Farm Advisory Service
National Advice Hub
T: 0300 323 0161
E: advice@fas.scot
W: www.fas.scot

April 2022

News in brief

The crises deepens

In different times, embedding an April Fool spoof article in this edition could have brought light relief to a very busy time of the year but with the covid pandemic passing its two year 'anniversary' and the deepening humanitarian crisis in war torn Ukraine; the mood this spring is anything but light with the resultant combined economic shock waves crashing through every sector and everyone's lives,

Although the covid pandemic and its periodic food shortages opened the general public's eyes and minds to the complexities of the normally slick farm-to-fork supply chains, the war being raged by Russia on its neighbour is already having far greater consequences with escalating energy and input prices, and rapidly rising inflation eroding incomes.

While Farm Business Income margins showed an overall increase for the 2020/21 Farm Business Survey year, the fact that this was largely due to lower expenditure on inputs, does not bode well for the current year with all sectors becoming significantly affected by the rising cost of feed, fertiliser and fuel putting increasing pressure on margins. With no derogation in the UK for planting additional cereals on Ecological Focus Areas (EFA) there are real concerns with regards feed and food security if there is no swift end to the war given that both sides are major cereal producers.

With livestock heading out for the start of the grazing season, the rising pressure on margins means that good grassland management will be more important than ever. Our grassland article gives some simple tips on how to forward plan to help mitigate the input cost challenges over the grazing season and into next winter.

Next month:

- Contract Farming
- Green Cow Research

Contents

This month's editor:
Christine Beaton

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

SAC CONSULTING

Scottish Government
Riaghaltas na h-Alba
gov.scot

2022 Single Application Form

Following the opening of the Single Application Form (SAF) window on the 15th of March farmers and crofters will be starting to think about its completion to ensure they get their essential 2022 payments. While there are no changes to the application forms for this year, there are a few things to note:

Method of submission and deadline

Paper SAFs will only be considered by RPID in a very limited range of exceptional circumstances. To request a blank form farmers and crofters must write to their local area office stating their exceptional circumstances that prevents them or a mandated representative from submitting an online application.

Due to the 15th of May falling at a weekend, the deadline for submitting the 2021 SAF is the 16th of May. If required, supporting documentation is also required by this deadline. These should be emailed or posted to local RPID area offices or uploaded to Rural Payments and Services. If posting documents, ensure copies are retained in case they go missing.

Land Maintenance Form

If a Land Maintenance Form (LMF) needs to be submitted to inform RPID of land updates these must be submitted before the 16th of April to ensure that SAF claims are accurate. LMFs can either be submitted via a paper form or online at the new Land Parcel Identification System (LPIS) viewer.

What is LPIS?

LPIS is the Scottish Governments web based geographical information system for registering and maintaining agricultural land in an multi layered geospatial environment. The system is not a land register, it only captures land boundaries which are either eligible to be claimed against for grants or subsidies and for providing land parcels for managing the movement of livestock and animal disease.

The LPIS provides information for the RP&S to enable it to calculate accurate entitlement and payments for claimants. The new functionality allows farmers, crofters, and other landowners to view information on their farms graphically and submit changes online.

Guidance on how to make changes to maps and submit LMFs using LPIS is available at: https://www.ruralpayments.org/topics/customer-services/tutorial-videos/

Greening

Despite requests from the industry to relax Ecological Focus Area (EFA) rules to allow farmers to grow crops such as wheat and barley on fallow ground, EFA rules remain the same. There is still the requirements to comply with Permanent grassland requirements, where applicable. Further information on the Greening requirements for 2022 can be found on Rural Payments and Services at: https://www.ruralpayments.org/topics/all-schemes/basic-payment-scheme/basic-payment-scheme-full-guidance/greening---bps/greening-guidance-2022/

Transfer of BPS entitlements

Due to the 2nd of April falling at a weekend, the final date for submitting a 2022 entitlement transfer application and associated paperwork is the 4th of April. Applications and supporting 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/#622276

Red diesel use update

It has now been clarified that charity tractor runs are included in the list of permitted activities to use red diesel.

The Government considers that running or participating in events which provide information and education that benefit agriculture are purposes relating to agriculture, and this includes taking part in charitable activities that promote these industries. Examples of such events are agricultural shows, ploughing matches and charity tractor runs.

Key dates for April

Date	Action
4th	Transfer of entitlements forms and documents to be submitted by this date.
16th	Muirburn must not be carried out from this date (except if a licence has been granted for out of season burning).
16th	To ensure SAF claims are accurate submit LMFs before this date.

gillian.inman@sac.co.uk, 07803 222362

Soaring costs of food production

During question time for Rural Affairs held on 24th March the cabinet minister Mairi Gougeon was asked how the UK Government is involving the Scottish Government and the other devolved Administrations in discussions pertaining to Ukraine and the conflicts impact on food security in Scotland, the reply; "Across the Scottish Government, we are in contact with the UK Government on a range of aspects relating to the conflict and its impact. I continue to press for further engagement with the Minister of State at the Department for Environment, Food and Rural Affairs, Victoria Prentis, to ensure that we are closely involved in responding to the fast-moving situation."

Interesting then, that Defra will be hosting a fertiliser roundtable on 30th March with industry bodies, chaired by the farming minister Victoria Prentis, to discuss pressures on farmers and to come up with possible solutions to soaring prices. The meeting will look at alternatives to ammonium nitrate fertiliser and Defra said the government would pay farmers to help them with the cost of sowing nitrogen-fixing plants, such as legumes and clovers, to reduce some of their dependence on manufactured fertilisers. Curious as this may be, the reality is that the sheer magnitude of price rises, dwarfs any measures announced to date.

While current inflation is mainly due to causes global in nature, here at home, headline annual inflation ran even higher in February, accelerating to 6.2% up from 5.5% in January. The Office for Budget Responsibility forecasts 2022 inflation at 7.4%.

The not-for-profit organisation, Energy and Climate Intelligence Unit report; Farming, Fertiliser and Fossil Fuels, (published on the 28th of March), put the potential total cost of fertiliser for the sector over the next 12 months at £1.18bn. This will be £760m higher than last year's bill, which had itself risen by £160m on 2020 levels due to the impact soaring energy prices had on fertiliser production.

Because fuel prices were at even higher levels this year – with red diesel averaging at 1.09p per litre at the end of March, compared with 56.2p per litre at the same point in 2021 – the conflict in Ukraine will doubtless exacerbate existing supply issues.

Domestic supply tightens further

Meanwhile, London futures continue to track global markets, but it is worth noting that the old crop cash market continues to firm. Feed wheat premiums in Scotland are now really stretching the distance that wheat can travel, at £17-30/t over futures. Current values for feed grains must be pushing the livestock sector to its limit, as producers question whether their business models are sustainable in the medium term. European wheat futures struck new contract highs with increasing fears that there will be no short-term end to the conflict and its impact on Ukrainian 2022 grain production.

In Ukraine

The Ukrainian Minister of Agrarian Policy and Food has said that spring cropping is likely to be dramatically reduced as a result of the conflict. Corn could see only 3.3 million hectares drilled, which compares to 5.4 million hectares last season. It was likely only four million hectares of winter wheat would be harvested from the 6.5 million hectares drilled. These comments broadly align with other recent analyst estimates. Spring drilling is underway in the northwest region of Rivne, with a target to drill 420,000 hectares. An official has said that 66% of winter crops have been fertilised, with local analysts sharing a similar view. Analysts APK-Inform estimate Ukrainian wheat production at 14.9 million tonnes and corn up to 18.5 million tonnes - just over half the production levels seen in 2021.

This week, domestic oilseed rape markets got off to a fiery start with old crop MATIF futures gaining €57/t in just two days, on the basis that consumers are trying to buy rapeseed oil as an alternative to the sunflower oil that is now stuck in Ukraine. The conflict in eastern Europe remains the fundamental driver in this market, with old crop Ukrainian oilseed supplies non-tradeable. There are also serious concerns as to whether the rapeseed currently planted in Ukraine will get the care it needs before harvest, and whether its spring planted sunflower seed will indeed go into the ground.

£ per t	Basis	May '22	Aug '22	Nov '22	Nov '23
Wheat	Ex farm Scotland	335	291	269	217
Feed barley	Ex farm Scotland		242		
Malt. barley - distil	Ex farm Scotland	260			
Oilseed rape*~	Del: Liverpool	850	681	672	526

Indicative Prices wk. Ending 31/3/22 (Source: SACC/Graindex)

mark.bowsher-gibbs@sac.co.uk, 07385 399513

B e e f

Prime Cattle Soar

Prime cattle prices continue to rally strongly. March has seen a continued rise in the beef price with all classes of stock sold deadweight throughout the month showing welcome improvements both north and south of the border. At the time of writing (31st March), finished cattle prices have risen to around 430p/kg for Scottish R4L steers.

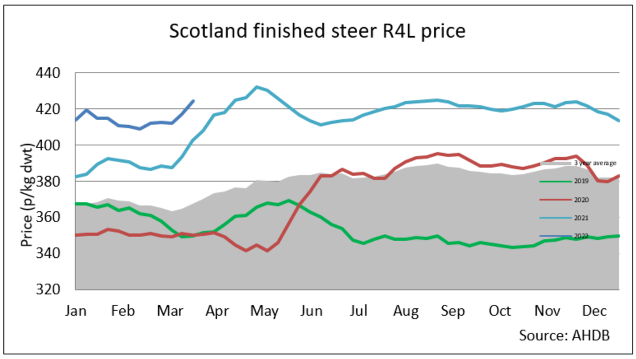
While finished farmgate prices are strong, those producing finished cattle will be looking for all the returns they can get, due to any gains being offset by the rapidly increasing input costs of feed, fertiliser, and fuel. Inputs prices were expensive before events in Ukraine, but prices have surged substantially since.

There is confidence around the store ring, with store cattle a buoyant trade. Early spring store sales tend to meet a good grade, as finishers aim to restock sheds ahead of spring arable work. Stronger, heavier stores are in demand due to the current strong prime trade with younger grass cattle also sought after, as is the norm for this time of year. However, many finishers would no doubt welcome a dip in the store trade to recover some margin however, as numbers of store cattle are still matching demand there will be a limit to how much the trade can fall.

The bull bubble shows no signs of bursting as the trade for prime bulls continues to be insatiable.

Cull Cow Price Rise Up and Up

Cull cow trade remains incredibly strong, with cow prices ramped up again in the week ending 19 March, continuing to build on record-breaking highs throughout the month. Such has been the demand for finished cows in recent weeks that Aberdeen and Northern Marts' weekly sale recently saw 40 cows sell for more than £1,500, with an average of £1,463.13. The clean cattle premium over cows is now at one of narrowest points on record.



The demand for processing type beef is likely to continue as a rise in living costs will no doubt affect consumer spending as the purse strings tighten. Retailers are unwilling to increase the price of beef on their shelves for fear of losing footfall, therefore a plentiful supply of 'cheaper' beef (mince, burgers etc.) will be needed.

Ukraine's Impact on Red Meat Market

The global Covid-19 pandemic for the past two years has caused market volatility and while we are recovering from this, the Russian invasion of Ukraine has led to renewed market turbulence, across the red meat supply chain. Increased fuel and energy costs are pushing up the operating costs of processing sites, there is also an increased cost associated with haulage, transport, and distribution.

Although cattle finishers are exposed to rising feed costs, the pig and poultry sectors are likely to be hit harder by the rising global grain markets due to their dependence on wheat. Russia and Ukraine are some of the world's biggest suppliers of wheat, with the war affecting exports. With a spike in the price processors are paying for chicken, this will undoubtedly have the effect of pushing up the retail price of 'white' meat on the shelves, which could well push consumers more towards beef as they search for an alternative and cheaper protein source.

sarah.balfour@sac.co.uk

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

Week Ending	R4L Steers (p/kg dwt)			-U4L Steers			Young Bulls - U3L		Cull cows	
		Change on week	North England diff.		Change on week	North England diff.		North England diff.	R4L	-O3L
26-Feb-22	**412.7**	0.8	-6.1	**406.7**	1.2	-7.6	**399.3**	-16.9	339.9	311.5
5-Mar-22	**411.9**	-0.8	-9.2	**408.5**	1.8	-7.3	**407.5**	-6.7	346.8	323.8
12-Mar-22	**416.9**	5.0	-5.4	**414.5**	6.0	-5.7	**412.8**	-5.3	359.6	335.5
19-Mar-22	**424.3**	7.4	-1.2	**421.2**	6.7	-2.2	**420.3**	-2.5	369.7	342.0

Impacts on major commodity exports

Combined, Russia and Ukraine are responsible for 25% of wheat exports, 20% of global grain feed, 50% of global sunflower oil, and are a key source of gas and fertilizer necessary for efficient food production.

Although food commodities are not being targeted with sanctions and farmers remaining in Ukraine are attempting, where possible, to continue production, other barriers exist. Most young, fit workers are fighting, there are reports that land is mined or in conflict areas, and both with both infrastructure and fuel are priorities for fighting over agriculture.

Commodity price changes, Feb-Mar 2022

	Feb 2022	Mar 2022	Increase
Red diesel	80p/l	130p/l	60%
Kerosene	60p/l	99p/l	65%
Fertiliser	£680/t	£940/t	38%
Feed mixes	£340/t	£400/t	15%
Soya	£450/t	£550/t	18%
Wheat	£210/t	£265/t	26%

Source: SACC/AHDB

Indirect impacts on European agriculture

We have been seeing some redirection of land use across the rest of Europe to replace the loss of feed and food production from Ukraine and Russia with homegrown product. Scotland has, in the face of past stresses, put more marginal land to use for grain production. In 2008, the Scottish (and UK) cereal area rose around 10% above the previous 5 year average in part response to high grain prices; this could amount to around 20,000 hectares of extra cereals this year. Some late spring planting may be in time to mitigate some of the impact in Scotland and across Europe.

However, even given the scope to increase production, the soaring costs of inputs will also be a barrier, with fertiliser and fuel prices having doubled in the last year. Fertiliser is produced from natural gas, ammonium nitrate and potassium, all imported from Russia and Belarus. Fertiliser supply and prices were already under stress due to the gas supply crisis earlier in the year, but the Ukraine crisis compounds this with much less hope of a quick resolution. Farmers will be wanting to make the best use of any nutrients available to them this year, more than ever, and make budgets stretch as far as possible for purchasing inputs. Last month's ABN article with tips on budgeting in the margin, and the launch of the new capital grant scheme will offer support for slurry management equipment.

While the EU has allowed for fallow land set aside for biodiversity use to be put into crop production this year to plug the crop production gap, this was not considered appropriate in the UK given the small areas/poor land capability of such land, and the greater potential in redirecting cereal for feed and drink production to food (e.g. malting barley).

As grain supply becomes more limited this will be redirected from feed to food supply chains, which has negative implications for the pig and poultry sectors, already under pressure due to limited processing capacity and labour supply. With rising inflation at consumer level (a 30-year record of 6.2% in February 2022) and tighter household budgets, the contradiction is that while these are often cheaper meats; we may see this change in coming months if these issues continue.

What more can be done?

The silver lining of the conflict is that the wider effects may serve to accelerate systems which have previously been considered unviable or less of a priority. In particular, many countries are examining their fossil fuel dependence and vulnerability to countries such as a Russia as a result (as well as implications for bankrolling Putin's army); oil and gas are major exports for Russia, with Europe importing 70% of Russia's gas and 50% of its oil exports (although the UK itself imports just 5% of gas and 8% of from Russia).

It also brings to the surface technologies and innovations such as alternative protein sources, or more efficient use of key resources including land, fertiliser and energy. Greater self-sufficiency of protein sources (particularly quality and sustainable feed proteins) are of particular interest, and increasing import costs and volatility sheds new perspective on the cost and complexity of other alternatives, (e.g. domestic production and processing, or insect production).

And lastly, it tests the resilience of new agricultural policies developed around environmental, climate and biodiversity benefits which make (arguably now inappropriate) assumptions around global political security. Instead, it throws up new questions around how to create agricultural systems that are both resilient and sustainable in the face of a wider range of factors.

anna.sellars@sac.co.uk

World Matters

With the conflict in the Ukraine and Russia progressing, the impact on world currencies and commodity prices is affecting every sector within the UK and further afield. The sterling has weakened against the euro and the US dollar, which affects both our imports and exports. With the conflict, inflation is driving up the cost of living, especially in fuel and energy, at some point, the consumer will feel the cost of food increasing. Which it must to keep in line with the rising cost of inputs such as cereals, protein, fertilisers and fuel. This inflation pressure is slowing down the economic growth within the UK, which has a knock on, on our currency value

The disruption to the supply chain as an effect to the war is leading to the extreme values for global commodities with ex farm feed wheat rising £72/tonne in a month and ex farm feed barley rising £73.40/tonne in a month (24th Feb – 24Th Feb 2022, source AHDB). Making margins extremely tight for producers who are feeding ewe's pre lambing or putting a finish on to store lambs. Those who purchased fertiliser early will be moderately sheltered from the price increase, but those purchasing now for grass, silage or forage crops will be paying a premium and hoping there is supply.

The use of rotational grazing, will allow for a higher utilisation of grass, and may offer the opportunity to defer grass for the winter. A refresher in understanding the nitrogen response rate and crop offtakes would be well worthwhile in understanding what the crop actually needs e.g. an estimated nitrogen response rate of 1:30, kg N:kg dry matter of grass, for every kg of nitrogen reduced, you will require 30kg DM of feed from another source.

Price gap

While we have soaring input prices, the end price is not climbing, which is currently causing insecurity and strain on producers. The ewe price is at an unbelievable high, largely driven by Ramadan starting on the 2nd of April, which will end with the festival Eid al-Fitr on 2nd May. Easter will follow this closely on the 17th of April and we should see the lamb market increase for this, however we currently have a good throughput of lamb to reach the level of demand.

Smaller export type lambs (32-39kg) are in strong demand, and it is worth evaluating feeding these lambs to finish quicker moving them off grass for breeding ewes to rear lambs on, given the price of fertiliser and grass lets.

Drought and labour crisis

Looking at our competition over in Australia and New Zealand, their deadweight price per kg is between €5.12-5.15, against ours at €6.75. However, they both have significant challenges now. In some areas of New Zealand, especially Southland and Otago there has been four months of extremely dry conditions, limiting grass growth and preventing the application of fertiliser. This is the driest it has been for 50 years, with a record of only 60% of the normal rainfall between December and the end of February. In addition, they are struggling to market lambs, with many slaughterhouses at reduced capacity with cases of COVID and workers having to isolate if members of their families are infected.

In Australia, they are dealing with a labour crisis for availability of shearers and wool handlers. Many sheep are unshorn which is resulting in welfare problems in the heat. There are no visas that make it easy to import skilled shearers. Coupled with this, the war has affected the currency exchange, which has affected the wool trading. Will this labour crisis result in more wool shedding breeds in the future?

On a side note – British Wool have just announced shearing courses for 2022.

Kirsten Williams; 07798617293

Week ending	GB deadweight (p/kg) 16.5 – 21.5kg				Scottish auction (p/kg)				Ewes (£/hd) Scottish	Ewes (£/hd) Eng&Wal
	R3L	Change on week	Diff over R2	Diff over R3H	Med.	Change on week	Diff over stan.	Diff over heavy	All	All
12-Mar-22	**570.0**	-6.3	-0.1	1.6	**257.70**	2.7	5.3	20.2	92.44	104.23
19-Mar-22	**570.4**	0.4	-2.2	1.6	**257.00**	-0.7	10.2	21.8	91.26	107.17
26-Mar-22	**568.9**	-1.5	-2.8	2.0	**259.90**	2.9	6.7	19.7	100.75	111.16

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

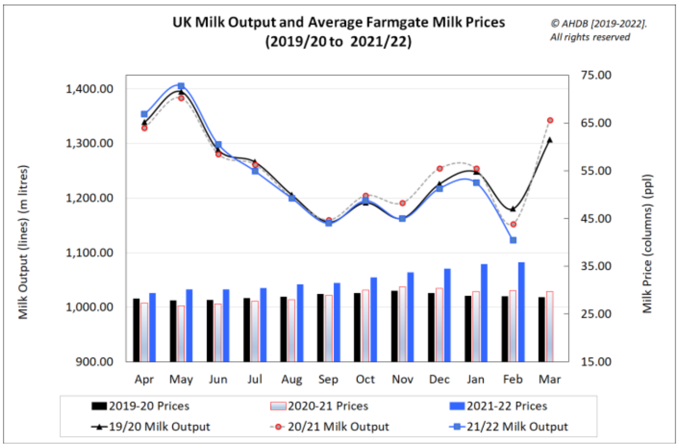
Standard weight 32.1 - 39.0kg; Medium weight 39.1 - 45.5kg; Heavy 45.6 - 52.0kg

Prices increase as supplies tighten

- *UK farmgate milk prices for February 2022 increased to average 35.89ppl.*
- *UK monthly milk output has reduced year on year since July 2021. EU and world milk production has been contracting since September last year and this downward spiral is fuelling further milk price increases, as processors attempt to secure supplies.*

The AHDB milk production statistics show that output for February 2022 is estimated at 1,122.90m litres (before butterfat adjustment) – down 29.71m litres on the February 2021 figure. UK cumulative production to the end of February is now estimated at 13,588.59m litres (82.69m litres down on the same period last year). With production levels contracting across the EU, upward pressure on prices is continuing to build, despite any perceived increase to UK output resulting from the usual spring flush. Several milk buyers acknowledge that UK farmgate milk prices must increase to help maintain production.

The UK average milk price increased from 35.46ppl for January 2022 to 35.89ppl for February 2022 (+0.43ppl). On a year-on-year basis, the UK milk price for February 2022 is up 5.96ppl. Considering AMPE and MCVE values, there is considerable potential for prices to increase further still.



Farmgate prices: April 2022

Price announcements for April 2022 include:

- Arla – the Arla member price will increase by 0.5-euro cents from 1st April 2022. After a 0.12ppl adjustment for currency smoothing, this means that the liquid standard litre increases by 0.32ppl to 38.20ppl, whilst the manufacturing standard litre increases by 0.34ppl to 39.72ppl.
- Arla organic supplies – The Arla organic milk price for April 2022 will increase by the same margins. The liquid standard litre for organic supplies increases by 0.32ppl to 45.37ppl, whilst the manufacturing standard litre for organic supplies increases by 0.34ppl to 47.17ppl.
- Arla Direct – Direct suppliers will receive a 1.75ppl increase from 1st April 2022. This takes the liquid standard litre price up to 35.35ppl.
- Müller - Müller Direct suppliers will receive a 1.50ppl increase from 1st April 2022. This takes the liquid standard litre price up to 36.25ppl for suppliers in Scotland. See Milk Price table.
- Lactalis –No announcements as yet for April 2022.
- First Milk – FM has confirmed a 2.00ppl increase from 1st April 2022 and a further 1.00ppl increase from 1st May 2022. See Milk Price table below for April milk prices.
- Graham's Dairies – Suppliers will receive a 1.50ppl increase from 1st April 2022; the second consecutive monthly increase of 1.50ppl. This takes the liquid standard litre up to 36.00ppl.
- Yew Tree Dairies liquid suppliers – 1.50ppl increase from 1st April 2022. This takes the liquid standard litre price up to 37.00ppl.
- Sainsburys (SDDG) – following the latest monthly price review, prices for the Sainsburys Dairy Development Group (SDDG) will increase by 0.40ppl. This takes the liquid standard litre price to 34.30ppl for Müller suppliers and 34.18ppl for Arla suppliers. It's clear from this that aligned contracts no longer represent a premium price.

Annual Average milk price estimates for April 2022 (ppl)	
Milk Buyers – Scotland	**Standard Ltr***
Lactalis (No profile or seasonality) [1] (Unconfirmed)	35.00
First Milk Liquid [1, 2]	35.55
First Milk Manufacturing *(4.2% Butterfat & 3.4% Protein)* [2]	36.75
Müller - Müller Direct - Scotland [1, 3]	36.25

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 *The FM member premium is set to remain at 0.50ppl from April 2021.*

3 *No monthly supplementary payment included in the price estimate. Includes 1.00ppl Müller Direct Premium and additional 0.25ppl haulage charge for Scottish suppliers.*

Wholesale prices

UK dairy commodity prices (£/ tonne)	Mar 2022	Feb 2022	Sept 2021
Butter	5,460	4,930	3,440
SMP	3,330	3,030	2,230
Bulk Cream	2,330	2,239	1,656
Mild Cheddar	4,280	3,960	3,070
UK milk price equivalents (ppl)	**Mar 2022**	**Feb 2022**	**Sept 2021**
AMPE (2021)	54.48	48.86	33.85
MCVE (2021)	49.95	45.81	34.43

Arla begins recruitment drive

Given the reduction to world milk production volumes in the wake of escalating on farm costs, milk buyers across the UK are keen to secure additional suppliers where possible. Last week (25/03), Arla announced that it is opening its doors to new suppliers. With Arla member milk prices at the top of the milk price league table, there will be no shortage of enquiries to Arla HQ. *alastair.beattie@sac.co.uk, 07771 797 491*

Methane Inhibitors Update

Methane (CH_4) is a significant contributor to anthropogenic greenhouse gas (GHG) emissions. It is described as a 'potent' greenhouse gas because it traps radiation that would otherwise be able to pass through our atmosphere. To use the common analogy, if we imagine earth's climate system as a glasshouse, removing a panel would allow trapped heat to escape and leave the system; Over a 100-year timescale, methane contributes 28 times more to global warming than CO_2, gram per gram, because it plugs this key window of wavelengths. This is reflected in the outsize contribution of enteric fermentation to the emissions of farm enterprises raising ruminants (**Fig. 1**).

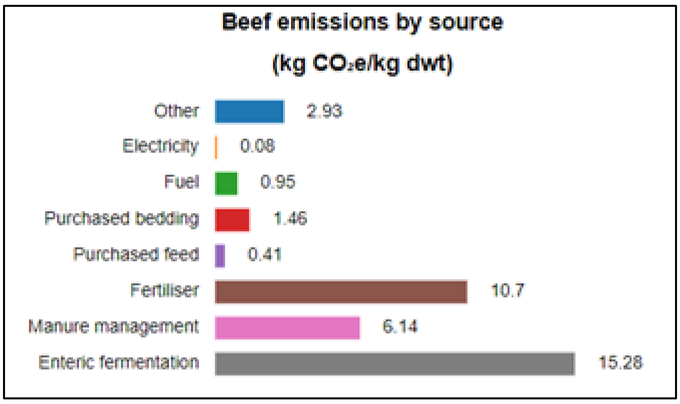


Figure 1: Example of typical emissions by source for suckler beef enterprise (Source: Agrecalc baseline data)

Methane from livestock makes up 6.3% of global GHG emissions and accounted for 55% of the GHG emissions in the UK agriculture sector in 2020. Cows, sheep, and other ruminants digest fibrous feeds like grass with the help of microorganisms in the rumen. These microscopic animals form a complex network, digesting molecules from livestock diets in a cascading series of chemical reactions called enteric fermentation (**Fig. 1**). In a final step of this internal food chain, one type of these microbes (archaea) convert CO_2 and H_2 into methane.

Attempts to affect and alter this chain have been limited by lack of understanding of the complex interactions of the rumen. However, researchers have been approaching this from multiple angles. Feed additives represent a promising avenue, and several have been tested including seaweed, flax, linseed, garlic and citrus. One of the first synthetic methane reducing feed additives to reach market is 3-NOP, commercial name Bovaer® 10, which is produced by Dutch company DSM and has shown encouraging results, reducing methane production by up to 37% and 17% in dairy and beef cows, respectively. Tests have indicated that 1.6g of 3-NOP per day produces this desired effect safely and without affecting productivity.

3-NOP was approved for use in the EU in Feb 2022 and the company is moving ahead with larger-scale trials. Farmers may see several effects if 3-NOP and other feed additives are approved for UK use. Purchasing these additives will come as an extra input cost and it is unclear how they will be priced, although the market potential for 3-NOP has been estimated at $2bn, and some alternatives may cost around £38 / animal / year. Some of these increased costs may be mitigated by decreased feed costs, however, as methane production results in a loss of feed energy ranging between 2-12%. There have been suggestions that farmers should be rewarded for incorporating these additives, but again, there should be savings and positive effects on animal performance which will offset costs.

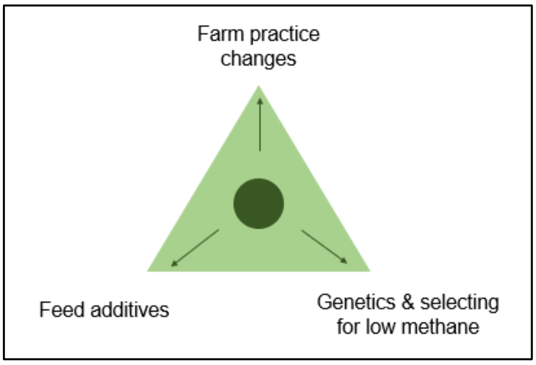


Figure 2: Three main methods for reducing methane emissions.

Methane can also be reduced through on-farm practices and genetics (Fig. 2) There is evidence that conversion efficiency and methane production are heritable traits, however selecting for low methane emissions may impact productivity and fitness and needs further research. The balance and interactions between these three methods (feeds, practices and genetics) will need to be optimised to yield the maximum possible methane reduction.

Brady.Stevens@sac.co.uk

Background

The Scottish Government published the Scottish Farm Business Income Estimates 2020-2021 on the 29th of March. The published Farm Business Income (FBI) figures differ from taxation net profit figures in that FBI is defined as 'the total income available to all unpaid labour and their capital invested in the business. Income from diversified activities is included. All agricultural output is valued at actual or as close to actual sale prices rather than end of year stock valuations, which better reflects the real income farmers received for their output. The figures are collected on behalf of the Scottish Government by the SAC Farm Business Survey Team from around 400 farms with economic activity over £20,000 per annum. The figures do not include farms predominantly engaged in horticulture, pig or poultry production.

The 2020/21 Positives & Negatives

With the backdrop of the first year of the covid pandemic, the average farm business income for 2020/21 FBI figures at £39,300 was £10,200 higher than the previous year, a headline grabbing increase of 35%. However, the table below highlights that the rise was largely due largely to a fall in expenditure not an increase in income.

All Farms	2019-20	2020-21	Difference	%
Output (£)	198,454	199,418	964	0.5%
Input (£)	219,637	207,928	-11,709	-5%
FBI (£)	29,096	39,347	10,251	35%

While the average dairy farm income increased to £99,600 based on a total output of £660,600, a five year high due to higher average milk yields and milk prices; general cropping farm saw their average farm business income fall by 15% to £67,800 based on a total output of £384,500. The fall was largely due to a 15% decrease in the average potato output from around £199,100 in 2019/20 to around £169,800 in 2020/21.

FBI	2019/20	2020/21	Difference	%
Cereals	51,189	68,446	17,257	34%
Mixed	11,171	45,327	34,156	306%
Lowground cattle and sheep	14,053	29,944	15,891	113%

While cereal, mixed, and lowland cattle and sheep recorded units all saw an uplift in their 2020/21 farm business income, only lowland cattle & sheep and mixed units saw any real increase in total business output of 3% and 7% respectively. All three farm types recorded reduced expenditure on inputs ranging from 6-10% over the total expenditure in 2019/20.

LFA	2019/20	2020/21	Difference	%
Sheep	10,922	9,555	-1,367	-13%
Cattle	15,204	22,968	7,764	51%
Cattle & Sheep	26,416	28,772	2,357	9%

Generally, LFA livestock farms have low but stable income, for specialist sheep farms, a 3% increase in output was not sufficient to offset the 5% increase in costs. While LFA cattle and LFA cattle & sheep fared better, like the specialist sheep units, the farm business income is still very low.

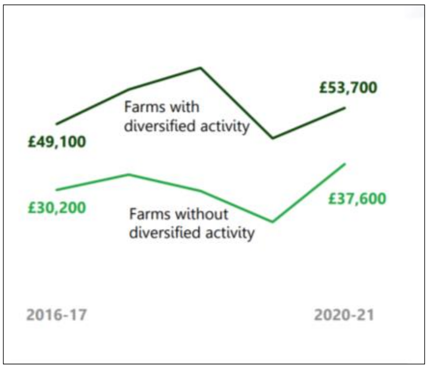
The Importance of support payments

Although reliance on support payments varies greatly across the different farming types and regions of Scotland; the role of support payments continues to remain crucial to farming businesses. The table below highlights the importance of support payments in Scottish Agriculture. While around 81% of all farms made a profit in 2020/21, this drops to just 37% if direct support payments are discounted.

All Farms	2020/21
FBI (£)	39,347
Subsidy and payments (£)	42,687
FBI without grants and subsidies	-3,340

Diversification

The increasing importance of diversification is highlighted below with the 55% of farms with diversification earning on average £16,100 more than the 45% of farm with no on-farm diversification.



Source of all data: FBI: Annual Estimates Tables 2020/21

Christine.beaton@sac.co.uk

Using Grass to Mitigate Costs in Beef Systems

Rising input costs are hard to get away from and while we cannot directly control feed prices, we can control how we maximise on farm resources. By challenging what you are doing on farm and look for areas that could be improved - marginal gains in many areas of production all add up.

Extending the grazing season and getting more from grass are key areas that can be improved on many farms. Willingness to forward plan and be openminded will help mitigate some of the input cost challenges we currently face.

The Growth Path project by AHDB Beef and Lamb (2016) showed average summer growth rates for cattle being 0.8kg/head/day on well managed set stocked pasture and less than 0.4kg/head/day average on poorly managed pasture, with both groups having much poorer performance later in the summer when grass quality reduces. In contrast, farms practising rotational grazing can achieve 1.1-1.2kg/head/day average and this is driven by maintaining the grass quality later in the season. Link to the project: https://ahdb.org.uk/lifetime-growth-pattern-and-beef-eating-quality

Attention to Detail

Achieving good quality grass in the backend requires attention to detail in the spring. Once grass has headed, quality has diminished and productivity is lost for the season, so managing the grazing pressure to suit the conditions is key - right number of mouths at the right time.

Rotational grazing doesn't need to be complicated and can simply be done by reducing field size or using an electric wire or by moving round existing fields - allowing fields that are grazed down to rest and keeping enough grazing pressure on fields that are growing fast. If grass is growing faster than the stock are eating it, taking a field, or part of a field, out of the rotation for silage will keep the grass quality for longer. The silage made from these paddocks is generally excellent quality and will be a very useful winter feed. It is worth noting that good quality silage reduces bought in feed requirements. 25% less concentrates are required for 1kg of gain in a 11ME silage compared to an 10.5ME silage and 50% less than 10ME silage.

If you are keen to try rotational grazing the Farm Advisory Service Rotational Grazing Guide (Written by Poppy Frater) is a fantastic resource to get you started.

www.fas.scot/downloads/rotational-grazing/

In areas where grass quality cannot be maintained due to terrain or other management factors, growing, and finishing cattle will need supplemented for additional energy to maintain growth rates as grass quality tails off later in the summer. Timing of supplementation will vary from farm to farm. However, it is important be aware where grass is plentiful and well managed, concentrates simply substitute grass intakes and make weight gain more expensive. When buying concentrates keep in touch with suppliers and take advice on a good time to book in or buy feed, look at all options available.

The efficiency of the 2022 grazing season will largely be decided by the choices made in the next few weeks. So, before you throw the doors open and set stock cattle at grass, take time to think about what you are trying to achieve and plan for how you are going to get there. By making a few tweaks to your system, you could make a difference to reducing bought in feed costs.

karen.stewart@sac.co.uk, 07796615719

Key Economic Data

General Indicators		Price indices for January 2022 (Defra 2015 = 100)			
		Output Prices		**Input Prices**	
Base interest rate	0.75% (0.5% Feb 22)	Wheat	189.3	Seeds (all)	116.4
ECB interest rate	0.00% (0.00% Sep '18)	Barley	195.5	Energy	145.9
UK (CPI) inflation rate	6.2% (target 2%)	Oats	165.7	Fertiliser	205.2
UK GDP growth rate	1.3% (Q4 '21)	Potatoes	138.2	Agro-chemicals (all)	160.3
FTSE 100	7,567 (31 Mar 22)	Cattle and Calves	122.8	Feedstuffs	142.2
		Pigs	104.2	Machinery R&M	121.2
		Sheep and Lambs	155.1	Building R&M	141.0
		Milk	144.8	Veterinary services	116.8

This publication is funded by the Scottish Government and EU as part of the SRDP Farm Advisory Service

SAC Consulting, Rural Business Unit publication   Annual subscription: free on-line at www.fas.scot   Contact: val.angus@sac.co.uk