Farm Advisory Service

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News in brief

November 2019

Wet autumn challenges

The wet end to autumn across Scotland and much of northern and eastern parts of England will create a significant knock-on-effect into next season.

Right now there are serious concerns over the current potato harvest with significant areas still to lift and much of what is still in the ground at risk of abandonment. This also threatens vegetables and other winter crops. Undoubtedly there will be a sharp drop in winter crop sowings; particularly wheat. This may take the pressure off our own wheat export campaign in 2019/20 and has already boosted forward wheat prices for 2020 harvest in the UK and should support feed barley prices too. On the flip-side this looks negative for UK and Scottish malting barley prices come harvest 2020, given that spring barley is one of the main alternatives for land left unplanted this autumn across England and Scotland.

For livestock producers all else being equal the drop in winter sowings could lead to a relative increase in some feed prices. On the other hand there will likely be more feed barley around so expect a strong barley price discount to wheat. The good news is that at least over this winter most livestock farms have good stocks of high quality forage so purchased feed requirements are generally lower at present. For pig and poultry producers, if we do see higher UK wheat prices, this is likely to push up compound feed costs.

This turn for the worse in the weather just serves to remind us that no matter what happens with the political and trade situation, farming has enough to deal with in maintaining production in the face of extreme weather. The Scottish Government has indicated that £80m of converge money will be directed to upland areas currently facing a reduction in LFASS support. While details of how this will be distributed have yet to be revealed this funding will be welcomed by recipients. On the other hand lowland producers may decry this focus on the uplands and this wet autumn shows that they can be disadvantaged at times too.

Next month

- Employing people
- Welfare in dairy cattle

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Julian Bell

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

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Convergence money

The Scottish Government are to distribute £80 million of convergence money to support active farmers in the hills, islands and marginal areas - effectively topping up the declining Less Favoured Area Support Scheme (LFASS) budget. Details of how and when the money will be distributed is expected to be available in due course.

CAP Scheme update

Agri-Environment Climate Scheme (AECS) 2020

Farmers and land managers who have an AECS contract that is due to expire in 2020 will have the option to extend their contract for one year. There will not be a normal AECS application round in 2020.

Scottish Upland Sheep Support Scheme

Scottish Upland Sheep Support Scheme (SUSSS) claims can be made until 30th November. Eligible animals must be retained on your holding (including away winterings) from 1st December in the year of claim to 31st March the following year. Ewe hoggs must be less than 12 months old at the start of the retention period.

2019 Scottish Agricultural Census

- Improved planting conditions compared to the previous crop year resulted in an increase in the area of cereals and potatoes grown
- While lamb numbers recovered in 2019, cattle numbers continue to decline and are at a 60 year low

Results from the June 2019 Agricultural Census can be found on the Scottish Government's website at: https://www.gov.scot/publications/final-results-june-2019-agricultural-census/. A summary of the changes in crop areas and livestock numbers compared to the previous year are included below.

Crops

- Overall **cereal area** increased by 10,601ha (+2.5%) to 437,258ha, driven by an increase in winter barley by 11,260ha (+30.0%), wheat by, 7,702ha (+7.7%), winter oats by 1,576ha (+18.7%) and rye by 629ha (+10.9%). Spring barley decreased by 8,386ha (-3.3%), spring oats by 1,756ha (-7.4%) and triticale by 423ha (-44.3%). Lower than average rainfall during the summer and autumn of 2018 resulted in an increase in winter crops grown. Although the area of spring crops grown decreased there was still an overall increase in cereal area. The area of rye has increased continuing to reflect its use for fuel production or distilling.
- Area of **oilseed rape** decreased by 883ha (-2.7%) to 31,855ha. The area of winter and spring oilseed rape both decreased by 723ha and 208ha, respectively. Winter oilseed rape is still the dominant crop at 31,561ha.
- Areas of ware and seed **potatoes** both increased, resulting in an overall increase in the area of potatoes grown by 1,133ha (+4.1%) to 28,491ha. The increase was driven by strong market prices and improved weather.
- The area of **soft fruit** decreased by 20ha (-1.0%), driven mainly by a decrease in the area of raspberries and blackcurrants. The area of blueberries increased over the same period. The overall decrease is potentially due to market uncertainty and labour.
- **Vegetables** for human consumption decreased by 264ha (-1.4%) to 18,624ha due to a decrease across all vegetables except peas, swedes and calabrese which increased marginally.
- Total area of **crops for stock-feed** increased by 280ha (+1.7%) to 17,041ha.

Livestock

- **Total cattle** numbers decreased by 27,591 (-1.6%) to 1.73 million, continuing a longer-term decline since the peak in 1974 when there was 2.78 million cattle. **Beef cow** numbers fell by 6,867 (-1.6%) whereas **dairy cow** numbers increased by 1,086 (+0.6%), the latter due to improved milk prices. Low profitability of beef is contributing to the decline in beef cow numbers.
- Total **sheep** numbers increased by 82,701 (+1.3%) to 6.67 million, driven by an increase of 116,313 lambs. The number of breeding ewes also increased by 15,900. Better weather conditions following the previous year's snow contributed to the increase.
- **Pig** numbers increased by 2,529 (+0.8%) to 319,265. Although a slight increase, pig numbers have been trending downwards since a peak in 1973.
- Total **poultry** numbers decreased by 107,964 (-0.7%) to 14.9 million. The number of layers is greater than the number of broilers and has been for a third year.
- **Farmed deer** numbers increased by 3,558 (+36.8) to 13,218, continuing an upward trend following an increased demand for venison.

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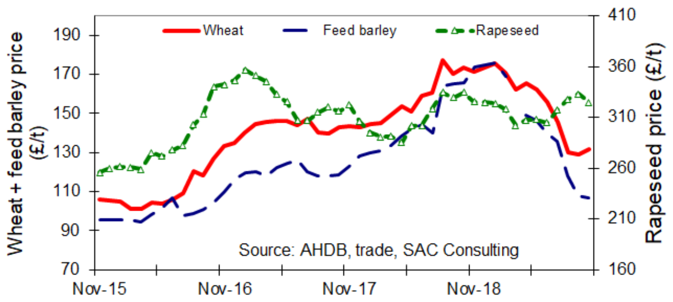
Large crops subdue world markets

World cereal markets were relatively stable over the last month with some weakness in recent weeks. World markets remain well supplied with wheat given record expected ending stocks while feedgrains saw declining but still ample ending stocks. UK cereal markets got a reprieve from a potential No Deal Brexit on 31st October with EU trade now able to continue unaffected until at least 31st January 2020.

In its November report the USDA estimated 2019 world wheat production estimates just 0.3mt higher to 765.5mt, use was almost stable and end stocks rose 0.5mt to a record 288.3mt. Wheat output estimates were cut for the US, Australia, Argentina and increased for the EU, Russia and Ukraine. Overall world wheat markets are well supplied with a lot of competition from export origins; not surprisingly this is keeping world prices subdued.

For coarse (feed) grain such as maize in 2019 the USDA cut production 1.8mt to 1,394.9mt, use rose by 1.8mt to 1,415.4mt and 2019/20 end stocks fell 7.2mt to 326.8mt and remain 20.5mt down on the year (347.3mt in '18/19). Lower US maize crop estimates outweighed higher feed grain output elsewhere. Overall world feed grain markets are adequately supplied though stocks have declined significantly over the last few years and if it were not for a record world wheat crop; feed grain prices would have risen higher.

Scottish cereal and oilseed prices



In the UK old crop wheat prices have risen around £2/t in the last month with the wet autumn likely to cut UK wheat sowing and output sharply for harvest 2020. The extension of EU membership from 31st October to the end of January 2020 has given the UK the chance to keep exporting surplus wheat and barley to the EU without restrictions for a few more months at least.

Rapeseed prices have gained support recently from rising world vegetable oil markets underpinned by rising palm oil prices and concern over EU rapeseed sowings for 2020 harvest.

Wet autumn and 2020 harvest

The wet end to autumn across Scotland and much of northern and eastern England will create a significant knock-on-effect into next season.

Right now there are serious concerns over the current potato and vegetable harvest with significant areas still to lift and much of what is still in the ground at risk of abandonment. Undoubtedly there will be a sharp drop in winter cereal crop sowings; particularly wheat. This may take the pressure off our own wheat export campaign in 2019/20 and has already boosted forward wheat prices for 2020 harvest in the UK. As a result there is currently a forward carry (price rise) on UK LIFFE wheat futures of over £7/t between May 2020 and November 2020. This differential is sufficient incentive to store surplus wheat from the 2019 crop into the 2020 season. This may be necessary if UK wheat sowings are as low as expected and UK wheat prices for 2020 harvest are already priced close to import parity level.

On the flip-side the fall in winter sowings looks negative for UK and Scottish malting barley prices come harvest 2020 given that spring barley is the main alternative for land left unplanted this autumn across England and Scotland. At the same time, feed barley prices for 2020 harvest are likely to be supported by the fall in UK wheat sowings. The main competition for malting barley may therefore be farmers opting to grow high yielding spring feed barleys instead. This could provide some support for malting barley premiums in 2020.

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Indicative grain prices week ending 25 October 2019 (Source: SACC/AHDB/trade)
'* Before oil bonus, # Ex-farm England spring brewing max 1.85%N, ~ nominal

£ per tonne	Basis	Oct 2019	Nov 2019	Jan 2020	May 2020	Nov 2020
Wheat	Ex-farm Scotland	132.50	133.50	136.50	140.00	147.50
Feed barley	Ex-farm Scotland	115.00	116.00	119.00	123.00	130.00
Malt. barley - distil	Ex-farm Scotland	124.55				
Malt. barley - brew	Ex-farm England#	126.00	127.00	129.00		142.00
Oilseed rape*~	Delivered Scotland	318.00	319.00	322.00		308.00

Static prime cattle price

Prime cattle prices haven't fared any better in recent weeks with finished price remaining in the doldrums as the chart shows. Prices remain fairly flat.

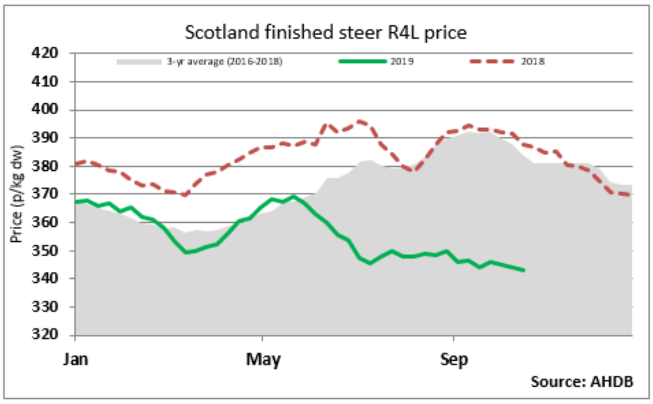
For week ending 19th October, Scottish base price for steers grading R4L was around 330p/kg/dwt, approximately 40p/kg/dwt back from the same week in 2018. Southern England is not faring any better with prices sticking around 325p/kg/dwt.

Cull cow price has dropped in recent weeks, with several processors dropping their price by 5-6p/kg. This being due to the approaching festive period when 'clean cattle' are required. A shortage of 'boning staff' is also said to be playing a part in restricting cow throughputs at some abattoirs.

Carcase weights remain high

Heavier carcases have contributed to lowering the finished price. Cattle have done well this year over a good growing season compared with last year, and carcase weights have been significantly heavier all summer. From 1st October in an attempt to reduce increasing carcase weights two of Scotland's leading processers will cap weights to 400kg. There are UK abattoirs already capped at 400kg. This new weight limit will mean going forward cattle finishers will need to be more vigilant if they are to avoid penalties.

The amount of beef in the system still exceeds consumer demand. However, on a positive note there is a hint of sales growth, although this growth is still for the cheaper cuts. Mince and stewing beef are what consumers are putting in their shopping baskets.



Christmas short-term relief?

The festive period is a peak time for beef sales. Prime cattle slaughtering's tend to peak in the months building up to Christmas when processers look to fill their chills in anticipation of high volume sales. Christmas stock buying is likely to start soon. Although this offers some short-term relief to the current beef situation, let's not forget that a high amount of beef is still likely to be in storage (partly due to Brexit stock piling), but with little demand in 2019 for beef supplied have remained fairly plentiful.

Brexit remains a concern with the Halloween date looming a lot of uncertainties remain, which is casting a spell of speculation over the beef sector. Going forward into 2020 supply levels are likely to tighten due to a decline in calf registrations in 2018. China 'beefing' up their protein imports due to the effect of African Swine Fever could give a welcome boost to the market. The first shipments (after a 20 year absence) of UK beef are expected to go to China in early 2020 if not by the end of 2019.

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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
05 Oct 19	**345.0**	-1.2	13.1	**343.2**	-2.0	4.6	329.3	10.0	261.8	245.3
12 Oct 19	**344.2**	-0.8	12.9	**343.6**	0.4	8.6	330.8	12.9	255.7	237.6
19 Oct 19	**343.2**	-1.0	-1.0	**344.3**	0.7	11.6	329.2	10.1	253.2	233.1

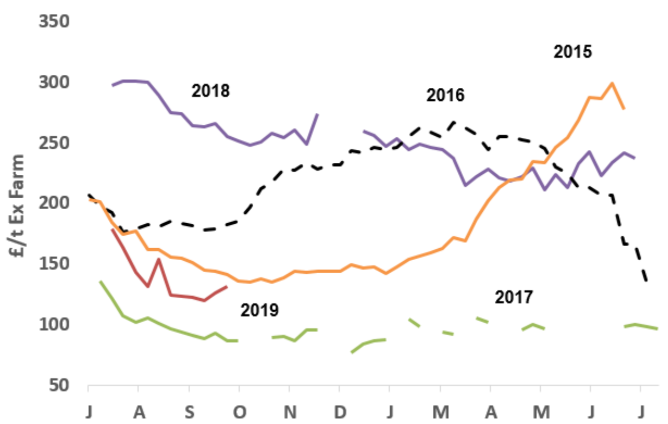
The finished cattle base price quoted by a buyer may be significantly different from the national average deadweight price presented above as these are averages of both commercial and premium cattle, reflect variation between processors and any bonus payment differences.

Market price update

- *The GB Weekly Average Prices for the week ending 19th October was £145.21/t for free-buy and contract purchases, and £131.14/t for free-buy purchases*
- *Compared to the previous reported figures on 12th October, contract and free-buy purchases were up by £4.13/t and free-buy purchases were up by £5.31/t*

Crop Year 2018/19	19 Oct	12 Oct	5 Oct
Average Price (£/t)	145.21	141.08	141.59
AVP change on week (£/t)	+4.13	-0.51	-6.66
Free-Buy Price (£/t)	131.14	125.83	119.65
FBP change on week(£/t)	+5.31	+6.18	-2.68

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



Trading Season July - July Source: AHDB

Market Overview

The market has remained fairly steady over the past few weeks with the WAPS average price w/e 19th October £145.21/t ex farm, up £4.13/t ex farm on the previous week. The WAPS free-buy price w/e 19th October was £131.14/t ex farm, up £5.31 on the previous week.

In Scotland, there was an increase in contract movement with the end of the month fast approaching. This resulted in little appetite for free-buy supplies with a large proportion of material heading into English markets. Grade 1 Maris Piper is trading around £120-140/t ex farm, down by around £10/t on last week. Grade 1 Whites are trading around £130/t ex farm, with little change on last week.

In England, quality is highly variable and premiums are being offered for good quality stocks. Grade 1 Maris Piper is trading around £135-175/t ex farm, and Whites are trading around £150-190/t ex farm. Grade 1 King Edwards are trading between £170-230/t ex farm with high end prices being paid for top quality, bold supplies. Reds are trading around £150-220/t ex farm.

The bagging market was described as "challenging" this week as some varieties prove difficult to source. Agria continues to command a high premium as availability of good quality supplies is limited. Due to high prices and tight availability, some buyers are unwilling to engage and are turning to more competitively priced varieties. To this extent, there were limited prices for Agria reported, below the AHDB threshold for publication. In the East, chipping Piper is trading around £130/t ex farm with good quality stocks reaching a high of £160/t ex farm. Sagitta is trading around £140/t ex farm with a high of £160/t ex farm reported this week. In the West, Challenger, Ramos, and Sagitta are all trading between £100-130/t ex farm. Piper is trading between £100-130/t ex farm, and Markies £90-130/t ex farm. In the South of England, chipping Piper is trading around £150/t ex farm, and Sagitta is trading around £160/t ex farm.

There is continued uncertainty in the export market with exports slowing down for many this week. By mid-week many exports stopped completely due to the uncertainty surrounding the situation from 1st November. Where there was some movement, King Edwards destined for the Canary Islands were trading around £185/t ex farm, and White varieties (Picasso, Daisy, and Markies) were trading between £120-190/t ex farm.

Potato lifting update

Latest figures from AHDB indicate that over 70% of the GB potato area (excluding seed) has now been lifted. Heavy rain during late September halted progress with many regions going from too dry to too wet within a few days. Growers on heavier soils have been stop-start as access to land with heavy machinery proved challenging. Quality is described as "variable" with the main quality issues arising from the variable ground conditions. Above average levels of blackleg and associated rots are reported on particularly saturated soils. Some stocks which were harvested wet are taking longer to dry in store.

Nevertheless, there are no major issues reported in store. Much will depend on rainfall in the remaining autumn period as to what effect this has on lifted area and market supply.

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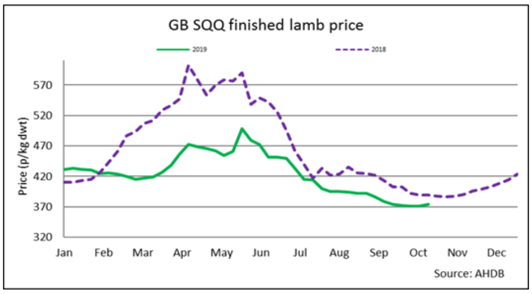
Has the finished price bottomed?

The deadweight price has been steady over recent weeks and has probably bottomed for the season. By comparison, the liveweight price has fluctuated a bit; not unexpected given the role of the live ring in balancing the marketplace. While the number of lambs killed in the past few months is up on the same period last year, so too the proportion of under-finished lambs. Killing out percentages have, the trade notes, improved of late as many producers have introduced creep feeding.



The cull ewe price continues to fair reasonably well despite the higher number of culls coming forward this autumn. Given the uncertainty created by Brexit, it is possible that this higher supply reflects producers culling out ewes that in more optimistic times would have been given a further chance. Last week culls averaged £50 in Scotland.

Good prospects through to Christmas

For the moment the threat of a bad Brexit has been postponed rather than cancelled. Which probably means that the lamb price will be influenced by the normal supply and demand factors through till Christmas at least.

For the coming week (w/b 28 October) Farm Stock (Scotland) are signalling that the deadweight price may soon start lifting from its 350-360p/kg dwt base as processors gear up for Christmas. With AHDB predicting the availability of less lambs through to Christmas and unchanged access to the EU market, the fundamentals support a better lamb price. And while a postponed Brexit also gives some certainty for New Zealand imported legs, the supermarkets will have to pay for them given strong demand from China: a positive for our lamb trade.

Exporting lamb to USA: what chance?

The Americans import much of the lamb they eat but almost entirely from Australia and New Zealand. Should we be getting in on the action? If so, how?

- In 1884 the US flock totalled 51m, but just 5m in 2016 with Texas and California the key production states supported by the mountain states like Colorado. Just 2m lambs are slaughtered in the US annually.
- 40% of Americans have never tried lamb. Overall consumption is tiny at just half a kg per capita, but that still amounts to a significant tonnage given 327m Americans.
- As the domestic industry only supplies around 70,000t, around two-thirds of consumption is met from imports.
- Demand comes largely from African, Caribbean and Middle Eastern communities in the big cities of north east America and California.
- Cuts rather than carcases are required with racks for restaurants especially popular. Market research suggests that provenance based on lambs' naturalness is especially important with "millennial foodies" and "baby boomers".
- US processor Superior Farms has developed two brands to target these markets; *Cascade Creek* (grass fed) and *Farmer's Mark* (antibiotic free).
- The Kiwis have recently rebranded New Zealand lamb under the *Taste Pure Nature* banner and targeted the "conscious foodies" of California.
- Tariffs are less significant to accessing the market though the Australians have a zero tariff agreement. Establishing a market channel is the big problem.
- Could collaborating with the ANZACS be the route in? With more antipodean lamb going into China, The Lamb Company is looking for lamb to import into the US. Opportunity?

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Week Ending	GB Deadweight 16.5 – 21.5kg			Scottish Auction (p/kg LWT)			Scottish Ewes (£/hd)	E&W Ewes (£/hd)
	R2	R3L	R3H	Stan	Med	Heavy		
05 Oct 19	373.9	372.0	366.1	151.0	161.4	155.9	49.0	50.3
12 Oct 19	374.0	372.0	366.1	159.0	164.6	155.6	52.6	53.2
19 Oct 19	377.9	375.3	369.3	157.0	160.8	153.3	50.4	51.8

Deadweight prices may be provisional

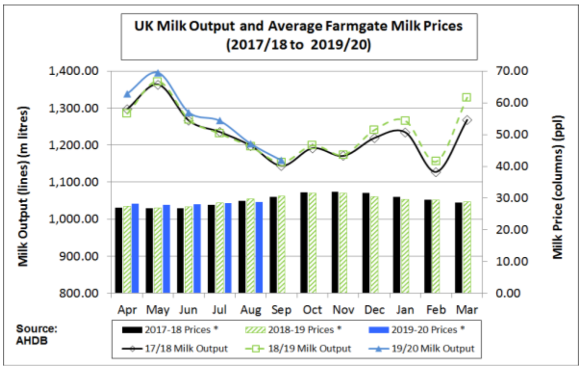
Source: AHDB

Growth to UK output continues to slow

- *UK milk output has continued to increase during September 2019 but the rate of growth is slowing down*

AHDB data for September 2019 estimates UK monthly milk output at 1,158.67m litres (before butterfat adjustment). This is 5.00m litres above milk output for September 2018. Whilst the figures show that 2019 monthly production has increased above last year, they also demonstrate that growth to UK output is slowing. Cumulative UK production for the six months to the end of September 2019 is now estimated at 7,649.92m litres. This means that cumulative production for 2019/20 is 143.81m litres higher than the cumulative total this time last year.

The UK average milk price for August 2019 is estimated at 28.80ppl (up 0.43ppl from the July 2019 average, 28.37ppl). The average milk price for August 2019 is 0.87ppl lower than the average price received in August 2018.



Scottish milk surplus expands

The milk surplus in Scotland is set to reach 200m litres in 2019/20 according to AHDB. Milk collections from Scottish dairy farms are expected to be around 1,500m litres in 2019/20 (up from 1423m litres in 2014/15). Meanwhile, processing capacity in Scotland has reduced due to the closure of milk processing facilities (FM Arran, Müller Aberdeen and East Kilbride). As a result, milk processing capacity in Scotland has fallen to an estimated at 1,294m litres and an increasing volume of milk is being transported to England.

Müller has reacted to the AHDB data, stating that the company will carry out a review with its 230 suppliers in Scotland, where production far exceeds demand.

Mixed fortunes on prices in November

Price announcements for November 2019 include:

- Fresh Milk Company (Lactalis) – Following a reduction of 0.63ppl at the end of September, Lactalis has confirmed that the October 2019 milk price (26.50ppl for the liquid standard litre) is to be a minimum price guarantee for the fourth quarter (Oct, Nov & Dec 2019).
- First Milk – FM has announced a reduction of 0.45ppl for November 2019 (see table below).
- Arla Foods amba – Arla has confirmed that the company will hold its conventional milk price for November 2019. However, Arla's milk price will reduce by 0.03ppl due to the company currency smoothing mechanism. The liquid standard litre price for November moves to 29.02ppl, whilst the manufacturing standard litre (4.20% b/f and 3.40% protein) moves to 30.19ppl.
- Arla's organic milk price will reduce from 1st November 2019. The manufacturing standard litre reduces by 0.91ppl to 41.03ppl whilst the liquid standard litre reduces by 0.87ppl to 39.43ppl.
- Tesco – Members of the Tesco Sustainable Dairy Group (TSDG) will receive a price increase of 0.24ppl from 1st November 2019 as a result of the latest review of the retailer's cost of production tracker. The increase will see the price for Müller suppliers move up to 31.44ppl, whilst the price level for Arla suppliers will increase to 31.19ppl.
- Co-op – Co-operative Dairy Group members will receive a price increase of 0.01ppl from 1st November 2019. This takes the liquid standard litre price up to 29.38ppl.

Annual Average milk price estimates for November 2019 (ppl)	
Milk Buyers – Scotland	**Standard Ltr***
Lactalis (No profile or seasonality) [1]	26.50
First Milk Liquid [1, 2]	27.00
First Milk Manufacturing *(4.2% Butterfat & 3.4% Protein)* [2]	27.90
Müller - Müller Direct [1, 3]	25.75

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.*
3 *No monthly supplementary payment included in the price estimate. Includes 0.50ppl Müller Direct Premium.*

Global milk supplies on par with 2018

Reduced output in Australia, lower than expected EU milk deliveries and flat-lining US output have contributed to a lowering of estimated global milk output for 2019. Earlier forecasts by AHDB had suggested a small year on year increase (0.30%) may be possible, however, the latest forecast shows global milk supplies to be level with 2018 output.

UK dairy commodity prices (£/ tonne)	Sept 2019	Aug 2019	Apr 2019
Butter	3,230	3,030	3,460
SMP	1,960	1,850	1650
Bulk Cream	1,590	1,400	1,500
Mild Cheddar	2,830	2,830	2,830
UK milk price equivalents (ppl)	**Sept 2019**	**Aug 2019**	**Apr 2019**
AMPE (2014)	29.73	27.66	27.83
MCVE (2014)	29.90	29.93	30.56

Source: AHDB

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Sector Focus - Seaweed Applications in Agri-Food

Background

Global demand for seaweed is on the increase as it is one of the most versatile and naturally occurring sources of vitamins and minerals for both humans and livestock. Coming in a multitude of colours, textures, shapes and sizes, all types contain a rich supply of minerals. It is also an excellent source of amino acids, anti-oxidants and essential fatty acids making seaweed an essential element in both human and livestock diets as well as for use as a soil fertiliser and in the cosmetics industry.

Despite its growing popularity, seaweed has been used as a food ingredient all over the world for thousands of years, but has most notably been a prominent part of Asian diets, particularly in Japan, Korea and China. There are thought to be over 10,000 species of seaweed, reflecting its immense diversity, both in flavour and nutritional properties.

Seaweed is a significant resource for Scotland. It is very important environmentally and historically and over the last five years has been harvested at a small scale. There is considerable potential for growth and development of its exploitation and use in Scotland. Kelp grows abundantly off the west coast of Scotland and around its islands. It has traditionally been harvested by hand, and used in the production of soap, glass and fertilisers but more recently in the pharmaceutical and cosmetics industries. Commercial firms are now expressing an interest in collecting much larger quantities.

Applications in cattle nutrition

Feeding seaweed to cattle has been proven to increase overall health and growth rates. Research by Penn State has indicated a small amount of seaweed added to cattle feed could result in a significant reduction in methane emitted by livestock. In short-term studies carried out in lactating dairy cows using a red alga seaweed, methane emission decreased by 80% and had no effect on feed intake or milk yield, when fed at up to 0.5% of seaweed dry-matter in feed. A study by the University of California, found a small amount of marine algae added to cattle feed can reduce methane emissions by gut microbes by up to 99%.

Both research institutions are positive but would like to stress that the results are for short-term experiments and long-term effects of seaweed on animal health and reproduction and its effects on milk and meat quality need to be determined. There is also a long history of feed additives that the microbes in cows' rumens adapt to reducing effectiveness. Long-term studies are needed to see if compounds in the seaweed continue to disrupt the microbes' ability to make methane. They also caution the practice may not be a realistic strategy to battle climate change given that the scale of production would have to be immense. With nearly 1.5 billion head of cattle in the world, harvesting enough wild seaweed to add to their feed would be challenging. For Scotland the questions include; do locally available seaweed species have the right properties? What are the measurable effects in Scottish production systems? What cost and practical implications might there be? SRUC are researching several of these areas.

Applications in food

At present seaweed is primarily used in food manufacturing in the production of phycolloids; Agar is a modern development which is used in food manufacturing to suspend, stabilise and as a thickening agent. Agar has the ability to produce high strength gels from a low concentration. It is used in the production of dairy products to emulsify and stabilise ice creams, creams, cheese and yoghurts; it is also used in the production of confectionary (fruit jellies), bakery products and as an emulsifying compound in soups and sauces.

Current research suggests that seaweed is also a rich source of phytochemicals, antioxidants and has anti-micro bacterial properties that could help reduce the need for chemical preservative in food manufacturing. Seaweed could also be used as a method of enhancing both food safety and quality. Research suggest that the use of antioxidants found in seaweed may be an effective way to prevent lipid oxidation which is the main reason for food spoiling. SRUC development chefs have worked closely with a number of food manufacturers in Scotland to produce innovative new food products using seaweed. One of the main applications is to use seaweed as a salt replacement. Mara Seaweed, who harvest a 40km stretch of seabed around the East Neuk of Fife, produce a Kombu Kelp which can be used as a healthy salt alternative. Seaweed is high in potassium and magnesium, two healthy mineral salts that guarantee flavour with 92% less sodium then average table salt. SRUC have worked with Highland Crackers to develop a healthy cracker using seaweed flakes as an alternative to salt and a seaweed drink with Lighthouse Seaweed that uses a blend of Scottish fruit, vegetables and seaweed to produce a sweet and healthy drink.

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Management Matters
US Tariffs and Scotch Whisky

25% tariffs threaten to dent US market

Scotch Whisky creates £5 billion of Gross Value Added annually for the Scotland, and both demand for one of the country's key exports and investment in the industry has increased in the last few years (Scotch Whisky Association).

Trump's recent decision to introduce tariffs of 25% on imports of single malt Scotch whisky comes at a time of existing uncertainty for exports after Brexit. The US is the largest export market of a single country in the world for Scotch, at around 22% of total export value. The Scotch Whisky Association estimate that a 25% tariff, mirroring the 25% EU tariff on bourbon imports, will reduce exports by up to 20% (4.45% of total export value). With tariff costs borne by the exporter, the price of Scotch single malt sold in the US would likely be increased to make up for this, making it less competitive compared to other whiskies, such as Irish whiskey and bourbon.

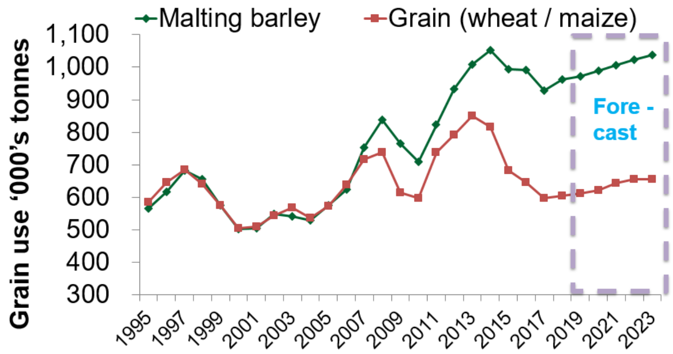
However, various measures could be introduced to manage the predicted dent on sales. The Grocer suggests that while larger distillers could absorb the additional tariff costs, smaller producers may wish to reduce US exports, explore alternative markets, or try to economise in other areas.

One way to economise would be to sell younger and less expensive whiskies into the US market to retain the consumer price point, and retain older and more expensive whiskies for other markets.

With US markets looking at an increase in price of single malt, a dip in sales is probable which could cause a backlog of whisky stored in bonds, and could encourage whisky distillers to moderate production, holding off for an improvement in the market or reversal of the tariff.

This being the case, distillers may decide to reduce production and buy less grain, choosing to hold on o stock stored in bonds until the market opens up again, or find alternative markets. Malt whisky is now the dominant form of whisky production in Scotland and the driver of rising demand for malting barley in the last decade.

Malting barley and grain use in Scotch whisky production



Source: SAC Consulting, Scotch Whisky Industry review

The provenance of Scotch whisky is an important added value for the final product. Scotch Whisky must be distilled in Scotland and matured in Scotland for a minimum of three years to be legally called Scotch Whisky. There is, however, no requirement on Scottish provenance of the grain used in its production.

This year has seen an increase in the Scottish spring barley harvest, predicted at 17% (240kt) more than 2018, and up 15% on the 5 year average. Because of this maltsters were reported to have been more particular about quality compared to previous years, part of a contributing factor towards lower malting barley premiums in 2019. This would likely be compounded if distilleries decide to reduce production based on a backlog of whisky in bonds and buy less grain, a decision that will come after spring sowing of cereals.

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Value of Scotch whisky export markets by region and top 10 (£ thousand million)
Source: Scotch Whisky Association, HMRC

Regional exports (value £ thousand m)		
EU	1392.0	29.6%
North America	1260.3	26.8%
Asia and Oceania	1127.5	24.0%
Latin Am & Caribbean	368.4	7.8%
Middle East and North Africa	274.6	5.8%
SS Africa	158.2	3.4%
Western Europe (non-EU)	84.7	1.8%
Eastern Europe (non-EU)	30.8	0.7%
TOTAL	**4696.6**	**100%**

Top 10 export markets (value £ thousand m)		
USA	1039.5	22.1%
France	442.1	9.4%
Singapore	319.9	6.8%
Germany	173.9	3.7%
Spain	170.4	3.6%
Taiwan	168.4	3.6%
UAE	146.9	3.1%
India	138.8	3.0%
Mexico	131.5	2.8%
Latvia	129.8	2.8%

Key economic data

General Indicators		Price indices for August 2019 (Defra 2015 = 100)			
		Output Prices		Input Prices	
Base interest rate	0.75% (0.50% Aug '18)	Wheat	113.07	Seeds (all)	103.6
		Barley	112.15	Energy	125.2
ECB interest rate	0.00% (0.00% Sep '18)	Oats	109.53	Fertiliser	105.6
		Potatoes	122.47	Agro-chemicals (all)	119.1
UK (CPI) inflation rate	1.7% (target 2%)	Cattle and Calves	97.36	Feedstuffs	114.3
UK GDP growth rate	-0.2% (Q2 '19)	Pigs	117.76	Machinery R&M	109.1
		Sheep and Lambs	102.16	Building R&M	112.3
FTSE 100	7,310 (13 Nov '19)	Milk	117.58	Veterinary services	115.3

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