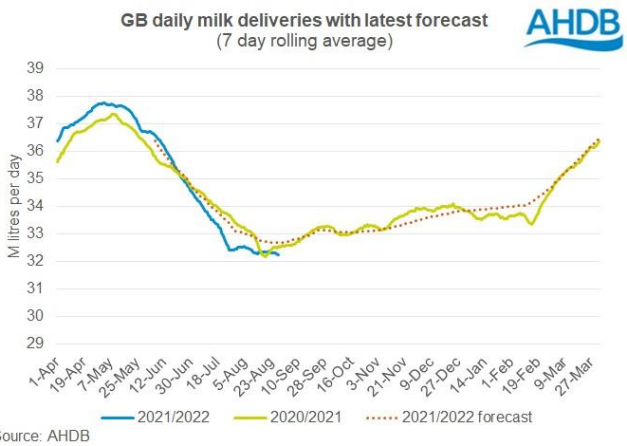
	Aug 2021	Jul 2021	12 months previously	Net amount less 2.4ppl average haulage – Aug 2021
AMPE	32.10ppl	31.59ppl	28.24ppl	*29.7ppl*
MCVE	33.46ppl	33.43ppl	31.54ppl	*31.06ppl*

Source: AHDB Dairy

- For the week ending 3rd September, spot milk and cream prices remained firm, with cream trading between £1.63 - £1.66/kg ex works and spot milk holding at 33 - 36ppl delivered, having been consistently around this level throughout August.

UK Milk Deliveries and Global Production

- GB milk deliveries have been well below forecasted levels for July and much of August as a result of hot dry weather this summer. Production is just 0.2% below the previous week (for the week ending 28th August) and 0.9% less than the same week in 2020, equivalent to 300,000 litres.



Source: AHDB

- So far in 2021, global milk deliveries have been well ahead of 2020, with deliveries in the key exporting regions 3.3% higher in May and 1.5% higher in June compared to the same months last year. The annual increase in May was the highest since November 2017, with daily deliveries reaching 828 million litres and slightly less for June at 785 million litres.

- Much of this growth has come from the US, with production up 12.5mlitres/day in May and 7.9m litres/day in June compared to the same months last year. While New Zealand also saw deliveries up in May by 7.6%, seasonality of their dairy industry means that milk production is at a low so the extra 7.6% only equates to 2.2m litres/day.

- Milk production from the EU-27 rose by 0.5% in June, equivalent to 2.1mlitres. Although Germany is the EU's biggest producer, their milk output has been lower compared to last year but growth for June remains positive in France, Poland and Ireland.

Monthly Price Movements for September 2021

Commodity Produced	Company Contract	Price Change from Aug 2021	Standard Litre Price Sep 2021
Liquid & Cheese	**Arla Farmers UK**	-0.87ppl liquid -0.9ppl manufacture	31.08ppl liquid 32.3ppl manufacture
Cheese, Liquid & Brokered Milk	**First Milk**	*No change*	31.0ppl manufacture
Cheese	**Fresh Milk Company (Lactalis)**	*No change*	29.75ppl liquid 30.98ppl manufacture
Liquid & Manufacture	**Grahams**	*No change*	29.0ppl
Liquid & Manufacture	**Müller Direct**	*No change*	28.75ppl (includes 1ppl direct premium and -0.25ppl Scottish haulage charge)
Liquid & Manufacture	**Müller (Co-op)**	*No change*	31.45ppl
Liquid & Manufacture	**Müller (Tesco)**	*No change*	32.66ppl
Liquid, Powder & Brokered	**Yew Tree Dairies**	*No change*	29.1ppl Standard A litre price

Other News

- Last month AHDB Dairy launched two new breeding indexes: EnviroCow and Feed Advantage, both of which can help farmers breed more environmentally friendly cows. EnviroCow is based on data on cow lifespan, milk yield, fertility, and the new Feed Advantage Index, and is expressed on a scale of -3 to +3. The highest positive bulls are more likely to produce daughters that are more environmentally friendly i.e., produce the least amount of greenhouse gas emissions per kg of solids corrected milk. Feed Advantage is based on research from SRUC's Langhill dairy herd at Dumfries where cows have had their dry matter intake measured throughout their lives to determine the efficiency of feed conversion. The index is expressed as a Predicted Transmitting Ability in kg of dry matter saved in each lactation. The difference between the most efficient and least efficient cow can be as much as 400kg for the same level of milk output.

- Arla have recently published a report on the carbon footprint (CFP) results of nearly 2000 UK dairy farms which can be found here: https://news.arlafoods.co.uk/news/arla-launches-new-report-revealing-carbon-footprint-data-from-almost-2-000-dairy-farms-and-the-steps-being-taken-to-reduce-farm-emissions-by-30-percent-by-2030
  It shows that the average UK Arla dairy farmer has a CFP of 1.13kg CO_2e/kg of milk which is about half the global average and the six main areas of emissions on their farms are digestion (46%), feed (where and how it is produced - 37%), manure handling (9%), energy production and usage (5%), emissions from peat soils (1%) and other sources (2%).

- Arla is one of the first processors to drop its milk price for September. The company blames rising inflation costs for the 0.9ppl price cut, with increased costs mainly from fuel, energy and packaging. In addition, the hot summer has impacted milk supplies across Europe with July production in decline after small growth in June.

- Congratulations to Brian Weatherup & Partners from Parkend Farm in Fife as one of seven finalists (and the only Scottish finalist) in the Holstein UK's 2021 Premier Herd Competition. The winner will be announced at the UK Dairy Day in Telford on 15th September.

- Defra's estimated UK average farm-gate milk price for July was 30.9ppl, which is 0.77ppl more than in June and 11% higher than July 2020. Note this price is not an average standard litre price but the average price paid into farmers bank accounts.

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

Straights Update

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

£/T for 29t loads delivery + £8/t haulage to central belt	**Sep 21**	**Oct 21**	**Nov 21 - Apr 22**	**May 22 - Oct 22**
Proteins				
Hipro Soya	376	376	366	246
Rapeseed Meal	267	267	261	-
Wheat Distillers Pellets	274	274	267	-
Starch				
Wheat	194	196	Nov 198	May 202 Oct 185
Barley	178	179	Nov 180	Oct 155
Maize	267	267	233	-
Fibre				
Imported Sugar Beet Pulp	233	233	214	-
Soya Hulls	214	214	211	202

Source: Straights Direct, Cefetra, AHDB and Graindex on 7th September. 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

- Weather has greatly impacted cereal and oilseed markets both globally and domestically. Dryness in the northern US and Canada throughout July affected wheat crops and as a result, the USDA WASDE report for August has slashed global wheat production by 15.5mT for the 2021/22 season.

- The Canadian wheat production forecast for 2021/22 is down 34.8% from last year at just 22.9mT, with spring wheat back 37.7% at only 16.1mT, a 14 year low for one of the world's biggest wheat exporters. The dry summer has also affected rapeseed crops, with the Canadian crop cut by 4.2mT to 16.0mT, which is 21% less than the July estimate.

- Hurricane Ida has impacted on the exports of US maize, soyabeans and wheat, with futures prices for these crops falling to their lowest level in several weeks on 31st August. The hurricane has caused damage to grain elevators near New Orleans and as much as 60% of US soyabeans and maize are transported out of the Gulf Coast. It is thought that exports out of the region will not be possible for several weeks. As a result, there is now more reliance on maize and soya from South America to supply the global market. As plantings begin in Brazil under dry soil conditions, there are concerns that another La Niña event is looking more likely, which will potentially affect not only Brazilian but Argentinian crops as well.

- While the Russian wheat harvest has so far cut more acres that last year, yields have been poorer, at 3.13T/ha compared to 3.58T/ha in 2020. Domestic prices are now at a 10-year high, raising concerns about increasing food prices.

- Heavy rains in France and Germany have result in quality issues in the wheat crop, meaning more wheat may be available for the animal feed market as there will be less quality wheat available for export.

UK and Scottish News

- There is more upside than downside to the Scottish harvest with regard to yields; a better harvest than England by all accounts where wheat only appears to be making the 5-year yield average. As a result, the UK wheat harvest expectation is being talked down from 15mT to 14-14.5mT, with yield estimates so far at 8.0-8.4T/ha, although there is still expected to be an exportable surplus. However, there could potentially be more quality wheats ending up selling into the feed market with proteins and hagbergs lower than expected this year. For Scotland this might apply to some of those wheats originally grown for biscuit that fall short of the 10% protein level or 150 Hagberg spec. Biscuit wheat is currently trading at £6/T over feed wheat (compared to the £5/T average for last year).

- Feed barley is currently trading at a £16 - 17/T discount to wheat but looking forward 12 months and barley returns to the default position of £30/T under feed wheat. Global end stocks at the end of the day remain wafer-thin which will always support the market.

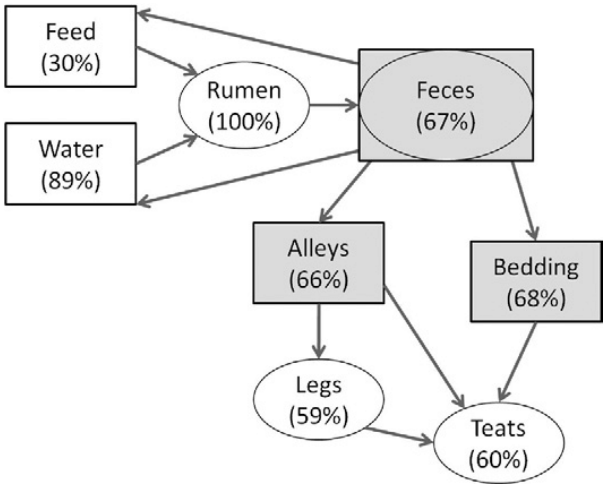
lorna.macpherson@sac.co.uk; 07760 990901
mark.bowsher-gibbs@sac.co.uk; 0131 603 7533

Dealing with Klebsiella Mastitis

Klebsiella mastitis is one of the lesser-known bacterial causes of mastitis but is becoming increasingly more common and can be tricky to treat and eliminate from a herd. Klebsiella is similar to E. coli infections in that it is primarily an environmental pathogen and can be fatal, but in some instances the pathogen can also be spread contagiously in the parlour. It is a faecal coliform and grows well in organic material.

It is often associated with wood-based bedding products but can be found in sand and green manure bedding. In fact, even healthy cows shed Klebsiella in their faeces, so any bedding contaminated with manure is a potential source of infection, as is milking equipment, water sources and other animals.

The prevalence of Klebsiella in different sites in and around the cow



Source: Zadoks et al, 2011

Once a cow has had a clinical Klebsiella mastitis case she is more likely to develop chronic mastitis. Repeat cases may occur with high cell counts although the milk may be normal in appearance. The bacteria damage the secretory tissue of the udder, deep in the mammary gland, meaning that infections can be hard to treat, become chronic and result in a long-term reduction in milk yield. Affected cows become very sick and tend to go downhill rapidly. It is rare for milk production in these cows to return to pre-infection levels and over 50% of clinically affected cows are likely to be culled.

Klebsiella has a poor response to treatment, with infections long lasting and cure rates only around 50%. Severe cases should be treated similarly to E.coli infections, with fluid therapy, anti-inflammatories and systemic antimicrobial therapy.

Cows infected with Klebsiella may become chronic and subclinical and so it is important that these cows are identified and managed carefully to reduce transmission within the herd. Recommended control measures are as follows:

- Review the cell count history of cows that have had clinical cases. A chronic infection may be identified with one or more previous monthly recordings with a cell count greater than 200,000/ml. Discuss treatment options for these cows with your vet.
- Infected cows should be milked last and chronically infected cows should be culled.
- Use both a pre- and post-milking teat disinfection product and adhere to good milking hygiene protocols to minimise cow-to-cow transmission via milking equipment.
- Fore strip all cows prior to milking for early detection of new mastitis cases and send off milk samples for pathogen identification. Early detection and prompt treatment is important to minimise the spread of infection.
- Keep the environment as dry and clean as possible with regular scraping of passageways and holding areas.
- Consider the type of bedding used.

Klebsiella is not always easy to detect in milk samples. The bacteria do not always grow well in milk, where they reproduce very quickly and die off rapidly. Once the coliforms die off, they release a toxin which causes the clinical signs of mastitis, at which point the bacteria is dead and so a “no growth” result may result from a milk sample culture. Therefore, a high proportion of “no growth” milk samples may be due to coliform mastitis, which could potentially be Klebsiella. This is where PCR analysis is a benefit. PCR detects the DNA of

bacteria and does not rely on the bacteria growing on a culture plate.

Reference:
Zadoks, R.N., Griffiths, H.M., Munoz, M.A., Ahlstrom, C., Bennett, G.J., Thomas, E. and Schukken, Y.H. 2011. Sources of Klebsiella and Raoultella species on dairy farms: be careful where you walk. Journal of Dairy Science, 94(2):1045-51.

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

Calf House Considerations

With the importance of a calf's early development being well recognised, many consider improvements to calf accommodation as a worthwhile investment. Whether updating existing facilities or planning a completely new build, there are a number of things that should be taken into consideration.

Space

It is important to have enough space for the maximum number of calves you need to accommodate, rather than the average. Obviously, this will be dependent on calving pattern. The size of a shed will not only be determined by the number of calves, but also by the age the calf will be kept to in that shed.

Area requirements for calves of different ages

Weight of calf (kg)	Approximate age (months)	Minimum (statutory) area (m^2/calf)	Recommended area (m^2/calf)
45	0	1.5	2.0
46-99	0-2	1.5	3.0
100-149	3-5	1.5	4.0
150-199	5-7	2.0	5.0
>200	7+	3.0	6.0

Source: AHDB

One option for transitioning calves from individual pens to group housing is to rearrange individual pens into larger pens. Once the calves are old enough to mix, the individual pens are removed giving them the run of the whole pen. This will reduce stress by keeping calf movements and mixing of social groups to a minimum. If planning this system, take into account the maximum size of pen required.

Group sizes

It is recommended that calves should not be in groups larger than 12 and with no more than 30 sharing the same airspace. The use of automated calf feeders has seen increased group sizes becoming more common. Separate airspaces can be created by using floor to ceiling divisions.

Ventilation

Good ventilation will remove moist, pathogen laden, warm air and replace it with cooler fresh air. In a well-designed building, the heat from the stock will drive the "stack effect" that will see the warm air exit through the ridge (outlet) while drawing in the fresh air through the inlets on the side of the building. Smaller calves do not produce enough heat to create a stack effect so mechanical ventilation can help improve air quality. This can be especially useful when adapting older buildings, where creating more inlet is difficult.

While the cost of installing mechanical ventilation may be off-putting, it does create consistent ventilation and is not dependent on weather conditions.

Example of mechanical ventilation

Calves with bovine respiratory disease will go on to produce less milk as a heifer. One study showed that calves with a 3cm or larger lung lesion in their first 56 days gave 500 litres less milk in their first lactation (Dunn et al, 2018).

Lesions of around 3cm are unlikely to affect the calf's survival. However, at a 30ppl milk price, every calf with a lesion of this size would cost the business £150. If mechanical ventilation prevented bovine respiratory disease in one calf per month, the annual saving would be £1,800.

When designing a new shed, keep in mind that a bigger shed is not necessarily a better ventilated shed. Air movement is more important than air volume. This principle is why calf hutches can be very successful, although, sometimes not as comfortable for the calf feeder! For more on ventilation see https://www.fas.scot/publication/technical-note-tn689-cattle-housing-ventilation/

Drainage

Calves must have a dry, clean bed. This will be assisted by a 1 in 20 (5%) fall from the back to the front of the pen, where there should be a drain to take any liquid away. This should also be the case for concrete areas used for hutches. It is often reported that problems with hutches are due to where they are situated.

If using an automatic calf feeder, the area around the feed station will be particularly damp due to urine and the cleaning cycle of the feeder. Consider a slatted area at this point. Keep moisture to a minimum by not washing out buckets and other calf feeding utensils in the shed. In a new build, consider a separate room for feed preparation.

Hygiene

Make sure all surfaces can be easily cleaned and disinfected. If adapting older buildings, make all floors and walls smooth and unable to harbour dirt. Using fibreglass cladding, similar to that used in milking parlours, can achieve this result.

Wash out the shed when empty if possible. The use of a steam cleaner will help eliminate pathogens and reduce drying times if washing has to be done when some calves are still in the shed. However, any high-pressure washing can throw pathogens into the air allowing them to be breathed in by other stock present.

Be aware that not all disinfectants are suitable for all pathogens, and some are only effective after a certain contact time. If you are having a particular problem, consult your vet to identify the pathogen, so that an appropriate disinfectant can be used.

Reference:
Dunn, T.R., Ollivett, T.L., Renaud, D.L., Leslie, K.E., LeBlanc, S.J., Duffield, T.F. and Kelton, D.F. 2018. The effect of lung consolidation, as determined by ultrasonography, on first-lactation milk production in Holstein dairy calves. Journal of Dairy Science, 101, pp5405-5410.

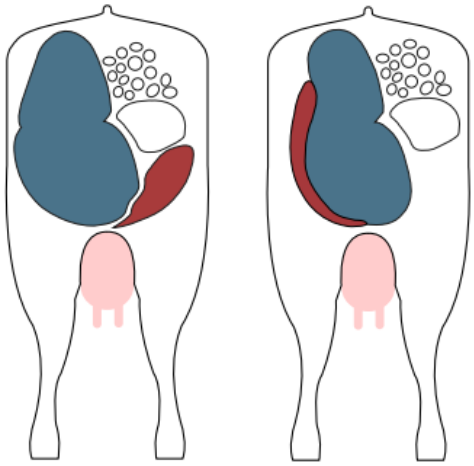
alasdair.scott@sac.co.uk; 01555 662562

A Displaced Abomasum: How Does it Happen?

The fourth and final compartment of a ruminant's stomach is the abomasum which is considered the "true stomach". The abomasum is like a carnivore's stomach which chemically digests feed rather than microbial fermentation of feed like in the rumen. Typically, the abomasum has a pH of 3.5 - 4.0 due to the presence of hydrochloric acid which aids the breakdown of protein from the feed and microbial protein.

The abomasum normally lies on the bottom of the abdomen however it can become displaced either to the left or the right. Post-calving is a period where a displaced abomasum is most likely to occur due to the empty uterus and potential low rumen fill which creates space for the abomasum to float from its usual position to the left-hand side of the rumen as seen below.

Left displaced abomasum



Seen from behind: Left: normal position of rumen (blue) and abomasum (red). Right: position during an LDA. Source: AHDB Dairy.

Breeds that yield high volumes of milk are more prone to LDAs including Holstein cows due to the depth of their abdomens.

Body condition can play a role in the risk of LDAs with both cows over a body condition score of 3.5

or below 2.5 at risk. It is important to remember that if your cows are over 3.5 at calving, dry matter intakes will be lower, so these cows have a higher risk of ketosis and LDAs post-calving. Transition management plays a key role in reducing the risk of LDAs. During the dry period gaining condition should be avoided and post-calving losing condition should be minimised to 0.5 of a condition score. Feeding low energy diets during the dry period can aid rumen fill without there being an oversupply of energy to the cow. Similarly, keeping group changes to a minimum pre-calving can reduce the risk of LDAs as moving cows into a new group can change the social hierarchy, affecting feeding behaviour and resulting in lower rumen fill.

Multiparous cows are more prone to LDAs than first time calvers, with the LDA typically occurring within the first month post-calving. Signs to look out for in cows with a LDA include reduced milk yield or sudden drop in milk yield, reduced rumination, dullness, mild diarrhoea, and refusal of concentrates if fed in the parlour. Cows fed a total mixed ration may be seen sorting the feed to consume the forage particles of the ration, leaving the concentrate behind. If you notice any of these signs, it is important to consult your veterinarian to confirm diagnosis and to start treatment.

During lactation, if a cow has reoccurring milk fever or ketosis, then she may be more susceptible to a LDA due to it filling with gas as the abomasum is not contracting properly. A right displaced abomasum tends to be less common however it is more life threatening to the cow as it can become twisted.

Both left and right displaced abomasum's have an initial cost factor of a veterinarian visit to diagnosis and provide treatment, which may cost between £200 - £300. However, there are hidden costs which include the loss of milk during the period of her displaced abomasum, as well as the cow not reaching her full potential for milk at peak lactation post-treatment. Fertility performance is impacted in cows that have previously suffered from a displaced abomasum, resulting in a longer calving to conception interval and increased lactation length. Due to the loss of milk and reduced reproductive performance, cows are more likely to be culled at an earlier age. All these factors significantly increase the cost of a displaced abomasum in a dairy cow.

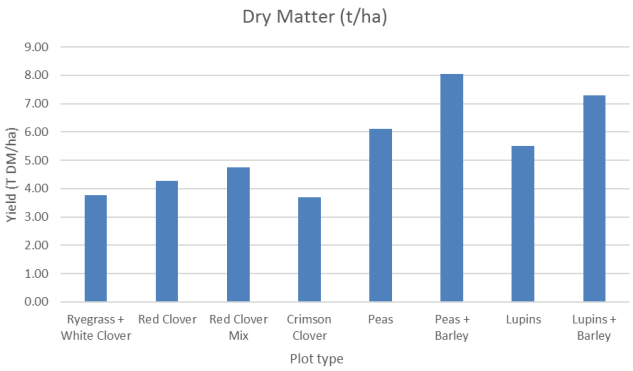
cara.campbell@sac.co.uk; 01586 552502

Alternative Forages – Results from a Demonstration in South West Scotland

As markets and consumer expectations of agriculture change, this will likely affect some of the concentrate feeds, especially components such as soya, that are a staple of dairy cow diets. However, there is still a demand for protein. If more of this can be grown on farm there is less reliance on imported protein sources, reducing the carbon footprint of the feed as well as limiting exposure to price fluctuations from imported feeds i.e. soya from South America. Additionally, more distillery grains, a traditional high protein feed, are now being used in anaerobic digesters and the resultant digestate is too low in energy to be used as a feed for cattle. Forage proteins such as white clover and lucerne have been proven to improve feed intake, feed conversion efficiency and increase productivity among ruminants, therefore could other crops and mixtures of crops be used to provide this protein?

As part of an EU project, Legumes Translated (https://www.legumestranslated.eu/), a selection of more novel crops were grown in demonstration plots at the SRUC Barony campus during 2019 to assess the yield and investigate the ensiled quality. These were red clover, a red clover/grass mixture, lupins and a lupin/barley mixture, forage pea, forage pea/barley mixture and crimson clover all compared with a perennial ryegrass/white clover mixture. All the plots were cut at the same time and the dry matter (DM) calculated (see graph below). Additionally, samples of the plots were ensiled in three litre screw topped jars for five weeks and then analysed.

Initial dry matter (t/ha) results from the demonstration plots



The results of the initial dry matter analysis showed that the pea/barley mixture gave the greatest amount of DM with 8T/ha, with the lupins /barley providing 7.3T/ha, compared to the ryegrass/white clover at 3.8T/ha.

The advantage of the pea/barley and the lupin/barley mixtures was not only did they provide the additional protein but extra energy from the barley. Although the results from the silage analysis showed even though the peas/barley mixture and the lupins/barley still gave the greater DM (g/kg) it was the lupins at 19% crude protein on a DM basis that was most similar to the ryegrass/white clover, along with the red clover, red clover grass mixture and crimson clover for crude protein (18 to 20%). This was also true for the metabolisable energy (ME) content with the lupins providing just over 10MJ of ME/kg DM compared to the grass and white clover that provided 11MJ of ME/kg DM.

The further consideration of the clovers and the grass/clover mixtures is that they would provide a number of silage cuts each year and not just the one cut that would be obtained with the lupins and peas. Therefore, even while the lupins and peas provided the greater yield in the demonstration plots the estimated accumulated yield should be considered as red clovers can produce up to 15T/ha DM and crimson clover 10T/ha DM annually.

While these more novel crops have shown advantages in yields it can be the other additional benefits that are not recognised in the growing season such as how they affect the next crop. The fixation of nitrogen by the legume species allows improved growth for the next crop in rotation or a reduction in fertiliser use. It has been estimated that red clover can provide 150 to 250 kg of N/ha and crimson clover, that can tolerate more acidic soils than red clover, can fix 60 to 150 kg N/ha. Other advantages are the longer tap roots that can utilise nutrients from deeper in the soil and sequester carbon to a lower depth.

However, the overall feed quality of these novel crops also needs to be considered, whether fed as a forage or just the combined grain, as it is known that peas are low in methionine. Peas are fine as a substitute for soya in low yielding cows but in higher yielding cows many trials in the US have shown that the more peas that are included in the ration at the expense of soya, the more the DMI, milk yield and milk solids decreased. Supplementation with methionine can help in this situation.

As climate change continues and the conditions for these crops become more favourable, we may well be considering these novel crops as standard forages in the coming years to provide more protein grown on farm.

paul.hargreaves@sruc.ac.uk; 01387 263961

Eliminating Horned Calves in the Dairy Herd

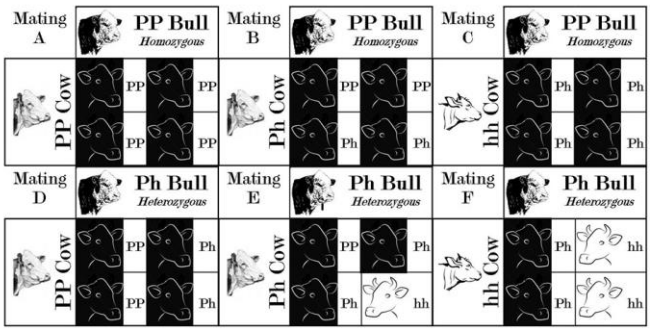
In the July issue of Milk Manager News, the issue of disbudding calves and the genetics for polledness were discussed. Here we examine how to permanently eliminate the need for disbudding calves.

Remember, every animal has two copies of a gene, one from its dam and one from its sire. As the horned gene is recessive, a horned calf will have two copies of the horned recessive gene, one copy from its sire and one from its dam (with the calf being termed homozygous horned). If the calf just had one recessive horned gene and the other the dominant polled gene, it would be heterozygous polled.

To be guaranteed a polled calf, a homozygous polled bull should be used. However, the influence of the genetic status of the dam can also have an impact further down the line when that calf (assuming it's a heifer) goes on to produce her own calf. If the dam carries one copy of the gene for being horned, the resulting calf has a 50% chance of carrying the horned gene and will be

heterozygous polled. As long as that calf is mated to a homozygous bull, its offspring will be polled. However, if it was mated to a heterozygous polled bull, there is a 25% that the offspring will be horned:

The effect of sire and dam genetic status on the chances of calves being horned or polled



Source: http://wirruna.com/understanding-the-poll-gene/

Therefore, is it the genetic status of the bull that is crucial in selection. A bull may be polled but if he carries the recessive horned gene (known as heterozygous polled) and is mated with an animal that also carries the recessive horned gene, there is a risk that 1 in 4 horned offspring will be born. In this instance, it is crucial that the genetic status of the dam is known – she must be homozygous polled to guarantee a polled calf. DNA testing at a cost of around £30 a calf can be used to identify whether animals carry the horned gene. However, the bottom line is the only way to guarantee the elimination of horned calves in the herd is for all breeding animals to be bred to homozygous polled bulls.

Farmers will only focus their efforts on breeding for polledness to eliminate disbudding if the bulls available are of suitable genetic merit that their use continues to improve the overall genetic merit and performance of the herd. Breeding companies are starting to focus efforts on the availability of bulls that are not only homozygous polled but also have good genetic indexes for the desirable production, health, fertility, and longevity traits. There are now homozygous Holstein bulls available from various breeding companies with a £PLI over 700. With the labour, cost and welfare implications of disbudding calves, closer attention to the use of polled genetics should be given when making breeding decisions, especially when the quality and number of homozygous polled bulls available is only going to increase going forward.

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

Dates for your Diary

- 14th September - **Lanarkshire: Growing Grass, Growing Success with Jim Baird**. Nether Affleck Farm, Lanark, South Lanarkshire, ML11 9UJ. Time: 10.30. For more information see https://scottishdairyhub.org.uk/events/lanarkshire-growing-grass-growing-success-with-jim-baird

- 14th September - **Are you Milking your Environment?** On-line event. Time: 19.30. For more information and to book your place please visit: https://www.fas.scot/events/event/are-you-milking-your-environment/

- 15th September - **UK Dairy Day**. The International Centre, Telford, Shropshire, TF3 4JH.

- 22nd September - **Women in Agriculture, Lanarkshire: Cattle Record Keeping Requirements**. On-line event. Time: 19.00. To book your place please visit: https://us06web.zoom.us/meeting/register/tZEvc-6hrjMvEtZP0J0ynYpu85PE2xzRLJ8J

- 22nd - 25th September - **Balmoral Show**. Balmoral Park, Maze Long Kesh, Lisburn, BT27 5RF.

- 29th September - **Lanarkshire: Hillhead Then and Now - final strategic farm meeting**. Hillhead Farm, Covington Road, Biggar, South Lanarkshire, ML12 6NE. Time: 11.00-13.00. To book your place please visit: https://ahdb.org.uk/events/lanarkshire-hillhead-then-and-now-final-strategic-farm-meeting

- 6th October - **The Dairy Show**. The Bath and West Showground. Somerset BA4 6QN.

- 7th October - **The Impact of your Team on your Personal Effectiveness**. On-line event. Time: 11.30. To book your place please visit: https://ahdb.org.uk/events/the-impact-of-your-team-on-your-personal-effectiveness
- 20th October - **How to Generate Income from Woodland Carbon**. On-line event. Time: 20.00. To book your place please visit: https://www.fas.scot/events/event/how-to-generate-income-from-woodland-carbon/

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

Lorna MacPherson (Dairy Consultant)
SAC Consulting Office
Thainstone Agricultural Centre
Inverurie
Aberdeenshire
AB51 5WU
Email: lorna.macpherson@sac.co.uk
Tel: 01467 625385
Mobile: 07760 990901
Fax: 01467 620607

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