

Issue 20 | December 2017

Milk Manager NEWS



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Advisory
Service**

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Contents

Milk Market Update	1
Global and domestic situation	
Straights Update	2
Cereals and protein prices going forward	
Causes of Cystic Ovaries	3
Influencing factors and prevention	
Why are my Cows not Milking?	4
Areas to investigate	
Genetic and Genomic Improvement in Dairy Cows	6
An example of its power	
Milking the Industry – FAS Panel Night	7
Opinions on the future of dairying in Kintyre	
Salmonella Dublin Bulk Tank Serology Testing	8
Signs of infection and testing procedures	
Dates for your Diary	9
What's on?	
This month's editor:	
Lorna MacPherson	



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Market Update

UK Wholesale Dairy Commodity Market

- Fonterra's recent on-line GDT auction (5th December 2017) resulted in a slight increase of 0.4% in the weighted average price across all products, reaching US \$3,091/t. Despite this positive result, butter was the biggest mover, dropping 11% to \$4,575/t. Cheddar also fell 3.9% to \$3,696/t. Surprisingly, skim milk powder (SMP) rose by 4.7% to \$1,774/t.
- UK wholesale prices for commodities all fell back in November with butter showing the biggest drop of 11%. However, prices are still well above those for the same month last year, with the exception of SMP which is 31% less than November 2016.

Commodity	Nov 2017 £/T	Oct 2017 £/T	% Difference Monthly	Nov 2016 £/T	% Diff 2016-2017
Bulk Cream	2,100	2,180	-4	1,990	6
Butter	4,500	5,050	-11	3,800	18
SMP	1,270	1,350	-6	1,850	-31
Mild Cheddar	3,265	3,365	-3	3,080	6

Source: AHDB Dairy - based on trade agreed from 1st to 27th November 2017. Note these are average prices indicating prices traded across the whole of the past month.

- The market for skim milk powder continues to be under pressure, as there is little demand for product and stocks are high. Prices continue to fall in the UK on the back of the stronger Euro. It is likely that there will be no SMP Intervention available in 2018, given that the EU Commission has failed to shift any of its 400,000t of stock.
- Little butter has been traded over the last month and despite fluctuations in currency, tight butter stocks have somewhat cushioned the fall in price.

	Nov 2017	Oct 2017	12 months previously	Net Amount less 2ppl Haulage – Nov 17
AMPE	29.2ppl	32.7ppl	31.5ppl	27.2ppl
MCVE	34.9ppl	36.6ppl	33.7ppl	32.9ppl

Source: AHDB Dairy

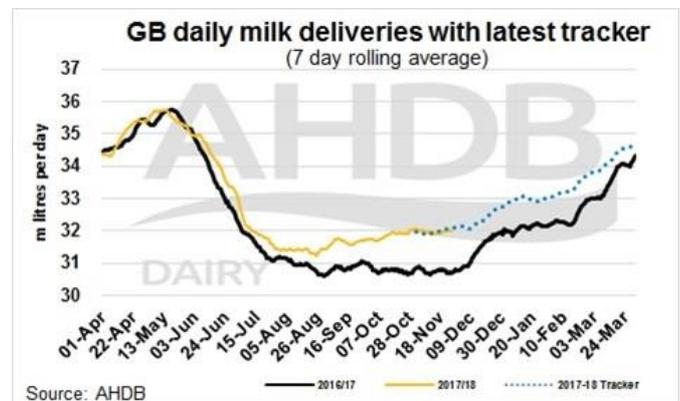
- AMPE dropped a whopping 3.5ppl from October, due to both butter and SMP falling on the UK spot market. At 29.2ppl, this is the

lowest AMPE has been since the spring flush this year.

- Products influencing the value of MCVE all fell, reducing MCVE by 5% from October to 34.9ppl.

UK Milk Deliveries and Global Production

- Milk production in the UK continues to increase for the week ending 25th November 2017, with a 0.1% rise from the previous week. Compared to the same week last year, deliveries are up 4.3% (equivalent to 1.3m litres/day). This is not surprising, given the EU milk reduction scheme at the end of 2016 and the more favourable milk to feed price ratio.



- According to AHDB Dairy, UK milk production for September was up 5.2% and year-to-date by 2.4%. This is equivalent to 175m litres or an extra 5 days worth of milk in the first 6 months of the year, and output is still increasing.
- It is predicted that global milk output will rise by 1.5% in 2018 but it is thought that major reduction in prices will be protected by continued demand for fat products. Global supplies are expected to reach 289bn litres in 2018, with the EU-28 being a key driver of increased production, with a predicted increase of 1.4% next year.
- Milk production in Oceania continues to increase. New Zealand has had better weather conditions in the second half of October and production is up 2.7% in their peak month and 0.93% from June to October, compared to the same period last year. Australian milk production is up 6.68% in October, compared to October 2016. These significant increases combined with the GDT auction results in November, means that butter, SMP, WMP and

Milk Manager NEWS

cheddar cheese prices are all weakening in Oceana.

Monthly Price Movements for December 2017

With all dairy commodity prices sliding back, any farm-gate milk price rise cannot be justified by processors and therefore no milk price rises have been announced from the major milk buyers in Scotland for December.

Commodity Produced	Company Contract	Price Change	Standard Litre Price Dec 2017
Liquid & Cheese	Arla Farmers UK	No change	31.04ppl Liquid, 32.30ppl Manufacture
Liquid & Cheese	Arla Direct	No change	29ppl Liquid, 30.16ppl Manufacture
Liquid & Brokered Milk	First Milk Mainland Scotland	No change	29.09ppl
Cheese	Fresh Milk Company (Lactalis)	No change	29.0ppl liquid 30.03ppl manufacture
Liquid & Manufacture	Grahams	No change	29.75ppl
Liquid & Manufacture	Müller Direct	No change	30.50 ppl
Liquid & Manufacture	Müller (Co-op)	No change	29.39ppl
Liquid & Manufacture	Müller (Tesco)	No change	29.45ppl
Liquid, Powder & Brokered	Yew Tree Dairies	No change	30.0ppl Standard A litre price

- The New Year is bringing reductions in farm-gate prices from a number of processors. Müller has slashed their liquid standard litre January price by 1.5ppl to 29ppl and Arla have announced a 1ppl reduction to the Direct supply milk price to 28ppl. No doubt others will follow suit.
- Sainsbury's have reduced their SDDG milk price by 0.11ppl from January 2018, taking the Müller liquid standard litre to 28.10ppl and the Arla price to 27.98ppl. The reduction is based on changes to feed, fuel and fertiliser prices in their latest quarterly review. Feed decreased 0.18ppl, but red diesel and nitrogen fertiliser increased 0.03ppl and 0.04ppl respectively.
- From the 9th December, the very first organic milk vending machine in Scotland will be open for business. The Willis family, who farm at

Forest Farm, Kinellar, Aberdeenshire will offer pasteurised organic milk from their 140 Holstein Friesian cow herd at a price of £1.20 per litre.

- Wyke Farms and OMSCo have formed a new partnership under the name of The British Organic Dairy Company. The partnership is looking to increase its supply of organic dairy products for the domestic and global markets. Wyke Farms is the largest independent cheese manufacturer in the UK and OMSCo is the world's 2nd largest organic milk producer. This partnership is aiming to increase its market share in organic cheese in the UK, which currently has less than 1% market share in cheese, compared to 8.5% in yogurt and 5% in liquid milk.
- Chinese imports of dairy products have showed massive increases over the past 12 months. Most notable is the 3524t of yogurt imported in October, a 161% increase from October 2016.

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Straights Update

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

£/T for 29t loads delivery + £7/t haulage to central belt	Dec 17	Jan 17	Feb 18 - Apr 18	May 18 - Sep 18
Proteins				
Hipro Soya	326	327	328	328
Rapeseed Meal	191	195	195	May-Jul 201
Wheat Distillers	199	199	199	187
Starch				
Wheat	151	152	154	May-Jul 156 Aug-Sep 152
Barley	132	133	135	May-Jul 137 Aug-Sep 132
Maize	170	170	174	179
Fibre				
Sugar Beet Pulp	187	187	187	-
Soya Hulls	179	173	173	155

Source: Straights Direct and Cefetra on 6th December. 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

- Global wheat prices have been under pressure, with the EU wheat crop's total output being increased by 1mT to 142.5mT. Poor export sales in the US continue, with exports back 6% year-on-year, doing little to boost the market. However, in the southern hemisphere, heavy rain is hampering the Australian wheat harvest affecting grain quality and making it very difficult to combine the remaining standing crops.
- There is growing concern about soyabean and maize crops in Argentina, given the dry spell of weather, which is largely due to the La Niña weather system. There is little chance of rain in the next few days (as of 6th December) and as a result soyabean and maize prices are seeing gains. Only half of the expected acreage has been sown and there is concern that yields will be poorer than normal. La Niña has the effect of cooling the tropical Pacific Ocean, leading to droughts in South America, and higher rainfall in Australia. The potential reduction in output from South America has raised concerns in the market that importers of soyabeans (the biggest being China) will look more towards the US for supplies.

UK and Scottish News

- With harvest price pressure now past, feed barley prices in Scotland have risen above English levels in the last few weeks. Feed barley demand in Scotland has also been boosted by growing use on farm as beef and dairy producers supplement variable forage supplies.
- Scottish feed wheat prices have been at a strong premium to English values so far this harvest, with a £5-£6/t premium typical. A key factor has been the increased demand for wheat in distilling since a large Edinburgh plant switched from maize to wheat. So far this season, distilling use of wheat has been running around 10,000t per month higher. The Scottish price premium may now come under some pressure, following the announced extended closure of the Vivergo ethanol plant on Humberside, which is struggling to compete given weaker ethanol prices both domestically and across Europe (there is excess sugar beet in the EU to make Ethanol just now). This plant had been drawing wheat from Northumberland

and the Borders which may now head north into the Central Belt.

- The forecast area of oilseed rape for the 2018 harvest is reported to be up by 9% on 2017 due to favourable moisture levels and less damage from flea beetles compared to last year, providing a favourable establishment period this autumn. In some areas oilseed rape will have returned more profit compared to other crops, influencing the area planted for 2018. The area will be over 600,000 ha, for the first time in 3 years, although still well below the 756,000 ha harvested in 2012 by 19%.
- There has been slightly less autumn cropping, with difficult ground conditions in many areas of the UK on the back of a long, late harvest. Furthermore, spring crop agronomic incentives and lower production costs for some crops means that the trend towards spring crops is continuing and spring barley plantings are expected to rise in 2018. The wheat area is predicted to fall by 2% (including spring wheat) and winter barley is expected to be down 9%.
- Production of peas and beans are predicted to fall by 6% in area, which is not surprising since the Greening rules changed to ban the use of pesticides in these crops in Ecological Focus Areas. In addition, current market prospects for these home-produced proteins are poor and return a lower margin compared to oilseed rape.

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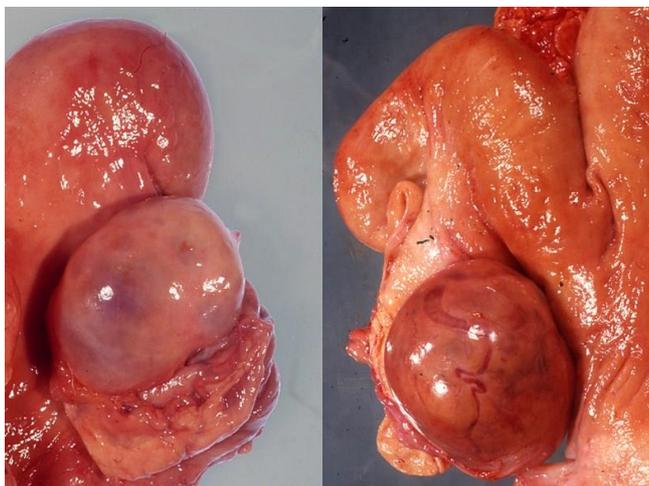
Causes of Cystic Ovaries

Cystic ovaries or cystic ovarian disease (COD) tends to occur between 30 to 60 days post-calving and prevents ovulation by disruption of the normal hormonal systems that control ovarian function. Ovarian cysts are defined as fluid-filled structures greater than 2.5cm in diameter and are present on the ovary for over 7 days. No functioning corpus luteum is present and cysts are normally accompanied by abnormal oestrus behaviour. Cysts fall into 3 categories: follicular cysts, luteal cysts and cystic corpora lutea. Cystic corpora lutea are a normal development on the ovary after ovulation and do not cause infertility. Therefore they are not of any clinical significance.

Cysts occur when the developing egg on the ovary is not released when the cow is on heat. Under normal conditions there are a number of hormonal signals that pass between the ovary and the brain to stimulate egg release. These hormonal signals can be interrupted as a result of rapid weight loss and stress. Stress can include factors such as lameness, poor housing and cubicle comfort and mixing of cows. Uterine infection and inflammation can also affect hormone signals from the ovary to the brain, preventing egg release. The growing egg secretes its own hormones as it continues to grow, resulting in erratic bulling behaviour, shortened oestrus cycles or no signs of heat (anoestrus).

Follicular cysts tend to be characterised by excessive bulling behaviour as cows come into heat every 2 to 3 days. These are the less common type of cyst. More commonly, luteal cysts result in cows not showing any signs of oestrus behaviour. The type of cyst can be identified by ultrasonography, with luteal cysts having thick walls greater than 3mm (see photos below). In contrast, follicular cysts tend to have thinner walls, <3mm.

A thin-walled follicular cyst (left) and a thicker walled luteal cyst (right)



Source: NADIS

Many factors have been implicated in the development of cystic ovaries in dairy cows. The most commonly suggested cause is insufficient dietary energy and negative energy balance. Others include metabolic diseases, high milk production, retained foetal membranes, calving difficulties, stress, age (older cows are more

susceptible) and genetics. There is thought to be a hereditary aspect with the incidence being greater in higher producing cows, and is more common in the Holstein breed.

As the exact causes are poorly understood, it is difficult to put preventative measures in place. As one of the main causative factors is thought to be energy related, reducing the extent and period of negative energy balance in early lactation, correcting for metabolic disorders and minimising body condition loss has to be the main focus to reduce their occurrence. Remember that if a cyst occurs two months post-calving, that egg started its development during the dry period. Therefore nutrition in the dry period may have an influence and inadequate dry period nutrition should be investigated as a possible cause. Early hormonal treatment is necessary as cysts will rarely resolve by themselves.

The incidence of cystic ovaries can vary greatly but less than 2% should be the goal and if greater than 5%, investigation should be carried out, particularly focusing on nutrition and management of transition cows. Good record keeping will identify cystic cows, as they do not come into heat when expected. The quicker these animals can be identified and presented for veterinary examination and hormonal treatment, the quicker normal fertility can be resumed.

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Why are my Cows not Milking?

It is fair to say that across the country cows do not appear to be milking as well as expected this winter. It seems to be a similar situation in all areas and even in housed herds, as well as those that have been grazed during the poor, wet summer. Despite what appears to be decent forage quality on many farms, with well balanced rations and sufficient protein, performance is still below expectation for many producers and it has sometimes been difficult to identify a possible explanation. Suggested areas of investigation are as follows (list is not exhaustive):

Peak milk yield

- Investigate peak yields by lactation. Heifers performing poorly could be due to problems

Milk Manager NEWS

during the rearing period and inadequate size at calving.

- If 2nd lactation cows are performing much better than older cows, perhaps more metabolic problems or poor culling decisions in older animals is the cause.
- If cows are failing to reach expected peaks, assess transition period nutrition, housing and management.

Persistency

- Is the decline in milk production post peak greater than normal? Look for excessive body condition loss indicative of underfeeding energy (may show up as low milk protein %).
- In multi-group herds, more than 10-15% difference in concentrate dry matter between group rations can result in sudden drops in milk.

Average days in milk

- Target for a year round calving herd is 180 days. Milk yield declines at a rate of 10-15% per month. A herd normally averaging 30 litres/day could be “losing” 3 litres of milk if the herd is 210 days in milk.

Calving interval

- Directly related to average days in milk, which is also influenced by average days to first service and services per conception. Compare these figures to past performance or benchmark against other similar management system herds if possible to identify if fertility has slipped.

Milking cow numbers

- Have numbers increased? If so, is there 35 inches of feed space per cow and 5 to 10% free cubicle space? Overcrowding in fresh/early lactation cows can reduce peak milk yields.

Cow groupings

- A separate heifer group can improve production by 5-10% due to less social problems and competition for feed/lying space. This is especially true if heifers calve down on the small side. If heifers calve in at target weights (85-90% mature body weight), space may be better utilised with a fresh cow group, rather than a heifer group.

Body condition score

- Under or overconditioned cows at calving will have suboptimal milking performance and will be more susceptible to transition diseases.

Target a body condition score of 2.5 to 3 at drying off and maintain this until calving.

- Thin cows in early lactation may be a result of cows being underconditioned in the dry period or transition disease affecting feed intake and excessive, rapid condition loss in early lactation. They will not peak and milk as well.

Recent forage analysis and ration check

- It goes without saying that regular forage analysis is essential, especially if forages have changed in terms of cut, dry matter or even appearance.
- Mycotoxins may be an issue given the wet summer, with higher levels of mycotoxins being reported in grain.

Transition period

- Complications at calving will impact peak milk yield and how quickly cows get back in calf. Nutrition especially in the last 3 weeks before calving is critical for transition success. Targets for transition diseases and interference levels are as follows:

Health Indicator	Performance Target	Alarm Level
Milk Fever	1% (>8yrs 2%)	3%
Retained Cleansings >12 hours after calving	<3%	>6%
Metritis % infected > 21 days	<5%	>10%
Clinical Ketosis	<1%	2%
Displaced Abomasum	<1%	2%

Source: Ian Lean, University of Sydney
(Total Dairy Seminar 2016)

Disease

- Sudden drops in milk can be caused by a number of diseases including BVD, winter dysentery and Salmonella, amongst others. Clinical signs include diarrhoea and a temperature over 103°F.
- A common cause of declining milk production is subclinical or clinical mastitis and this can also shorten lactations.

Milk sales will usually be most influenced by peak milk yield, persistency, days open (days in milk), length of dry period, mastitis and somatic cell counts and culling rate. It goes without saying that

cow comfort has a big part to play and assessing cow comfort will be discussed in the next issue.

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Genetic and Genomic Improvement in Dairy Cows

Selection in dairy cattle through the 1980's and 1990's was focused on production since the national herd was transitioning from a predominantly Friesian population to a predominantly Holstein one. The Holsteinisation of the national herd was not the intention – it was simply due to a change in circumstances. Those changes were mostly a loss of the EU variable beef premium for dairy cattle and the opening up of the North American semen market, allowing UK farmers access to higher production genetics. Extensive use of North American semen has transformed the entire UK herd. The lesson was learned – using semen from bulls with high genetic merit for production gives cows that produce large volumes of milk. The power of genetics was established.

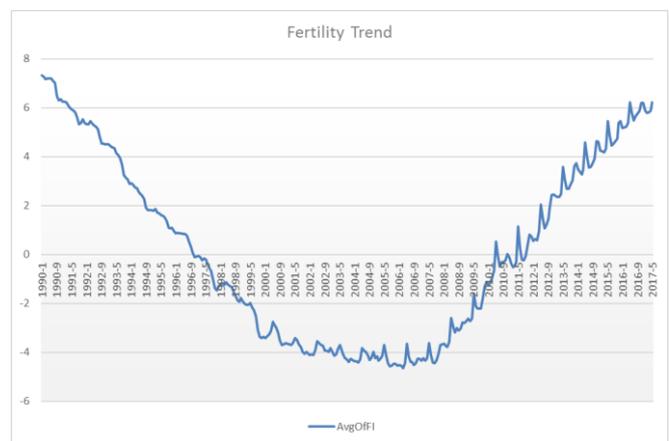
As now known, the widespread use of high production bulls led to some unexpected and unwanted correlated responses. Health and fertility reduced and this was mirrored from results coming out of the Langhill experiment. The select line cows produced more milk and were more profitable on any diet but had reduced fertility and more health issues. There was a period when this reduction in fertility led some farmers to reject the use of EBVs and utilise other selection criteria such as conformation (ironically using EBVs for conformation) to improve cattle.

SRUC (then SAC) were awarded funds from Defra and industry partners to use national milk recording data and pedigree society data to produce a fertility index for use by farmers to improve fertility as well as production. This started in 2002 and the UK's fertility index was released for general use in 2006.

You can see from the graph that the result was almost immediate. As farmers began to put emphasis on fertility in their choice of bulls, the merit for fertility rose accordingly. The rate at which production rose slowed down, but was (and is) still rising. The rate of decline in fertility slowed down just as or slightly before the project started

and was turning around during the project. This can be explained by the fact that most of the big breeding companies were involved in the project and had access to results early. They clearly began to adjust their own selection policies ahead of the index release to ensure they had good bulls on offer. Certainly, after the first release of the index a very popular bull at the time became unmarketable because the bull's fertility index was very negative, despite having very good other attributes. Such is the power of genetics.

Change in Fertility Index Values (£) in the UK between 1990 and 2017



Source: produced by AHDB Dairy, based on EGENES data

We have seen the power of genetics to improve yield and reduce fertility. We have also seen even more power in improving yield and fertility together when appropriate indexes are available. So if we accept the power of genetics, what more can we do with it?

Genomics is here and has revolutionised the way the industry operates, the relationships between breeding companies and farmers and the traits that are now available to select for. More recently, UK farmers have the world's first index to select for TB resistance. AHDB funded EGENES to utilise national data to produce TB Advantage since January 2016. It's too early to see any significant effect on trends but anecdotally, farmers are very happy with it and breeding companies are responding through their young bull offerings. Almost 80% of all bulls semen used is now from genomically tested bulls.

Genomics provides opportunities to select for traits that have been difficult to do so in the past

because the recording is too expensive on a widespread scale. Feed intake is one such trait but genomics allows us to concentrate efforts into a few animals and then use genomic breeding values to disseminate the value to large numbers of farmers. AHDB expect to publish genomic breeding values for feed intake early in 2018, after calculation and validation by EGENES. These will be based on cows from SRUC Langhill herd and other research herds around the world. More details will follow in the January edition of Milk Manager News.

Genetics (and now genomics) is very powerful at changing animals. It can change them in the wrong way (fertility) and can change them in the right way (fertility). Used appropriately it can create large financial benefits for farmers since it is cumulative (improvements build over generations), permanent (once you have good animals you have them until they die) and cost-effective (you just have to choose the right bull).

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Milking the Industry - FAS Panel Night

The Kintyre Dairy Producers recently attended a lively panel evening at The Seafield Hotel in Campbeltown on 28th November. The panel, made up of John Armour, NFUS Policy Advisor, Sandy Wilkie – Mr Milk, and Csaba Adamik the Senior Dairy Consultant with SAC Consulting were challenged by a number of pertinent questions from the group at this Farm Advisory Service funded meeting.



Panel of speakers: John Armour (left), Sandy Wilkie (middle), and Csaba Adamik (right)

The future for the next generation was debated at length and the key messages, especially from Sandy Wilkie, were that technology and entrepreneurship are seen to be the two main ingredients for success in the new generation of dairy farmers.

Innovation and exploring new opportunities are crucial for the younger generation to take their farm businesses forward in what will continue to be challenging times. The Wee Isle Dairy was offered as an example, as well as door step deliveries based on the Muller model, which has been exploited down south after the acquisition of the Dairy Crest business.

The expansion of existing dairy farms to very large units such as 1000 cow herds was discussed, and whether they could in time displace the family farm, especially in a peninsular like Kintyre. This was an emotive subject as well as realistic and the consensus was that the British dairy industry still relies heavily on family businesses. Their continued support from milk buyers is important, given the number of players now controlling the industry. The panel felt that greater security in milk contracts would give stability to dairying although it was pointed out that young entrepreneurs are prepared to take "risks".

Promoting products with a value added price tag was an area the panel felt requires attention, with buzz words, correct marketing and having a product that meets consumer demands being key for profitable sales. For example, the creamery in Campbeltown sells its butter under the "Scottish Pride" brand name. Would sales improve if it was marketed as Campbeltown Butter? It was pointed out by all three panellists that the population is growing and there is a demand for new products, such as flavoured milks and those branded as coming from "free range" grazing cows. Market opportunities will always exist. However, there must be a will and farmers, as suppliers, must react to consumer needs to achieve a sustainable business and hopefully, a stable milk price.

Cost of production is an area all producers should be looking at after the last two years of hardship with low milk prices. Being mindful of investment and the need for dairy producers to invest again, requires bravery and faith and is certainly not for the fainthearted. Kintyre has a unique climate, with the ability to grow grass when it's not raining!

Milk Manager NEWS

There was good consensus that all these family farms have a future in dairying, but they must persuade their milk buyer that investment in the promotion of their product is paramount for a sustainable business in the long-term.

Communication, trust, innovation and investment, both by First Milk and the producers could continue to achieve the delivery of a first class product. The panel felt that all these criteria would be a good recipe for success linking in with what Kintyre can offer to tourists and local hoteliers.

The Kintyre dairy producers have much to consider, especially as they head towards an unknown future post Brexit. However, with a much sought after premium product, and with the right marketing, the producers can be positive that opportunities will exist and they will embrace the challenging and exciting times ahead.

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Salmonella Dublin Bulk Tank Serology Testing

Salmonella Dublin outbreaks have been diagnosed commonly again this autumn by the SAC Consulting Veterinary Centre in Dumfries. Many herds in the area are endemically infected, with some either currently or historically using vaccination as a control tool. Other herds will be naïve and both types of herd are potentially at risk depending on management and biosecurity factors. Our opinion is that Salmonella Dublin associated disease in dairy herds will be under-diagnosed if based on just monitoring for typical clinical signs in cows and calves.

There are many clinical symptoms of Salmonella Dublin infection. Abortion is one clinical sign and this tends to occur in mid pregnancy. If there are a cluster of abortions in the herd, or a herd abortion rate of over 3%, then submission of a foetus to your local Disease Surveillance Centre for examination is recommended.

A recent review of Salmonella Dublin clinical disease presentations was carried out by SAC Veterinary Services and the data is summarised in the following table. As you can see, Salmonella Dublin can cause quite a diverse range of clinical signs and this is worthwhile considering and if necessary discussing with your vet.

Reason for submission for samples or carcasses from which Salmonella Dublin was isolated, and considered to be clinically significant (SAC Veterinary Services data from 2011-2016)

Reason for submission	Percentage of isolates from adult cattle	Percentage of isolates from calves
Diarrhoea	66	53
Respiratory signs	3	17
Malaise/recumbency /lethargy)	3	9
Ill-thrift	9	6
Found dead	1	7
Milk drop	17	0
Neurological	0	6
Joint ill	0	1
Sloughing of extremities	0	1
Mastitis	1	0

We now offer bulk tank Salmonella Dublin serology testing and if used routinely this can help take some of the guess work out of health planning for Salmonella Dublin, allowing control measures to be implemented before significant clinical disease becomes apparent.

Some facts about how the test performs and can be used are outlined below:

- Used as a one-off test, the herd level sensitivity is 79% if there are clinical signs of infection in the adult herd, and 31% if clinical signs are only present in the calves.
- Therefore, if disease is seen predominantly in the youngstock, it may be appropriate to combine bulk tank testing with serology of calves aged greater than 3 months.
- The test works best when carried out on a regular quarterly basis. This can show if the disease is present or not, and how the risk changes over time, allowing further preventative disease control measures to be taken.
- A positive bulk tank result may be due to infection or vaccination, and so this test is not suitable for use in vaccinated herds.

Another potentially useful indication for Salmonella Dublin bulk milk testing is for calf rearers, looking to source higher health status calves from the

Milk Manager NEWS

dairy herd. Salmonella Dublin can be a significant cause of disease and mortality in calf rearing units, particularly for units multi-sourcing calves. At the age at which these calves are purchased, screening them individually is not usually possible, because of the presence of maternally derived antibodies. Screening the bulk tank from the herd of origin would enable a more informed decision to be taken, and high bulk tank titres for Salmonella Dublin have been linked to poor calf health.

If you are concerned about Salmonella Dublin risk and wish to investigate further, please contact your vet or local SAC Disease Surveillance Centre.

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Dates for your Diary

- 11th December 2017 - **Christmas Show and Sale of Dairy Cattle & Young Calves & Stirks**. Dumfries Mart, Huntingdon Road, Dumfries, DG1 1NF.
- 11th December 2017 - **How to Minimise Losses During Storage and Feed-out of Silage – Webinar**. Time 18.00-19.00. To register visit: <https://register.gotowebinar.com/register/4574109495147993347>
- 11th - 13th December 2017 - **DIY AI Training**. Aberdeen. Event Organiser: Embryonics t: 01606 854411, email: embryonics@embryonicsltd.co.uk
- 14th December 2017 - **Cut Costs by Making More of Muck and Slurry**. Colfin Farm, Stranraer, Wigtownshire, DG9 9BQ. Time 10.30-14.30. Book your place through the KE Events Hub on 01904 771216 or ke.events@ahdb.org.uk
- 3rd - 5th January 2018 - **Oxford Farming Conference**. Oxford.
- 12th January 2018 - **Managing Mastitis**. SRUC Barony Campus, Parkgate, Dumfries, DG1 3NE. For more details contact t: 01387 242918 BaronyTrainingServices@sruc.ac.uk
- 14th - 16th January 2018 - **Semex International Dairy Conference**. Radisson Blu Hotel, 301 Argyle Street, Glasgow, G2 8DL.
- 17th January 2018 - **LAMMA Show**. East of England Showground, Peterborough, PE2 6XE.
- 22nd - 24th January 2018 - **British Cattle Breeders Conference**. Telford Hotel & Golf Resort, Great Hay Drive, Sutton Heights, Telford TF7 4DT.
- 1st February 2018 - **Precision Technologies in Dairy Farming**. SRUC Barony Dairy Technology Centre, Parkgate, Dumfries, DG1 3NE. Time 10.00-15.00. To book a place contact janis.forrest@sac.co.uk, tel 0131 603 7525.

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