Issue 28 | January 2019

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 (2nd January) resulted in a 2.8% increase in the weighted average price across all products, reaching US $2,986/t. This is the 3rd consecutive increase in a row, after months of declining prices, mainly due to New Zealand production being higher than predicted. The 3 biggest movers were butter milk powder, skim milk powder and butter (increasing by 9.3%, 7.9% and 3.9% respectively).

- As UK milk deliveries have remained strong (and processors always having surplus cream, with little milk being sold as whole milk), cream prices have shown the greatest % reduction in price of dairy commodities during December, ranging from £1,500/t to £1,780/t.

Commodity	Dec 2018 £/T	Nov 2018 £/T	% Difference Monthly	Dec 2017 £/T	% Diff 2018-2017
Bulk Cream	£1,700	£1,830	-7	£1,800	-6
Butter	£3,680	£3,750	-2	£4,000	-8
SMP	£1,500	£1,420	+6	£1,230	+22
Mild Cheddar	£2,850	£2,860	0	£3,000	-5

Source: AHDB Dairy - based on trade agreed from 1st to 21st Dec 2018 (including sales agreed for 24th-28th Dec). Note these prices are indicative of values achieved over the reporting period for spot trade (excludes contracted prices)

- Butter prices continue to decline, with demand for product being relatively weak. However, throughout December, Sterling dropped in value which helped support prices. The increase in skim milk powder (SMP) was mainly down to the weaker currency.

- SMP prices are on the up and this is in part due to the amount of intervention stocks which have greatly reduced from 380,000t in March 2018 to now only 100,000t. There are two more tenders due in January which will hopefully get rid of the remaining stocks.

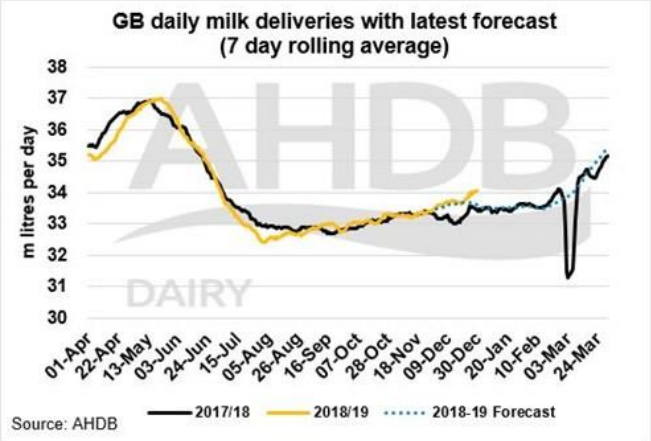
- There has been very little movement in the Actual Milk Price Equivalent (AMPE) and Milk for Cheese Value Equivalent (MCVE) from November to December, with a marginal increase in AMPE, mainly due to SMP rising from 9.24ppl to 9.98ppl. MCVE dropped by 0.02ppl despite a rise in whey powder (2.30 to 2.42ppl), due to small a drop in cheddar (27.29 to 27.18ppl) and whey butter (1.47 to 1.44ppl).

	Dec 2018	Nov 2018	12 months previously	Net Amount less 2ppl Haulage – DEC 18
AMPE	27.44ppl	27.01ppl	26.38ppl	*25.44ppl*
MCVE	31.04ppl	31.06ppl	31.87ppl	*29.04ppl*

Source: AHDB Dairy

UK Milk Deliveries and Global Production

- UK milk deliveries for the week ending 29th December were up 0.7% on the previous week and were 1.8% higher than the same week last year, equivalent to an extra 600,000 litres.



- World milk supplies have been above 2017 production levels for the whole of 2018 (see graph below).

The 2018 tracker is based on monthly milk production from the *EU-28, Argentina, Australia, New Zealand and the US over the previous 5 years to produce an average milk profile. This gives a reference on which to base projected output.*

- The latest monthly deliveries for October 2018 averaged 818 million litres/day, a 0.7% increase from the previous October (813

million litres/day). New Zealand has shown the most growth, with production nearly 6% up on October last year. In contrast, deliveries from the EU-28 are back about 0.1% for October compared to last year. Key milk producing regions of the EU (France, Germany and Holland) were down by 147 million litres combined. However, Ireland produced 20% more milk in October 2018 compared to the same month last year, which accounted for an additional 100 million litres.

- Growth in the US has slowed and farmers have been struggling with producing milk well below the cost of production. In the state of Wisconsin, roughly 600 producers quit the industry in 2018. Milk production in the US was running at about 3% above market requirements (both domestically and for the export markets) in 2018. The average cost of production was equivalent to 30ppl and milk price ranged from 23.8ppl to 28ppl over the last 12 months.

Monthly Price Movements for January 2019

Commodity Produced	Company Contract	Price Change from Dec 2018	Standard Litre Price Jan 2019
Liquid & Cheese	**Arla Farmers UK**	*-1.33ppl*	29.06ppl liquid 30.24ppl manufacture
Liquid & Cheese	**Arla Direct**	*-1ppl*	27.75ppl liquid 28.92ppl manufacture
Liquid & Brokered Milk	**First Milk Mainland Scotland**	*-0.75ppl*	27.75ppl liquid 28.69ppl manufacture
Cheese	**Fresh Milk Company (Lactalis)**	*-1.5ppl*	27.5ppl liquid 28.5ppl manufacture
Liquid & Manufacture	**Grahams**	*-1ppl*	27.50ppl
Liquid & Manufacture	**Müller Direct**	*-1ppl*	28ppl (includes 0.5ppl premium)
Liquid & Manufacture	**Müller (Co-op)**	*No change*	30.04ppl
Liquid & Manufacture	**Müller (Tesco)**	*No change*	31.24ppl
Liquid, Powder & Brokered	**Yew Tree Dairies**	*-1ppl*	27.50ppl Standard A litre price

Other News

- Producers with aligned contracts are faring better in the New Year with M&S and Sainsbury's increasing their farm-gate milk price from January 2019. M&S producers are to receive a 1.41pl increase, bringing their liquid standard litre to 32.82ppl. This interim change (outwith the standard April/October pricing window) is in response to the company's Pledge Model which follows monthly changes in feed, fertiliser, soil improvers, energy, labour and lubricants. If the +/-1.1ppl threshold is exceeded, an immediate price move is triggered.

- Sainsbury's price increase of 0.56ppl brings the liquid standard litre up to 30.41ppl for Müller SDDG suppliers and 30.29ppl for Arla SDDG suppliers (the lower prices takes into account the company's haulage cost of 0.12ppl). The 0.56ppl comes from a 0.48ppl increase in feed costs and 0.04ppl for increases in both fuel and nitrogen fertiliser.

- While Lactalis have come out with the biggest milk price drop across Scotland's milk buyers for January, it has guaranteed to hold this price until 1st April 2019.

- From February, the TSDG is increasing its milk price by 0.37ppl in response to its latest cost tracker review (from April 2018 to March 2019). Müller's TSDG price increases to 31.61ppl and Arla's TSDG price is 31.36ppl. The level of increase is the same but Arla's lower price takes into account their haulage cost.

- From February, the Co-operative Dairy Group's price is down slightly by 0.03ppl to 30.01ppl, based on prices tracked from the TSDG, SDDG and Müller Milk Group Direct.

- With news of some buyers holding the January milk price for February (Müller and Arla), and the last 3 GDT auctions returning positive movements, there is optimism that milk prices could be stabilising in the short-term.

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 19	Feb 19 - Apr 19	May 19 - Oct 19	Nov 19 - Apr 20
Proteins				
Hipro Soya	311.50	311.50	310.50	316.50
Rapeseed Meal	243	243	243	-
Wheat Distillers Pellets	POA maize distillers meal 233	POA	POA	POA
Starch				
Wheat	185	187	May-Jul 189 Aug-Oct 148	170
Barley	178	180	May-Jul 182 Aug-Oct 148	153
Maize	184	185	188	-
Fibre				
Sugar Beet Pulp (10mm)	206	206	211	-
Soya Hulls	163	163	161	166

Source: Straights Direct and Cefetra on 15th January. Barley and wheat prices are based on delivery to central belt (for North-East, deduct £5/t for wheat), courtesy of Julian Bell, Senior Rural Business Consultant, SAC Consulting. Prices do not include seller's margin.

Global News

- The price of soyabeans has firmed slightly in the New Year with crop yields in Brazil being revised downwards due to dry conditions in the central part of the country. Brazil's estimated soyabean crop has been cut by 4mT to 116.25mT by INTL FCStone. In addition, there is some optimism regarding the US trade relations with China, as trade talks between the two countries are due to take place w/c 7th January in Beijing. With the possibility of increased sales of soyabeans to China, fund managers are buying commodities in the hope that a trade deal would benefit both US and global economies.

- Due to the current US government shutdown, several crop reports due to be released by the USDA have been delayed. There have been rumours of large purchases of US soyabeans by China in early January but without USDA export sales reports, this cannot be confirmed. Various quantities have been speculated, with Chinese state-owned firms having bought anywhere between 3 to 15 cargoes, which ranges from 180,000t to 900,000t.

- Excessive rain in Argentina has also helped support soyabean prices and with more rain forecasted, the Argentinian wheat crop could potentially be downgraded in quality and size. Their wheat harvest is almost complete, with about 10% left to harvest of their estimated 19.5mT crop (as of 4th January 2019).

- Higher exports of Russian grain have been announced, with the Russian agriculture ministry raising exports to 42mT, up from 38-39mT previously. Their wheat production figures have also been increased by 2mT to 72mT which may also help curb prices.

UK and Scottish News

- Barley remains hard to source in Scotland due to the lower production, down 128kt on 2017 with limited trading. Feed use of maize in UK animal feed reaches a record high as imported maize use increases in response to high barley and wheat prices. UK cereal output at harvest 2019 is expected to rise sharply due to an increase in winter sown area and so far good growing conditions for winter crops. The UK wheat area is seen 4% higher (+ 74k ha) and the Scottish wheat area is seen 16k ha higher at 116k ha in 2019 according to AHDB. The UK wheat crop could rise 1.5mt to 15.5mt giving the UK the first significant net surplus in 4 years. The Scottish wheat crop could rebound from this year's poor 681kt to 967kt and is likely to lead to lower Scottish wheat prices relative to England and imported cereals such as maize. This is reflected in lower new crop values. There is also expected to be more winter barley and less spring barley in the UK and Scotland. A recovery to at least average yields could see UK and Scottish barley output grow strongly. Therefore expect more competitive local wheat and barley prices from harvest. UK cereal prices will continue to be driven by global factors and world stocks are lower than in recent years. So far no serious world crop problems have emerged and world cereal areas are expected to rise. In the UK our grain prices are also driven by the sterling exchange rate which could move

quickly up or down as we await a conclusion to the Brexit process in parliament.

julian.bell@sac.co.uk, 0131 603 7524
lorna.macpherson@sac.co.uk, 07760 990901

Rumen Fluke – Should we be Worried?

Rumen fluke are common in tropical countries but are becoming more prevalent in temperate countries, being present in many parts of Europe, including the UK, with wetter summers and milder winters. Prevalence in mainland Europe is typically around 20-30% in sheep and cattle, with Ireland being particularly affected; one study found an incidence of about 77% in sheep across the country (Martinez-Ibeas *et al*. 2016). Rumen fluke eggs and adult rumen fluke are also commonly found by SAC Veterinary Laboratories within faecal samples and at post mortem.

Rumen fluke, once mature, are pear shaped and light to bright red in colour, with a length of around 1cm (see photo below). They are found attached to the surface of the rumen and reticulum where they feed. Their eggs are not dissimilar to that of liver fluke eggs, apart from they are clear in colour as opposed to yellow.

Mature Rumen Fluke in the Rumen of a Cow

Source: The Dairy Site: http://www.thedairysite.com/articles/3410/control-of-liver-fluke-and-rumen-fluke-infection-in-sheep-and-cattle-in-northern-ireland/

The life cycle of rumen fluke typically lasts between three and four months and is fairly similar to that of liver fluke. The adult rumen fluke will shed eggs which will be excreted by the infected animal onto pasture. The eggs then hatch and the larvae infect their intermediate host, the mud snail (Galba truncatula), which is the same as for liver fluke. The larvae develop within the intermediate host and, after being shed from the snails, will then encyst themselves on to pasture or other hard surfaces. In addition, they can also encyst within water. They further develop during this time whilst waiting to be ingested by a grazing animal. Once they are ingested, they will attach themselves within the small intestine and feed off the host for up to six weeks. They will then migrate up the digestive tract to the rumen and reticulum and attach themselves to feed whilst shedding eggs.

Animal performance tends not to be affected by rumen fluke. However, its true effect on the animal may be masked as it is usually present with other parasites (usually liver fluke). It is often diagnosed from faecal samples, port mortem of dead animals or abattoir inspections. Rumen fluke symptoms only seem to occur in cases where there are high numbers of the immature parasites. The immature rumen fluke cause the most damage during their migration to the rumen and reticulum, leading to symptoms in cattle such as watery scour, poor appetite, anaemia and general lethargy. Youngstock, particularly calves, are the most affected by a high disease pressure and in some cases calves may die. This is currently rare and has not been reported in Scotland.

Risk factors are the same as those for liver fluke, which is due to them sharing the same intermediate host. Climate and rainfall have a huge influence, with the mud snail thriving in warm and wet conditions (they are resistant to drought and frost), with fluke risk being highest in the autumn. Main risk factors include buying in cattle, presence of sheep on the farm (reservoir of infection) and the length of the grazing season. Ideally avoid grazing wet/high risk pastures in the autumn.

Treatment of rumen fluke is usually under veterinarian prescription. It is important to adhere to milk withdrawal dates on animal medicine labels as milk companies do carry out spot checks on milk for animal medicine residues. Not adhering to

withdrawal dates may have serious consequences.

Reference: Martinez-Ibeas, A. M. et al. 2016. Rumen fluke in Irish sheep: prevalence, risk factors and molecular identification of two paramphistome species. BMC Veterinary Research 12 (1): 143.

katie.vance@sac.co.uk, 01776 702649

Success Rates with Sexed Semen

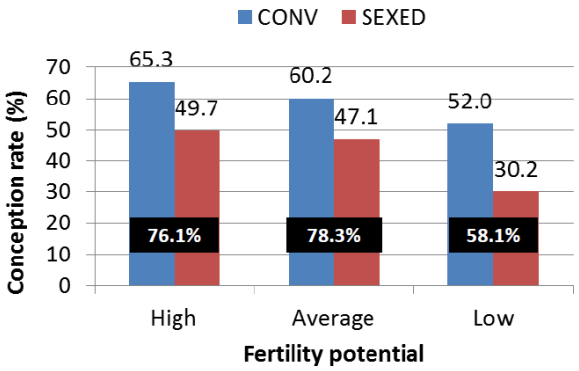
Sexed semen has been available for use in the UK for around 10 years, and despite over 90% reliability on the sex of the calf being a heifer, conception rates are lower than that for conventional semen. Sexing Technologies Inc. (which owns Cogent) are the predominant producers of sexed semen globally and have reported that relative conception rates with sexed semen have improved from around 65% in 2012 to around 88% in 2015. This has been due to improved handling processes, improved equipment and increasing the number of sperm per straw from 2 million to 4 million, which has resulted in a new generation of sexed semen known as ULTRA 4M.

When comparing conventional and sexed semen, the average Conception Rate (CR) is often expressed as a percentage of the mean CR achieved with conventional semen, and is known as the Relative Conception Rate. For example, if the conventional CR is 60%, sexed semen would need to achieve 54% to give a relative conception rate of 90% (54/60 x 100).

In 2018, a study was carried out by Teagasc and the Irish Cattle Breeding Federation across 8000 cows on 160 herds, the aim being to see if sexed semen could achieve a relative conception rate of at least 90% on lactating cows.

Each herd was given 30 straws of conventional semen and 30 straws of sexed, used randomly on cows in their 1st to 3rd lactations and over 60 days in milk (DIM). The following graph shows that across the study it was not possible to achieve a relative conception rate of 90% or over. However, when the herds were ranked on relative conception rate, 1/3 had achieved a figure of over 90%, with some even exceeding 100%. Sexed semen has a shorter lifespan than conventional semen and so the timing of AI, 14 – 20h after standing heat is more crucial with sexed semen to ensure good conception rates. Researchers believe that those farms achieving high conception rates from sexed semen have heat detection protocols which are more suited to the use of sexed semen. This is backed up by research from the US, where relative conception rates of 90% are reported using fixed time AI synchronisation protocols.

Effect of DIM and Lactation Number on Success Rates with Conventional and Sexed Semen



- *High Fertility Potential = More than 70 DIM, lactation 2 or less and a Fertility Index of more than 60 euros.*
- *Low Fertility Potential = Less than 70 DIM, lactation 3 or over and a Fertility Index of less than 60 euros.*
- *Average Fertility Potential = All other combinations of DIM, lactation number and Fertility Index.*

The Fertility Index is a sub-index of the Irish Estimated Breeding Index (EBI).

The results of this study appear to show that ULTRA 4M sexed semen has improved the conception rates from early sexed semen, but on most farms, using standard once daily AI protocols, conception rates still struggle to match those of conventional semen. However, sexed semen has a massive role to play in the future of our dairy industry, both by increasing the speed of genetic gain and by reducing the number of dairy bull calves. With the correct heat detection protocols, use of sexed semen can achieve excellent results.

Reference: "What Role Can Sexed Semen Play?" Teagasc, Moorepark and Irish Cattle Breeding Federation.

alison.clark@sac.co.uk, 01776 702649

Genomic Selection – What is it and is it for me?

Genomic selection has been around for a number of years in the UK with tests for farmers becoming available in 2013. Traditional breeding programmes have focused mainly on estimated breeding values (EBVs) which have come from progeny testing of sires over a number of years. Genomic selection involves taking DNA samples from young animals and selecting animals who's DNA contains specific markers for desired traits, reducing the need for years of progeny testing.

Genomic selection in the dairy herd has been found to increase the rate of genetic improvement by as much as 50%. AHDB Dairy suggested that a rise of 15% in the rate of genetic improvement over 10 years could be worth an extra £20 million to the industry. Therefore, it is something that many farmers should consider now to accelerate genetic improvement in their herds. The rate of genetic change is mainly affected by the generation interval, which is the average age of each of the progeny's parents at birth. Younger parents tend to pass on more of their desirable genes to their offspring compared with older parents.

The shortest the generation interval can be is the age of sexual maturity plus gestation. If genomic selection is used, desired traits can be identified from a young age, allowing younger bulls to be used for breeding without waiting years for progeny testing results. For example, a bull selected using genomic selection methods could be used from 1 year of age as opposed to a traditionally selected bull at 4.5 years of age.

An animal's DNA can be genomically evaluated by a number of testing methods. Traditionally a tissue tag sample or a hair sample would be taken from the calf which is to be tested. Newer techniques are being developed constantly in order to make the process easier and not leave additional tags in the calf. One of these newer methods involves using equipment which takes a very small ear notch from the calf. Once samples have been taken they are sent off for genomic evaluation. The sample DNA is extracted and compared with the DNA of the reference population. The reference population consists of a vast array of DNA information collected from bulls which have a lot of proven daughters. Genetic information for the reference population is often shared with the United States, Canada and Italy as these countries all have similar breeding goals to the UK. The bigger the reference population, the more accurate selection on the desired traits will be. There is sufficient DNA reference population data from Holstein, Friesian, Guernsey, Ayrshire and Jersey breeds.

The DNA samples collected are screened against the specific breed reference population to look for specific gene markers known as single nucleotide polymorphisms (SNPs). The combination of these markers on the animal's genome compared with phenotypic information collected from progeny testing of the reference population contribute to specific traits being identified. Therefore high genetic merit animals can be identified before any progeny testing is carried out. There is genomic information for a vast array of traits from production traits such as milk yield and composition, to health traits such as fertility and somatic cell count (SCC), to confirmation traits such as legs and feet. The accuracy of genomic selection for production traits is as high as 0.8 and for health traits 0.7.

There are two types of test which can be selected when sending samples off for genomic evaluation. Low density testing looks at fewer SNPs but gives all the breeding values required for heifers sired by artificial insemination (AI) bulls. If you are testing potential bulls or looking for additional traits such as polledness or coat colour, a high density test should be used as these look at a wider range of SNPs. Jersey and Ayrshire females should also be tested with a high density test as the reference population is still currently quite small.

Genomic selection of heifers has the potential to save farmers the cost of rearing heifers which may have undesirable traits. A number of farmers are now beginning to genomically test replacement heifers at weaning and only keep those with the desirable traits. Results from genomic evaluations normally take from between six to eight weeks to come back and it is recommended that all animals are tested as young as possible, especially before they are ready for their first service.

katie.vance@sac.co.uk, 01776 702649

Precision Technology for Early Disease Detection

As we struggle with labour shortages on Scottish dairy farms, the use of precision technologies are becoming more useful in the early detection of disease in dairy cows. Activity monitors have been widely used for heat detection for many years, but, by tracking levels of cow activity, they now have the ability to provide a useful tool for indicating the early onset of disease. Often these devices can pick up changes in behaviour days before any clinical signs are evident.

Mastitis

Dairy cows with mastitis, are more idle, spending less time eating, ruminating, lying and grooming. However, due to high variability, feeding behaviour is currently not a strong predictor of mastitis. Researchers at Ohio State University measured lying time and length of lying time using leg accelerometers. They found that the length of time the cow lay for reduced by 14 minutes, 3 days before the onset of clinical mastitis.

Ketosis

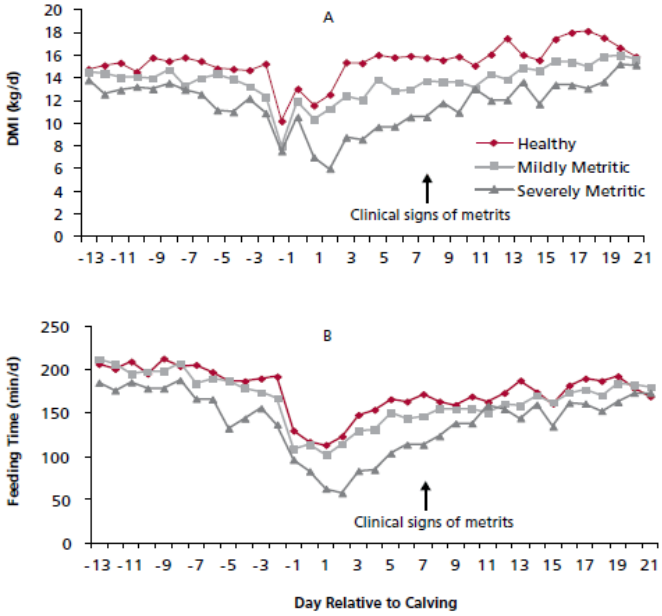
Rumination time, activity levels and milk yield can be used to detect ketosis post-calving. Israeli researchers found that the prevalence of ketosis post-calving was around 15%. They found that lying time for cows with ketosis was 40 minutes per day greater than for those without ketosis and milk yield was also reduced by about 4kg. There were some concerns about the sensitivity of the technologies to pick up these subtle differences and more work is required on this. Other work looking at early detection of ketosis has shown a reduction in feed intake 3 days before any visual signs are evident and a significant increase in standing time (up to 20%) in the last week of the dry period.

Metritis

Ohio State University looked at the lying time for cows with metritis compared to healthy cows. Cows with metritis were equally active at times of high activity for the herd such as milking and feeding, but showed lower levels of activity throughout the rest of the day. Those cows with metritis also had increased lying times. The results of this study suggest that monitoring lying time and activity may have the potential for metritis detection.

Research at the University of British Columbia also showed that cows that developed metritis 7 to 9 days post-calving, spent less time feeding prior to calving (see following graphs).

Dry Matter Intake and Feeding Time in Relation to Clinical Signs of Metritis



Source: Huzzey et al, 2007

Lameness

There is a lot of work going on in early detection of lameness and technology already exists on farm for monitoring lameness. However, behavioural changes also occur long before visual signs become apparent. One study showed that cows with acute lameness spent on average 19 minutes less each day at the feed fence for 7 days prior to visual signs of lameness.

With all these cases, it is not clear whether behavioural changes are a cause or effect of an emerging disease, e.g. is the disease caused by a reduction in feed intake or is that an early effect of the disease? Nevertheless, changes in behaviour are very difficult to pick up in individual animals and would require animals to be watched or recorded all day, which is not practical. Therefore, there is no doubt that precision technologies have a role to play on modern dairy farms and their capabilities have gone well beyond heat detection. They will never be a replacement for excellent stockmanship, but they are a useful aid for early detection of subclinical illness. This will enable a proactive treatment plan to be put in place allowing

quicker recovery, improved animal welfare and reduced economic losses.

References:
The Future of Disease Detection: Should you Check the Cow or Check the Computer? Sterrett, A. and Bewley, J. University of Kentucky College of Agriculture. https://afs.ca.uky.edu/dairy/future-disease-detection-should-you-check-cow-or-check-computer

Huzzey, J.M., Veira, D.M., Weary, D.M. & von Keyserlingk, M.A.G. 2007. Prepartum behavior and dry matter intake identify dairy cows at risk for metritis. Journal of Dairy Science. 90: 3220–3233.

alison.clark@sac.co.uk, 01776 702649

Dairying in California

I was fortunate enough to be selected to go on the SAYFC Agri and Rural Affairs Study Tour to California in November 2018. Our group of 18 travelled around the state looking at a large variety of crops and processing facilities. Californian dairies average around 1100 cows producing 10,500kg/cow.

Two of the farms visited were dairy farms, and a day was also spent at the first California Dairy Sustainability Summit. This was a fantastic gathering of farmers and industry leaders from across the state to discuss the future of dairying in California. A great deal of pressure is being exerted on dairy farms by those in the cities who see them as wasteful and bad for the environment. However, sustainability cannot just be a narrow view of the environment, it must also include diet and social sustainability. Dr Frank Mitloehner (Professor and Air Quality Specialist, UC Davis Department of Animal Science) gave a fantastic talk on debunking many of the myths around methane emissions, and how that 80% of livestock methane emissions come from the developing world. California is driving down emissions by giving grants to fit AD plants to dairy farms, and to convert diesel engine vehicles to run on biogas.

The first dairy farm visit was to Jones Dairy Farm, near Turlock, where they run 800 cows. Two Delaval VMS robots were installed in January 2018 to milk 100 cows, while the remainder are milked through a flat level parlour, taking 20 hours per day. A further 8 robots will be installed in the coming years. This is to improve cow comfort and help ease the labour shortage issue. Eleven people are employed on the farm. The farm would historically have several people a week coming looking for work, now it is only 1 or 2 a month. A neighbour is going to fit 110 robots to milk 8000 cows due to a lack of labour. The herd, compromised of 45% heifers, is averaging 46.8kg per day.

Cows are grouped according to stage of lactation. Fresh cows are milked 4 times a day, the main herd 3 times a day and late cows twice a day. Cows are on deep bed cubicles, bedded with almond hulls. They were very clean and looked very healthy. No hormones are used.

The TMR is based around maize silage, wheat silage and alfalfa hay, with maize distillers, maize gluten, cotton seed, almond hulls and minerals. The large amount of by-products available in California keeps dairying financially sustainable. Rations are altered every 2 weeks based on the price of raw materials and cow performance. Maize is grown on all dairy farms in the state. Once harvested, the ground is planted in winter wheat for wholecrop before going back into maize. This double cropping system allows dairies to compete with the high value crops growing in the area.

Dairyland Farms, owned by Bill van Beek, was the other dairy that was visited. Farming 1000 acres, they milk 3000 cows. Having recently purchased another 640 acres they plan to increase to 4000 cows and keep all beef stock to store – they are currently sold at a day old. A 72 point rotary is running 23 hours per day (see photo below). Cows are deep bedded on sand and passages are flood washed. The dry environment means that sand can be piled in the sun to dry before being reused. The farm has an average rainfall of 8 inches and all crops are flood irrigated. Current milk price was $14.50/100lb of milk (around 25ppl), with the cost of production on farm sitting at $16/100lb (28ppl). This is better than many farms in the area and Bill puts this down to good staff and a compact, well laid out steading. Dairyland Farms steading is 56 acres, where there are many farms over 200 acres with the same cow numbers. Twenty-six staff members were on farm and were seen as a key asset. They are all paid above minimum wage and have a role in decision making.

The 72 Point Rotary Parlour at Dairyland Farms, California

California is a massive player in the world stage of dairy production. However, the ever pressing labour shortage, the political threats to irrigation water and tight financial pressures are big issues these farms need to address in order to stay in business.

By Andrew Taylor
Lochhill Farm, Mauchline, Ayrshire.

Dates for your Diary

- 17th January - **Feeding Signals: Feeding Dairy Cows for Health and Production**. High Garphar Farm, Crosshill, South Ayrshire, KA19 7QT, by kind permission of Scott Shearlaw. Time 11.00. To book your place contact: Chris Stockwell 01904 771216 email: chris.stockwell@ahdb.org.uk/ke.events@ahdb.org.uk.
- 29th January - **Grow More - Graze More - Earn More - Take your Paddock Grazing Management to the Next Level.** Linns Farm, Collin, Dumfries, DG1 3SA, by kind permission of Michael Kyle. Time 11.00. To book your place contact: Chris Stockwell 01904 771216 email: chris.stockwell@ahdb.org.uk/ ke.events@ahdb.org.uk.
- 6th February - **Dairy Tech**, Stoneleigh Park, Coventry, West Midlands.
- 7th- 8th February - **NFU Scotland Conference, AGM and Annual Dinner**. Radison Blu Hotel, 301 Argyle St, Glasgow G2 8DL.
- 12th February - **Dairy Leader Development Programme: Change Management and Inspiring Business Growth**. Hetland Hall Hotel, Carrutherstown, Dumfries, DG1 4JX. Time 09.00-17.00. Events organiser: KE Events Hub t: 01904 771216 e: ke.events@ahdb.org.uk
- 9th March - **Borderway UK Dairy Expo 2019**. Borderway Centre, Carlisle, CA1 2RS.
- 12th March - **Dairy Leader Development Programme – Employment and Recruitment**. Hetland Hall Hotel, Carrutherstown, Dumfries, DG1 4JX. Time: 09.00-17.00. Event Organiser: KE Events Hub t: 01904 771216 or email: ke.events@ahdb.org.uk

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