

Agribusiness NEWS



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Service

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News in brief

April 2020

Virus impacts spread across food chain

Almost on a daily basis, we have all been adapting to the impact of Covid-19 on our lives both from a work and a personal perspective. In these unprecedented times, on a global scale, life as we knew it has been turned upside down.

World economic growth is expected to be close to zero in the year ahead as every major economy goes into something approaching full or partial lockdown without precedent outside of war time. Global oil demand has collapsed dropping by around 20% in a matter of months pushing prices to the low \$20's/barrel. Shifts in global consumer demand are underway with basic staples benefitting and higher value product demand less certain as belts tighten. Restrictions on labour mobility and close working are starting to impact on the functioning of supply chains and processing facilities with implications starting to emerge.

Maybe in the face of adversity, there will be a refocusing of what is and isn't important. Hopefully, once the bizarre initial panic buying of pasta and toilet rolls is past, people not directly involved in agriculture will give some thought to the intricacies of modern food production, and the complex logistics required to bring to fruition the simple sound bite, 'Farm to Fork'.

Given the words of Winston Churchill, "A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty"; looking for the positives in these very difficult times; positive marketing campaigns to promote locally produced healthy food could give the UK a unique opportunity to stimulate balanced demand within the food chain and support locally produced foods so welcome in an era of global uncertainty.

Next month

- New opportunities in farming
- Alternative crops

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This month's editor:

Julian Bell



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



Scottish Government
Riaghaltas na h-Alba
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Policy Briefs

2020 SAF

Following the opening of the Single Application Form (SAF) window on 15th March, applicants will be starting to think about its completion to ensure they get their essential 2020 payments. While there are no changes to the online application process for this year, there are a few things to note that will have an impact on some applications. These are as follows:

Greening

Crop Diversification (the two/three crop rules) will not be implemented for the scheme year 2020. This is due to a derogation which has been granted following the extended period of wet weather.

Payments

Although the online application will be offering a choice of Euro or Sterling payment, all schemes will be paid in Sterling this year. Applicants should ensure that their Sterling account details are registered on Rural Payments and Services.

Coronavirus (COVID-19)

At time of writing, local Payments & Inspections Division (RPID) Offices are closed and are not able to support face-to-face customer appointments to facilitate the submission of SAFs. Local customer Service staff are however available either by telephone and/or email.

Paper customers that were previously informed that paper SAF applications would no longer be automatically sent out by post, will now receive them to their address from 6th April. Completed paper application forms and other correspondence can be posted through the letter box of area offices and a member of staff will process it as normal.

If applications require supporting documents these will need to be emailed or posted to local area offices. Such documents can also be uploaded to Rural Payments and Services. If posting documents, ensure copies are retained in case they go missing.

Agents who completed applications on behalf of applicants will also be adhering to the 'social distancing' restrictions so will be doing applications over the phone, via email or using other sources of software.

Although the way SAFs will be completed this year will be different from previous years help is available, so applicants must not worry. If it is identified that there are mistakes on the SAF or

within the supporting documentation, amendments can be made.

CAP scheme key dates

Transfer of BPS Entitlements

The final date for submitting a 2020 entitlement transfer application and associated paperwork is 2nd April 2020. Applications and relevant information should be sent to the relevant Entitlement Transfer Unit.

Contact details for the Entitlement Transfer Units can be found on the Transfer Entitlements page, on the Rural Payments and Services website at: <https://www.ruralpayments.org/topics/all-schemes/basic-payment-scheme/basic-payment-scheme-full-guidance/guidance-on-transfer-of-entitlements/>

Forestry Grant Scheme capital claims

Scottish Forestry have extended the current claim window for 2019-2020 Forestry Grant Scheme (FGS) capital item claims to 17th April 2020. Claims and supporting documents should, where possible, be submitted via the post.

SAF

While the Scottish Government recognise that the current COVID-19 restrictions will be causing implications for applicants needing to complete their SAF within the required deadlines, at time of writing the 2020 SAF must still be submitted by 15th May 2020. Supporting documentation is also required by this deadline.

Inspections

In order to prevent the spread of COVID-19, Scottish Government RPID Offices have restricted inspection activity until further notice i.e. they have suspended inspections where there is a requirement for close contact with customers.

At the time of writing they are still undertaking potato tuber inspections but with additional measures to ensure they limit contact with the grower/farmer. They are also continuing with capital inspections, such as those associated with Agri-Environment & Climate Scheme (AECS), Crofting Agricultural Grant Scheme (CAGS) or LEADER, where they can be carried out without face-to-face contact and where they are not required to travel by public transport.

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Cereals and Oilseeds

World markets in flux as virus hits

World cereal markets have so far responded in different ways to the economic impacts of the Covid-19 pandemic. Panic buying of flour and pasta sent world milling wheat futures sharply higher led by US wheat futures; up \$20/t (+14%) to \$172/t in the last month. US maize futures by contrast fell \$1/t to \$111/t. What the long-lasting impact of the virus will be is harder to tell.

World economic growth is expected to be close to zero in the year ahead as every major economy goes into something approaching full or partial lockdown without precedent outside of war time. Global oil demand has collapsed dropping by around 20% in a matter of months pushing prices to the low \$20's/barrel. This in turn is lowering the value of US maize for ethanol and oilseeds for biodiesel. Staples of human consumption such as flour and pasta appear to be benefitting from higher demand; the global outlook for higher value or discretionary purchases is more uncertain as household incomes suffer and poorer households are forced to reign in expenditure.

In the immediate future practical issues such as restrictions on staff availability at processing and logistics facilities around the world such as breweries and ports may have an important role in pushing local prices around.

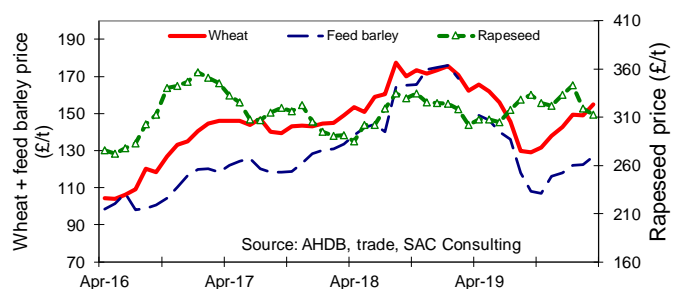
Beer sales across Europe have been affected with beer consumption at home rising strongly in Spain while sales to pubs and restaurants in the UK have dried up. The UK spirits sector has diverted spirit production into production of alcohol gels for hand sanitisers. Weaker global economic growth in the year ahead may curb whisky and spirit exports from the UK. How these changes affect total demand for beer and spirits in the months to come will start to become clearer as production and consumption data becomes available.

Oilseed prices have risen despite the fall in the crude oil price. Movement restrictions in Malaysia

have forced the closure of some oil palm plantations while similar restrictions are slowing soyameal shipments from South American ports. Further to this in the US, the fall in ethanol demand is boosting livestock feeding of grain and in turn of soyameal. In the UK a weakening sterling is also boosting prices in UK terms.

UK LIFFE wheat futures were volatile but had risen by £11.70/t in the month to 27th March.

Scottish ex-farm cereal and oilseed prices



UK crop roundup

After the winter deluge skies have finally cleared across Scotland and the UK and soils are now ready to cultivate. Winter crops are in many cases in a poor state so yield expectations for harvest 2020 are currently not promising. Spring barley sowings are going well into generally good seedbeds in a timely manner which could be more supportive of spring crop yields. Growers in England are mindful of the impending surplus of spring barley expected this harvest and are seeking alternatives; crops for AD, forage and fallow. On the other hand, the future of many labour-intensive crops; particularly field vegetables are under threat given the restrictions on labour mobility and close working. If the UK fruit and veg sector cannot be sure it will be able to replace the usual seasonal workforce that arrives from Europe within weeks or months, then some crops may not be planted.

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Indicative grain prices week ending 27 March 2020 (Source: SACC/AHDB/trade)

* Before oil bonus, # Ex-farm England spring brewing max 1.85%N, ~ nominal

£ per tonne	Basis	Mar 2020	May 2020	Jul 2020	Hvst 2020	Nov 2020	May 2020	Nov 2021
Wheat	Ex-farm Scotland	155.00	158.00	160.00	166.00	168.00	183.00	155.00
Feed barley	Ex-farm Scotland	127.00	129.00	132.00	130.00	134.00		
Malt. barley- distil	Ex-farm Scotland				192.00			
Malt. barley- brew	Ex-farm England#		132.00			132.00		
Oilseed rape*~	Delivered Scotland		313.00		309.00			

Beef

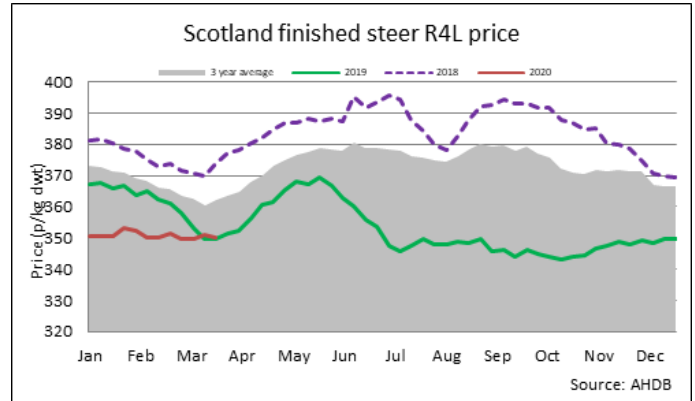
Beef market sees demand shifts

The world we live in is a very different place today, when compared to last month. It seems now that the issues we discussed in last month's edition are fairly insignificant, against the backdrop of a global pandemic and our current lockdown situation. Lamb sales were stopped this week with no notice, sheep were sent home from markets as export markets were affected by Coronavirus restrictions while cattle sales continued as domestic demand remained strong. Some abattoirs are experiencing staff shortages, with cattle lines being priority over sheep in a bid to keep beef on supermarket shelves.

Consumer attitude has changed dramatically in recent weeks, while supermarkets work with just in time delivery systems, the general public have been bulk buying to ensure they have what they "need" to get through any potential lockdowns. These strategies have led to shortages of many day to day items, everything from toilet rolls to mince are in short supply on the shelves. Local butchers have seen an upturn in their fortunes, working day and night to keep up with demand. In turn, this has also given a boost to cattle sold through the live ring.

While the household market is booming, the same can't be said for the catering sector. McDonalds closing all of its restaurants is a blow to the beef sector as they are a major player in the beef sector. However, it's not all negative as many will be substituting a McDonalds burger with some beef at home. However, the catering sector does consume a lot of higher value cuts, meaning carcass balance may be an issue. This may put pressure on the beef price. However, what effect Covid-19 will have on trade remains to be seen.

Livestock Markets have had to alter their operational procedures in recent weeks. Live sales



of store and prime animals are still being permitted. However, only registered buyers are allowed into the markets. Vendors drop stock off and they are sold through rings with very few people in them. Trade for store cattle remains strong and Prime cattle in the live ring have seen significant increases as local butchers look to secure an increased number of cattle to supply their needs.

Veganuary?

Now is definitely not the time to go on the offensive about vegans and climate, that debate can and will be had at a later date, when the world reverts to a new normal. But one interesting point to note and a reason for optimism is found within a recent Kantar report, which reported that more shoppers purchased fresh meat and poultry than a year earlier in the 12 weeks to the end of January, with the overall retail volume stable – despite high profile Veganuary campaigns and shoppers being encouraged by the press to eat less meat. This positive message for the industry along with renewed domestic demand and respect for our product can only be a positive for the beef sector.

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Scotland prime cattle prices (p/kg dwt) (Source: drawn from AHDB data)

Week Ending	R4L Steers (p/kg dwt)			-U4L Steers			Young Bull-U3L		Cull cows	
		Change on week	Diff over N. Eng.		Change on week	Diff over N. Eng.		Diff over N. Eng.	R4L	-O3L
7-Mar-20	349.5	-0.2	-2.5	346.8	-1.9	2.5	341.3	16.3	275.0	256.4
14-Mar-20	351.0	1.5	1.0	347.2	0.4	2.2	338.4	7.1	274.8	257.2
21-Mar-20	350.2	-0.8	-0.4	347.6	0.4	1.1	343.4	7.7	273.9	257.8

The finished cattle base price quoted by a buyer may be significantly different from the national average deadweight price presented above as these are averages of both commercial and premium cattle, reflect variation between processors and any bonus payment differences.

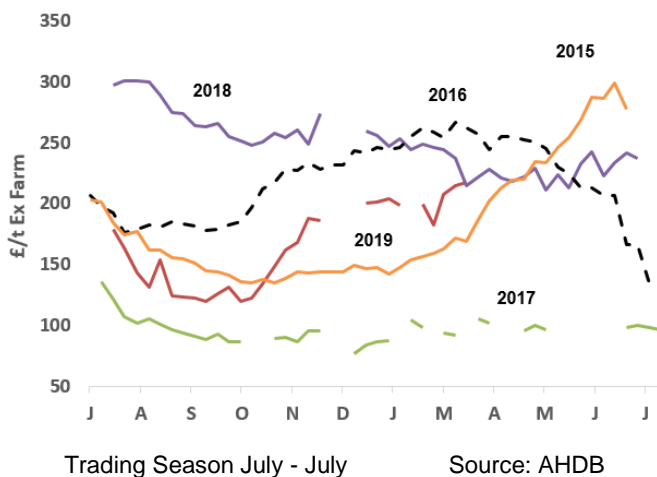
Potatoes

Market price update

- The GB Weekly Average Prices for the week ending 14th March was £197.94/t for free-buy and contract purchases, and £217.62/t for free-buy purchases
- Compared to the previous reported figures on 7th March, contract and free-buy purchases were down by £0.04/t and free-buy purchases were up by £3.31/t

Crop Year 2018/19	14 Mar	7 Mar	29 Feb
Average Price (£/t)	197.94	197.98	189.13
AVP change on week (£/t)	-0.04	+8.85	+11.58
Free-Buy Price (£/t)	217.62	214.31	207.67
FBP change on week (£/t)	+3.31	+6.64	+25.44

GB Weekly Average Free-Buy Price (2015-2019 crop years)



Surge in Retail Demand on Covid-19

Due to the recent Coronavirus outbreak, retail sales for fresh potatoes have increased significantly this week as widespread panic buying sees the public stock up on staple foods. There has been a large increase in free-buy demand for packing potatoes, for both best and lower quality stocks, to help meet this demand. There have also been some reports of packers pulling contracts forward to help mitigate some of the pressure. Sales into food service have dried up as the government force the closure of pubs, cafes and restaurants. As the Coronavirus outbreak develops, demand in the chipping market is expected to drop significantly as the public exercise social distancing. A surge in consumer demand has resulted in a jump in sales of bagged ware potatoes as consumers turn to smaller shops and the farmgate to ensure they are adequately stocked with supplies. Demand for frozen products into food service has fallen, but retail sales have increased on the back of large-scale panic buying as consumers stock up freezers in case they need

to self-isolate. There have also been reports of issues with availability of haulage this week, due to packed schedules to restock supermarket shelves. As the outbreak develops, and the government impose tighter public movement restrictions, there are concerns over staff shortages for both hauliers and packers/processors as an increasing number of the population self-isolate. These are truly unprecedented times with new developments unfolding daily. Packhouse planning and forecasting is proving very challenging as things change on a daily, sometimes hourly basis. For growers with surplus or unallocated free-buy volume, this sudden spike in demand due to Covid-19 has been very much welcomed.

Market Overview

In Scotland, Grade 1 Piper is trading around £230/t ex farm with a high of £265/t ex farm. This is around a £15/t ex farm uplift on last week. Grade 1 Whites are trading around £220/t ex farm with a high of £240/t ex farm. Increased consumer demand for Whites has increased the average price by around £20/t ex farm.

In England, Grade 1 Piper is trading around £255/t ex farm, with a high of £330/t ex farm reported. This remains relatively on par with last week with only a slight uplift seen at the top end. Grade 1 Whites are trading around £270/t ex farm with a high of £370/t ex farm. This is around £20-30/t ex farm uplift on last week. Grade 1 King Edwards are trading around £280/t ex farm with a high of £300/t ex farm reported.

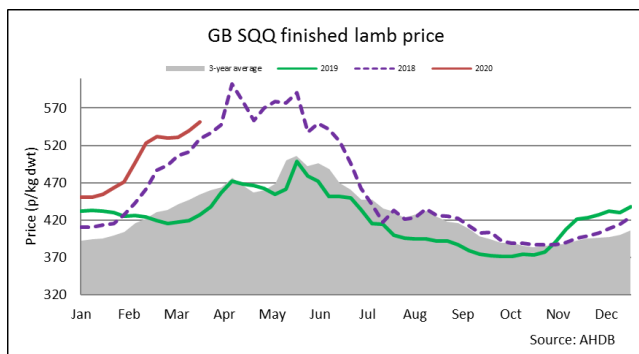
In the East of England bagging market, chipping Piper is trading around £235/t ex farm with a high of £270/t ex farm. Agria is trading around £240/t ex farm with a high of £300/t ex farm. Cabaret is trading around £250/t ex farm with a high of £270/t ex farm, and Markies is trading around £265/t ex farm with a high of £300/t ex farm. High volumes of bagged ware are being sold with Belmonda, Desiree, Manitou, Maris Piper, Nadine and other whites trading around £200/t ex farm with a high of £240/t ex farm. In the West, chipping Piper and Markies are trading around £205/t ex farm, with a high of £220/t ex farm. Ware varieties; Ramos, Rock, Wilja and Sagitta are trading around £140/t ex farm with a high of £160/t ex farm. There are no prices reported for the South of England or Scotland this week.

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Sheep

Virus collapses export market

The collapse in export demand at the start of last week resulted in hoggs and culls being turned away from markets. Fortunately, they reopened the following day once sense was made of the situation. However, supply and demand have since found a balance at a far lower farmgate price given a lack of orders from EU markets. Farmstock indicate a base of 420-440p/kg dwt for the week beginning 30th March. Though much down, still a decent price.



The impact on the cull ewe trade has been especially dramatic. AHDB records for Longtown show that on 12th March 3,142 ewes averaged £105, climbing to an extraordinary £129 average the following week (for 2,833 culls). But last Thursday the average had dropped to just £54.

Shine taken off Easter

Until a week or so ago, the outlook for the end of the 2019/20 sheep year was good thanks to Easter and Ramadan. But the trade is already reporting that Easter lamb sales campaigns have been cancelled across Europe.

Still, some improvement in export demand might be expected. EU borders remain open although are subject to some new, Covid-19, related inspections. Indeed, new green lanes at borders have been agreed to prioritise food trade. Also, sterling has markedly weakened to around 92p/€ making British sheepmeat competitive in the EU.

It is unclear how UK supermarkets will price lamb at Easter. Certainly they and processors will have welcomed the drop in hogg prices from the exceptional levels of early March. Presumably they are committed to a fair tonnage of New Zealand legs that were priced at pre-virus levels.

Of course, the slaughter, cutting, packing and distribution of sheepmeat may also influence the farmgate price. Besides a likely reduction in staffing caused by folk infected or self-isolating, a lack of vets to inspect the process could limit throughputs. Social distancing in plants will also reduce productivity. Interestingly, chicken processing is being particularly hard hit.

If limitation on movement and gatherings remains in place until at least June, the Ramadan festival could be severely disrupted. The breaking of the fast at the end of festival (Eid al Fitr) is 24th May.

Back to normal in June?

Looking to the new season, clearly, it is important that trade with EU export markets is re-established by the end of June when the first big draws of the new lamb crop are ready. Much depends on how well the lockdown works in the UK and EU.

The UK has missed the opportunity to nip this illness in the bud. We, and much of Europe, have not achieved what the Koreans have done in quickly controlling the rate of new infections.

Instead, it now seems more likely that a far higher proportion of the British and wider European population will be infected, and that eventual control will come as much from the immunity recovered folk will naturally gain. From a purely economic standpoint, this path may allow business, and the European sheepmeat market, to return to greater normality sooner than under the Korean approach. But this outcome would still take months and the cost in human lives and strain on the health services would be alarmingly high.

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Week ending	GB deadweight (p/kg) 16.5 – 21.5kg				Scottish auction (p/kg)				Ewes (£/hd)	
	R3L	Change on week	Diff over R2	Diff over R3H	Med.	Change on week	Diff over stan.	Diff over heavy	Scottish All	Eng&Wal All
7-Mar-20	533.8	0.2	1.3	-0.3	243.90	5.1	12.6	8.7	85.43	90.22
14-Mar-20	543.5	9.7	-0.2	1.5	247.50	3.6	15.4	8.3	88.40	94.04
21-Mar-20	554.8	11.3	-2.3	1.7	244.10	-3.4	0.0	7.4	104.46	114.27

Deadweight prices may be provisional. Auction price reporting week is slightly different to the deadweight week. Source: AHDB and IAAS

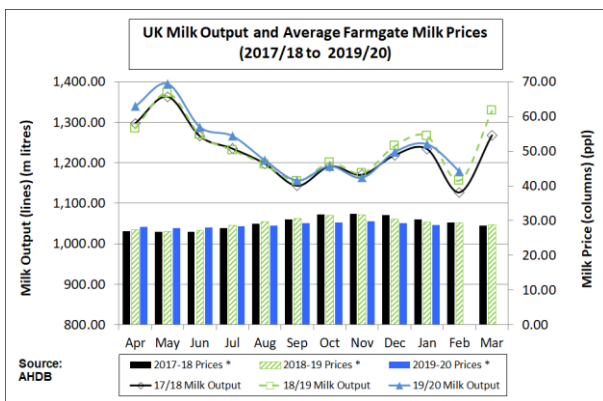
Standard weight 32.1 - 39.0kg; Medium weight 39.1 - 45.5kg; Heavy 45.6 - 52.0kg

UK production rise in February 2020

- UK monthly milk output shows signs of recovery in February 2020

The latest milk production figures released from AHDB indicate that UK monthly milk output for February 2020 is estimated at 1,178.32m litres (before butterfat adjustment). This is 22.07m litres above milk output for February 2019. The increase to output for February 2020 follows four months of year-on-year reductions. Cumulative UK production (April 2019 to February 2020) is estimated at 13,657.76m litres. On this basis, cumulative production for 2019/20 is 114.78m litres higher than the same period last year.

The UK average milk price for January 2020 is estimated at 28.77ppl (down 0.55ppl from December 2019 average, 29.32ppl). The average milk price for January 2020 is 0.82ppl lower than the average UK price for January 2019.



Milk prices for April 2020

Price announcements for April 2020 include:

- Arla Foods amba** – Arla has confirmed it is to hold its member milk price for April 2020, however, farmer members will see a reduction to prices due to the currency smoothing mechanism. The liquid standard litre price will reduce from 29.75ppl to 29.61ppl, whilst the manufacturing standard litre will reduce from 30.94ppl to 30.79ppl (reductions of 0.14ppl and 0.15ppl, respectively).
- First Milk** – FM has confirmed a hold on March 2020 prices going into April. However, member returns will increase from 1st April as the member premium increases from 0.25ppl to 0.50ppl. This means that the liquid standard litre rises to 26.75ppl and the manufacturing standard litre rises to 27.63ppl.
- M&S** – M&S supplier through Müller Milk Group will see a reduction of 0.61ppl from 1st April 2020. This takes the liquid standard litre price down to 32.72ppl.

- Sainsbury's** – Members of the Sainsbury's Dairy Development Group (SDDG) will see prices reduce by 0.05ppl from 1st April 2020, following the latest review of the retailer's cost of production tracker. Müller Milk Group SDDG suppliers will see prices reduce from 30.75ppl to 30.70ppl whilst Arla SDDG suppliers will move down from 30.63ppl to 30.58ppl (prices include an average bonus of 0.62ppl for Herd Health & Efficiency).

Annual Average milk price estimates for April 2020 (ppl)	
Milk Buyers – Scotland	Standard Ltr*
Lactalis (No profile or seasonality) ¹	26.50
First Milk Liquid ^{1,2}	26.75
First Milk Manufacturing (4.2% Butterfat & 3.4% Protein) ²	27.63
Müller - Müller Direct ^{1,3}	26.25

¹ Liquid standard litre – annual av. milk price based on supplying 1m litres at 4.0% butterfat, 3.3% protein, bactoscan = 30, SCC = 200 unless stated otherwise.
² FM prices include 0.25ppl Member Premium. The member premium increases to 0.50ppl from April 2020.
³ No monthly supplementary payment included in the price estimate. Includes 1.00ppl Müller Direct Premium.

First Milk launches First4Milk

First milk has launched a new initiative – the First4Milk Pledge – which aims to promote dairy farming and First Milk to the public. The initiative will ask members to commit to making improvements in three main areas: people, animal welfare and the earth. As part of the pledge on animal welfare commitments, members are being asked to ensure that cows have access to pasture for a minimum of 120 days per year. FM is aware of a small number of members who house cows all year round. Those who cannot sign up to this commitment will not sign the pledge. Members are being asked to sign up to the pledge by 30th June 2020. Those who have not signed up to the pledge by 30th June will not receive the FM co-operator bonus from 1st July onwards.

Dairy market update

With government controls imposed for coronavirus and the closure of schools, universities, coffee shops and restaurants, the UK food service industry has almost ground to a halt. Processors supplying the food service sector are particularly exposed. As orders are reduced or even cancelled there is growing speculation that spot milk prices will fall in the wake of a drastic reduction in demand.

UK dairy commodity prices (£/tonne)	Mar 2020	Feb 2020	Sept 2019
Butter	2,920	2,930	3,230
SMP	1,990	2,180	1,960
Bulk Cream	1,280	1,250	1,590
Mild Cheddar	2,910	2,870	2,830

UK milk price equivalents (ppl)	Mar 2020	Feb 2020	Sept 2019
AMPE (2014)	28.49	30.40	29.73
MCVE (2014)	30.98	30.56	29.90

Source: AHDB

The Implications of Covid-19 on the Food Supply Chains

Feed Costs Though feed companies forward buy where possible, the devaluation of the pound has led to a sharp rise in some raw materials which, coupled with the increasing expectation for feed companies to buy certified sustainable raw materials, could lead to higher on farm prices at a key time of year for the sheep sector. Equally, due to the closure of pubs, reduced demand for alcohol, could lead to reduced availability/higher prices for most feeds.

Fuel & Interest Rates While the impact of [Brent Crude prices](#) effectively halving over the past month to ~ \$27 a barrel has been slow to filter through to retail level; as supplies are plentiful, the availability/price of fuel should not impact on the fluidity of the food chain.

Although the unprecedented reduction in the Bank base rate to 0.1% will reduce the financial burden for many businesses with variable rate borrowing; for those with fixed rate borrowing, additional funds may need to be negotiated to cover ongoing costs of production.

Livestock From a food supply perspective, livestock ready for slaughter is not an issue. However, while both slaughter numbers and price per head are lifting for [prime cattle](#) and [pigs](#); prices for both [lamb and cull ewes](#) have fallen by ~ £30/head - linked to the closure of livestock markets, uncertainty over export markets due to COVID-19 coupled with the sharp fall of the pound against the Euro.

In terms of demand for meat, due to the closure of food retail outlets, the skewed demand for cheaper cuts of meat in supermarkets is causing a carcass imbalance. While a period of rebalancing is expected as supermarket supplies stabilise and domestic consumers start to utilise their stockpiles of fresh and frozen meat, domestic budgetary constraints could further skew demand for cheaper cuts of meat.

Milk Logistics aside, while [2020/21 milk supplies](#) are expected to be similar to 2019/20; inconsistent pricing for raw milk is expected, given that milk buyers supplying the liquid markets are experiencing an increase in demand as many families are now home based; while others, due to closures in the foodservice market are asking their farmers to reduce milk volumes if possible, which could have a knock-on-effect on the availability of

supplies later in the year if peak milk yields are suppressed. Globally, with demand changing almost on a daily basis, the [Global Dairy Trade](#) shows a downturn in price for whole and skimmed milk powder, while butter and cheddar prices remain strong.

Cereals As many arable farmers, due to wet weather were unable to plant wheat last Autumn; UK wheat prices were under pressure long before COVID-19. With a 2020 harvest estimate of 10 m tonnes, 5 m less than the rolling 5 year average; the UK will change from a net exporter to a net importer of wheat. This coupled with ongoing flooding issues and recent currency changes will have an ongoing impact on cereal prices, and subsequently cereal based foods.

Labour, Transport & Logistics The fluidity of the food supply chain relies on the availability of people from farmers and their staff through to processing, transport and end point delivery/sales staff. While concerns had already been raised due to Brexit with regards the availability of ~70,000 seasonal workers required by UK fruit and vegetable growers for this season; the general public, not currently able to carry out their normal work/studies are responding in their thousands to pleas from [soft fruit and vegetable growers](#) to help with harvesting produce. Equally, at the other end of the food supply chain, supermarkets have been employing more staff to restock shelves before stores are opened to ensure essentials are available for those that need them and increasing home deliveries for vulnerable people.

[Business support](#) packages are now available to help cover labour costs to keep key businesses operating.

Like many other industries, the UK food manufacturing and supply industry operates on a "just in time" system to save on expensive warehouse storage. If there are no "hiccups", this works extremely efficiently. Therefore, to keep the food supply chain flowing, logistics workers have been deemed 'Key Workers' with regards COVID-19 testing/securing school places for their children; and non-essential business transport networks have been redirected to increase the capacity to deliver raw materials and food products around the country to minimise the effect on the food supply chains.

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Sector Focus - Heat Pumps Today, and the Future

Today

We have previously covered heat pumps a couple of times, how they work, standard operational uses the basic financial case under the RHI and optimisation. Now that heat pumps are really taking off, this article considers how they are being deployed today, and the possibilities for the future, post-RHI.

Up until about two years ago, the uptake of heat pumps under the non-domestic RHI had been low. The reason for this post-2013, when ground and water sourced heat pumps tariff doubled, is not completely clear. Biomass dominated in this period and possibly gained the foothold required to become the option of choice.

However, since the rapid drop in tariffs for biomass in 2015 and 2017 (for the small scale and medium scale respectively) ground and water source heat pumps have received significantly more interest. They have gone from about 90MW installed 2 years ago to over 210MW currently.

With the future of the non-domestic RHI unclear beyond March 2021, we are possibly approaching a phase of last chance to install under the RHI. However, there may be some kind of extension for those applications which have tariff guarantees, this is indeed mentioned in the 2020 Treasury Budget, but details of this are as yet unknown. For now, it would be wise to assume a safe deadline is March 2021 for completion of any project if you wish to receive RHI payments. It should be pointed out that this timescale is completely feasible, most largescale projects take 3-6 months to complete.

Just to recap on how a heat pumps works for the sake of this article, they are basically the same as a refrigeration plant. Like a fridge, they move heat from a source, the inside of the fridge in the case of a refrigeration system, but the ground or water in the case of a heat pump, and reject that heat (far warmer) where we want it. It is possible to use more than one source of heat in a single system, e.g. ground, coldstores and waste heat from a grain dryer, the warmer the heat source the more efficient the system is. Most heat pumps use one or more compressor to upgrade the heat to higher temperatures, it is these compressors which use most of the electricity.

There isn't a one-option-fits-all solution even on agricultural sites, but generally the sites which have an optimal situation for large scale systems, have a large heat use such as crop drying, with a good heat recovery source, such as coldstores and/or heat recovery from a dryer. The reason a good heat recovery source helps, is that it can reduce the size of the ground/water heat collector required and thus save on capex and increase the efficiency of the system which in turn reduces the running costs.

However, it is vital that consideration is given to the timing of use of the various sources of heat, both recovered and the ground/water. For example, waste heat from chilling potato coldstores is often not available by the time you need heat for cereal drying, the potatoes are off the farm by that time. However, recovering heat from the dryer could easily give you half of your heat requirement in a well-designed system. Likewise, winter space heating requirements may only be partially met by heat recovery from coldstores, as the cooling load is at its lowest in the winter months.

For some sites, the restriction of their electricity supply has been seen as an insurmountable barrier, typically needing about 400 amps (3 phase) per MW of installed heat pump. However, if the system is only run at full power (all the compressors) during the relatively short crop drying season, then it may be possible to hire in a generator to run some of the compressors in the heat pumps during this period. At times of lower demand (such as winter space heating loads) then mains power may be enough.

Future

Post RHI, some people think this may be the end of new heat pump systems on farms, but with the Scottish Governments' ambitious targets on renewable heating and fossil fuels, it is possible that the days of new 100% diesel or kerosene fuelled dryers may soon be gone, therefore efficient, sustainable alternatives need to be sought. For the following reasons, using heat pumps for this is not the dreadful thing some may think.

Sector Focus - Heat Pumps Today, and the Future

Use existing cooling equipment – Currently under RHI regulations it is not possible to use used equipment and receive the RHI. However, if the RHI goes, there is no reason why an existing refrigeration system cannot be modified to become a heat pump as well as a refrigeration system. That way you can use the warm summer air (from inside the open, empty coldstores) as a heat source for the dryer. How much heat you can get is difficult to say, but a “typical” single shed cold store has about 100kW of cooling capacity installed, which could give up to about 140kW of heat output depending on the ambient temperature. If you have multiple coldstores, then this could add up to a reasonable amount of heat.

Running costs – for most agricultural situations, such as using heat pumps to dry crops in the summer, then the heat pump should be running at electricity-to-heat ratios (known as COP) of over 1:5. So assuming electricity price of 15p/kWh, then that gives a cost of 3p/kWh of heat, which compared to kerosene or diesel at about 5p/kWh, is a considerable saving.

Carbon savings – UK electricity currently produces about 277g of carbon dioxide for every kWh, using the assumed ratio of 1:5 for a well designed crop drying system, that gives 55g of carbon dioxide for every kWh of heat. Compared to kerosene at 296g, again a considerable saving.

Enhanced grain cooling – an additional benefit of the cooling side of a heat pump, is the ability to chill the air used to cool the grain by 5°C - 10°C below ambient, saving cooling time and fan costs.

Without the luxury of the RHI payments, it is even more critical to optimise any heat pump system, so consider voltage optimisation (for mains power supplied sites) and power factor correction equipment if you have a high annual electricity usage. These technologies can save up to 10% on the bill.

Future developments of heat pumps may include the development of engine driven heat pumps at smaller scales. These heat pumps use a gas or diesel powered engine to run the compressor(s) rather than an electric motor, as is used on most heat pumps and refrigeration systems. This would remove the requirement to upgrade the electricity supply or hire in a generator to run an electric heat pump. These types of heat pumps already exist, but mainly at the multi-MW scale and mostly based on mains gas fuelled engines. An additional benefit is that the hot water from the engine cooling can be used in addition to the heat pump, increasing the overall the efficiency of the system.

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Key economic data

General Indicators		Price indices for January 2020 (Defra 2015 = 100)			
		Output Prices		Input Prices	
Base interest rate	0.1% (0.75% Mar '20)	Wheat	122.53	Seeds (all)	103.7
ECB interest rate	0.00% (0.00% Sep '18)	Barley	115.01	Energy	124.2
UK (CPI) inflation rate	1.7% (target 2%)	Oats	110.61	Fertiliser	92.2
UK GDP growth rate	0.0% (Q4 '19)	Potatoes	128.95	Agro-chemicals (all)	128.5
FTSE 100	5,503 (30 Mar '20)	Cattle and Calves	100.42	Feedstuffs	109.9
		Pigs	125.06	Machinery R&M	110.8
		Sheep and Lambs	120.67	Building R&M	110.1
		Milk	117.45	Veterinary services	114.2

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