



Today's Farm

Business, production, environment and countryside issues www.teagasc.ie

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COMMENT



Mark Moore
Editor,
Today's Farm

Too many suckler heifers are having a gap year

Many young people take a gap year in order to travel to distant lands before they settle down in their careers. They can spread the 'cost' and also the benefits of their gap year over a career that may last 40 years. Too many beef farmers are affording heifers a gap year, without the travel.

Heifers who calve at 36 rather than 24 months are losing a whole year out of a productive lifetime of maybe six or seven years. The process of getting heifers to calve at 24 months starts at their birth. We hope our article will encourage more farmers to help their heifers reach this goal.

Briseadh bliana á thógáil ag an iomarca bodóga diúil

Tógann go leor daoine óga briseadh bliana chun taisteal go tailte i bhfad i gcéin sula socraíonn siad síos ina ngairm bheatha. Is féidir leo 'costas' a mbriste bliana a scaipeadh thar ghairmréim a d'fhéadfadh maireachtáil go ceann 40 bliain. Tá an iomarca feirmeoirí mairteola ag tabhairt briseadh bliana do bhodóga, gan aon taisteal i gceist.

Na bodóga a bheireann lao ag aois 36 mhí seachas ag 24 mhí, cailleann siad bliain iomlán amháin dá saolré tháirgiúil a d'fhéadfadh maireachtáil idir sé nó seacht mbliana. Is ag a mbreith féin a thosaíonn an próiseas le bodóga a chur ag breith ag 24 mhí d'aois. Tá súil againn go spreagfaidh ár n-alt níos mó feirmeoirí chun cabhrú lena mbodóga an sprioc sin a bhaint amach.



BEEF
Benefits from
calving suckler
heifers at two
years old
>>18-21

Colin Byrne of Teagasc Grange
says that heifers should be 380-
420kg at breeding and 550-600kg
when they calve at 24 months.

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Cover: Future Beef advisor Gabriel Trayers with Mayo farmers Michael and Niall Biggins who are strong advocates of calving suckler heifers at 24 months.

COLLEGE OPEN DAYS

Here at Teagasc, we are extremely proud of our education offering, our learners, our staff and our facilities. On behalf of Teagasc, I would like to extend a warm invitation to you to visit our college network during our forthcoming open days.

Our students enjoy courses in agriculture, equine, horticulture and forestry. We offer full-time, part-time and distance course options.

All our colleges are hosting a spring open day, where you can experience first hand our facilities and course options. We look forward to welcoming you to our open days.

-Anne Marie Butler

Mountbellew Agricultural College Open Day

Hear about the courses offered at Mountbellew Agricultural College.

- Venue: Mountbellew Agricultural College, Mountbellew, Co Galway, H53 WE00.
- Event time: 10am - 12:30pm.

Friday 3 March 2023

Kildalton College Open Day

Hear about the courses offered at Kildalton College.

- Venue: Teagasc, Kildalton College, Piltown, Co Kilkenny, E32 YW08.
- Event time: Tours start at 10am and 11am

Wednesday 8 March 2023

Gurteen College Open Day

Hear about the courses offered at Gurteen College.

- Venue: Gurteen College, Ballingarry, Roscrea, Co Tipperary, E53 TP93.
- Event time: 10:30am - 12:30pm.

Thursday 9 March 2023

Teagasc College of Amenity Horticulture Open Day

Hear about the courses offered at the Teagasc College of Amenity Horticulture.



The national tillage conference takes place in Kilkenny on 25 January.

- Venue: Teagasc College of Amenity Horticulture, National Botanic Gardens, Glasnevin, Dublin 9, D09 VY63.
- Event time: 12noon - 3pm.

Friday 10 March 2023

Ballyhaise College Open Day

Hear about the courses offered at Ballyhaise College.

- Venue: Teagasc, Ballyhaise Agricultural College, Ballyhaise, Co Cavan, H12 E393.
- Event time: 10am - 1pm.

Clonakilty Agricultural College Open Day

Hear about the courses offered at Clonakilty Agricultural College.

- Venue: Teagasc, Clonakilty Agricultural College, Darrara, Clonakilty, Co

- Cork. P85 AX52.
- Event time: 11am - 1pm.

National Tillage Conference 2023 January 25

- Venue: Lyrath Convention Centre, Paulstown Road, Kilkenny. Eircode: R95 F685.
- Event time: 9am - 4pm.

Teagasc National Lowland Sheep Conference - Monaghan

January 24

- Venue: Hillgrove Hotel, Old Armagh Rd, Latlorcan, Co Monaghan. Eircode: H18 RK15.
- Event Time: 7pm.

Teagasc National Lowland Sheep Conference - Wexford

January 26

- Venue: Brandon House Hotel, Southknock, Chambersland, New Ross, Co Wexford. Eircode: Y34 KR62.
- Event time: 7pm.

Teagasc National Hill Sheep Conference February 15

- Venue: Westlodge Hotel, Bantry, Co Cork. Eircode: P75 N978.
- Event time: 7pm.

Anne Marie Butler.



Gurteen College.

Reducing carbon emissions through fertiliser management

February 7 2023

- Event time: 7pm.
- Venue: Online.

There is increased pressure on beef and sheep farmers to reduce greenhouse gas emissions, but how do we practically do this on-farm?

The Agriculture and Horticulture Development Board (AHDB) have organised a series of webinars in partnership with the British Society of Animal Science (BSAS) and Teagasc, which aims to share the most recent research findings investigating methods to reduce emissions from livestock agriculture and how we can apply this on farms. Register on the Teagasc website.

This webinar will focus on reducing carbon emissions through fertiliser management.

Speakers include:

- Paul Newell-Price, ADAS.
- Mark Plunkett, Teagasc.
- Kim Matthews, BSAS.

Throughout each webinar, there will be plenty of opportunity to ask the scientists and industry experts presenting their findings any questions you may have about this complex topic.



The European Union (EU) has awarded a group led by Teagasc €5m in funding to develop and test farm safety solutions. The landmark SafeHabitat project was launched on Thursday 15 December 2022 in Teagasc Ashtown by Minister of State at the Department of Agriculture Martin Heydon TD.

The project, a Horizon Europe Innovation Action being co-ordinated by Dr David Meredith at Teagasc, focuses on;

- Developing communities of farm safety practice across the EU.
- Improving the understanding and awareness by policy makers, farmers organisations, trade unions and health authorities of farmers' and farm workers' health and safety at work.
- Exploring the potential of corporate social responsibility initiatives and bottom up innovations that enhance farmer and farm worker health and safety.
- Developing recommendations for better performing European and national policy, and governance frameworks favouring safer and more inclusive working environments for farmers and farm workers.

ADVERTORIAL



Selecting a calf milk replacer this spring

Maeve Regan,
Head of Ruminant Nutrition, Agritech

The management of calves in the first weeks of life will have a significant impact on their lifetime production, and with replacement heifers, it impacts their long-term profitability.

The average cost of rearing a heifer to 24 months is estimated to be €1,553, with a significant percentage of this cost being incurred during the calf rearing period. However, relative to spend, the first 6 months of a calf's life is crucial. In just 8% of its lifetime the calf will reach 25% of its mature weight – highlighting the importance of ensuring optimal nutrition.

Milk replacer ingredients

Research has shown that calves will reach similar weight gains on milk replacer as they would being fed on whole milk. However, this is providing that the milk replacer is formulated correctly, from good quality dairy ingredients and that feeding instructions are followed. Many questions centre around the percentage of protein on the label of a bag of milk replacer, which is important, but more emphasis needs to be placed on the origin of the protein sources.

As we try to replicate whole milk, as much of the protein as possible should be coming from a milk/dairy-based source relative to vegetable/plant-based sources. Obviously to a young calf, dairy sources are more digestible and result in greater performance. Plant-based protein sources are cheaper alternatives and where inclusions are high, similar levels of performance to whole milk should not be expected in the early days of life.

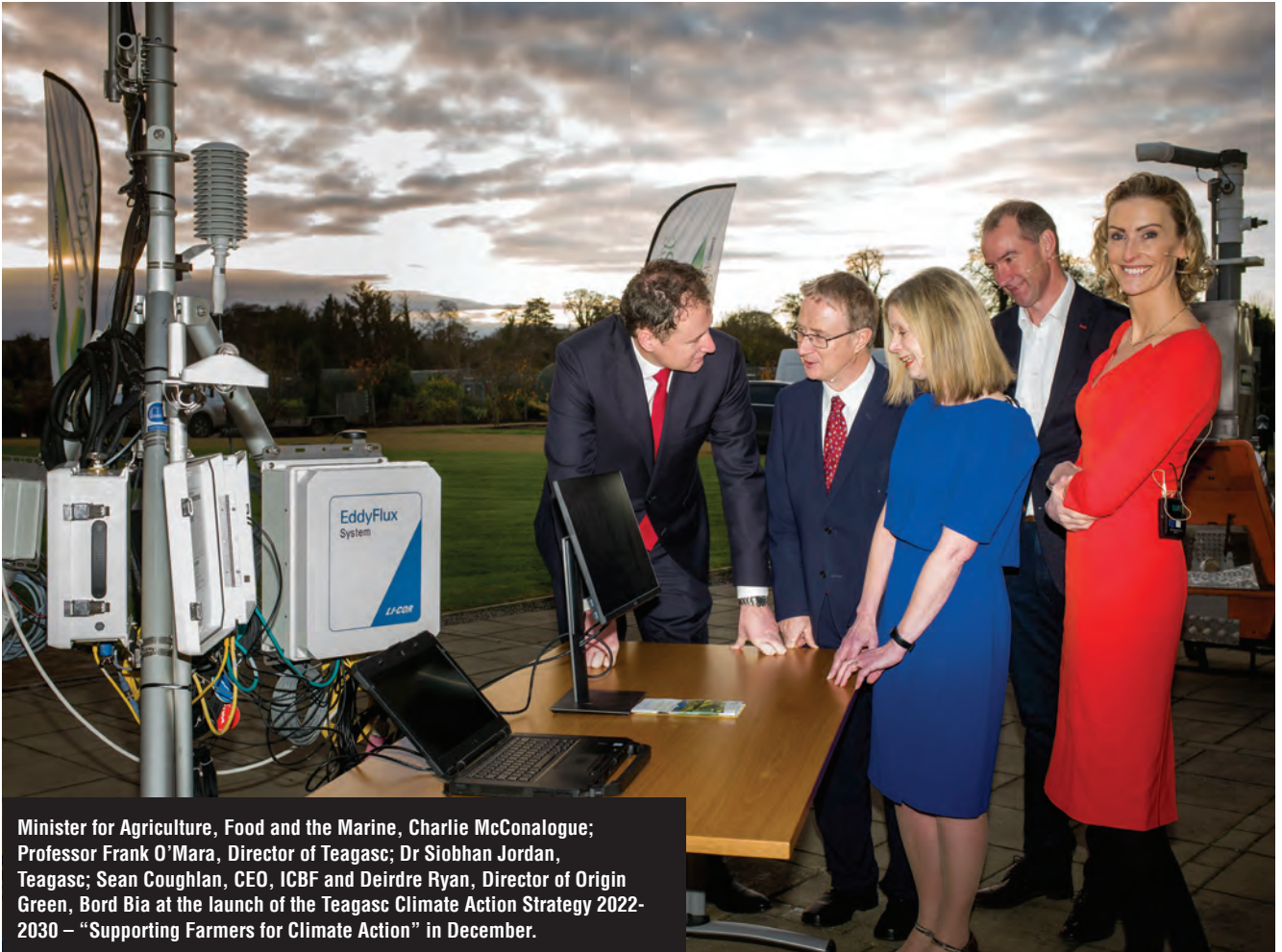
Another often unspoken factor in overall digestibility of a milk replacer is the quality of the raw materials used. Low heat-treated milk powders will have natural immunoglobulin content available in the product and its proteins will have not been denatured or effected. Fat % and sources in milk replacer are also important, as fat is the main source of energy to the calf. Coconut and palm fat are the most common sources as they offer the greatest digestibility and energy respectively for young calves.

The percentage of solids in whole milk is about 12.5%, hence it is also the most common feeding rate of milk replacer on farm. This equates to 125g of powder in 875ml water to make up 1L of feed. Fed at 6L, a calf will be consuming 750g of milk replacer daily.

For further advice on calf rearing and calf milk replacer, contact your local Agritech Sales Advisor or visit www.agritech.ie



www.agritech.ie



Minister for Agriculture, Food and the Marine, Charlie McConalogue; Professor Frank O'Mara, Director of Teagasc; Dr Siobhan Jordan, Teagasc; Sean Coughlan, CEO, ICBF and Deirdre Ryan, Director of Origin Green, Bord Bia at the launch of the Teagasc Climate Action Strategy 2022-2030 – "Supporting Farmers for Climate Action" in December.

Climate action measures a win-win for Irish farmers

Teagasc Director of Research Professor Frank O'Mara answers questions about meeting climate targets for agriculture and the future of Irish farming

Q: The new Climate Action Policy was published just before Christmas. What are the key points from this in relation to agriculture?

A: We have been talking about climate change for many years and Governments have had policies to reduce emission of greenhouse gases for some time. So what's different now? The current situation with policy is

that we have a target to reduce emission by 51% by 2030, which is legally binding for the first time.

In July 2022, the Government decided on the reduction each sector would have to make towards that target, and the agriculture sector has a target to reduce emissions by 25% by 2030. The Climate Action Plan 2023, published just before Christmas, set out the key

measures for each sector so that it will achieve its target.

For agriculture, these include technical measures like reducing chemical nitrogen fertiliser, switching to protected urea, feed additives to reduce methane, efficiency measures like earlier age at slaughter for beef cattle and diversification options like organics, forestry and production of

feedstock for anaerobic digestion.

With the publication of the Climate Action Plan 2023, there is an urgency to see emissions reducing, as we are now starting the third year of the first carbon budget period, which covers the 2021-2025 period.

These targets are set out in legislation, but this is not just about compliance. It is the challenge of our time to reduce greenhouse gas emissions rapidly so we leave the planet in as good a state for the next generation as possible. Also, the consumers of Irish food want low emissions food.

The challenge is to achieve these reductions without negatively impacting food production and the economic sustainability of farmers.

What will Teagasc be doing to promote the diversification options highlighted?

We will support farmers who are considering diversification options such as organics, forestry, horticulture, or who are considering partly or fully switching from one mainstream enterprise to another.

In the Climate Action Plan 2023, there is a target to significantly increase the area under tillage crops, and our advisers are well positioned to support farmers seeking to in-

crease their tillage area.

We have also significantly increased our advisory team working on organics in the last year, and we have seen a large number of farmers apply to join the new Organics Scheme. We have a team of forestry advisers available to advise farmers about the options in the new Forestry Programme. Our horticulture team can advise farmers and growers about the options in this diverse sector.

We expect new options to emerge, like the production of feedstock for anaerobic digestion, and we have a research programme in this area, including a pilot scale anaerobic digestion plant, so that we can provide advice on this option.

You have previously outlined a roadmap for climate action, outlining a pathway for Irish agriculture to meet its climate targets. Can you summarise this?

I see the roadmap in three phases. First, there are things that farmers can do right now that will reduce emissions, which are outlined in the Teagasc MACC. These include reducing chemical nitrogen use (which can be enabled by using clover and better soil fertility and liming), switching fertiliser type to protected urea,

improving efficiency on farms so that cattle reach their target slaughter weight at a younger age.

Phase two is about completing the development of technologies that are currently well in the development process. These include other fertiliser products and soil fertility related measures, dietary amendments such as feed additives to reduce methane and technologies to reduce methane emissions from stored slurry.

Phase three is about bringing additional technologies to fruition that are currently in the early stages of development, which includes things like feed additives that can be used at pasture and breeding low emitting animals. There will also be opportunities for diversification and system change that farmers can avail of, such as forestry and organics.

How does Teagasc Dairy Roadmap to 2027 which shows an increase in milk output fit with the new Climate Action Plan?

Dairy cows numbers have risen in the last few years and are now close to the



Continued on page 8

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Continued from page 7

numbers we forecast in the Roadmap. Changes in other animal categories has meant that the overall number of cattle has not changed much in recent years, although it must be noted that emissions from a dairy cow are higher than other animal types. Individual farmers can't control the overall number of cows in the country, but they do control their own farm, and the important things for individual farmers to do are the actions they can implement in their own farm business to reduce emissions.

That means improving their cows' EBI, getting soil fertility right so they reduce nitrogen use, using protected urea, improving animal health and pasture management.

Some dairy farmers, albeit a relatively small number, are considering organics, and they might also consider planting small areas of forestry, as the new forestry programme is proposing a much more streamlined process without the need for a licence for areas up to 1ha.

All of these actions can significantly improve the carbon footprint milk farmers produce, as well as reducing the absolute quantity of emissions, which must reduce to meet the 25% target.

What will allow us to complete the journey to 2030? What research is Teagasc conducting to bring forward

additional mitigation technologies? When can we expect results to be available and additional mitigation technologies to be ready for use?

Teagasc has a lot of research ongoing at the moment. This includes research to more accurately quantify methane emissions of dairy cows and beef cattle, which we expect to start seeing included in the national inventory in the next year or two.

An important technology is feed additives that can reduce methane, and we expect the first generation of products to be available in the next few years, but the financial cost of these for farmers is an issue that has to be addressed.

Stored slurry produces a lot of methane and there are promising technologies to reduce this source. We also have a lot of research on carbon sequestration into mineral soils (and hedgerows) and emissions of carbon, which occur from drained peat soils used in agriculture.

We are looking at how the rates of sequestration could be increased and researching whether the emissions from the drained peat soils could be reduced by raising the water table in a way that would still allow for farming on these soils.

This is longer-term research and it will take a number of years for reliable results to be available.

There are other research lines as well, and it is important that we stay focused on efficiency, for instance, seeing how can we achieve earlier slaughter of beef cattle through improved genetics and management. We

want to accelerate all this research given the timeframe to reduce emissions by 25% by 2030.

How can Teagasc support individual farmers who are confused or anxious over the type of changes required?

Farmers can talk to their adviser about what these changes mean for their farm. There is a lot that farmers can do now that their adviser will outline, and we have a new Signpost Advisory Programme, where we will work with individual farmers to benchmark their current situation and develop a plan to suit their farm.

It's much better to get a handle on a challenge than to ignore it, so we would encourage farmers to engage with their adviser on this topic. Generally, it is not something farmers should fear. Many of the actions that reduce emissions are positive for productivity and/or profitability. Farmers might also want to talk to their adviser about the diversification options that are available to see if any of them would be beneficial on their farm.

How confident are you that Irish agriculture can meet the climate challenge?

There is a roadmap for Irish agriculture to reach the 25% target. It does require a lot of change at farm level. This will be different for each farmer – for some, it will involve improving efficiency and adopting technologies, such as those currently available in the MACC – for others, it will involve a switch to organics or putting some land into forestry.

The good thing is that we do see farmers making these changes – there has been a steady increase in use of protected urea; nitrogen fertiliser use fell in 2022, mainly due to price but there is also a big increase in interest in clover; low emission slurry spreading is now widely used; the average age at slaughter of cattle is falling.

We are supporting farmers in adopting these technologies through the Signpost Programme, which also involves many other partners. That is all grounds for optimism. We do, of course, also need to see new technologies emerging from research, but again, there are several promising technologies in the research pipeline.

No doubt, climate change presents a massive challenge for agriculture, but farmers are very adaptive and resilient and I believe they can meet this challenge.

Farmers will need support from the Government and industry, as well as research and advice, and Teagasc will strive to ensure that the research and advisory support pillar is not found wanting.

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Save money by helping to save the planet

A Climate Action Plan is saving this Cavan farmer €23,000 per year.

Owen McPartland
Teagasc, Ballyhaise.

Seamus Kearney
Teagasc, Moorepark.

Alan Clarke who farms at Killinkere, Virginia, Co Cavan, has been a Signpost Farmer since 2021. He has 153 dairy cows, 50 calves and 39 in-calf heifers on 97.1ha. The farm is in derogation and the stocking rate is just over two livestock units per hectare.

As a Signpost Farmer, Alan was one of the first farmers in Ireland to complete a climate action plan, which aims to increase farm profitability while reducing greenhouse gas (GHG) emissions. The areas addressed in the plan were fertiliser type and usage, cow performance, replacement heifer performance and improving grassland management.

Changing fertiliser type –

• **Savings: €6,150 and a 4.4% reduction in GHG emissions.**

The lowest emitting – and cheap-



Cavan farmer Alan Clarke with Owen McPartland.

est – nitrogen fertiliser is protected urea, followed by urea and then CAN. Protected urea is low in greenhouse gas and ammonia emissions. Urea is low in greenhouse gas emissions, but high in ammonia emissions. CAN is

high in greenhouse gas emissions, but low in ammonia emissions.

To save money and reduce emissions (of both GHGs and ammonia), farmers need to switch from CAN to protected urea to reduce greenhouse gas emissions and from urea to protected urea to reduce ammonia emissions.

“We have good soil fertility,” says Alan. “And we aim to keep phosphorus (P) and potassium (K) levels at index 3, because it means we need to apply less chemical nitrogen.”

Table 1 illustrates Alan's chemical fertiliser use for 2022. The main compound was 18:6:12 with some other fertiliser such as 0:7:30 and 10:10:20 also used.

Using 18:6:12 and 10:10:20 to build P and K levels meant that Alan applied his P and K in a more concentrated format than cut or pasture sward. “This meant we were able to spread the remaining 72% of chemical N as protected urea and urea,” says Alan. At December 2022 prices, Alan's fertiliser bill for the year came in at €46,569.

In 2022, Alan spread 136kg N/ha, with 72% of all N spread as protected urea or urea. “We would have used exclusively protected urea, but at times

Table 1: Scenario one - 2022 fertiliser use by Alan Clarke.

Product	Quantity Tonnes €	Kg N	Kg P	Kg K	% of N Spread
Protected urea @€1,000/t	16.65 €16,650	7,659	0		58%
Urea @€950/t	4.2 €3,990	1,932	0		14%
18:6:12 @€960/t	18.4 €17,664	3,312	1,104	2,208	25%
10:10:20 @€990/t	3.5 €3,465	350	350	700	3%
0:7:30 @€960/t	5.0 €4,800	0	350	1,500	0%
Totals	€46,569	13,253kg	1,804kg	4,408kg	100%

Table 2: Scenario two - 2022 fertiliser use spread as pasture sward and 0:7:30.

Product	Quantity Tonnes €	Kg N	Kg P	Kg K	% of N Spread
Pasture sward @€950/t	49 €46,550	13,230	1,225	2,450	100%
0:7:30 @ €960/t	6.5 €6,175	0	455	1,950	0%
Totals	€52,725	13,230kg	1,680kg	4,400kg	100%



it couldn't be got," says Alan.

In order to use the same N, P and K that was used by Alan in Table 1, 100% of the chemical N would need to be spread as pasture sward (27:2.5:5) with some 0:7:30 in order to provide the same N, P and K as nutrients.

The fertiliser needed as pasture sward and 0:7:30 is shown in Table 2. This fertiliser combination (scenario two) come in at €52,725 for 2022 – that's €6,150 more expensive!

Reducing fertiliser use –

- **Saved €3,000 and achieved a 0.2% reduction in GHG emissions.**

Alan reduced his chemical N use by 9% from 150kg N/ha in 2021 to 136kg N/ha in 2022.

"The reduction was driven primarily by fertiliser prices," says Alan. "We achieved it without losing forage output by raising soil pH, improving P and K levels and incorporating clover where possible."

For clover to establish, soil pH should be greater than 6.5 and P and K levels need to be at index 3. Alan has successfully incorporated clover into 17% of the whole farm through reseeding.

"We reduced chemical N fertiliser applications on these clover fields," says Alan. "Fortunately, all of our fields are above pH 6.2 and don't require lime for grassland."

In Alan's case, the 14kg N/ha reduction totals an overall reduction of 1,359kg of chemical N, or the equivalent of 3t of protected urea, saving €3,000 compared to 2021.

Improving cow performance by 30kg milk solids per cow

- **Saved €10,500 in additional costs.**

In 2020, Alan's herd delivered 459kg of milk solids per cow. In 2022, they each delivered 489kg (with an average of 146 cows milked). The extra 30kg/head has come from improved genetics and grassland management.

"In 2022, we milked an average of 146 cows delivering 71,450kg of milk solids," adds Alan. "At 2020 milk yields, we would have needed 156 cows to produce the same amount of milk output."

Improving milk solids per cow saved Alan from having to milk 10 extra cows in 2022 to deliver 71,450kg of milk solids. From 2021 Profit Monitor figures, it costs about €1,050 in variable costs to maintain a dairy cow. The total variable costs saved by milking 10 fewer cows to produce the same output is €10,500.

Alan's overall cow numbers in 2022 were 10 higher than what he milked in 2020. This meant that his GHG emissions associated with dairy cows were actually higher in 2022 than 2020, albeit with much higher production.

Improving heifer performance by calving at 22 to 26 months of age

- **Saved €2,700 and a 2.5% reduction in GHG emissions.**

For 2020 to 2022, 100% of Alan's heifers calved at 22 to 26 months. The national figure for dairy heifers is just 75%. So, one in four heifers are not meeting this goal.

If Alan was at the national average figure he would have 10 heifers calving up to six months later than currently. This would mean carrying the equivalent of five extra livestock units at an extra variable cost of €2,700 (€540/LU for five livestock units).

Improving grassland management

- **Saved €790 and a 0.5% reduction in GHG emissions.**

Alan has extended his full-time grazing by three days. "Cows go out part-time (by day) in early March and graze part-time into the second week of November," says Alan. "As each day at grass is worth €1.80 per cow in autumn, the three extra days at grass full-time was worth €790 to me."

How do you create a Climate Action Plan for your farm?

You can avail of the new Teagasc Signpost Advisory Programme to create a climate action plan for your farm. This programme is free and is available to all farmers. The aim of the programme is to improve your farm sustainability, reduce GHG emissions and enhance the environment.

To book your place on this free programme, contact your local Teagasc office or sign up today by scanning this QR code and following the links provided.



Table 3: Soil fertility status for Alan Clarke's farm.

Soil pH	%	P Index	%	K Index	%
<6.2	0%	1 & 2	61	1 & 2	28
6.2 to 6.5	8%	3	35	3	29
>6.5	92%	4	4	4	43

Table 4: Full-time grazing dates For 2022 and 2020 for dairy cows.

Days at Grass	2022	2020
Date out full time	28th March	28th March
Date in full time	20th October	17th October
Days grazing	207	204

Have you considered a registered farm partnership?

A registered farm partnership is a great way to smooth the succession process, delivering lifestyle and financial benefits

Gordon Peppard
Teagasc Collaborative
Farming Specialist

There are more than 3,500 registered farm partnerships (RFP) operating in Ireland. Why? This collaborative farming arrangement delivers a range of benefits, particularly for farm families. RFPs provide a natural progression to farm succession, giving the young heir a sense of responsibility and purpose within the farm business and a share of the profits.

RFPs between family members (intra family) are most common but there are also inter farm RFPs where non-family members come together to form a collaborative business arrangement. RFPs provide all members with a say in the decision-making and management of farming activities. They also generate numerous financial benefits. See page 14.

RFP applications can be submitted at any time during the calendar year. But, if you plan to submit an application to enter an RFP in 2023, it must be submitted before 10 February.

This deadline is in order for the Department of Agriculture, Food and Marine to have it processed in time for submission of your Basic Income Support for Sustainability (BISS) application before 15 May 2023 under an RFP number.

There are five key areas to address when completing an RFP application.

1 Establishing the herd number for use in the Registered Farm Partnership

RFPs can be a single herd number partnership, or a multi-herd partnership.

Multi-herd number partnerships

Where two individuals currently have their own herd numbers and have been farming in their own right prior to the establishment of the partnership, then this will be a multi-herd partnership.

No changes are required to the herd numbers and partners can nominate a dominant herd number to use for animal registration, herd health management, etc. The other herd number may be made dormant but not ended as it will be required for scheme payments.

The BISS application will then be made as one application under the RFP number. Within the BISS application form, both herd number tabs will appear and lands associated with each herd number should be declared under the respective herd number.

Single herd number partnerships

Single herd number partnerships generally arise in a family situation where a son or daughter (with a minimum Level 6 agricultural qualification) are returning home to farm in conjunction with their father/mother in an RFP.

Discuss with your local Regional Veterinary Office (RVO) and agricultural advisor whether to add the son/daughter to the existing herd number or whether they should establish their own herd number.

In the majority of cases, the new entrant is added to the existing parent/s herd number using an ER1.1 application submitted to the local RVO.

Before changing herd number, ensure to discuss it with your agricultural advisor/consultant as some schemes may need prior approval to change.

2 Setting up the RFP bank account

A new RFP bank account must include the names of all the partners. All income and expenditure from the partnership will go through this account.

No farming transactions of the partnership should now take place through an individual partner's own bank account. It is essential to notify all sources of payments, for example co-ops, marts, Department, etc, of the change of bank account details.

There is a one-page form to be completed and stamped by the bank to verify that the bank account is set up and operational.

3 Completing the on-farm and partnership agreements

These agreements are very important documents and require consultation with accountants, solicitors and agricultural advisors for their completion. The agreement forms the basis of a successful RFP, where all the partners' roles and responsibilities are clearly defined.

All template agreements are guidelines and should be amended to reflect each individual partnership agreement.

4 Providing supporting documentation

The following documents must be included with your application for an RFP.

- Completed application form.
- Completed bank details document verified by bank.
- A signed copy of the farm partnership agreement.
- Copy of on-farm agreement.
- Copy of folios and maps of all owned lands.
- Copy of leases and maps for all lands leased in.
- Stamp duty certificate from Revenue for all leased land.
- Evidence of agricultural qualifications (minimum Level 6) for Category II partners
- Completed checklist.

5 Submitting your application

Completed applications with all supporting documentation should be emailed to farmpartnerships@agriculture.gov.ie before 10 February 2023 in order to have an RFP number prior to the closing date for the BISS on 15 May 2023.

For further information on forming an RFP, please consult the Teagasc website or contact your local Teagasc office for further information.



Continued on p14-15



THE FUTURE IS IN THE EAR

// We wanted a monitoring system that would work on a grass-based system and be both reliable and accurate and that's what we got with CowManager. The installation was quick and effortless; 260 cows and heifers were tagged in under 4 hours. It was a smooth process, and we were up and running that evening. When it comes to such a big investment on the farm we sit down as a family, and we look at it as a whole. If it can save you time, save you money and make you money, you have to invest in it, CowManager does all three! //

John Rowe, Ballycleary Farm, South County Wexford. Milking 220 Cows



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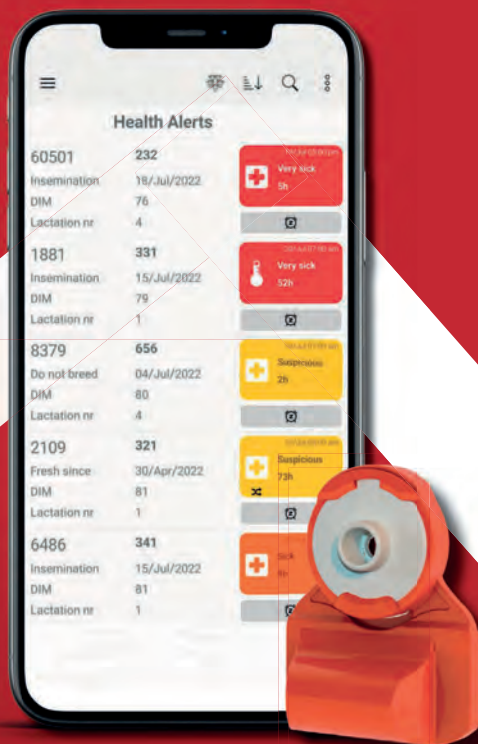
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Gordon Peppard with Rob and David Connor.

CASE STUDY: Successful RFP

Farming in Lahinch, 2km outside of Clara in Co Offaly, father and son, David and Rob Connor have been successfully running heifer finishing and tillage enterprises on their farm for many years.

In 2016, David decided to form an RFP with Rob. Having allowed the RFP time to bed in and develop, they decided that the partnership structure was a very good way for their farm business to proceed. In 2018, they changed to a succession farm partnership. "I was keen to involve Rob in the farm business and to making the transition from one generation to the next as smooth as possible," says David.

"As we all move through the years, we slow down a bit and with the ever increasing workload, I felt it was the right time to involve Rob in a more structured arrangement.

"With Rob officially involved in the running of the farm, my wife Stephanie and I were in a position to take

some time away from the farm and enhance our work life balance."

David didn't want to retire fully but was happy to step back and give Rob significant input into the physical and financial running of the farm business.

Having completed his education and spent a number of years working part time away from the farm, Rob had developed business knowledge and relationships that now help him with the farm business.

"Dad still has essential knowledge and experience to contribute to the farm, while I like to think I have the youth, enthusiasm, skills and new ideas to drive the business forward," says Rob.

"Mark Coyne, our Teagasc advisor in Tullamore, advised us on scheme requirements and benefits, herd number changes and Basic Payment Scheme entitlements. He assisted us in liaising with our accountant and solicitor to set up the new RFP farm business structure."

The Connors' accountant also played a key role in establishing the RFP by registering the new part-

nership business with Revenue to obtain a tax reference number; compiling a capital account to outline the starting position of each partner in the business; and advising on a favourable profit-sharing ratio for all members. The accountant will complete end-of-year returns for the partners and has guided the partners through tax implications.

David and Rob also involved their solicitor in drawing up the legal agreement for the Succession Farm Partnership as it involved identifying a minimum of 80% of the farm assets that were to be transferred between the end of year three and year 10 of the partnership agreement.

It is also critical that the will is updated at this juncture to ensure it matches the Succession Farm Partnership agreement.

"We felt it was important to involve other family members in the initial discussion also," says Rob.

"This ensured that everyone knew what is happening. We also talked to other farmers who are already in existing partnership structures to see what are the pros and cons."

Financial and scheme benefits from registered farm partnerships

- Maximise the amount of net income coming into the farm family. Depending on the profit-sharing ratio, each partner can earn up to €40,000 at the low rate of income tax.
- Young trained farmers can avail of 100% stock relief on their share of the partnership.
- Enhanced stock relief of 50% for the parents on their share.
- In a succession farm partnership, there is an annual tax credit of €5,000 per year to the registered farm partnership for a maximum of five years subject to all terms and conditions being met.
- Targeted Agriculture Modernisation Scheme (TAMS) allows a doubling of the investment ceiling from €80,000 to a maximum of €160,000 for a registered farm partnership.
- Where there is a young trained farmer in the RFP, they can avail of 60% grant aid on the first ceiling (proposed to be €90,000 in the next TAMS).
- National Reserve Entitlements: young trained farmers will be entitled to a top-up on low-value entitlements or an allocation of entitlements on naked ground in the new Basic Income Support for Sustainability (BISS) under the National Reserve Scheme.
- Complementary Income Support for Young Farmers will permit an RFP that has a qualifying young trained farmer to avail of a top-up of approximately €170 per hectare for five years, on a maximum of 50 hectares.
- Collaborative Farming Grant. There is a 50% grant aid available on the costs associated with the establishment of an RFP subject to a maximum spend of €3,000.



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Innovation driving profitability

Steady focus on animal performance and new technologies are the keys to profitability on this west Cork beef farm.

Alan Dillon

DairyBeef 500 Programme.

James O'Sullivan farms 31ha near the villages of Leap and Union Hall in scenic west Cork. Some of his land drops steeply to the sea and faces directly due south. The next landfall is over a thousand miles away at Santiago de Compostela in northern Spain.

"My wife Rachel and I run a dairy-beef enterprise with the emphasis on early maturing heifers," says James. They have four children, Kayla (12), Daire (10), Jenna (8) and Eoin (6).

James has been in the DairyBeef 500 programme since early 2022 and has been steadily implementing changes that will increase the profitability on the farm, according to his local Teagasc advisor Anna Sexton.

Exposed to the warm(ish) sea wind, the coastal land can certainly grow very early grass. James says this comes at a cost, with early nitrogen a 'must' to drive growth on early turnout. He reseeds a portion of his land each year. The home farm has much heavier soil, with some needing reclaiming.

Calves are key

"In the recent past, I have been sourcing calves from local dealers and marts," says James. "This worked well from a time efficiency point of view, but it did lead to variability in quality of calves. It also brought with it disease risks, particularly respiratory illnesses."

James works part time as an AI technician and aims to use this knowledge to source better quality calves in the future. "My aim is to buy calves with a higher Commercial Beef Value (CBV) next year," he says.

"They will finish early, before the main group of yearlings are housed



Local advisor Anna Sexton with James O'Sullivan.

prior to the second winter, and will deliver an increased carcass weight. To ensure as many cattle as possible are finished before the second winter, it is important to get hold of early calves."

James' strategy is to identify farmers that will have early maturing calves born from early to mid January onwards.

"I hope to be finished buying calves by mid-March. I want to keep the

group as tight as possible in terms of weight uniformity. This will help also with housing, dosing and drafting for sale."

Weight targets

"Low carcass weights have been an issue with the finishing stock," says James. "Early maturing heifers were the main class of stock on the farm this year. These animals would naturally have lower carcass weight than

Table 1: James's cattle performance.

Year	Category	No.	Age (mths)	Carcass kg	Grade	€
2020	Steer	21	23	291	0=	1,046
2020	Heifer	60	20	244	0=	938
2021	Steer	24	21	262	0=	1,143
2021	Heifer	34	21	240	0=	1,044
2022*	Steer	4	21	257	0=	1,229
2022*	Heifer	54	20	250	0=	1,234



Alan Dillon and
James O'Sullivan.

their male counterparts or Friesian steers, but would finish at an earlier age with lower inputs.

"I have been carrying more steers in recent years, but heifers give me the chance to kill more before the second winter. This is important as our housing is limited."

As can be seen from Table 1, James is achieving a low age of slaughter compared to national performance with the majority of his stock killed by 21 months of age.

"Carcass weight does need some improvement, with roughly 20-30kg of extra carcass gain needing to be achieved at the same age to inject a higher level of profitability into the system," says Anna Sexton.

"This must be achieved in the earlier stages of life, with the majority of the weight gain coming from grazed grass."

Commercial Beef Value

James says he aims to target calves with a higher CBV, which will have a higher value for carcass weight. This

will help deliver the targeted carcass of over 300kg at 21 months for steers and 275-280kg for heifers at 20-21 months.

"I examined some of the sires of the cattle I had slaughtered over the past number of years and found significant variability in the quality of bull used," says James. "Some bulls, particularly some of the early maturing stock bulls, were extremely poor in terms of carcass characteristics."

As can be seen from Table 2, only two bulls are even positive for carcass weight.

These bulls produced finished carcasses which are below target weight and are largely unprofitable.

"For this year, I will be targeting calves from some of the sires in Table 3 if they are available," says James.

"The main focus will be on carcass weight, with a target of at least 12kg for this index. These bulls should have the ability to deliver on carcass traits while maintaining an early slaughter age."

Sticking with the system

While James will be incorporating various technologies on-farm, including CBV to purchase better calves of a higher beef merit and reseed-ing with MSS to reduce reliance on chemical nitrogen and help with drought periods, the overall plan of the farm remains the same.

Calves will be purchased slightly earlier and from known sources, but they will still be slaughtered at 20-21 months of age from a largely grass-based system. Profitability will improve on the farm over time.

The message is that no radical change is needed on most farms, simply focusing on what delivers profit, incorporating new technologies that increase profit, reduce costs and promote environmental sustainability and sticking with the targets set out will lead to a more profitable and labour efficient system.

Achieving these goals should result in calves being finished profitably here, rather than heading due south to Spain.

Table 2: Examples of the bulls commercial beef values.

Breed	Stock Bull/AI	Carcass weight (Beef Sub index) (kg)	Beef sub index value
(€)	280	300	320
Hereford	Stock Bull	-2.1	26
Hereford	Stock Bull	6.7	41
Angus	Stock Bull	-5.2	17

Table 3: Examples of sires with good beef carcass characteristics.

Breed-Code	Stock Bull/AI	Carcass weight (Beef Sub index) (kg)	Beef sub index value (€)
Angus - AA4087	AI	20	99
Hereford HE4344	AI	13	51
Angus - AA6331	AI	15	65

This year, James decided to apply for the Multi Species Sward Scheme and sowed 8ac of multi species sward (MSS) between his home farm and his out-block. The farm is very fertile, with excellent P, K and lime status, which has been worked on for a number of years.

The land was ploughed by James himself in early summer and run with a disc harrow shortly after to break up

the sod. The land was levelled and run with a harrow to create a nice fine seed bed and then seeded and rolled. The only spray the land received was glyphosate prior to ploughing and it received two bags of 10-10-20 at sowing.

"Growth was excellent once the sward became established this year," says James. "Particularly in the dry period in late summer and early autumn, when the sward outperformed grass

swards on the farm without the need for any chemical fertiliser applications."

James says he definitely saw a good level of performance, enough to encourage him to try another few paddocks in future.

"What I want to establish is how the swards will persist next year, particularly if there is any level of poaching on the sward, which can be quite open early in the year."

beef

Multiple benefits from calving suckler heifers at two years old

Research and farm experience shows that beef heifers who calve at 24 months deliver higher lifetime profit than those who calve at 36 months.

Colin Byrne, Paul Crosson, David Hallissey, Pearse Kelly, David Kenny, Mark McGee, Alan Twomey
Teagasc.

Examiner vs Indo, Guinness vs Murphys – a lot of our personal preferences are based on years of habit...and are no one else's beeswax. The age at which farmers calve their heifers is a bit like that, a personal decision, with most still opting for 36 rather than 24 month calving. But beef farmers are losing very serious money as a result.

The benefits of earlier calving, both financial and environmental, are proven by Teagasc research and the experience of the almost one in four beef farmers calving their heifers at 24 months.

Calving at 24 months dramatically reduces the cost of replacement heifers. Older heifers have a higher rearing cost up to the point of calving. In addition, older heifers have a larger environmental footprint, as they have higher methane output/calf produced over their lifetime.

Other benefits of calving at 24 months include reduced labour costs:

there are simply fewer stock groups to manage. By switching from 36 month calving you can have more productive suckler cows or finishing animals on the farm at the same overall stocking rate.

Management and genetics are required to achieve calving at 24 months. Growth rates in early life are critical to ensuring heifers reach their target of 380-420kg at breeding time.

Selecting heifers with a high Replacement Index reduces the age at first calving, as animals reach puberty sooner and are more fertile. Good management is important to ensure they have the opportunity to express their genetic potential.

The proportion of heifers calving at 24 months has remained steady for 10 years. This must be partly due to beef farmers' preferences. Heifers may have had the potential to reach puberty and be fertile, but if they are not served, they obviously can't calve down at 24 months.

Recent research using data collected through the Department of Agriculture, Food and Marine scheme BEEP, as well as national data available from the Irish Cattle Breeding Federa-



Colin Byrne of Teagasc Grange says that heifers should be 380-420kg at breeding and 550-600kg when they calve at 24 months.

tion (ICBF), helps dispel some of the myths around earlier calving.

•**Myth:** "Calving heifers at 24 months will result in difficult calving."

•**Fact:** Fertility of heifers in subsequent lactations is a good indicator of a heifer's ability to cope after calving and her ability to cycle again.

Heifers that calved at 24 months had a more desirable calving interval in lactation one, compared to heifers that calved at 36 months. The age at first calving had no impact on the probability of cows surviving to subsequent lactations.

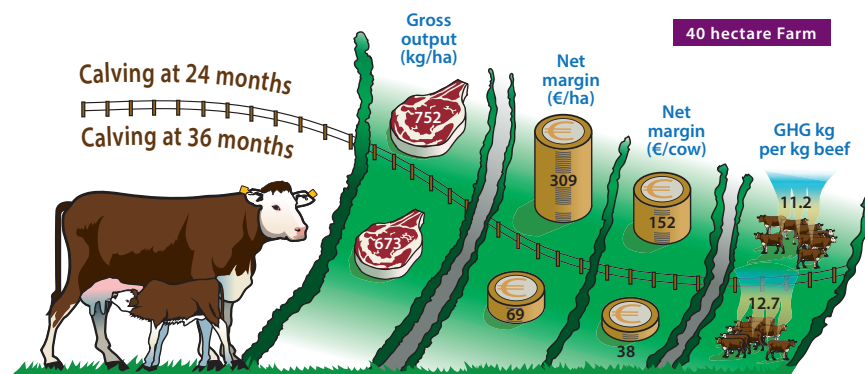
•**Myth:** Calving at 24 months will stunt growth.

•**Fact:** BEEP data showed heifers that calved at 24 months were lighter at first lactation, but with each new lactation cycle their weight difference decreased. By lactation five, there was no difference compared to heifers calved at 36 months.

Having a lighter cow in earlier production years is actually beneficial. They eat less and have a lower environmental footprint.

Overall there was a higher number of calving difficulties in heifers, irrespective of the age at first calving, when compared to mature cows.

Farmers could choose a very easy





If heifers are ready

Critical to implementing a 24-month calving system is maximising pre-weaning liveweight gain.

Heifers achieving 1.2kg of live-weight gain per day during this period will be 300 kg or more come weaning time, in many cases making them very suitable candidates for a 24-month calving system.

Factors that make this weight achievable include good grassland management, milkability of dam, breeding and health status.

Many farmers are achieving these weights with their heifers and have the hard work done. Plenty of farmers in the West-Cork/South-Kerry areas and across the country have their heifers at the target bulling weight of approximately 420kg and above at 15 months, but don't take the final step to put these heifers in calf, and instead opt to wait for another year. This is an opportunity lost.

For some, exclusively using a stock bull only on the farm might be a deciding factor as they don't have the option to use easier calving bulls on young heifers. Many suckler farmers use AI giving them a wider choice of bulls to choose from, helping to avoid any calving issues.

Key goals to ensure heifers calve at 24 months

- Pre-weaning growth rate of at least 1.2kg per day are needed to ensure heifers reach puberty in time for the breeding season.
- Heifers should be 380-420 kg at breeding and 550-600kg at calving.
- Bulls with less than 8% heifer calving difficulty and 80% reliability should be used on maiden heifers.
- Calving heifers in the first 21 days of the calving season increases their fertility and lifetime productivity in the herd.

calving bull to minimise the risk of a calving difficulty. Age at first calving had no effect on the risk of calving difficulties in future lactations.

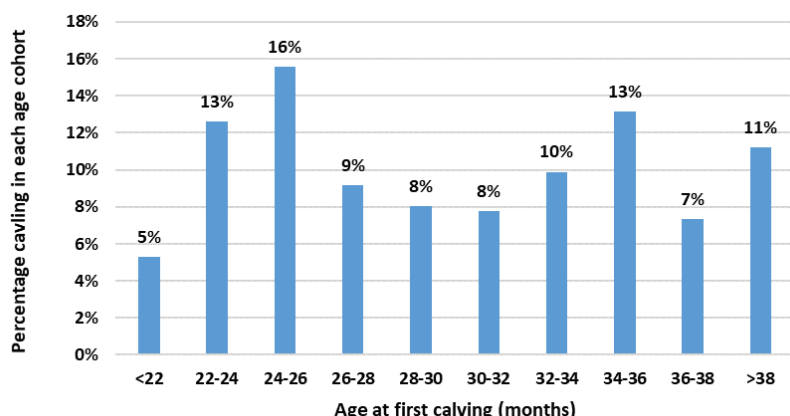
One performance trait that did tend to be affected by calving at 24 months was weaning weight. However, the total amount of weight weaned is more

for the heifer throughout her lifetime, as she will be producing an extra calf, which negates the lighter weaning weight in the early lactations.

Data shows that many of the fears around calving at 24 months are unfounded, and that it is beneficial for overall herd productivity.

Distribution of age at first calving for suckler beef cows in Ireland in 2021

Reducing age at first-calving increases farm productivity (output per head) while reducing costs. A co-benefit is that greenhouse gas emissions per animal and per kg of beef is reduced.



Last Autumn Teagasc ran a series of workshops for farmers across the country on calving heifers in the suckler herd. The workshops explained the economic and environmental benefits of moving to 24 month calving and the management of the heifer from birth all the way through to calving. Each of the farms where the workshops were held have been calving their heifers at two years of age for many years. A booklet produced for the workshops is available on the Teagasc website. Teagasc will hold similar workshops in 2023.





Gabriel Trayers of the Teagasc Future Beef programme with Mayo farmers Michael and Niall Biggins.

Case study

Michael Biggins and his son Niall farm near Glencorrib in south Mayo.

Michael works full-time on the farm, combining the farming work with his busy role as IFA rural development chair. Niall works off-farm as a carpenter, but is also heavily involved in the farm.

The 45ha farm is in three blocks. The land is described as dry limestone, but there is also an area of a heavier peaty soil. There are 65 spring-calving suckler cows. "We sell our bulls as weanlings and the heifers as yearlings," says Michael. The Biggins family participates in the Teagasc Future Beef Programme.

Michael and Niall are continually improving their suckler herd. The herd is made up of Limousin x Saler suckler cows who are fertile and have a lot of milk.

"We cull hard – any cow with only an average-quality calf or who calves late will not get a second chance," adds Michael.

Breeding policy

Two Charolais stock bulls are used on the mature herd and an easy calving Saler runs with the heifers. Approx-

mately 20 cows with their calves plus the bull will be put into a separate group on each of the three blocks.

"We want to start calving on February 1st, so the bulls are let out in the last few days of April," says Michael. To keep the calving interval tight, the bulls are removed after eight weeks.

Replacement policy

Replacement heifers largely come from within the herd, but Michael will occasionally purchase suitable in-calf heifers, directly from farmers where possible. They have one main rule: "Heifers must calve at two years of age or very close to it," says Michael.

"It costs too much to have a heifer running around for an extra year without producing a calf."

Do heifers need assistance at calving? "We've had heifers calving at three years of age and they are the ones I had the most trouble with. All

heifers calving need extra observation and assistance, no matter what age they are."

All of the Biggins' suckler herd have now calved at two years of age with the exception of some purchased replacements.

"There are cows on their fourth and fifth calving with a mature weight of over 650kg, who calved for the first time at two years old," adds Niall.

Key weight targets

There are specific target weights that the heifer must meet at different stages of her development.

On the Biggins' farm, the young heifer calves are forward grazed during the first summer. This ensures that they get to graze leafy covers of grass and, combined with their mother's milk, will be gaining 1.2kg liveweight per day. Prior to weaning, meal is introduced at 1kg per day. They are also vaccinated against IBR

Table 1: Key weight targets.

Mature cow weight	Weaning weight	Bulling weight	Calving weight
Target percentage of mature weight		60%	80%
600kg	260-280kg	360kg	480kg
700kg	300-320kg	420kg	560kg



David Hallissey at Teagasc Clonakilty says using AI gives farmers access to a wide range of easy calving bulls to use on heifers calving at 24 months.

and RSP and dosed for worms.

"The heifers are weaned in a stress-free, gradual way by removing three to four cows at a time from the main group," says Michael.

"There is no housing of cows and calves during this process. The heifers will be weaned at 280kg and over.

"After weaning, the heifers remain on grass with 1kg of meal until housing. Then they are weighed and this year, the group averaged 300kg. They are penned and offered high-quality 73% DMD silage. The target is a weight gain of 0.6kg/day while indoors for the first winter. We take dung samples and animals are dosed based on the results. The heifers have plenty of room and feed space to ensure maximum performance."

Year two

Weather permitting, the heifers are let out to grass as early as possible in late February. "The target is to have them at 60% of their mature cow body weight, i.e 400kg + at bulling on May 1st," adds Michael.

"Prior to bulling, we will draft 12-15 of the best heifers. These heifers will be from the best mothers that meet the following criteria:

- Consistently produced a top-quality calf.

- Plenty of milk.
- Good docility.
- Calved early in the season.
- Good udder and feet.
- High maternal index on ICBF (€100 plus)."

Breeding time

An easy calving bull is selected. The bull will run with the heifers for eight weeks only. "If the heifer does not go in calf in this time she will be sold off-grass to the local mart," says Michael.

This means that the most fertile heifers are kept and will calf compactly the following year.

Michael likes to calve the heifers along with the main herd: "Calving in mid-February means that the heifer won't be far off going to grass," he says.

Management pre- and post-calving

After breeding, the heifers are scanned and the in-calf heifers are kept as a group on their own. The farm is well paddocked and the heifers get three-day grass allocations. The target is to get a liveweight gain of 1kg/day.

During the second winter, the heifers are penned as a group. They are not mixed with other stock such as

older cows. They are offered moderate quality silage (68% DMD+) ad-lib and a close eye is kept on body condition. Heifers are vaccinated prior to calving against rotavirus, coronavirus and leptospirosis.

"At calving, we make sure one of us is near home and we can both watch the calving pens from our phones," says Niall.

"After calving, the heifer is allowed to bond with her calf in a pen of her own for three days. She will be given top-quality silage (73%DMD+) until turnout.

"It is vital that the heifer is well looked after post-calving to ensure that she will go back in-calf. We will continue to keep the heifers that calved as a group of their own for another year. We have an easy calving CH bull for them for the second season."

Michael sums up their attitude to 24 month calving: "We wouldn't have it any other way. Once you look after the heifer, calving at two years will work.

"It is a lot more profitable and I read that it reduces GHG by 12% – we all have to be very conscious of the environment side as well as profit from now on. Calving at two years is a win-win all round."

Table 2: Key performance indicators from the 2022 ICBF reports.

	Biggins herd average	National average	Top 10%
Replacement index (cows)	€105	€87	€112
Replacement index (first calvers)	€133	€91	€128
Herd calving interval	366 days	393 days	358 days
Calves per cow per year	0.99	0.87	1.02
Heifers calved 22-26 months	74%	24%	75%
Six week calving rate (spring)	85%	55%	100%

Managing ewe body condition

Some of us have gained some body condition through excess consumption over recent weeks. Many ewes have not been so lucky.

Michael Gottstein
Teagasc sheep advisor.



Most farmers recognise that ewe body condition plays an important role in reproductive performance, particularly litter size and lambing spread. But in many cases, the interest in managing ewe body condition wanes once mating is completed.

Last year was an unusual one. High prices resulted in reduced fertiliser application on many sheep farms. Summer drought further reduced grass growth rates and on many farms, ewes have been in less than ideal body condition since going to the ram in October.

Unfortunately, the autumn weather did not play ball either and, despite having reasonable grass covers, the constant rain resulted in poor utilisation and reduced intakes. This made it more difficult for ewes to retain, let alone increase, body condition.

Drawing on information provided by participants in the Teagasc Better Sheep Programme, we see that, on average, body condition at mating time for lowland flocks was roughly on par with the 2021 mating season.

However, averages can be misleading and this year, there is a much bigger range in condition scores within the flocks. In particular, there is a

higher percentage of thin ewes than in previous years.

At this stage, it is obviously too late for farmers to be able to do anything about sub-optimal body conditioned ewes at mating time. But you can still influence how those ewes will be managed between here and mating time.

Ewes that are below body condition score (BCS) of 3.0 at mating time are prime candidates for lambing down in very low body condition.

This increases the risk of lamb mortality and poor lamb performance, as the ewes have little or no reserves to mobilise in early lactation.

Key steps to take now are:

- 1 Ensure all ewes have adequate feed to maintain body condition in mid pregnancy – this is when a lot of ewes lose condition.
- 2 Identify thin ewes and separate them for preferential treatment in late pregnancy (i.e. pen thin, single-bearing ewes with the twin-bearing ewes. Put thin, twin-bearing ewes with ewes expecting triplets.
- 3 Eliminate health issues such as parasites, lameness etc. These will cause ewes to lose body condition.
- 4 Get your winter forage tested. Silage/haylage/hay that will be fed to ewes in late pregnancy is particularly important.
- 5 Formulate your late pregnancy diet based on forage analysis and



feed concentrates according to litter size, body condition and lambing date. Concentrates are expensive but necessary to ensure ewes lamb down with sufficient milk and adequate body condition.

6 Check that ewes have adequate feed space to ensure that shy feeders get their share. This is one of the biggest shortcomings on many sheep farms. You need between 500mm and 600mm of trough space per ewe for most lowland sheep flocks.

Summary

Ewe body condition is a very useful tool to manage the pre-lambing nutrition of your sheep flock. Flock average condition score hides the fact that much of the flock could be in suboptimal body condition. Identifying under-condition ewes and segregating them for preferential feeding will pay dividends. This year, it is important to ensure that ewes do not lose condition in mid to late pregnancy. Introducing supplementary forage and/or concentrates should ewe body condition start to diminish is essential.

Table 1: Body condition scores for mature ewes across the sheep BETTER Farms.

	2021	2022
Flock Average Score	3.3	3.3
% of ewe BCS <3.0	12%	17%



Ewes feeding on forage rape.

Case study one

Brian Keane and family farm a mixed cattle, sheep and tillage enterprises at Garr, Davidstown, Enniscorthy, Co Wexford. "We were very short of grass due to drought throughout the summer," says Brian.

Ewes were supplemented with good-quality hay in August and while the overall BCS of 3.2 looks acceptable, 24% of the ewes were in sub-optimal condition at mating time. The average body condition score for the mature ewe flock and the percentage of ewes in a body condition score of less than 3.0 are outlined in the table below.

"The early cereal harvest allowed us to sow a percentage of the cereal area with forage rape," adds Brian. "This crop is now being used to feed ewes to ensure body condition is maintained during the mid pregnancy period."

A significant percentage of thinner ewes (BCS <3.0) will need to be supplemented with additional concentrates in late pregnancy to ensure body condition does not slip further. "Ewes are due to be housed in late December and will be offered ad-lib silage until scanning time," says Brian. Once the flock has been scanned, ewes will be penned according to litter size, body condition and lambing date, so thin single-bearing ewes will be penned and fed with the twin-bearing ewes. Thin twin-bearing ewes will be penned and fed with the triplet-bearing ewes.

	2021	2022
BCS (mature ewes)	3.2	3.2
% BCS <3.0	29	24

Case study two

Tomás O Toole, Moyard, Clifden, Co Galway runs suckler cows in combination with lowland and hill ewe flocks. The results of the lowland ewe flock body condition score is outlined in the table below.

"Average ewe body condition is back 0.2 from 2021, but in addition to this, the figures show (table below) that the number of ewes in sub-optimal body condition at mating time was 29%," says Tomás.

This means that nearly three out of every 10 ewes were below target for body condition score at mating time. Critical to the success of next year's lamb crop will be that these ewes do not slip further during the mid to late pregnancy period.

	2021	2022
BCS (mature ewes)	3.3	3.1
% BCS <3.0	7	29

"To avoid ewes slipping further, we housed the lowland flock in the last week of November," says Tomás. Ewes are receiving 74% DMD high-quality silage ad-lib and will be scanned in early January.

Once scanned, ewes will be penned according to litter size, ewe body condition and expected lambing date (using different raddle colours).

Getting ready for calving

Compact calving helps to maximise grass utilisation and profitability; preparation can ease the inevitable work peaks

George Ramsbottom
Teagasc Oak Park,
Carlow



Teagasc Moorepark work shows that to optimise profitability at least nine out of 10 cows (90%) should give birth in the first six weeks of the calving season. Profitability per cow in the herd declines by €8.22 for every 1% six-week calving rate below the 90% target.

A 100-cow herd achieving a six-week calving rate of 90%, will be €12,000 more profitable than a herd at 75%.

About half of this difference is due to lower milk sales (mainly among the late calvers). The balance is due to poorer fertility, and an estimated 3% higher replacement rate caused by the later-calving cows.

Nationally, calving has also become increasingly concentrated as the fertility and size of the national dairy herd has increased. In 2010, approximately 270,000 calves were born in February; an estimated 670,000 will be born in February 2023.

Study

Managing compact calving demands a high level of organisation and planning before the calving season begins.

Conor Hogan and Marion Beecher from Teagasc Moorepark conducted a springtime labour study on 76 spring-calving dairy farms carrying an average of 137 cows in the spring and early summer of 2019.

Their study extended beyond calf rearing to encompass all of the tasks carried out in springtime on Irish dairy farms.

Average hours worked per day were 15.4 and 15.7 hours in February and March, respectively. This declined



Nationally, calving has also become increasingly concentrated as the fertility and size of the national dairy herd has increased.

Table 1: Factors associated with the labour efficiency for calf care during the February-June period on the study farms

Factor	Hours saved per cow
Calves trained on group feeders at 1-4 days	0.52
Automated or ad lib calf feeding once the calf was trained to suck	0.71
Not rearing the bull calves on the farm of birth	0.69
Sending calves to be contract reared before they were weaned	0.79

to 14.0, 14.9 and 13.4 hours per day in April, May and June.

Efficiency, measured as the number of hours worked per cow, was greater in larger herds. But irrespective of herd size, the authors observed considerable variation between farms in the number of hours worked per cow.

The work associated with calf rearing during February-June averaged 3.44 hours/cow or 14% of the total time spent on dairy farms during the period.

The study identified four strategies on the featured farms that helped to reduce the hours worked that were

associated with calf rearing (see Table 1).

I asked four of the Teagasc Tirlán Joint Programme Focus Farmers for their top tips for the busy calving season ahead in 2023.

All of the four are specialised dairy farmers and have experience of the labour-saving practices highlighted by the study.

In summary, they rear very few bull calves, train the calves onto group feeders from a young age and some of them use automated feeders to rear the calves retained. None of them send their calves for contract rearing.

Kevin Murphy

Farming just outside Gorey, Co Wexford, Kevin and Ann Murphy milk just over 300 spring-calving dairy cows. In 2022, over 260 cows calved in the first six weeks of the calving season, which started on 26 January. Kevin's top tips are:

- "Get the facilities ready well ahead of calving – we'll have the sheds bedded and disinfected and pens set up well in advance."
- "We aim to get the cows to grass as soon as ever possible after calving – it makes a big difference to reducing the spring workload when they're outside."
- "We've a vaccination policy in place for Rotavirus with the herd divided into early and late-calving groups and vaccinated accordingly – afterwards it's vital to make sure that the calves get enough colostrum to protect them in the first few weeks."

Continued
on p26

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Steven Fitzgerald

Steven farms at Aglish, west Waterford. His calving season is very compact with 154 cows calved in a six-week period in 2022 and the remaining 14 cows in the next 18 days. Not surprisingly, he's highly organised when it comes to the calving season.

Like Kevin, his priority now is to get everything prepared for the coming calving season. In addition, his other top tips are:

- "I believe in the importance of having the cows in tip top shape at calving. A healthy cow has a healthy calf and all the straw in the world won't compensate for a weak calf."
- "We'll have a weekend away in mid-January – it gets us ready to 'roll' before calving starts."



Donal Kavanagh

Donal and Fiona Kavanagh farm in Kildare, close to the Wicklow town of Baltinglass. They are liquid milk producers and just over three quarters of the 240-strong dairy herd calves in the spring. He prepares shed space, orders tags, disinfects and vaccinates like Kevin and Steven well in advance of the calving season.

According to Donal, "I put leg bands on the cows as they're dried off. The colour of the leg band is linked to the expected calving date so I know at a glance which cows are close to calving."

"It takes a lot of the work out of sorting the cows around calving time. We'll record the colours of the leg bands on a whiteboard so that everyone knows what the colours mean."



Coccidiosis in dairy calves – your help needed to influence our advice

With the start of the busy spring calving season close at hand, it's time to focus on coccidiosis, a disease which continues to be a concern on many calf-rearing farms.

Coccidiosis mainly causes clinical disease in calves from three weeks to nine months of age.

The most recent all-Island Animal Disease Surveillance Report details the percentage of samples submitted to Regional Veterinary Laboratories returning positive results for coccidial oocysts.

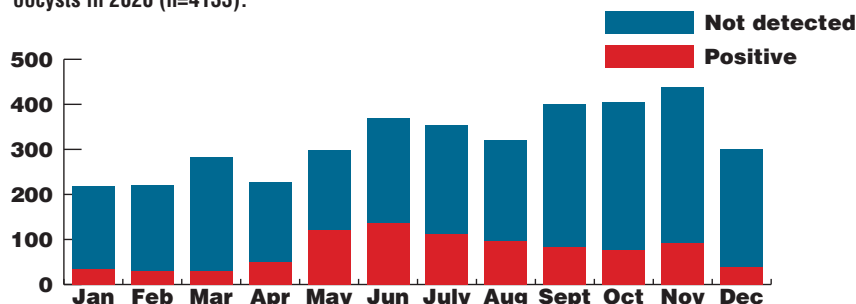
Coccidia are excreted in the dung and are ingested by a susceptible calf in dung-contaminated bedding, feed or water. A single ingested coccidia oocyst develops into thousands of new parasites, each of which destroys the calf's gut lining resulting in very rapid and severe damage to the gut and which can lead to diarrhoea, dysentery (bloody diarrhoea), dehydration, tenesmus (straining), loss of condition and possible death.

The summary of their results, presented in Figure 1, shows a rise in the proportion of samples testing positive for coccidial oocysts throughout the spring, reaching a peak in May. This reflects the infection pressure of increasing numbers of calves in spring-calving herds, especially while the calves are housed.

Infective coccidia oocysts are highly resistant to environmental conditions, both in housing and on pasture, so premises and fields can remain contaminated for a year or more. Calves are commonly infected

Figure 1

Number of bovine faecal samples (all ages) tested for coccidiosis oocysts in 2020 (n=4133).



through ingestion of coccidia oocysts from bedding or pasture, which previously have carried infected cattle (possibly including adult cows). Stressors, such as weaning, turnout, change of diet and poor weather may precipitate outbreaks of disease.

As warm, damp conditions are necessary to allow oocysts to become capable of infecting animals, it is important to avoid dampness in bedding or around water bowls/drinking or

feeding troughs.

A lot of the damage and clinical signs can be seen in calves before coccidia oocysts appear in the faeces. So sampling of a number of calves in the affected group including contemporaries which have not yet developed clinical disease is important.

This might help in the detection of coccidia oocysts and in the diagnosis of the cause of the clinical signs seen.

The Department of Agriculture, Food and the Marine's Regional Veterinary Laboratories, Teagasc and UCD are carrying out research on coccidiosis in dairy calves. The research will find out what dairy farmers are currently doing to control, prevent and treat coccidiosis. You can participate in the study by scanning the QR code and completing the survey on your mobile phone. This survey will take approximately three minutes to complete and it is entirely anonymous. The results of this research will influence future Teagasc advice on how to control coccidiosis on dairy farms.



Tom and David Fennelly

The Fennellys milk 260 spring-calving dairy cows near Portarlington, Co Laois. Almost 240 of them calved in the first six weeks of the calving season in 2022. Having enough help around is a key part of the Fennellys' plan to making the upcoming calving season easier for them.

According to Tom, "We've a full-time person already working with us on the farm and plan to take on a dedicated milker for morning and evening milkings this spring. This will lighten the workload and give us more time to concentrate on the cows and calves."



Tom Fennelly.



David Fennelly.

Summary

With the busy springtime calving period imminent, the research study highlights the potential of labour-saving technologies to reduce the time required to rear calves. All of the farmers that I interviewed rated being prepared very highly.

All employ one or more of the key calf-rearing practices that the study identified as important in saving labour during the spring. And, finally, remember to be kind to yourself in the run-up to (and during) the calving season.

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Businesses in perfect synch

A garden centre and a dairy herd work well together on this Meath farm.

Mark Moore
Teagasc

Aileen Muldoon, her husband Frank Byrne and their son Aran operate two independent businesses on their 60ha near Slane, Co Meath. Frank and Aran run a 150-cow dairy herd, farming 80ha, while Aileen's business is the Boyne Garden Centre and Nursery. This is not a diversification story.

Both businesses have grown steadily and in parallel over the last 25 years. The garden centre and nursery just occupy an acre but is financially strong in its own right. The dairy enterprise is thriving too.

Frank took over the 20 cow dairy herd after leaving St Pats Agriculture College in 1976. Today, after immense work by the Byrne family, the business has grown into a high performing herd. They have won many awards over the years in the North Eastern Holstein Friesian Club (NEHFC). Glenrowan Holstein pedigree herd supplies milk to Lakeland Dairies and sells surplus stock.

Aileen grew up in the suburbs of Dublin, not far as the crow flies from northeast Co Meath. "Both Frank and I were interested in fruit and vegetables and amenity plants of all kinds, so when we married and built a house, we allowed ourselves the luxury of an acre of garden," she says.

Previously a nurse and keen indoor plant grower, Aileen developed the garden design herself. Neighbours and friends noted her expertise. Many sought her advice, and largely through word of mouth, a business developed.

Gradually, the business began with propagating, sourcing and supplying plants, as well as delivering a design and landscaping service. "Obviously with Frank running the farm and me contributing, I saw first-hand what it took to run a business. It certainly helped me gain experience and learn new skills," adds Aileen.

Twenty five years later, Aileen's business has gained a national and international reputation as a specialist grower of ornamental perennial plants, in particular species which attract and support pollinators. "A garden shouldn't be sterile but full of life. We particularly focus on hardy perennials which are sustainable, offer great value for money whilst supporting wildlife. Some examples of these plants are Monarda, Rudbeckia, Persicaria and Digitalis (foxglove)," she says.

So what is the relationship between the farm and the nursery? "Well the businesses are financially separate, but obviously it's a benefit for the nursery to be able to occasionally borrow a loader or other equipment from the farmyard," says Aileen.

"The greatest crossover is that Frank is heavily involved in both businesses."

It turned out that the largest workload for the nursery occurs when there is a slight easing on the dairy farm.

"By the end of April, the calving season is over and the cows are out on grass. The workload is then mainly managed by Aran," says Frank. "Aran's focus is on farming rather than on gardening, but he does have an interest in planting native tree species."

Late spring is when the garden centre also goes on the road. "A big part of our marketing involves attending



garden shows all over the country from the late spring through to late summer," says Aileen.

"We will have been growing plants to bring to these shows, loading up the trailer and travelling to 10 or more shows a year, including Fota in Cork, ClareGalway castle in Galway, and of course Bloom, which is huge."

Exhibitors compete to have the most attractive and impressive displays, and Aileen, though slow to say it, has won nine gold medals at Bloom and two 'Best in Show' awards. Frank works with Aileen preparing for and attending the shows. They are members of ISNA [Irish Specialist Nursery Association] and the Boyne Valley Garden Trail.

"I greatly enjoy working with the cows," says Frank. "But I also look forward to the show season when we bring a huge range of plants and meet hundreds of people every day. Most of them are gardening enthusiasts whom we know well and who love to





buy home-grown hardy plants which Aileen and her staff have nurtured.”

Starting a business

“My advice to anyone considering starting a business of any type is to be sure you choose something that you really enjoy,” says Aileen. “That way, you’ll have the enthusiasm to overcome the many challenges that will inevitably arise.

“The next point is to start gradually and don’t overextend yourself by, for example, spending lots of money on machinery etc. That can leave you exposed if the economy turns down for a period.

“During the boom, people were able to borrow huge amounts of money and were keen to spend it. Several landscapers were overextended when the crash came. Had we expanded more aggressively, we could have been in trouble too.

“In gardening, as in farming, the weather can be challenging. In 2010,

we lost thousands of plants due to the cold snap in that spring. It knocked us back but we were able to survive as we weren’t over-extended.

“Horticulture, like farming, involves a huge range of activities, some mundane, some more exciting and it attracts an equally large range of people,” says Aileen.

“What I have learned is that the employee’s attitude is key. If they are enthusiastic and positive, they will

succeed, particularly if they also have qualifications from somewhere like the Teagasc colleges. We are always open to employing a person who has a passion for plants and gardening.”

Gardening centre operations course.

“The Covid pandemic actually generated an opportunity for me,” says Aileen. “It meant that I was able to join the Garden Centre Operations course at the Teagasc College at the National Botanic Gardens. All of the lectures were on Zoom and I was able to complete assignments here at the Garden Centre.

“I entered the course as a mature student and found James Brady and all the lecturers at the College to be hugely knowledgeable and supportive of students. It was an interesting collective of different age groups and backgrounds benefitting all of us!

“Doing the course taught me a lot and endorsed many of the things we were doing, even if we had learned the hard way through experience. It was thought provoking and gave me confidence, as I had been self-taught up to this point. I would highly recommend anyone considering setting up or working in a garden centre to attend this course.”

Though her garden centre is within an hour of half the country’s population, Aileen says that Covid has made location less important for specialist growers like her: “In the past, I never thought that people would be happy to choose plants from our website and receive them via courier. Now they are.

“People will always like to come and buy in person, but once you have built a relationship with them and they trust you, they don’t need to travel every time.”

Aileen advocates for doing your research before going into the garden centre, or any other type of business.

“Simply ask people who are in the industry how things are going. They will almost always help you with advice and help you to avoid pitfalls they may have encountered. “It’s never too late to change direction or begin a new chapter in life. If I can do it, anyone can,” she concludes.

Level 6 Garden Centre Operations Course at the Teagasc College at the National Botanic Gardens

On completion of the course students will be able to:

- Evaluate the retail market for garden plants and products.
- Analyse garden centre layout and customer flow patterns.
- Examine product display, promotion and public relations within the garden centre industry.

- Explain the role of staff within garden centres.
- Apply routine skills necessary to display merchandise and stock.
- Apply routine skills necessary to display merchandise and maintain stock.
- Apply knowledge of a wide range of garden products and services with a view to providing professional customer service.

Taking stock in tillage fields

Assess your plant populations as well as weed and disease threats.

Shay Phelan
Teagasc tillage specialist



The Teagasc Harvest Report 2022 estimates that winter cereal plantings for harvest 2023 are down 34-35,000ha compared to last year. Most of the decrease is down to the wet weather, which prevented autumn planting. Winter oilseed rape area, by contrast, continues to increase on the back of a very good performance in 2022 and favourable drilling conditions in August and September.

Flood damage has left fields with areas where there are few, or no, plants. The question of whether to continue with the crop or re-plant should be driven by the potential yield of the crop and the cost of inputs.

Autumn field conditions made spraying difficult. Many wheat and oat crops in particular received no autumn herbicides. Most winter barley crops did receive a herbicide and an insecticide. But there are still many on wetter soils that didn't and are struggling, with bare patches evident. So, many crops will need to be treated in the spring for weeds.

Top priority are winter barley crops where grass weeds are present, particularly annual meadow grass or bromes.

Options are limited now and the effectiveness of the herbicides will also be reduced. Grass weeds that have tillered will not be fully controlled with the herbicides that are available – bear this in mind when choosing what to apply.

Products containing flufenacet, (Firebird), chlorotoluron (Tower) or pendimethalin (Stomp Aqua), will struggle to give adequate control

of grass weeds, particularly if they have continued to grow well during the winter. Some grass weeds started tillering before Christmas, so inspect crops and see what stage they are at before spraying.

All barley crops will need a tidy up in the spring to control broad-leaved weeds. If grass weeds are not a big problem, it may be wise to wait until later in the spring and control all the weeds at the one time.

When choosing a spring herbicide, be careful about its persistence in the soil. Check the label restrictions or consult a company rep to find out if the product will have any effect on a following oilseed rape crop, especially if non-plough systems are being used. This has already been an issue in some oilseed rape crops planted in 2022.

Barley crops will also probably need an insecticide to control aphids. It may be late to apply one, but trials have shown that a single application of an insecticide in January can still give adequate control of BYDV. Especially in high-risk areas in the south or along coasts.

Crops that received an insecticide in the autumn probably do not need a second application, unless they were sown very early.

In winter wheat, there are still plenty of options for weed control, with products such as Alister Flex, Pacifica Plus, Broadway Star or Monolith where grass weeds are an issue. Again, before selecting a herbicide, inspect the fields that need to be sprayed and assess the weeds that are present.

For example, Broadway Star is very good on grass weeds, including wild oats, and many broadleaf weeds, but annual meadow grass is resistant. Pacifica Plus is very good on grass



weeds, but is limited on weeds such as groundsel, fumitory and speedwells.

Growers also need to be aware of the increased incidence of resistant weeds. Always aim to alternate the herbicide chemistry to reduce the risk of resistance developing in your fields.

For any winter oilseed rape crop that still needs a herbicide, options are becoming limited. Kerb or As-trokerb must be applied by the end of January – after this, the only options for broadleaf weed control are Belkar or Korvetto, both which have a limited weed spectrum.

Growers should also be aware of light leaf spot infection. From the end of January, sample some crops by taking leaf samples, placing them in a plastic bag and putting the bag in a warm room. After 24-48 hours,

Table 1: Estimated winter crop plantings 2022 ('000 ha).

	2020	2021	2022	2023
Wheat	35.4	56.1	60.3	55
Barley	51.3	67.3	73.6	52
Oats	8.2	13.9	15.0	8
Oilseed Rape	8.7	10.0	14.5	19



Meath farmer Vincent Macken.

the typical salt-like lesions should be visible on infected leaves.

If there is disease present, then consider an application of a prothioconazole based product (Proline, etc.).

From mid-February, start carrying out GAI calculations on your crops using your smartphone to gauge the canopy size and the nitrogen requirement for the crop. Crops with GAI of less than 1 will probably need an application of nitrogen-based fertilisers before the end of February. Crops that have a large GAI, greater than 1.5, can wait.

Remember that a GAI of 1.0 represents 50kg/ha of nitrogen that is being stored in the leaves and which will not need to be applied. So try to keep pigeons from grazing on the leaves. One farmer who says he still has some tidying up to do is Vincent

Macken, one of our Teagasc Tillage Signpost farmers. Vincent grows winter wheat, winter barley, spring beans and winter oilseed rape on his farm near Kentstown, Navan, Co Meath.

Vincent drills the majority of his crops with a three meter Vaderstad rapid drill.

"Last autumn I began drilling cereals before the end of September and managed to get all crops in before the weather broke," he says.

"I got some spraying done but will have to tidy up some weeds in the spring."

As part of a project on BYDV, Vincent is also monitoring aphid movement and has placed some yellow traps in his fields to catch aphids.

"So far, the numbers have been low and as a result, I decided not to spray an insecticide on the winter barley.

However, I might just spray one or two tramlines in January for comparison to see if there is an effect.

"Oilseed rape crops were sprayed with Falcon to control volunteer cereals and grass weeds but the crops will still need to get Astrokerb before the end of January to complete the grass weed control. I am comparing prothioconazole (Proline etc.) and tebuconazole (Sirena) to see which gives the best disease control in his oilseed rape crops," adds Vincent.

Drilling of beans will begin around the end of February if ground conditions allow but before that, he will destroy his cover crops by disking.

"We've got on well with both cover crops and beans in recent years," adds Vincent.

"They are good for sustainability but also fit very well in our rotation."

Accurate spreading: six steps you need to take

To get the best return on the fortune you spend on fertiliser, you must spread it accurately.

Dermot Forristal
Teagasc Oak Park.

Achieving accuracy has been made more challenging thanks to the use of wider-spreading machines and varying physical characteristics of fertilisers, particularly urea. Focusing on the following six points will help.

Know your fertiliser quality.

While the chemical analysis of a fertiliser is controlled, the physical properties – size, shape, strength and density of the particles – are not. These can have a huge impact on how easily the fertiliser is spread, and particularly on the optimum setting/adjustment of the spreader.

A good fertiliser will have a relatively large particle size, with 80% of the particles in the 2mm to 4mm size range. This can be checked with a simple sieve box. Many fertiliser types have a density of about 1kg/litre, but urea (either standard or protected), has a density of about 0.8kg/litre making it more difficult to spread, limiting the bout widths and usually requiring a different spreader setting.

Larger particles make spreading a little easier and this is particularly true of low density urea. The marketing of blends which contain both low density urea and high density P and K elements presents a particular challenge and should be considered with a lot of caution, as the different constituents may spread to different widths.

Particle strength is also important, as weak particles can break up on hitting the spreader disc vane – strength can be easily tested. Always ask your supplier about the physical quality of a fertiliser.

Know your spreader's capabilities

Specific makes and models of fertiliser spreader have different capabilities in terms of the bout width at which they can spread different products evenly. Urea may not be spread as widely or evenly in most cases.



Modern spreaders enable the spreading elements to be set to suit fertiliser physical quality and the bout width. Headland spreading mechanisms also need to be adjusted.

The most important characteristic of any spreader is its ability to spread fertiliser evenly, as indicated by a tray test. This produces a coefficient of variation (CV) value. CV values of less than 10% indicate even spreading.

The design of the disc, vane and spreader outlet determine how evenly it spreads and is not necessarily helped by electronic control or GPS systems. Relying on the absence of striping in the target crop as evidence of even spreading is not good enough – always look for evenness test data when purchasing a spreader.

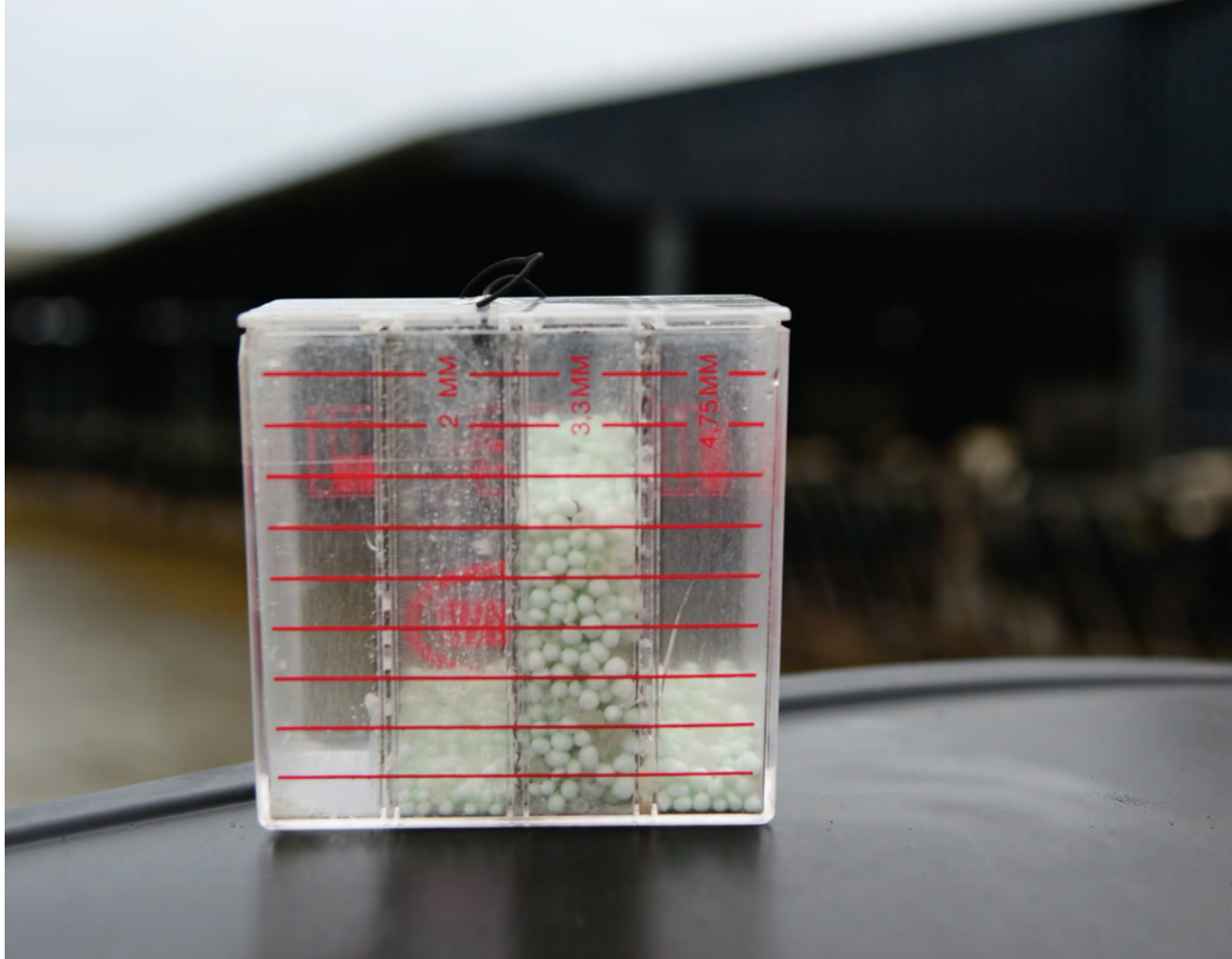
Set your spreader for even spreading

Today's fertiliser spreaders typically

have an adjustable spread pattern that can be changed to suit the bout width for the fertiliser product being used (size, density and strength). Some of: disc type, vane type, vane position, spreader tilt, fertiliser drop point etc may need to be changed.

Manufacturers of good spreaders continually test a huge range of products so that the user can match their fertiliser with something in the fertiliser manufacturer's database. Increasingly, this is being done through a smartphone app, or an online web page.

Typically, a simple fertiliser sieve box, density check and strength test are used to characterise the fertiliser to get the appropriate settings.



Sieve box: Characterising the fertiliser in terms of granule size distribution, density and strength allows it to be matched to a product in the spreader manufacturers database, giving the correct setting for spreader evenness, which is now normally accessed via a phone app or similar.

This should be carried out for every batch of fertiliser.

Set the rate correctly

Setting the desired application rate can also be aided by using the spreader manufacturer's resources, but static calibration using the actual fertiliser being applied is usually worthwhile.

Some manufacturers produce calibration aids such as fertiliser flow-rate calculators which can ease the task. Spreaders with weigh cells or electronic flow measurement devices allow self-calibration.

As fertiliser varies from batch to batch, calibration checks are vital – relying on estimates and adjustments after each paddock or field is finished can result in a lot of area being spread at the incorrect rate.

Measure carefully or use GPS

Marking bout widths by using tramlines in cereals, using temporary markers, or GPS guidance is essential for spreaders working with bouts of 12m and more.

Simple light bar or screen guidance GPS systems rely on good operator skill to ensure accuracy, with higher resolution systems and auto-steer increasing accuracy, but at a significant

cost. GPS systems, which automatically turn on and off fertiliser flow at the headlands, can also improve accuracy. Modern spreaders often have turn-on points 15m to 20m or more from the end headland.

This can be very difficult to judge by eye, resulting in significant overspreading when leaving the headland. If GPS switching at the headlands is not an option, the correct turn-on points should be marked in the field to allow the operator to calibrate their own eye for this distance.

Set-up headland spreading systems carefully

Broadcast spreaders need to have a different spreading arrangement for use on the field boundary to get the correct rate up to the boundary, and to avoid spreading past it.

Modern spreaders, by design, have a large overlap of fertiliser from adjacent bouts to give an even spread, but on headlands, we need one side of the pattern to deliver the same quantity of fertiliser without overlap to the field edge.

This is challenging and manufacturers use a range of different methods including deflectors, different discs, vanes and drop points to achieve this, but none of these are perfect and

often require very careful setting using trays.

Between inaccurate on/off switching and incorrectly adjusted headland mechanisms, significant errors at field headlands can occur (see below panel).

Correct selection, setting and use of fertiliser spreaders is essential to ensure even spreading and requires accurate information about fertiliser quality. Getting the basics right is vital.

Headland research

In a Teagasc study of fertiliser spreading on cereal field headlands on 17 farms, Mark Ward found that:

- Fertiliser spreading was uneven, with the first 8m of the headland getting 20% less than the target rate but the next 8m getting 20% more than intended.

- These average figures hid the much greater variation on individual farms, with some parts of the headland getting virtually no fertiliser and others getting more than 50% more than the targeted rate.

- Both the headland spreading mechanism and the fertiliser on/off switching when leaving or approaching the headland were contributing to these errors.

Forestry becoming more

The new Forestry Programme, commencing in 2023, is already generating very strong interest from farmers and landowners.

Tom Houlihan
Teagasc forestry specialist

Last November, An Taoiseach Micheál Martin, along with Minister of State with responsibility for Forestry, Senator Pippa Hackett, and Minister for Agriculture, Food and the Marine, Charlie McConalogue announced a proposed investment by the Government of €1.3bn in Irish forestry.

The funding represents the largest ever investment by an Irish Government in tree planting. An Taoiseach said: "Forestry is at the heart of delivering on our sustainability goals and strong support is needed to encourage engagement from all our stakeholders in reaching our objectives."

The proposed new Forestry Programme is the main implementation mechanism for the new Forest Strategy (2023-2030). This reflects the ambitions contained in the recently published 'Shared National Vision for



Trees, Woods and Forests' in Ireland until 2050.

The new programme is built around the principle of the right trees, in the right places, for the right reasons, with the right management.

It aims to deliver more diverse forests, which will meet multiple economic, social and environmental objectives. Higher grant rates for forest establishment are included with proposed increases of approximately 20%. Forest premium rates are set to be increased by between 46 and 66%, depending on forest type. A premium duration of 20 years will apply for approved applicants who meet farmer qualification criteria.

The new programme will be 100% Exchequer-funded and is currently subject to State aid approval from the European Commission. Table 1 shows the proposed new planting grant and premium rates for the 12 forest types proposed for landowners considering new forest creation.

These new forest types provide a wide range of options including commercial conifers and broadleaves, agroforestry, native woodlands, emergent woodlands, forests planted to protect and enhance water quality and forests planted to facilitate a future continuous cover management approach.

The minister has approved an interim solution for afforestation. An Interim Afforestation Scheme (via General De Minimis) is being offered to those applicants that on the 31 December 2022, hold a valid technical approval for planting and do not wish to wait until the launch of the Forestry Programme 2023-2027.

If an applicant with a valid approval wishes to await the launch of the Forestry Programme 2023-2027, no further action is required at this stage.

Decision support

The Teagasc Forest Investment Valuation Estimator (FIVE) informs decision-making in relation to potential land use and forestry options. FIVE uses discounted cashflow (DCF) analysis to model indicative financial returns for forestry land use options (forest creation) and management op-

Table 1: Proposed new supports for forest types

Forest type	Proposed grant/ha	Proposed annual premium/ha	Proposed number of premiums for farmers
FT1 Native woodland	€6,744	€1,103	20
FT2 Forest for Water**	€6,744	€1,142	20
FT3 Forest on Public Lands***	€10,544	n/a	n/a
FT4 Neighbourwoods****	€10,200	€1,142	20
FT5 Emergent Forests	€2,500	€350	20
FT6 Broadleaf mainly oak	€6,744	€1,037	20
FT7 Other Broadleaf	€4,314	€973	20
FT8 Agroforestry	€8,555	€975	10
FT9 Seed Orchards	€10,000	€1,142	20
FT10 Continuous Cover Forestry	€5,421	€912	20
FT11 Mixed High Forest Conifer, 20% Broadleaves	€4,452	€863	20
FT12 Mixed High Forest Conifer with mainly spruce, 20% Broadleaves	€3,858	€746	20

*Additional supports for fencing also apply.

**Additional payment of €1,000 per ha may be paid to landowner on completion of planting.

***Grant includes trails, seats and signage facilities payment.

****Grant includes facilities payment

financially attractive



An Taoiseach, Micheál Martin TD and Minister of State with responsibility for Forestry, Senator Pippa Hackett plant a birch tree from the Teagasc birch improvement research programme to mark the announcement of the proposed new Forestry Programme.

CASE STUDY

Our example farmer would like to plant 6ha of heavy mineral soil with forest type (FT) 12 under the new Forestry Programme 2023-2027. This FT comprises mixed high forest with mainly spruce and an inclusion of 20% broadleaves. This planting option is equivalent to Grant and Premium Category 3 (GPC 3) under the previous Forestry Programme (Table 2).

Table 2:

Previous grant and premia category (GPC)	New forest type (FT)
GPC 3, grant rate: €3,215 (excluding fencing)	FT 12 grant rate: €3,858 (excluding fencing)
GPC 3 premium rate: €510 /annum (15 years)	FT12 premium rate: €746/annum (20 years)

Assumptions

Establishment type: afforestation.

Area planted: 6ha.

Soil type: wet mineral.

Selected species: Sitka spruce 65%, birch 20%.

Retained area for biodiversity enhancement (e.g. open spaces, retained habitat, setbacks): 15%.

Yield class (productivity indicator): Sitka spruce YC 24, Birch YC 8.

Forest thinning: normal.

Rotation: 35 years.

Timber prices: 10-year average*.

Discount rate: 4.5%.

Grant rate: covers full cost of establishment/early management.

tions (e.g. forest thinning).

FIVE provides financial output for decision support, particularly in relation to reviewing pre-planting options and comparing criteria such as tree species, yield classes and forest rotation lengths according to landowners' preferences and objectives.

Potential timber revenues are generated by FIVE through the selection of forest criteria and management regimes.

A range of variables are used as inputs in a typical financial analysis. These include species, site productivity, rotation length, relevant premium payments, establishment and ongoing management costs, as well as potential thinning and clearfell timber volumes and revenues.

Future cost and revenue streams from forestry are generated by FIVE and are discounted to present day values and presented as net present values (NPVs).

The NPV refers to the net returns to forestry over one (or more) forest rotation(s). In order to compare forestry with other farm enterprise options, the FIVE tool expresses different forest crop rotations on an annual per hectare basis by generating the annual equivalent value (AEV) for each forest scenario.

The following case study uses FIVE analysis to outline the returns for Forest Type 12 within the proposed new forestry programme.

Analysis of forest types comprising mainly broadleaf species will be included in future articles.

Table 3

Indicative returns	Per ha (€)	Total (6ha) (€)
Total revenues	35,903	215,423
Total costs	6,980	41,880
Balance	28,923	173,543
Net present value**	12,084	72,502
Annual equivalent value***	€692	4,152

*10-year timber prices (2011-2021)

**Net present value refers to the net returns to the forest enterprise.

***Annual equivalent value expresses the net present value as a series of equal cash-flows over the forest rotation.

Farmers meeting the required criteria can also be eligible for the Basic Income Support Scheme (BISS) Payment on planted land.

Conclusions

Forestry returns based on proposed new premia levels in the Forestry Programme 2023-2027 can now be highly competitive when compared to many agricultural enterprises. Attractive returns can also be shown for fast growing broadleaved species such as birch and sycamore.

FIVE analysis does not take into account the capacity for eligible forestry parcels to draw down the new BISS payment in addition to the forestry premia.

It also doesn't reflect the income tax advantages of forestry income and relative efficiencies in terms of labour inputs when compared to other enterprises.



Further information

Teagasc provides comprehensive supports and the best information available to help inform good decision-making while supporting landowners in meeting their objectives. See www.teagasc.ie/forestry or contact your local Teagasc forestry staff.

Income prospects for 2023

Another year of high production costs expected.

Emma Dillon, Trevor Donnellan, Kevin Hanrahan, Anne Kinsella, Jason Loughrey and Fiona Thorne
Teagasc Rural Economy Development Programme.

Each year, economists from the Teagasc Agricultural Economics and Farm Surveys department, with specialists from the Pig Development Unit and the Forestry Development department, publish a summary of the economic performance of the agriculture sector and a forecast or outlook for the year ahead.

In December 2022, our farm income forecasts for 2023 and estimates for farm incomes in 2022 were published. In this article, we summarise this outlook for the dairy, beef, sheep and tillage sectors.

Full details of our income forecast for these and other sectors of Irish agriculture are available from the Teagasc website www.teagasc.ie/

[publications/2022/outlook-2023---economic-prospects-for-agriculture.php](https://www.teagasc.ie/publications/2022/outlook-2023---economic-prospects-for-agriculture.php).

In 2022, farmers faced considerable uncertainty relating to input and output prices. This influenced production decisions. The uncertainty was largely driven by Russia's invasion of Ukraine, which had immediate consequences for energy, fertiliser and feed prices. Subsequently, farm output prices were impacted.

Weather conditions in 2022 were unusual, with exceptionally dry conditions over the summer having a negative impact on grass growth. Cereal production generally benefited from the dry weather.

For farm incomes, the outcome in 2022 was mixed. Dairy farms achieved dramatically higher incomes, as did tillage farms, compared with 2021. Incomes on cattle farms and sheep farms were lower in 2022 than in 2021.

On dairy farms, a significant increase in income in 2022 is estimated



to have occurred, with the average Irish dairy farm income likely to be up by 50% on the 2021 level. This increase takes the average dairy farm income figure to €148,000.

Irish dairy farmers benefitted from a 44% increase in milk prices due to the lack of growth in global milk supplies in 2022.

On average, milk production costs were about 8c/litre (30%) higher in 2022. Irish milk production in 2022 was more or less in line with the 2021 level, despite dry conditions over the summer of 2022 limiting grass availability.

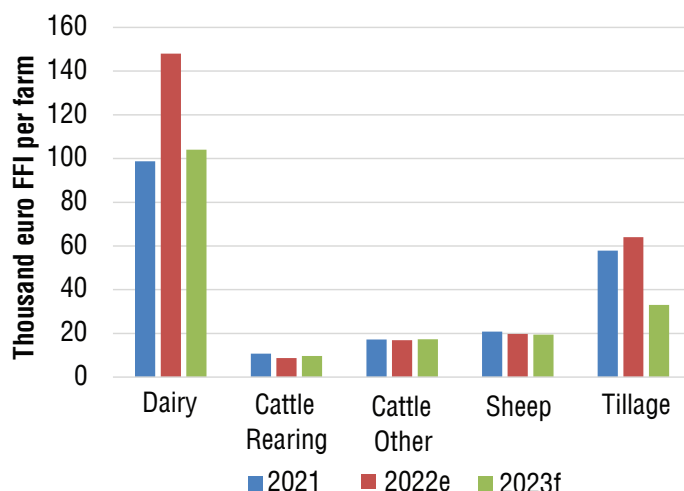
For tillage enterprises, favourable weather led to higher yields and good moisture content for most crops in 2022. However, winter barley yields were lower due to virus impacts.

Tight global grain supplies and uncertainty regarding export potential from Ukraine boosted cereal prices at harvest time in 2022.

Even allowing for a large increase rise in production costs, we estimate that average tillage farm income in 2022 increased by 10% to about €64,000.

The average income on cattle rearing farms is estimated to be down 20% in 2022. Higher production costs more than offset the benefit of higher cattle prices. We estimate that the average cattle rearing farm income will be €8,700 in 2022. This decline is despite the positive influence of

Figure 1: Family farm income 2021, estimated 2022, forecast 2023.





the Fodder Support Scheme on farm incomes.

The combination of higher finished cattle prices and the contribution from the Fodder Support Scheme have offset most of the increase in production costs on 'cattle other' farms. However, the average income for these farms will still be down 2% in 2022 to an estimated €16,900.

Sheep farms benefitted from higher lamb prices in 2022, which remain at record levels, and they also received payments via the Fodder Support Scheme.

They have also had to deal with higher production costs. Payments from participation in the Sheep Welfare Scheme boosted gross output, but was not sufficient to cover the input cost increases in 2022. We estimate the average income on sheep farms will be down 4% in 2022 to about €19,800 per farm.

2023 outlook

Looking ahead to 2023, the uncertainties created by the invasion of Ukraine are likely to persist. Global economic growth rates are set to slow, with some regions moving into recession. This could have a negative impact on food demand.

There are few signs of relief in 2023 from the high production costs that were observed in 2022. Looking at forecasted average input prices in 2023 relative to the average in 2022,

fuel prices may fall slightly, but feed prices are likely to be higher.

Very little change is expected for the annual average fertiliser price for the fertiliser marketing year, which starts in October and ends in September.

Farm gate milk prices are forecast to fall by 15%, as global milk production growth resumes and demand growth eases.

The lower average milk price in 2023 should still be sufficient to cover the production cost increases experienced over the last 18 months.

Margins will remain relatively high in 2023 and there should be a return to growth in milk production of perhaps 4%. While dairy farm incomes are forecast to be lower in 2023, the forecast average dairy farm income of €104,000 will still be one of the highest recorded.

Cereal prices at harvest are forecast to be lower in 2023. The high cereal yields achieved in 2022 are unlikely to be repeated and in our forecast, we assumed a return to trend yields.

There is likely to be little relief for tillage farm incomes on the cost side, but additional support under the new CAP will provide some benefit, such as the ACRES programme and additional protein payments. Overall, the average tillage income in 2023 is forecast to fall by 48% to €33,000 per average tillage farm.

In 2023, cattle prices are forecast to increase, particularly during the first

quarter of the year. Stable volumes of beef production (domestically and in key export destinations) are likely to constrain rising cattle prices in the second half of 2023.

Our forecast is that average finished cattle prices will be 4% percent higher in 2023 and that young cattle prices will increase by 5%. The availability of additional support under Pillar II of the new CAP will benefit some cattle producers. Average incomes are forecast to improve on cattle farms in 2023, with an increase of 11% in prospect for cattle rearing farms to €9,700, and an increase of 2% for other cattle farms to €17,300.

We expect lamb prices to increase by 2%, on average, in 2023. On many farms specialised in sheep production, incomes will continue to be supported by payments from CAP Pillar II schemes. In 2023, these payments will be from the new Sheep Improvement Scheme.

With a forecast 4% increase in costs in 2023, the average income on sheep farms in 2023 is expected to decline to just under €19,500.

All of these income calculations are in nominal terms, which means that they do not factor in general inflation and the impact that this has on the purchasing power of each euro. With inflation now at its highest level for many years, a farm with a stable nominal income will experience an appreciable decline in real income.

Making changes to improve your health

Dr Diana van Doorn

Former Teagasc/ South East Technological University (SETU) Walsh Scholar.

Dr John McNamara

Teagasc Health and Safety Specialist.

A recent ESRI report showed a decline in overall mortality in the Irish working population. However, farmers and agricultural workers were reported to be 2.5 times more likely to die of heart disease than the 'employers and managers' occupational group.

Teagasc research into farmer health has shown that they are at risk for heart disease based on factors, such as high blood pressure (40%), high cholesterol (46%), high blood sugar levels (23%) and being overweight or obese (86%). Nearly three-quarters of farmers have several risk factors.

A recent US study showed that clustering of heart disease risk factors is associated with a five times higher risk of a farming injury.

Health gain – the benefits

While our research findings on Irish farmers' health are highly concerning, making healthy lifestyle changes, can improve your health and consequently reduce health and farming injury risks. For example, losing 5-10% of excess body weight lowers your risk of high cholesterol and cancer markers.

According to the World Health Organisation, 80% of heart disease and 30%-50% of cancer cases are linked to bad lifestyle habits. These include unhealthy eating, physical inactivity, smoking, excessive alcohol consumption and prolonged stress.

Being moderately physically active for five days a week for 30 minutes is associated with a 15% reduction in risk for all-cause mortality, reduced mortality from heart disease as well as improved wellbeing.

Changing your eating habits can lead to a 10% reduction in heart disease risk and an 8% reduction in all-cause mortality.

Eating five or more portions of fruit and vegetables each day has been



found to help protect against heart disease.

Changing lifestyle – it can be done

Changing your lifestyle is challenging. Studies show that 60-70% of attempted changes fail. However, it can be done! Our recent health research programme for farmers (Farmers Have Hearts – Cardiovascular Health Programme) offered farmers support with making lifestyle changes.

The findings showed that 81.5% of participants successfully made lifestyle changes and of those farmers, 82% reported noticing a positive health change. The programme also found that 41% of the participating farmers had improved their heart disease 'multiple risk profile'.

Health promotion

A health check is worthwhile at any age, especially where there is a family history of heart disease. For men, a health check is particularly advised from age 45 on and for women from age 55. This is especially important to detect risk factors for heart disease, which tend to show no symptoms such as high blood pressure, referred to as the 'silent killer'. Use the health check to discuss your intentions to make lifestyle changes and to get medical clearance before doing so.

Food, drink and smoking

In general, try to incorporate more

fruit and vegetables in your diet and eat less sugary and fatty foods. Increase your moderate physical activity levels to five days a week for at least 30 minutes – outside of farming. Moderate physical activity is characterised by a raised heartbeat during exercise and feeling slightly out of breath. Consume no more than 17 standard drinks of alcohol per week (half a pint of beer or a pub measure (35.5ml) of whiskey equals one standard drink).

If you smoke, aim to stop. Consult www2.hse.ie/quit-smoking for assistance. Our study showed a 24% reduction in smoking levels after one year.

Managing stress and setting goals

Manage your stress by organising your farm work, taking breaks and connecting with others. Ongoing support from professionals, friends or family is a key factor for making successful lifestyle or wellbeing changes.

Other tips include informing yourself about improving your health and recommended health guidelines, for example by reading health booklets, goal setting with realistic aims and using technology (i.e. your phone, smartwatch, pedometer) or a journal to track your physical activity and/or dietary changes (self-monitoring).

Study finding at www.teagasc.ie/rural-economy/farm-management/farm-health-safety.

Scan the QR code
to register



National Sheep Conference 2023

Tuesday, 24 January | Hillgrove Hotel, Monaghan
Thursday, 26 January | Brandon House Hotel, New Ross

Both conferences begin at 7pm

For more information see: www.teagasc.ie/sheepcon23



Scan the QR code
to register

National Tillage Conference 2023

Wednesday, 25 January | 9am
Lyrath Estate Hotel, Kilkenny

For more information see: www.teagasc.ie/tillagecon23

National Hill Sheep Conference 2023

Wednesday, 15 February | 7pm
Westlodge Hotel, Bantry, Co. Cork

For more information see:
www.teagasc.ie/hillsheep23

Scan the QR code
for more info





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