TEAGASC

September-October 2023 | Volume 34 | Number 5

Today's Farm

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

Sustainable sucklers in Monaghan

Dairying on heavy soils

Reducing slaughter age in Mayo

Optimising sheep handling

Sharing machinery, saving money

Organic dairying

Digital tools for advisors

Reducing inheritance tax

New forestry grants, botanics and more

teagasc

Agriculture and Food Development Authority

Accelerate your growth

Leading the way on Irish Dairy Farms for a generation

IFI Pasture Sward (27N, 2.5P, 5K +2%S) and
IFI Cut Sward (24N, 2.5P, 10K) give all the nutrients your crops need, precisely as required, in one shot.
Consistent High Quality • Highly Water Soluble • Fast Growth

Recommendations: -
Grazing: spread 1 - 1.5 bags/acre IFI Pasture Sward
First Cut Silage: spread 4 - 4.5 bags/acre IFI Cut Sward
Second Cut Silage: spread 3 - 3.5 bags/acre IFI Cut Sward

IFI
Palmerstown, Kilkenny

contents

15

Grassroots results

Monaghan farmer James McMahon has seen his herd's milk performance increase substantially since joining the Teagasc Heavy Soils Programme

Today's farm is a bi-monthly publication produced in a joint venture between Teagasc and the Agricultural Trust, publishers of the *Irish Farmers Journal* and *The Irish Field*.

Editor: Mark Moore
Sub-editor: Ronnie Bellew
Cover design: Design at DBA
Imaging: Philip Doyle and Jerome Dunne
Printing: Boylan Print Group, Drogheda, Co Louth

All editorial enquiries to: Teagasc, Oak Park, Carlow
Tel: (059) 917 0200 Fax: (059) 9183498
e-mail: mark.moore@teagasc.ie | web: www.teagasc.ie

All advertising enquiries to: Paul O'Grady, Think Media
The Malthouse, 537 NCR, Dublin 1, D01V822
Tel: 01-856-1166/086-246 8382

Cover: Wesley Browne taking a break on his beef farm in Co Monaghan. Wesley is committed to sustainable farming and says the steps he is taking are a 'win-win' for the environment and his bottom line. **See pages 16-17**

COMMENT

Mark Moore
Editor,
Today's Farm

A year of many warnings

This has been another year of extraordinary weather events. Heat waves and associated fire-storms, deluges leading to floods. We cannot say we weren't warned if we, or future generations, pay a high price for our failure to get a grip on global warming.

The challenge for farmers, as for other industries is immense.

Teagasc is working hard to assist farmers to meet climate targets without losing their livelihoods. To learn more about what Teagasc are doing please visit us at the National Ploughing Championships from September 19 to 21.

Bliain le foláireamh

Bliain eile d'imeachtaí fíor-dhrochaimsire a bhí ann i mbliana. Tonnta teasa agus na falscaithe a bhaineann leo, dílí ag éirí ina dtuilte. Ní féidir linn a rá nár tugadh rabhadh dúinn má bhíonn orainn, nó ar na glúnta atá le teacht, íoc go daor as ár mainneachtain an téamh domhanda a mhaolú. Is dúshlán ollmhór atá os comhair feirmeoirí, chomh maith le tionscail eile.

Tá Teagasc ag obair go dian chun cabhrú le feirmeoirí spriocanna aeráide a bhaint amach gan a slí bheatha a chailliúint. Chun tuilleadh a fháil amach faoina bhfuil ar siúl ag Teagasc, tabhair cuairt ar sheastán Teagasc ag an gComórtas Náisiúnta Treabhdóireachta i mí Mheán Fómhair.

Teagasc staff at NPC 2022

The live animals section at the Teagasc outdoor exhibit in 2023 will demonstrate emissions reduction strategies for beef and sheep enterprises.

TUESDAY-THURSDAY,
19-21 SEPTEMBER 2023

Teagasc at the National Ploughing Championships

The Teagasc presence at the 'Ploughing' will be larger than ever this year. Within the overall theme of 'Science Supporting Farmers' there are exhibits addressing every aspect of your family farm business.

Whether your interest is in beef, sheep, dairy or tillage an expert will be present. If you are interested in ACRES, farm management, transferring your family farm, downloading an app or podcast, furthering your education with Teagasc or just have a general query on any aspect of farming or agricultural research there will be someone to guide you.

The new Teagasc/Bord Bia/ICBF AgNav programme will be a special focus and you will be able to establish your carbon figure live at the event.

Young and old, will have the opportunity to test their machinery safety skills. DAFM is investing about €1.2 million in machinery simulators for use in education settings and one will be available on our stand.

The Teagasc Food programme will showcase world-leading research and expertise in Food for Health, Food Quality, and Food Innovation. VistaMilk will present a 3D cow model accessorised with sensors demonstrating digitalisation in the dairy industry.

The theme for this year's Teagasc stand is 'Science Supporting Farmers' and there will be a special focus on the new Teagasc/Bord Bia/ICBF AgNav programme.

The outdoor area of the exhibit will demonstrate how Teagasc is using science and the latest technologies to help farmers feed the world profitably, protect the environment and reduce the output of greenhouse gases. Advisors will demonstrate digital tools developed to enhance the service for farmers.

Live animals will showcase how it's possible to reduce greenhouse gas emissions per calf and increase profit per cow calved. This year sheep will also be featured.

Other outdoor exhibits will include cover crops, soil profiles, red and white clover, mixed species and managing high production swards. Managing parasite resistance and plant nutrients will be addressed, and there will be demonstrations of opportunities in forestry and biodiversity. A new high tech exhibit will show how water moves across soil surfaces and down the profiles.

And we are hiring! So if you want to find out the opportunities and benefits of a career with Teagasc, visit us at Block 2 Row 21 Stand 337.

Bovilis® Nasalgen®-C

The FIRST and ONLY vaccine to protect against Bovine Coronavirus*

BE FIRST BE FAST

Vaccinate calves against bovine coronavirus (BCoV) from the **DAY OF BIRTH**

Calves | 2ml dose | Intranasal administration

BOVILIS Nasalgen®-C | **BOVILIS INtranasal RSP Live** | **BOVILIS IBR Marker Live** | **BOVILIS Bovipast® RSP** | **BOVILIS Huskvac**

For the active immunisation of cattle from the day of birth onwards to reduce clinical signs of upper respiratory tract disease and nasal viral shedding from infection with bovine coronavirus.

*Respiratory bovine coronavirus.

Withdrawal periods: Zero days. Legal Categories: ROI POM NI POM-V

Use medicines responsibly

For further information see SPC, contact prescriber or MSD Animal Health, Red Oak North, South County Business Park, Leopardstown, Dublin 18, Ireland. Tel: +353(0)1 2970220.
E-Mail: vet-support.ie@msd.com Web: www.msd-animal-health.ie

MSD Animal Health Ireland - Cattle & Sheep

MSD Animal Health Ireland @msd_ah

For more information visit bovilis.ie

MSD Animal Health

IE-BOV-230700005, JULY 2023

events

TUESDAY, 12 SEPTEMBER 2023

DairyBeef500 Farm Walk & Live Forum
Topics will include:
• Farm system/farm financials
• Multi species swards and red clover
• Winter feeding options for both finishing animals & weanlings
Live Forum Chaired by Dr. Doreen Corridan, Munster Bovine
This will look at calf breeding from the dairy herd, health issues, the future of the dairy industry and market specifications.
• **Venue:** Pat Collins' farm, Castlemartyr, Co. Cork
Eircode: P25 W892
• **Event time:** 5pm

SATURDAY-SUNDAY, 26-27 SEPTEMBER

Best Practice in Milking course

This course* is suitable for dairy farmers or anyone who wishes to work part-time or full time as a dairy farm relief operator. **The theory exam takes place on October 11*
• **Venue:** Teagasc Ballyhaise Agricultural College, Ballyhaise, Co. Cavan
• **Event time**: 9am-4pm

WEDNESDAY, 4 OCTOBER 2023

Mountbellew Agricultural College Open day

• **Venue:** Mountbellew Agricultural College, Mountbellew, Co Galway, H53 WE00 **Event time:** 10am-12.30pm.

FRIDAY, 6 OCTOBER

Kildalton College Open Day

• **Venue:** Teagasc, Kildalton College, Piltown, Co Kilkenny, E32 YW08
• **Event time:** 1.30pm.

ONGOING DURING OCTOBER 2023

Teagasc 'Transferring the Family Farm' clinics nationwide

These Teagasc clinics are designed to help farm families through the process of, and all aspects that need to be considered when, transferring the family farm.Teagasc is hosting six clinics across the country at the following venues. You should register in advance on the Teagasc website. For more information, see pages 28-29 ofthis publication. Dates and venues (see next column):

Tuesday 3 October: Ballygarry Estate Hotel and Spa, Leebrook, Tralee, Co. Kerry, V92 W279

Wednesday 4 October: Celtic Ross Hotel, Englishisland, Rosscarbery, Co. Cork, P85 WF86

Thursday 5 October: Newpark Hotel, Castlecomer Road, Newpark Lower, Kilkenny R95 KP63

Monday 9 October: Landmark Hotel, Carrick on Shannon Co. Leitrim N41 N9W4

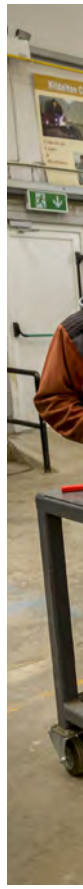
Tuesday 10 October: Lady Gregory Hotel, Ennis Rd, Gort, Co. Galway, H91 KN2N

Friday 13 October: Errigal Country House Hotel, Cavan Rd, Errigal, Cootehill, Co. Cavan.

9-19 OCTOBER 2023

New Afforestation Scheme, Public Information Meetings nationwide
• **For local meeting details, see** *www.teagasc.ie/forestry*

• Read more about the Scheme and financial incentives for farmers: pages 36-37 of this publication.



The Teagasc DairyBeef 500 campaign aims to promote and demonstrate dairy-beef systems, which are socially, environmentally and financially sustainable.

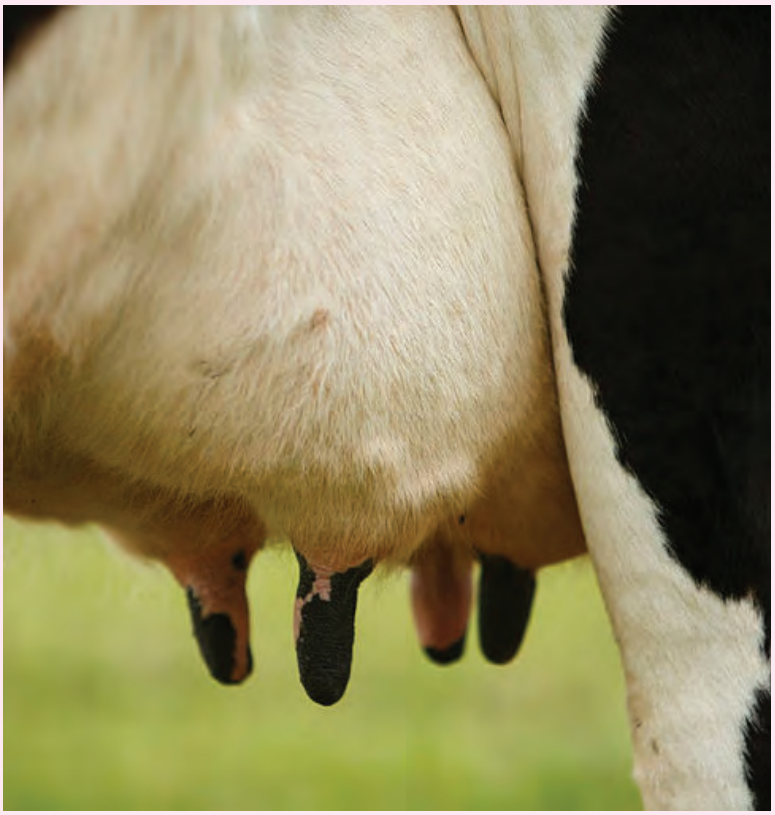
Students getting some hands-on experience at Kildalton College, Piltown, Co Kilkenny. The Teagasc college is hosting an open day for prospective students on Friday, October 6. The event starts at 1.30pm

New Teagasc research points the way to lower antibiotic usage on dairy farms

Research at Teagasc Moorepark is aiming to identify and provide recommendations to farmers on using teat sealant alone at dry-off in uninfected cows. This will help reduce antibiotic use in dairy farms without negative impact on udder health.

The research recommendations are:
- Farmers should use their milk recording information to make dry cow therapy decisions.
- Internal teat sealant alone should be considered if SCC is ≤61,000 cells/mL in first lactation cows and at least ≤100,000 cells/mL in ≥2 lactation cows.
- If treating with teat sealant alone, implement measures to reduce milk yield to ≤15 kg/day near dry-off.
- Do not look at an increase in SCC in late lactation as normal. This is due to increased infections and will affect the cows' SCC in the following lactation.
- Clean cubicles twice per day during the dry period and early lactation.
- Use the CMT to detect high SCC cows and quarters and take action when identified (treat, dry, cull).
- Infections with Staphylococcus aureus need to be reduced to improve the outcome of selective dry cow therapy.

(TResearch autumn 2023)



Using only teat sealant at dry-off in uninfected cows will help reduce antibiotic usage without any negative consequences for udder health.

Watch the Maher Family's Farmer Stories Episode here!

THE FUTURE IS IN THE EAR

"With the old collar system we had, we found the collars tended to get stuck in things like feed barriers. The CowManager tags are just a neater, tidier job. The tags are extremely robust. In the 7 years we've had it, I've yet to see a tag actually break. Changing tags from cow to cow, it's very simple. The linking and the delinking can all be done through the phone. It's all done in a matter of seconds.
Since installing CowManager, our incalf rate has increased. We are using AI straws more efficiently. CowManager is ruling out inregular or false heats, which is a big plus and a big saving."

Daithi Maher, 200 Cows, Ramsgrange, Co.Wexford

COWMANAGER®

AHEAD OF THE HERD TOGETHER

www.cowmanager.ie

WWS

T 021 234 9691
E info@cowmanager.ie
www.cowmaneger.ie

Whiskey galore: the rise of a billion-euro business

As the industry booms, a joint Teagasc and Technological University of Dublin (TUD) project is playing a key role in safeguarding the authenticity of Irish whiskey

Ireland is the birthplace of whiskey. It is thought that Irish monks learned the art of distilling from the Moors of Spain as far back as the 11th century. Whiskey – or whisky – is mainly produced in Ireland, Scotland, USA and Japan, but, also in Canada, India and a host of European countries on a smaller scale.

Whiskey production peaked in Ireland in the 1800s with an estimated 88 distilleries in operation. However, only two distilleries were active on the Island of Ireland by 1975; Irish Distillers in Midleton, Co. Cork, and Bushmills Distillery in Bushmills, Co. Antrim.

Apart from the establishment of the Cooley Distillery in Co. Louth in 1987, very little growth occurred in the sector until 2010. Today, however, there are over 40 distilleries in operation here. Most of these new operations are craft distilleries but some are relatively large scale operations.

The growth in Irish whiskey has been rapid as the value of exports increased from ~€200 million in 2010 to over €1 billion in 2022. A number of factors are responsible for this growth, such as better marketing, but also the ability to produce a more flexible or diverse range of products than some competitors. The main export markets for Irish whiskey are the USA (42%) and the EU (22%).

Irish whiskey consists of four main types; Irish Malt Whiskey, Irish Pot Still Whiskey, Irish Grain Whiskey and Irish Blended Whiskey, which is made by blending Grain whiskey with Malt whiskey and or Pot Still whiskey. Irish Blended Whiskey is by far the largest category, making up over 90% of all sales.

"Irish whiskey received geographical indicator (GI) status within the EU in 2016, which not only provides assurance of quality and tradition, but also offers a level of protection against fraud," explains Kieran Kilcawley, Principal Research Officer for Teagasc.

"For Irish whiskey to be recognised as both a spirit drink and of Irish origin, it must comply with certain legal definitions, under EU Regulations and the Irish Whiskey Technical File. In addition, Irish whiskey must be produced as well as matured on the island of Ireland."

Maturation and blending

Whiskey production can appear as a relatively fundamental process; cereal (barley, wheat, rye, maize, etc), malting, kilning, mashing, fermentation, distillation, maturation and blending. However, as Kieran Kilcawley points out, minor alterations in the process can have a significant impact on the sensory characteristics of the final product.

"There are several unique aspects to Irish whiskey production," he explains. "These relate to the ability to use enzymes to enhance the conversion of starch into fermentable sugars, the use of wood other than just oak in the maturation process, and the relative uniqueness of Pot Still whiskey.

"In Pot Still whiskey the mash consists of a minimum of 30% malted barley, a minimum of 30% green (unmalted) barley and 5% other cereals. This is distilled in copper pot stills resulting in flavour profiles that differ from those achievable from a single cereal source."

Teagasc, in partnership with the Technological University of Dublin, initiated in 2022 the project 'Identification of Biomarkers to Authenticate Irish Whiskey and to Safeguard against Fraudulent Practices'.

"We aim to create a database of key congeners (compounds responsible for the flavour) in Irish whiskey that could be used to authenticate the different types," says Kieran. "Also to enhance our understanding of the evolution and impact of these congeners in relation to sensory quality."

Flavour is a combination of taste and aroma, with aroma having a significantly greater impact as it can be perceived through the nose and from the mouth. More than 10,000 aroma compounds are known to exist as opposed to a minority of taste compounds.

Kieran explains that the first step was to develop a robust method to identify volatile aroma congeners in whiskey using gas chromatography mass spectrometry expertise and capability within the Flavour Chemistry facility at the Teagasc Food Research Centre in Moorepark, Co. Cork.

A novel method was developed that can identify more than 200 individual volatile congeners. This was recently presented at the Worldwide Distilled Spirits Conference in Edinburgh, Scotland, organised by the Institute of Brewing and Distilling.

(TResearch autumn 2023)

Image: Shutterstock.

Digging deep on heavy soils research

The Teagasc Heavy Soils Programme was developed in response to an appetite for more detailed research with regard to the management of heavy soils.

Of the 3.18 million ha of managed grassland nationally, it is estimated that 0.96 million ha (30%) are imperfectly or poorly drained. Poorly drained soils, by their nature, typically remain wet for prolonged periods each year and reach saturation during rain events.

Shorter grazing seasons

Farms on such soils are subject to shorter grazing seasons – due to a need to limit damage to soils/swards – and have lower productivity, profitability and resource efficiency than those on free draining soils. The level of volatility associated with such soils will depend on the proportion of such soils on a given farm and weather in a given year. Generally, profitability on such soils is closely related to weather and as such can be extremely volatile.

It was decided to establish a programme to develop a network of farms on poorly drained soils to acts as a test bed for strategies and management practices that could be implemented to improve the efficiency and performance of farms dominated by such soils.

The primary objective was to demonstrate methods to sustainably improve grassland productivity and utilisation, and sustain viable farm enterprises on poorly-drained soils. Initially the major focus areas were land drainage design and implementation and grassland management. Over time, this has evolved with soil fertility, fodder reserves, and farmyard & grazing infrastructure requiring greater consideration as the project developed.

Key requirement

A key requirement was that each farm would be willing to monitor, record and share information with regard to farm inputs, management practices, outputs and financial performance.

This commitment has served the programme very well by facilitating detailed analysis of the farm systems over time and the development of solutions to common restrictions to efficiency and productivity on poorly drained soils. The openness of each farmer has been crucial to the sharing of information and lessons learned with visitors and the wider public.

Read more: pages 12-15. **Pat Tuohy**

All Teagasc Heavy Soils Programme information, programme updates and links to other resources is available from the dedicated website: www.teagasc.ie/heavysoils

The primary objective is to demonstrate methods to sustainably improve grassland productivity and utilisation.

Unlocking the potential of heavy soils dairy farms

The average herd size on Teagasc Heavy Soils Programme farms has increased by 32% since 2011

Improving soil fertility, grazing infrastructure, grazing management and herd genetics are key priorities in the Teagasc Heavy Soils Programme

James Dunne
Teagasc Dairy Knowledge Transfer Specialist

One common question when dealing with farms which are of moderate to poorly drained soil status is: "Does my focus need to be different given the fact I have a heavy farm?" This sentiment often hinders progress and leads to inefficiencies.

The Teagasc Heavy Soils Programme (HSP) over the past decade has shown that the fundamental management practices to achieving farming success on these soils are similar to those on free-draining soils. However, they require adjustments to take account of prolonged periods of wet weather and poor grazing conditions.

Key lessons

At the outset of the programme the primary focus was land drainage, but it soon became obvious that although targeted land drainage would make up part of the solution, at individual paddock level it was a combination of management practices that would play a significant role across all the farms. This involves improving soil fertility, grazing infrastructure, grazing management and herd genetics.

Correcting soil fertility

As part of the programme, a soil sampling campaign was undertaken to monitor soil fertility status. All paddocks on the participating farms are now sampled annually.

Soil sampling has shown that most HSP farms are below optimal soil fertility levels. The sampling interval and intensity has allowed soil fertility to be addressed on a paddock-by-paddock basis.

Lime and fertilizer application strategies have been developed with a focus on the under-performing sections of each farm. Increasing soil fertility on these soils brings particular challenges in terms of nutrient response rates. An intense regime of data collection at a paddock scale in terms of nutrient inputs (chemical/organic fertiliser, concentrates) and off-takes allows for an in-depth understanding of changes in soil nutrient levels when compared with annual soil tests over an extended period.

Targeted nutrient improvement measures across the HSP farms has seen them move from a position where in 2013 only 2% of paddocks were optimum for pH, P and K to the current figure of 30% for this measure.

There remains a lot of room for improvement – a major issue with building soil fertility status on such soils is a disparity in responsiveness to applied nutrients or lime.

Regular soil sampling means nutrient allowances can be targeted at the most responsive farm areas to ensure best return. Soil fertility improvements have delivered a large part of the increased grass grown on each farm. HSP farms on average have increased grass grown from 10.6T DM hectare in 2011 to 12.5T DM hectare in 2022.

Increasing grass utilisation on grassland farms is a key driver in increasing net profit. Improved grassland management relies upon robust grazing infrastructure –

suitably sized and shaped paddocks with multiple access points serviced by roadways of sufficient quality and adequate drinking water.

On heavy soil farms, grazing infrastructure is particularly important to maximise grassland utilisation during periods of wet weather. Appropriate roadways, paddock access and water trough provision allows for a flexible approach in terms of grazing allocations and aggressive on/off grazing where required.

Farm audits

The HSP farm audits were carried out by each farmer along with HSP staff and aimed to identify any issues around grazing infrastructure under the following headings: paddock size, shape and access points; extent, quality and condition of the farm roadway network; access to drinking water in paddocks.

A number of issues around grazing infrastructure were apparent on all farms.

Many of these were relatively minor in their own right, but combined to create difficulties in grassland management and utilisation, animal performance and labour input, particularly in periods of poor weather and difficult grazing conditions.

Improvements made to grazing infrastructure allowed the HSP farms to achieve 7.6 events (grazing and silage events) per paddock on average in 2022. Better grazing infrastructure has also allowed for better grassland management. On average, 35 grass walks were completed across each farm with an average pre-grazing yield of 1,444kg DM/Ha.

When farmers have a greater focus on grazing it is inevitable that there will be prolonged periods of poor weather where cows will have to remain housed.

This means 70% of all silage made needs to be high quality (75DMD) for feeding to milking cows and young stock. There should be also be a 20% silage reserve in place at all times on these farms to cover these adverse weather periods.

> “Better grazing infrastructure has also allowed for better grassland management

Improving Animal Performance

Since the beginning of the programme, herd size on the farms has increased by approximately 32% from the 2011 level.

There has also been a corresponding increase in milking platform stocking rate from 2.12 to 3.03 LU/HA, with a whole farm stocking rate of 2.07 LU/HA.

Throughout the duration of the programme a large emphasis has been placed on improving herd genetics and fertility performance.

Herd EBI has increased from €84 in 2011 to €188 in 2022 (EBI figures reflect the August 2016 EBI base change of -€71 applied universally).

The six-week calving rate has averaged 81% over the 2020-2022, up from 63% in the early years of the programme.

In 2022, HSP herds on average produced 520kg milk solids per cow on 1,106kg meal fed. Overall kg of milk solids per HA (MP) has increased from 850kg in 2011 to 1574kg in 2022 ultimately resulting in improved efficiency and profitability.

This increase can be attributed to better genetics, improved fertility, increased grass utilisation and an increase in stocking rates in line with the improvements in grass grown.

'I was leaving money behind

James McMahon and his Teagasc advisor James O'Donoghue

Farmer focus: James McMahon

James McMahon has seen his herd's milk performance increase substantially since joining the Teagasc Heavy Soils Programme

James McMahon, who farms near Swans Cross in Co Monaghan, joined the Heavy Soils Programme (HSP) in 2015. He currently milks 115 cows on a 28-hectare milking platform while farming 79 hectares in total. "The farm is not only heavy in nature, but is also fragmented which has its own challenges," explains James.

The farm performance wasn't where he wanted it to be from an animal and grassland performance perspective. After he joined the HSP, a plan was devised to correct soil fertility, improve grazing infrastructure, identify paddocks for land drainage works, and also improve herd genetics and fertility performance.

"Along with the HSP team we put in place a long-term plan for the farm which I have been working on over the last number of years," says James.

On grazing, he placed a strong emphasis on improving the soil fertility status. This has improved dramatically, but continued work is required to ensure the percentage of paddocks optimised for pH,P&K continues to increase.

For grazing infrastructure, additional main roadways and spur roadways have been added. And fences have been amended to allow multiple access points into individual paddocks. "If you can't get to the paddock easily you just won't get cows to grass on those wet days."

Soil analysis and classification from the HSP team identified that a shallow drainage system was required in the form of collector drains and gravel mole drainage.

"Unfortunately for me, this is the most expensive form of drainage but it is working very well in the parts of the farm where I have completed it," says James. "We try to complete 2.5/3 hectares a year and then also incorporate this into our reseeding programme. We grew 12.8T DM/Ha in 2022 which we are very happy with and it's reflected in the animal performance improvements."

Breeding decisions

"Prior to joining the programme, herd breeding decisions were often outsourced with my only real concern being that we had cows with plenty of milk."

Until 2015, the herd produced 408kg MS / cow at 4.18% butterfat and 3.32% protein on with a calving interval of 430 days.

"I was leaving money behind when I looked at what other herds were achieving so something needed to be done to improve fertility and milk performance," says James. "It was slow in terms of progress up until we made the decision to buy in high EBI in-calf heifers over the last three seasons."

With the help of the local Teagasc advisor, James

compared to other herds'

James McMahon and James O'Donoghue on the farm near Swans Cross in Monaghan inspect new roadways that have been added as part of the Teagasc Heavy Soils Progranmme plan for the farm.

O'Donoghue, clear criteria were identified for the type of stock to be purchased. The emphasis was on fertility and solids, AI-bred, calving in February and high health status.

"We identified a number of groups of stock in the south to look at that fitted the criteria with regards genetic potential. I won't tell a lie – I wasn't so sure when I looked at the first group of stock," says James.

Herd EBI

"They were a lot different from what I was used to looking at, but after seeing the herd of cows and the performance figures they were achieving it did put my mind at rest. We purchased 57 in-calf heifers over the last three years and sold poor performing cows."

These changes have seen the herd's EBI jump from €84 in 2018 to €166 in 2023. The herd calving interval is now down 378 days and there's a six-week calving % of 65%.

"I would like the six-week calving percentage higher and we are continuing to work on that," says James.

There was also a dramatic increase in the herd's milk performance in 2022 when the cows produced 498kg MS at 4.20% butterfat and 3.54% protein on 1,200kg of meal.

That is an increase of 90kg MS / cow on 2015 levels or an additional €450 per cow in additional milk sales based on 2021 milk prices. "It's an additional €51,750 in milk sales when you multiply it up across the herd. "It's very much about focusing on the simple things and doing them well," concludes James.

'It's a win-win for us and the environment'

What does sustainable farming mean in practice? Monaghan drystock farmer Wesley Browne is showing how it can be done profitably

Gabriel Trayers
Future Beef Programme Advisor

The world's population is expected to rise from 6.7 billion in 2009 to 9.2 billion by 2050. Global food production will need to rise dramatically. The problem is that many food production practices are influencing our environment and climate in a very negative way.

The greatest agriculture challenge of our time is to achieve global food security while reducing, eliminating and, ideally reversing, environmental damage.

Sustainable agricultural practices offer a solution. It means farming in a way that has environmental, social and economic dimensions. In simple terms, it means farming profitably while enhancing the environment to the benefit of all.

To play its part in combatting climate change Irish agriculture must reduce its greenhouse gas emissions (GHG) by 25% by 2030. While it won't be easy, we can achieve this target if practices and actions to reduce GHGs are quickly adopted by all farmers, whatever their enterprise.

The Teagasc-led Signpost programme is a multi-annual campaign to lead and encourage climate action by all Irish farmers.

The programme includes a network of demonstration farms across the country that will be adopting these mitigating actions to reduce GHGs and enhance biodiversity. The lessons gained and actions adopted by these farmers will be showcased for all farmers in their regions to see.

Wesley Browne, is one such farmer. Farming just outside Monaghan town he calves 90 cows in spring with all males finished as under 16-month-old bulls and yearling heifers sold as breeding stock. "Our land is typical of Monaghan which means it is fragmented; the soil is heavy and many of our fields are sloping," says Wesley.

In terms of economic sustainability, the farm is in a strong position. In 2022, the gross margin was €1,399 per hectare.

"We are primary producers of beef and I believe that a 'greener' image will be a big positive for the farm. If we want to survive we need to showcase that efficient farming can be done in an environmentally friendly way.

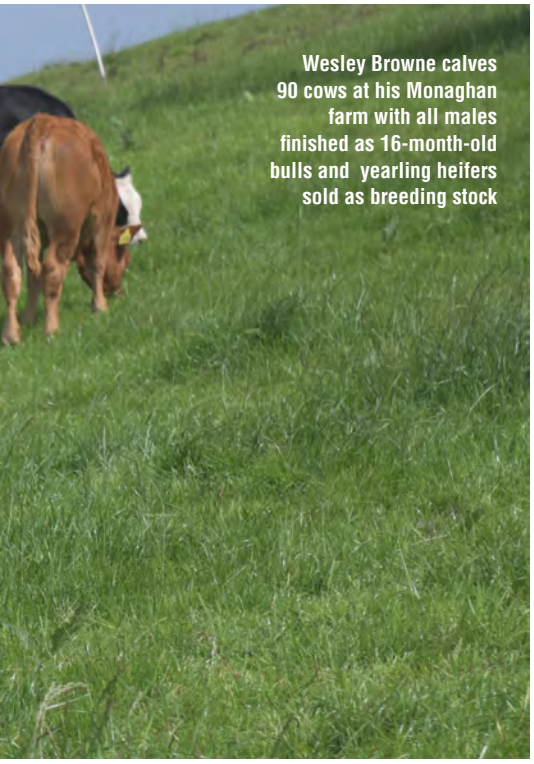
"I'm committed to reducing the production of greenhouse gases on the farm which will reduce my overall carbon footprint," says Wesley.

'Green' and efficient

"The majority of the steps we are taking to reduce GHGs also make the farm more profitable. So I see them as a win-win for us and the environment."

The following are some of measures he has taken to reduce harmful GHGs such as nitrous oxide, methane and ammonia include:

- The only type of chemical nitro-



Wesley Browne calves 90 cows at his Monaghan farm with all males finished as 16-month-old bulls and yearling heifers sold as breeding stock

gen Wesley uses is protected urea. Protected urea results in much lower nitrous oxide emissions than CAN and is also cheaper per unit of N.

- Wesley has taken soil samples to help him build soil fertility in a targeted way and, where necessary, to correct the soil pH. Raising the pH to 6.5 means that the soil will release 64 units/N/acre naturally and the efficiency of chemical fertiliser is enhanced.
- To build the P and K indices, Wesley's fertiliser of choice is now 18.6.12 rather than low P and K blends. The fertiliser programme only includes 18.6.12 and protected urea.
- Slurry is applied using a LESS slurry spreader. This reduces ammonia emissions and also increases the N value from 6 units to 9 units/1,000gal. Wesley prioritises areas like silage ground.
- "I've certainly focussed on better grassland management," says Wesley. The overall aim is a long grazing season with the herd consuming high quality pasture. In 2022 the grazing season lasted 280 days a high figure for the location. Wesley has divided the land into 42 paddocks which he says allows him to grow more grass and to manage it effectively.
- He operates a very efficient suckler herd which is hitting all the key performance indicators including:
  - 1 calf/cow/year
  - 360 day calving interval
  - 100% calving in 11 weeks
  - 96% of the heifers calve at two years of age. This is a big lever when it comes to reducing GHG on farms and can lower GHGs by 12%.

Wesley is aiming to increase clover content, reduce age at slaughter and maximise carbon capture.

A proactive approach to carbon capture

Looking at his future farm sustainability steps, Wesley says he is aiming to increase the clover content in the swards. "This will help reduce our fertiliser usage. In preparation for clover, we have applied lime at two tons/acre, docks and weeds have been sprayed off. We plan to sow clover in April next year.

"The other big area we are targeting to reduce GHG production from the farm is to further reduce the age at slaughter. Currently, the bulls are finished at 15.3 months. I feel that we can reduce this age by pushing the males more at the weanling stage.

"This year we started forward-creep grazing and will introduce meal earlier in the autumn. The target is to reduce the average age at slaughter to 15 months."

Wesley says he wants to be proactive in terms of capturing carbon. "There are different hedge types on the farm so we are putting a plan in place on how we will manage these hedges over the next few years to maximise carbon capture."

- **Wesley will be hosting a farm walk on Wednesday, September 13 at 5.30pm, Eircode: H18R921. All are welcome.**

How to achieve results with a reduced slaughter age strategy

Teagasc regional manager Vivian Silke (left) and Jarlath Ruane on the Ruanes' beef and sheep farm in Corbally, Co Mayo

Reducing the slaughter age of their beef animals has delievered impressive results for DairyBeef 500 participants Jarlath and Austin Ruane

Tommy Cox
Teagasc DairyBeef500

One of the strategies which will help reduce greenhouse gases is the reduction in the age of slaughter of animals on beef farms. The goal is a reduction of three months, from an average of 27 months back to 24 months.

This will generate a reduction in the quantity of methane emitted from the national beef herd of as much as 19kg per animal over their lifetime. Because methane is a much more damaging greenhouse gas than carbon dioxide this would be a significant and valuable achievement.

DairyBeef 500 participants Jarlath and Austin Ruane, who operate a dairy calf to beef and lowland sheep system in Corbally, located just outside Claremorris in Mayo, have achieved a considerable reduction in the slaughter age of their animals in recent years.

In 2020 the average slaughter age for animals on the farm stood at 26.7 months. Last year, the average slaughter age had dropped to just over 24 months. No single factor caused this reduction; instead, it was driven by a combination of small adjustments to the farm system.

Calf sourcing

"When we first began dairy calf to beef in 2016 we didn't place great emphasis on the source of our calves," says Jarlath. "At the time we were happy to purchase a calf at a price that we considered 'cheap', but when animal performance data was analysed, the weight for age and carcass weights we achieved at slaughter were considerably behind where they should be."

The increased costs associated with keeping these animals to greater ages to meet factory specs, and the reduced carcass weight being achieved, meant that the profitability of those animals was less than their comrades with superior genetics.

The genetically inferior animals also left behind an increased environmental footprint due to the fact that they were being kept into a third grazing system. "We soon started paying much greater attention to a calf's genetic makeup," adds Jarlath.

Calf rearing

In the current system calves arrive on the farm at approximately three weeks of age. They are fed on an automatic milk feeder until they reach their targeted weaning weight of 85-90kg, generally at 55-60 days.

From arrival, calves are introduced to a highly palatable calf nut to start the rumen development as previous issues with summer scour syndrome have been experienced on the farm in the past.

"Generally, by weaning calves should be consuming over 2kg of concentrates per day to prevent any growth check as they transition from milk to solid feed as they move from a pre-ruminant to the ruminant phase," says Jarlath.

"Calves are kept on this level until turnout and when they are first let out to grass they are put out to stronger covers in a paddock close to the farmyard. That's just to have an extra bit of fibre and the grass isn't too lush which prevents any potential issues with summer scour."

This year's poor weather means concentrate supplementation has been maintained right throughout the summer to ensure performance.

Animal health

As with all livestock production systems, animal health is one of the main factors underpinning performance in dairy beef systems. An unhealthy animal will prove costly in terms of veterinary treatments, but will also have reduced daily gains. As mentioned earlier, sourcing a calf with high genetic merit is important. Equally important is sourcing a healthy calf.

"During our initial venture into calf rearing, animals came from a number of different sources with the 50 calves purchased in 2019 having come from 26 different sources including dealers and marts," says Jarlath.

This variety brought about its own issues with an outbreak of scour and pneumonia occurring. Many of those calves suffered growth setbacks from which they never really recovered.

"This incidence of disease led us to begin purchasing directly from local farms," says Jarlath. "The short journey is less stressful and reduces the risk of a potential disease outbreak. Reducing the number of calf sources has also had a highly positive effect on the overall herd health. We have less disease and higher performance during the calf rearing phase."

The Ruanes now have a herd health plan which includes an intranasal vaccine to protect against RSV, and Pi3 is administered as well as an oral drench against coccidiosis. At turnout, calves are given a vaccine against black leg with a follow-on booster given after four weeks.

Calves are monitored for parasites, and faecal sampling is carried out regularly. If counts exceed 200 eggs per gramme a dose is administered. Sheep are grazed behind calves early in the year and this helps reduce the egg burden.

Grassland management

The Ruanes place a big emphasis on grassland management and are seeing the rewards in terms of improved animal performance. The grazing infrastructure is extremely well set up with the entire farm been serviced by an extensive network of paddocks, water troughs and roadways.

"Our target cover is approximately 1,400 kg DM/ha for older stock all year around as this is the cover at which we feel animals perform best," says Jarlath. "Paddocks are set up to be grazed down to 4-4.5cm in a day. Tight grazing to this level ensures the highest quality of grass regrowth. We aim for slightly lower covers of 1,000-1,250 kg DM/ha or approximately 7-8cm for calves."

The farm is walked weekly to assess grass covers and this assists in making management decisions and taking corrective measures if needed to ensure quality grass is kept in front of stock at all times. Where surpluses arise Jarlath wastes no time taking it out as baled silage to provide high quality winter feed.

Silage quality

The Ruanes also prioritise high quality silage to maintain performance over the winter months. Last year, the first cut was harvested on May 14 and this crop had a DMD of 76.7 which is capable of achieving a target 0.6kg/day of weight gain on weanlings over the winter months.

Drafting for slaughter

During the finishing phase, cattle are regularly monitored and they are drafted once the desired fat score of a 3 is achieved. At that point, the carcass weight potential of the animal is maximised.

Putting animals into any higher fat cover levels reduces their efficiency significantly in terms of average daily gain and also increases their environmental footprint.

"Overall, the reduced age of slaughter, approach has proven a win-win strategy for us," says Jarlath. "Herd profitability has increased and methane emissions reduced."

Aidan Murray
Teagasc Beef Specialist

Maria Guelbenzu
Animal Health Ireland

New scheme is next step to a national IBR programme

What's involved in the voluntary one-year National Beef Welfare Scheme and how you can apply

Reactions to the National Beef Welfare Scheme (NBWS) launched last month by the Department of Agriculture Food and the Marine have been mixed, but as with most things in life you will get out of it what you are prepared to put in.

Under the voluntary one-year scheme for IBR-testing and meal-feeding weanlings, you are being compensated to undertake certain beneficial actions. So if it covers your costs and leaves some money you are still ahead.

The scheme, funded by the Brexit Adjustment Reserve (BAR), essentially replaces the old BEEP-S scheme.

For the new scheme, the weighing component no longer features as it now part of the Suckler Cow Efficiency Programme (SCEP) while the faecal sampling and the calf vaccination elements have also been dropped.

What actions are required and how do I apply to the NBWS?

Firstly there are no optional components this time around – both required actions are mandatory

1 IBR Testing Each participant must commit to participate in the IBR testing action managed by ICBF on behalf of DAFM.

They are required to engage a PVP (vet) who will blood sample and test up to 20 bovine animals per herd, ideally nine months old (if feasible) or above if present in the herd, or all ages if there is less than 20 in the herd for IBRgE antibodies.

Where a herd has 20 or more bovines, a minimum of 20 must be tested. Where a herd has less than twenty bovines, ALL must be tested.

Payments per herd are set out below:

Number of bovines & tested payment rates

- Between 2 to 6 animals – €120
- Between 7 to 10 animals –€180
- Between 11 to 15 animals – €250
- Between 16 to 20 animals – €300

2 Meal Feeding Participants must introduce meal feeding for a period of four weeks pre-weaning and two weeks post-weaning to reduce the stress on calves at weaning time. Eligible suckler calves are those born between 1st July 2022 and 30th June 2023.

The rate of payment is €35 per calf for a maximum of 40 calves.

Applications Applications are online via your www.agfood.ie account and will remain open until midnight on September 12. Applicants may apply themselves online or they can get their approved FAS advisor to apply.

Once you make an application it will be up to you to make contact with the vet to arrange the IBR blood testing. The vet will then send the samples to one of the DAFM approved labs.

Because DAFM hope to make payments for the scheme before the end of 2023 both actions – meal feeding and IBR testing – will have to be undertaken by November 1.

The maximum sum payable in the scheme is €1,700. For example, a 50-cow herd with 50 weanlings would get paid as follows:

IBR Testing – €300 (20 animals tested)
Meal Feeding – €1,400 (Max. 40 weanlings €35 x40)
Total Payment – €1,700

As with all schemes there will be a level of checks by DAFM. So particularly for the meal feeding action make sure you have meal dockets to show that calves were fed for the month

It's estimated that 75% of Irish herds contain animals that have been exposed to IBR and are carriers

The Pilot IBR scheme on BETTER Beef Farms

- A pilot IBR eradication programme was developed by Animal Health Ireland's IBR Technical Working Group for herds participating in Phase Three of the Tea gasc/Irish Farmers Journal BETTER Farm Beef Programme. A total of 30 herds were involved.
- The pilot comprised the sampling and testing of a proportion of the herd for IBR ('snap shot' test), application of an IBR on-farm veterinary risk assess ment and management plan (VIBRAMP), and provision of biosecurity and disease control advice.
- Results showed that over 50% of the tested herds had a negative 'snap shot' test, indicating the absence or low num ber of IBR-positive animals in the herd.

before weaning and that they are not sold within two weeks of weaning.

The receipt of the correct number of blood samples by an approved lab will confirm the IBR testing requirement.

Why feed meal pre-and-post weaning?

Research at Teagasc, Grange, has shown that reducing the cumulative effect of multiple stressors around weaning time results in a less marked stress response in the calf.

One of these stressors is nutritional stress where the calf's diet changes from one of grass and milk pre-weaning to perhaps concentrate and conserved forage post weaning.

By offering the weanling concentrates for four weeks pre-weaning and two weeks post-weaning you can maintain animal performance and reduce the nutritional stress factor.

This is of benefit if you decide to hold on to the weanling or offer to potential buyers. Meal feeding is cost effective in weanlings and the NBWS payment will cover your meal costs.

Why test suckler herds for IBR?

IBR is a highly infectious disease of cattle which is associated with the bovine respiratory disease complex. Infected animals recover but become carriers and despite appearing healthy may start shedding virus when under stress (transport, calving, mixing of animals etc).

It is estimated that approximately 75% of Irish herds contain animals that have been exposed to IBR and are carriers. In addition to the impact on health and productivity, it also affects the trade of animals, semen and embryos.

Bulls with antibodies to IBR (including those due to vaccination) are prohibited from entering semen collection centres.

Why participate in the National Beef Welfare Scheme 2023?

By participating, herd owners will not only avail of funding to investigate the IBR status of their own herds, providing information to better manage risk, improve biosecurity and inform decisions on vaccination at herd level; they will also help to better understand the status of IBR in Irish beef herds nationally, generating information that will inform the development of a national IBR programme.

What should you do when you get the IBR test results?

All results should be discussed with your veterinary practitioner.

If either none or only one animal is positive to IBR, the proportion of infected animals within the herd (the within herd prevalence) is estimated to be between 0-15%. At this low prevalence, screening of the whole herd to identify and remove any carriers present is justified where herd freedom is the target.

These herds should review their biosecurity to minimise the risk of introducing the disease (for example when introducing animals) and consider introducing/extending/maintaining vaccination. as agreed with their vet, to the whole herd to reduce the impact from a reintroduction of the virus.

If more than two seropositive animals are identified, the likely within-herd prevalence is greater than 15%.

Provided that the animals have been randomly selected, the results also allow you to estimate the overall prevalence of infected animals in the herd. In these herds, identification and removal of all carriers is unlikely to be feasible in the short term, and therefore other control measures are required.

It is recommended that these herds apply IBR vaccination as agreed with their vet to the whole herd as one of the measures to control IBR on farm. The vaccine makes it less likely that a carrier will reactivate and shed the virus, and less likely that a naïve animal will become ill and spread the virus after exposure.

Over time, with appropriate biosecurity measures, the prevalence should decrease as carrier animals leave the herd and are replaced by uninfected animals.

More information and resources on IBR are available at https://animalhealthireland.ie/programmes/ibr/

Good handling units cut the workload and enhance safety

The TAMS 3 grants available for sheep handling facilities can help farmers cut their workload by 24 days per annum and reduce the risk of injuries.

Damian Costello
Teagasc Sheep Specialist

Francis Bligh
Teagasc Health and Safety Specialist

A Teagasc study has found that good handling facilities can save farmers 75 minutes working time per ewe. For a 150-ewe flock, this amounts to 192 hours or 24 working days per year. Routine tasks such as checking body condition scoring, drenching, vaccinating, and footbathing are more likely to be completed safely and in a timely manner when good handling facilities are in place.

Sheep handling units, both fixed and mobile, are now eligible for 60% grant aid under the Farm Safety Capital Investment Scheme (FSCIS) entry route of TAMS 3.

There is an investment ceiling of €90,000 and a minimum spend of €2,000 per application.

For fixed handling units, VAT can be reclaimed with the net investment in all cases being treated as a capital investment for income tax purposes.

Choosing a sheep handling system

There is a wide range of mobile units on the market, ideal for fragmented farms. When deciding on a system ask yourself:

- How many sheep do I have; and how many do I intend to have?
- How many land blocks are my sheep grazed on?
- Where would I site a fixed unit (main block used for sheep)?
- If sheep are carried on out-farms, could they be transported to the main handling unit?
- Would a mobile unit be more suitable?

Mobile sheep handling equipment

A TAMS 3 application for mobile equipment does not require sketches or planning permission. Compare systems, not just on price, but also on functionality. Speak with farmers using the equipment you are interested in.

Standard costings are summarised in Table 1. One, often-mentioned, point, is that the standard costings do not cater for higher end equipment – they are eligible for TAMS, but the cost far exceeds the standard costings that the 60% will be paid on.

Fixed sheep handling unit

A good starting point is to visit a number of farms with efficient handling facilities. Also, consult the comprehensive Teagasc publication, *A Guide to Designing a Sheep Handling Unit*, which is available on the Teagasc website .

This document provides extensive design advice along with images and sample layouts of handling systems for all flock sizes.

And remember that it is critical that your design is in compliance with

> Compare systems not just on price, but on functionality. A good starting point is to visit farms with efficient facilities.

Table 1: Standard costings on mobile sheep handling equipment (Dept. of Agriculture, Food and the Marine DAFM)

Sheep weighing scales	Item	€826.89
Sheep rollover crate	Item	€1,023.86
Mobile sheep batch footbath	Item	€842.38
Portable basic sheep handling race	Item	€1,064.97
Portable basic sheep handling race with wheels	Item	€3,847.75
Mobile sheep penning	Linear metre	€33.73
PDA EID tag reader and management software package	Item	€1,820
EID tag reader and software	Item	€710

Gurteen College sheep manager Ger Carey with Damian Costello viewing the main sheep handling facilities at Gurteen College in Tipperary. Using the race and two-way dividing gate for tasks such as weaning or drafting lambs takes a lot of pulling and dragging out of the tasks.

DAFM specification S.136.

A fixed sheep handling unit will require planning permission or, at minimum, a letter of exemption.

As can be seen from Table 2, the overall area of the unit is used to calculate DAFM costings with the higher rate applying if including a dip tank. This includes all concrete, penning, gates etc with weighing scales and rollover crate, if applicable, costed separately.

Gurteen College sheep handling unit

Many attendees at Sheep 2023 at Gurteen College will recognise the photos of the impressive sheep unit they viewed on the day. Ger Carey, manager of the sheep flock on the farm, is quick to point out the value of good handling facilities.

"Using the race and two-way dividing gate for tasks such as weaning or drafting lambs takes a lot of pulling and dragging out of the job," says Ger. The circular forcing pen is another feature he likes as it delivers an even flow of sheep into the race with minimum stress on man and beast.

"I generally use the batch footbath in tandem with other routine tasks and find it is central to lameness control in the flock," adds Ger.

An estimate of the DAFM costing for a unit similar to Gurteen College is as follows:

- **Overall internal dimensions 22.8m x 7.2m = 164.2 m2**
- **Costing of unit (no dip tank) = €103.71/ m2**
- **Total DAFM costing 164.2m2 x €103.71 = €17,029.18**
- **TAMS 3 funding 60% x €17,029.18 = €10,217.51**

(assuming DAFM costing is less than actual cost)

Other items such as sheep weighing scales and rollover crate may be included and costed separately to the main unit.

When the final layout is decided, it is important to do an estimate of the actual cost of the project.

This can be then compared to the DAFM costings (Table 2) as it is the lesser figure that the 60% grant will be paid on.

Table 2: Standard costings on fixed sheep handling equipment (Source: DAFM)

Sheep weighing scales	Item	€826.89
Sheep rollover crate	Item	€1,023.86
Fixed sheep handling unit	m2	€103.71
Fixed sheep handling unit with dip tank	m2	€140.97

How to mind your back when handling sheep

A farm safety report [check: published by the DAFM in 2019] found half of farmers across all enterprises reported suffering from back problems at some time in their life.

Teagasc National farm Survey data shows accidents occurred on 11% of sheep farms in 2012-2017.

Trips and falls (27%), livestock (20%) and farm vehicle/machinery (33%) were the main factors.

The HSA identifies the main risk factors associated with back pain and musculoskeletal disorders for farmers as: lifting heavy loads, awkward postures, lifting loads to a height or to ground level, repetitive movements and poor workplace set up.

Many of these risk factors can be present on sheep farms. Sheep handlers should avoid repetitive tasks and straining muscles:

- If possible, avoid lifting/turning over sheep.
- If you have to lift a lamb, use your legs not your back.
- Minimise straining the same muscles repeatedly.
- Ensure the level of work is below the level of your heart.
- Take regular breaks when shearing or other repetitive tasks.

Shay Phelan
Teagasc Tillage
Specialist

Sharing means saving

Reliable farm machinery is indispensable – finding the right ownership mix is key to keeping it affordable

This year's yields and prices have not equalled last year's stellar harvest. Basic Income Support Scheme payments are typically lower than from the Basic Payment Scheme. The increased investment ceiling in the new Targeted Agricultural Modernisation Scheme (TAMS 3) is welcome but it barely matches inflation. All this is leaving tillage farmers wondering how best to fund their machinery.

Renting, where available, is a possibility, but this is becoming more expensive. Second hand equipment is worth considering, but prices are also rising and reliability can be an issue. Nearly all contractors provide a professional service, but there can be issues around timeliness in broken weather.

Built into the contractor's price are the driver, their expertise, and the increased efficiency so you are not just getting access to a machine – you are getting other benefits as well.

Machinery sharing or 'rings' aim to offer affordable access to equipment. Machinery rings such as the CUMA in France are very popular and come with binding rules and commitments from the participants. Machinery rings are common in Scotland too and increasingly they are also providing labour.

Sharing machinery

In Ireland there are still relatively few situations where two or more farmers come together to share machinery and/or labour. Those who do have such arrangement in place find that there are many benefits.

Access to labour is an obvious plus, but there are others such as increased efficiency, job sharing, access to more hi tech equipment if needed, shorter working time, and farm biosecurity. Probably one of the biggest is the sense of companionship between the parties when they are working.

Farmers who share machinery and who may also work together will often comment that they appreciate working with someone else in the field at the same time.

For some jobs like drilling or harvesting it can be very satisfying to know that when you finish your task in the field, you can move on to the next one knowing the other party will complete their part of the job whether that be, for example, rolling the crop or baling straw.

Last year Teagasc launched a machinery sharing template as a guide to assist farmers in drafting arrangements on sharing the cost and use of different machines.

The template, which could be used by contractors as well as farmers, gives a step-by-step guide on the different areas that an agreement should cover.

It provides a legal framework that all parties can use. And it can also be used as planning document where the parties can chose to adopt some aspects of the template while not using others.

There are a number of factors in the template that we think that any agreement should contain. These include:

- Financing the investment
- Usage policy
- Repairs and maintenance
- Tax and insurance
- Replacement strategy
- End of agreement strategy

Possibly one of the longest, continuously running machinery sharing arrangement in Ireland, is that between two farmers on either side of Laois/Kildare border near Athy.

Cousins Tom Phelan and John O'Brien are continuing an arrangement which was started by their late fathers, Mick Phelan and Phil O'Brien, almost half a century

Cousins Tom Phelan and John O'Brien pictured with Teagasc advisor Shay Phelan (centre); in the background is the cousins' co-owned New Holland TX62 combine

The bottom line on machinery costs for tillage farmers

The annual Teagasc Costs and Returns figures on machinery hire are based on a survey of contractor charges from around the country.

While the totals do include drivers costs, they are still a good representative sample of the typical machinery costs on tillage farms.

In 2018, Teagasc advisors conducted a survey of 139 tillage farms to assess machinery costs.

The survey (see table) showed that 14% of farmers actually had higher machinery costs, not including labour costs, than the cost of employing a contractor.

Table 1. Average machinery costs Teagasc Costs and Returns

Machinery hire Costs €/ha	Winter wheat	Winter barley	Spring barley	Winter oats
Plough, One-pass & Roll	223	223	242	223
Spray	128	128	77	103
Fertiliser spreading	65	65	44	44
Harvesting	146	146	146	146
Transport (€7/Tonne)	77	70	56	63
Total Costs	**640**	**633**	**565**	**578**

ago in the 1970s.

When their original arrangement began, both Mick and Phil often commented that the cost of running a combine harvester on each farm was difficult to justify and so the idea of sharing a combine seemed a better idea. After purchasing their first combine together, a Claas Matador, the two farms have co-owned a combine ever since.

Crops

The current machine, a New Holland TX62, is owned on a 50;50 basis. It's an ideal sized combine for the 100 hectares or so of combinable crops that they grow every year.

Back in the 1970s, spring malting barley, spring seed barley and sugar beet were the main crops, but this year crops grown on the two farms include spring malting barley, winter barley, peas, beans and gluten free oats. Other crops include beet, potatoes and grassland. "We saw that sharing arrangement in action when we were growing up," says John.

"Our fathers were able to make it work so we always felt there's no reason why we can't. And we are not immediate neighbours. The two farms are on opposite sides of Athy, so the combine travels back and forth.

"We resist the temptation to use the combine to do some contracting," says Tom. "By keeping its use to immediate family we keep the advantages of ownership – we can almost always cut in good time, while reducing the cost per acre."

But what about the question of who gets priority?

"It can depend on something as basic as where the combine is located at the time," says John.

"We will discuss how best to approach each harvest and it generally balances out for both of us."

The variety of crops grown means that the machine really isn't under too much pressure at any time and it can cope comfortably with whichever crop is ripe at any time. This has proven to be very important in a harvest year such as 2023 when you literally had to take every available opportunity.

Although both men use contractors for different jobs on the farm, both agree, that this was not a year they would like to have been dependent on others to cut their crops.

"Everyone's circumstances are unique," concludes Tom.

"But we think more farmers could benefit by including at least some sharing in their machinery strategy."

Protected urea cuts costs and GHG emissions

Extensive research has proven the reliability and cost benefits of protected urea as a nitrogen fertiliser source

Mark Plunkett
Teagasc Soil Specialist

Urea fertiliser is the most widely used N source in the world. Protecting urea with a urease inhibitor (NPBT / NPPT) reduces ammonia N (NH3) losses by up to 80% leaving more nitrogen for the crop.

By replacing nitrate-based fertilisers (e.g. CAN) with protected urea we reduce N O losses by 70%. This is a major, ready to go, technology which can help us meet our 2030 target, by delivering a three to 8% reduction in GHG emissions on livestock farms.

Over the last 24 months fertiliser N prices have reached unprecedented heights.

This has resulted in a large price differential between protected urea and CAN. Urea delivers significantly better value due to the larger market than for CAN and large quantities are traded globally.

Over the last six months, fertiliser prices have dropped steadily but remain higher than before Russia's illegal invasion of Ukraine.

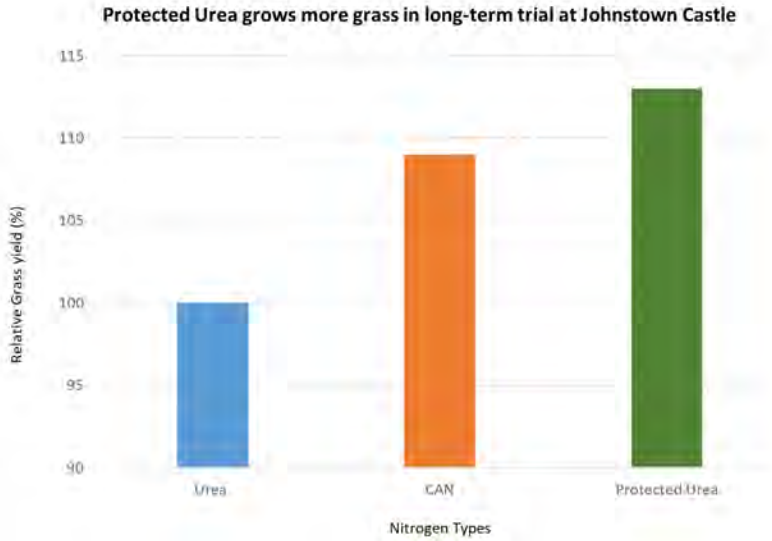
Lower costs

Average fertiliser prices to date in 2023 (Table 1) show that protected urea offers a 30% lower cost per kilo compared to CAN (27% N).

Table 1:- Average price of fertiliser nitrogen in 2023

	CAN 27%	Standard urea 46%	Protected urea 46%
Kg N/ tonne	270	460	460
€/tonne	€680	€750	€810
€ / kg	€2.52	€1.63	€1.76

Figure 1:- Protected urea trial at Teagasc Johnstown Castle



Standard urea losses are 15%, losses from protected urea are just 3% thus retaining 12% effective N. With reduced and more regulated chemical fertiliser N use, retaining more effective N in the soil allows adjustments to N rates while still maintaining yield compared to standard urea.

A 50ha dairy farm switching from applying 210kg N/ha as all standard urea to protected urea, N rates can be reduced by 12% equating to a reduction of 22kg N/ha giving a farm fertiliser N saving of €1,936.

Reducing farm emissions

By switching to 100% protected urea on dairy farms, total farm emissions have the potential to be reduced by 7-8% at a spreading rate of between 200 to 250 kg N / ha.

The equivalent savings on total emissions on suckler farms is 1-2%, at a spreading rate of 60 to 80 kg N / ha. To achieve a 100% switch to protected urea, the use of high P-K products such as 18-6-12 +S is required to deliver balanced P, K & S nutrition.

On-going research at Teagasc Johnstown Castle is showing that fertiliser blends containing N with a high ratio of ammonium-N to nitrate-N (generally high P blends) are more stable and

Richard Starrett, a Signpost Farmer based in Lifford, Co Donegal, switched to exclusive usage of protected urea in 2019

environmentally friendly.

For example, the N form in 10-10-20 / 18-6-12 is mainly ammonium N resulting in a 40% reduction in N_2O emissions relative to CAN 27% N or high Nitrate – N based compounds such as 27-2.5-5 / 24-2.5-10.

More grass from less N

A long-term trial *(see Figure 1)* over eight years at Tegasc Johnstown Castle is consistently showing that the tonnage of grass grown by protected urea has been greater than standard urea in seven out of eight years.

Protected urea grew 13% more grass on average compared to standard urea.

The additional yield is similar in magnitude to the extra effective N level delivered to the plant by protected urea over standard urea. CAN yielded 9% more than standard urea.

At a time of more regulated chemical fertiliser N use, moving from standard urea to protected urea offers the opportunity to reduce fertiliser N rates by up to 10%.

Mark Plunkett is a soil and plant nutrition specialist at Teagasc, Johnstown Castle, Co Wexford

Farmer focus: Richard Starrett

'Talk to your merchant and try it – you will end up with more money in your back pocket'

Richard Starrett is a Signpost Farmer, milking 160 cows outside Lifford, Co Donegal, and he moved to using exclusively protected urea in 2019, *writes Liam Quinn.*

When asked what motivated him to make the change, Richard says: "With 78% lower ammonia emissions than ordinary urea and 71% less nitrous oxide emissions than CAN it is the right fit for us."

With protected urea applied as the main nitrogen source on the farm Richard emphasises the importance of maintaining soil fertility. "I have very good soil fertility across the farm and use NMP maps to monitor pH, and for targeting slurry to keep my indexes right."

The farm averages 14t/DM/Ha each year, and Richard sees no effect on annual tonnage of grass grown since moving to protected urea. He primarily uses protected urea with 46% nitrogen and explains: "When sowing fertiliser, the 375 kg of protected urea goes a long way because of the strength of it."

This results in less travelling especially beneficial where spreading fertiliser on out-blocks or away from the home farm.

Richard regularly calibrates his fertiliser spreader to make sure the fertiliser is spreading as accurately as possible and is very happy with how evenly the protected urea is spread.

On calibrating the spreader, Richard says: "It's not any different calibrating protected urea from ordinary urea; we spread at 12m widths on the farm and don't see any stripes in fields after spreading."

He is making every effort to reduce the nitrogen input on the farm by improving soil fertility, testing slurry and incorporating clover but some nitrogen is required to support growth for the cows.

When asked would he have any advice for someone thinking of using protected urea he replied:

"Go ahead and contact your merchant and try it, you will end up with more money in your back pocket. It's cheaper per kilo of nitrogen and you will have the same grass growth."

Liam Quinn is a Signpost advisor at Teagasc, Athenry, Co Galway

Early action brings taxation rewards

Timely planning is the key to successful farm asset transfers that minimise tax payable

James McDonnell
Teagasc Farm Management specialist

When it comes to formulating a succession plan, good tax advice is essential to maximise the benefits of a timely transfer. But seek your taxation advice before the transfer is completed, as taxes fall due on the act of transferring and cannot be unwound.

There are two elements to consider: the potential taxation due, but also the potential reduction in existing taxes being paid. There are reliefs to significantly reduce the taxation that is due if a farm transfer is timed correctly and there are also tax reliefs to help out the successor.

In addition, CAP payments are structured strongly favour of the "young" successor. Given all these factors, it would be a pity to miss out on all the benefits of an early transfer.

Making a start

Calculating the taxation due cannot be completed until the succession plan is worked out. In many cases, that might be the most difficult part. Once it is decided who gets what asset, then you look at the taxation implications.

If the tax due once the proposed plan is completed is very small, then it is best to proceed, because a delay could result in a higher tax burden. If the tax due is high when the farm succession plan is worked out, adjusting the time lines or adjusting the asset mix involved in the calculation, could reduce the cost.

This is why having a good accountant experienced in dealing with capital taxes is important.

I've seen cases where a large tax bill on receipt of a farm, has resulted in a significant drain on the resources of the young person starting out in farming.

The taxes

Capital taxes are applied on the transfer of an asset. These are the main taxes to be aware of when completing a farm transfer. Income tax also needs to be carefully managed as parents may be ceasing business and a successor starting.

It is important to maximise the reliefs and credits available against both types of tax. In this article I will concentrate on capital taxes.

There are three capital taxes to watch out for when planning a farm transfer. A tax return on each of these must be made within a specific timeframe after the asset transfer.

- **Capital Gains Tax (CGT)** Payable by the disponer, i.e. the person who provides the gift or inheritance
- **Capital Acquisitions Tax (CAT)** Payable by the recipient or transferee
- **Stamp Duty** Payable by the transferee

Capital Gains Tax

CGT is a tax on the increase in value of assets such as land and buildings while these assets were in the hands of the person now transferring them. The tax applies only to the disponer (the person who owns the asset) who is transferring the asset during his/her lifetime.

This increase in value (the gain) can be crudely calculated as follows:

Gain = current value of the assets at the date of disposal minus the value of the assets when first acquired by the current owner

The gain can be adjusted to take account of improvements and, in some cases, inflation.

This gain is currently taxed at a rate of 33%. There are a number of reliefs that are available. These may even reduce the tax due to zero.

The main relief is called CGT Retirement Relief which can greatly reduce or eliminate the tax completely. To avail of this relief a number of conditions must be met:

- The owner must be over 55 years of age at the time of the transfer
- The owner must have owned and used the asset in question for the previous ten years

Some advance planning may be required to avail of this relief.

There are some upper limits, and these depend on the timing and relationship of the disponer to the recipient.

Entrepreneurial relief is another type of relief that is also available, but is not as advantageous as CGT Retirement Relief.

Capital Acquisitions Tax

This tax targets the person receiving

Table 1: CAT tax class groups and thresholds

Relationship to Donor	Tax Class Thresholds	2023 Threshold
Child, favourite niece/nephew	Group A	€335,000
Brother, sister, children of brother, sister	Group B	€32,500
Any other person	Group C	€16,250

Revenue tax reliefs and CAP payment structures strongly favour an early and well planned farm succession plan

the assets via a gift (lifetime transfer) or via an inheritance (on a death). It can apply to assets such as land, buildings and cash. However there are also some useful measures and reliefs to reduce or eliminate the exposure to CAT.

Tax free exemptions are available and the value depends on how closely related you are to the disponer. (see Table 1) You can also claim reliefs to maximise the benefit of these thresholds.

The main relief used is called Agricultural Relief which, if applicable, will reduce the value of the assets for calculation of the tax to 10% of their actual value.

To qualify for agricultural relief the receiver of the gift or inheritance must pass what is known as the 'farmer test'.

Passing this test requires that the receiver has at least 80% of their total assets invested in agricultural assets.

There is an additional requirement which is that the receiver must be an "active farmer".

Knowing all of your asset values is essential to complete a calculation. An auctioneer can value assets as part of a transfer. Business Asset Relief is another relief that is sometimes used to reduce CAT.

Stamp Duty

Stamp duty is a tax levied where an official Revenue stamp is applied to the official transfer document (called a deed) for an asset. It applies to assets such as land, farm buildings, commercial property or private dwellings that require official documentation to effect the transfer.

Payment entitlements, livestock, and machinery are some of the assets that are not liable to stamp duty since they don't require a Revenue stamp to give legal effect to the transfer.

The stamp duty charge is levied on the recipient of the asset on the stamping of the deed or within 30 days of the transfer.

The rate of stamp duty that applies differs depending on whether the asset is residential property or not.

This tax also has valuable reliefs and the main one requires planning. This is the Young Trained Farmer Relief from Stamp Duty whereby a young farmer (less than 35) with the appropriate qualifications (minimum Level 6 Specific Purpose Certificate in Farming) can get full relief.

As with some of the other reliefs, there are conditions applying to the length of time the young farmer must hold on to the asset and also how long they must remain classed as a farmer after availing of the relief.

Another popular relief, Consanguinity Relief, reduces the rate applied to the transfer of non-residential property (land, farm buildings), provided the transfer is between blood relatives.

This relief has additional 'active farmer' conditions.

Expert advice for free at Teagasc succession events

Teagasc is holding a series of 'Transferring the Family Farm' events this October. These free-of-charge events will give you free access to all of the relevant profes sionals. Check out our events page in this publication or online at www.teagasc.ie/events or scan the QR code below to book in.The events will be run in a clinic format allowing you and your family to discuss your individual farm succession circumstances.

Transferring the Family Farm event dates & locations

Tuesday 3 October Ballygarry Estate Hotel and Spa, Leebrook, Tralee, Co. Kerry
Wednesday 4 October Celtic Ross Hotel, Englishisland, Rosscarbery, Co. Cork
Thursday 5 October Newpark Hotel, Castle comer Road, Newpark Lower, Kilkenny
Monday 9 October Landmark Hotel, Carrick-on-Shannon Co. Leitrim
Tuesday 10 October Lady Gregory Hotel, Ennis Rd, Gort, Co. Galway
Friday 13 October Errigal Country House Hotel, Cavan Rd, Errigal, Cootehill, Co. Cavan.

Unlocking the potential of digital farming

The Teagasc FAIRshare project is closing the digital divide in agriculture and helping farmers achieve their viability and sustainability targets

Tom Kelly
Teagasc (ret.)

Digitalisation has changed the way many services are delivered, but in agriculture a wide gap (digital divide) still exists both at advisor and farmer level. This gap has been identified as a major barrier affecting the sustainability of farmers and the quality and efficiency of the services provided by advisors.

Teagasc has led FAIRshare, an EU H2020 project, which supports digitalisation of advisory services and digital innovation on European farms. The project identified Digital Advisory Tools and Services (DATs) and aimed to make them 'Findable, Available, Interoperable, Reusable and Shareable' (FAIR).

It also identified good practice in digitalisation and the barriers and opportunities around digitalisation of advisory services and their use by advisors and farmers.

Advisor Colm Doran, pictured with farmers from the Gorey 2 Macamore Discussion Group, says iPads are extremely useful at group meetings as well as during one-to-one consultations

An inventory (library) of over 300 DATs was assembled and FAIRshare implemented two main actions. The first was engaging advisors to talk about the tools and services they use and to share them with others. The second action was improving advisors' access to, and use of, digital tools and digital skills.

As the project comes to an end this year it is worth reflecting on its achievements. FAIRshare funded over 40 advisory services across Europe to address specific needs. These needs varied from country to county across a range of public and private advisory services.

Robust tablet computers

In Ireland, two services were awarded funding. Teagasc trialled the use of robust 5G tablet computers for on-farm access to online services. The Agricultural Consultants Association (ACA) trialled the use of a slurry storage calculator.

Some advisors had the opportunity to travel to other countries, meet other advisors and share their experiences and know-how. It was also reassuring that many advisors were able to find useful tools in the FAIRshare inventory and adapt them for their own use.

For example the Croatian Service

adapted the AHI mastitis cell count CostCheck calculator for their advisors.

All in all, we can say that advisors in Ireland have access to excellent digital tools supported by Teagasc, the DAFM, ICBF and farm software companies.

Apart from the sharing and adaptation of the digital tools and services, FAIRshare also produced a set of animated videos to highlight digitalisation good practice and a bank of training supports to help upskill advisors and farmers. These are available now at https://fairshare-pnf.eu/

Bringing digital services out of the office and into the field and farm offers a huge opportunity to support farmers with better and more specific advice and information,

This helps in planning and operational decisions and the analysis of data specific to every animal, crop, field and farm.

Over the last 20 years we have seen many examples of this in cattle breeding, nutrient management, grassland management, animal and crop disease prevention, and financial management.

In more recent years, we have seen that data from farms provides evidence of compliance with stricter regulation and voluntary environmental standards. There are obvious concerns about the amount of data generated and stored and how this might be used in future. However, the general view in the EU is that digitalisation will bring far more benefits than risks. It has a vital role in helping advisors and farmers address the challenges facing the industry.

The FAIRshare project helped two Teagasc advisory regions to trial new tablet computer devices with built-in internet connectivity to bring digital solutions to the farm and field. Teagasc now supplies advisory staff with two vital pieces of equipment, a laptop computer and a mobile phone.

The organisation supports users across research, advisory and training with standard models. This makes it easy for maintenance, security and is cost efficient. The difficulty with laptops is that they are not field or farm friendly and are not dependable for connectivity to the web.

> Digitalisation will bring far more benefits than risks – it has a vital role in helping advisors and farmers address the challenges facing the industry

Connectivity

And while mobile phone technology has advanced to have much better connectivity in the farm or field, these have small screens and far less computing functionality.

A project business case was developed by advisors and the regional managers to introduce, on a trial basis, 5G enabled laptops or tablet devices which would better serve the need of advisors whether working in the office, in the field or farm or any other location.

Advisors specified that these needed to be robust, waterproof, with touch screen, good battery and camera, be capable of running Windows and have good internet connectivity in the field.

A lot of effort was made to make the change and the work is ongoing. On page 32, we look at the experience to date of some of the advisors and farmers participating in the trial.

Continued on p31

Continued from p31

'Using these devices means any location can become an office'

Teagasc advisors and client farmers give their feedback on how the FAIRshare project and 5G tablets' trial has helped their work in the field

Nigel Kennington: Waterford / Kilkenny Region

"The project has allowed me to make better use of digital tools on farms. Having all the available information and data at our fingertips in the field makes for better interactions and engagement.

"I am learning all the time, and there are a lot of things that you wouldn't realise you can do until you start to try them out. The tablet devices allow for very visual presentation of the information we deliver to farmers and have encouraged me to be more creative in how I deliver these messages. It is also very interesting to see what tools other countries are using to aid their advisory services."

"It would be great to see more of the digital tools being combined together. There is a lot of information out there, the more that we can bring together the better we can make use of them. From both the advisor and the farmer's perspective if information sources are linked up it will give greater scope to allow for better decisions on farm."

Aine Butler: Waterford /Kilkenny region

"The new notepads have allowed me to give a lot more practical advice to clients in the field. It raises the discussion to a new level by allowing us to look at cattle in the field or shed and relevant ICBF data at the same time.

"Also, for scheme mapping online drawing of features and their location is improved as many maps are not up to date. Doing it in the field or farmyard live saves time and improves accuracy."

"Farmers really only start to see the value of digital applications when they are used with them on the farm. Seeing is believing."

"I would like to be able to use more apps which are available on phone on the 5G enabled laptops.

Aine's client farmer, Catherine Fleming from Mullinavat, Kilkenny, says: "It's a great help to be able to have a detailed discussion with Aine in the field looking at individual animals data on a fully live ICBF system, there is so much useful information there relevant to replacements and culling."

Jack Murphy: Wicklow/Carlow/Wexford

"The in built 5G sim card allows for any location to become an office, be that a field, out-farm, a kitchen table or the car. The touch screen zoom function makes it easier for the farmer to read documents or correspondence that I can pull up relating to a particular topic."

"It really is down to the user's willingness to utilise the tablet as it is intended to be. Even though the keyboard is attachable it is important to remember that you need to use it as a tablet first and foremost for better engagement."

"If the app versions that we have on our mobiles, such as Agrisnap, could be used on the laptop it would be a massive benefit. Both to us from a practical point of view and for showing the farmer information."

Fieldwork: Teagasc advisor Jack Murphy and Wexford farmer Cathal Breen discuss genetic data for suckler cows on the Breen farm in Killenagh, Gorey.

"It's particularly useful to be able to go to the Teagasc or any other website with Jack when we are in the field," said Cathal Breen from Killenagh, Gorey, Co Wexford who produces beef in partnership with his father Pip.

Colm Doran Wicklow/Carlow/Wexford

"The 5G enabled laptop offers greater flexibility to use it on farm or at meetings without having to rely on WiFi. The faster connectivity and quicker access to online resources means I'm more inclined to use it during a farm visit if there is a query that can be looked up or addressed online.

"When the tools are available to access and complete work on site, it can help cut down on office work and sending correspondence after a farm visit or group meeting."

"Almost as important as having the new tools themselves is the support from Teagasc ICT which is needed to utilise the resource as best as possible. For our group, meeting with members of the Teagasc ICT team every few months proved very beneficial."

"Any farmer I have used the technology with has been positive about the development. They're especially interested when an item of research can be pulled up while talking to them, or when I show information from PastureBase or ICBF relating to their farm."

Joe Kelleher
Teagasc Organic Specialist

A conversion experience

Kevin O'Hanlon has seen profits, biodiversity and work-life balance improve – and emissions cut by 25% – since converting a Wexford farm to organic dairying

Kevin O'Hanlon is one of the 70 fully organic dairy farmers operating in the country. As farm manager of the Marie Pascale-Pollard farm in Ballywilliam in Wexford, Kevin has overseen the organic conversion over the past two years.

"We've seen profits, biodiversity and work life balance improve while at the same time the farm's greenhouse gas emissions have dropped by almost a quarter," he says.

While the farm officially applied to join the Organic Farming Scheme in April 2021, Kevin had really started the conversion to a different way of farming in 2019. Having spread almost 100t of chemical fertiliser in 2018, he says he began his quest to see if he could reduce the farm's fertiliser usage.

He reduced chemical fertiliser to 69t in 2019 and to 36t in 2020, before eliminating it completely in 2021. Cow numbers only dropped by just over 10% over the same period. There are currently 155 cows being milked on the 130ha farm, compared to 175 cows before the organic conversion. The milking platform extends to 59ha.

Multi-species swards

"The key to maintaining cow numbers on this farm while simultaneously eliminating the fertiliser bill is our incorporation of legumes and, more specifically, clover, via multi-species swards, onto the farm," says Kevin.

There is a legume growing in every field with the exception of the 4.4ha of fodder beet, but as Kevin commented at a recent farm walk: "There is plenty of clover growing in that too!"

The whole crops all contain peas as the legume source and most of these are under-sown with multi-species swards, so there is a living bed of clover very visible at the base of these crops too.

Another key feature is Kevin's ambition to grow more of the farm's feed requirements. Prior to organic conversion, he was purchasing 1.2t of concentrate per cow. This is now reduced to 0.6t. "I estimate that the cows are receiving a total of 1.2t each of concentrates in their diet when the home-grown grain and the grain contained within the arable silage are included," he says.

Table 2 *(see page 34)* outlines how milk output has fallen by 25% over the past four years.

Kevin O'Hanlon is farm manager of the Marie Pascale-Pollard farm in Ballywilliam, Co Wexford

This is due to a combination of three factors: fewer cows, a reduced level of meal feeding and an increased volume of milk being fed to calves.

In organic dairy systems, all calves must receive whole milk for their first 90 days. For many farmers, this drop in milk output would be enough for them to slam the brakes on the thought process surrounding potential organic conversion. But the truth is that this is only part of the story.

In Table 2 we have attempted to estimate what the financial scenario

Continued on p34

Continued from p33

(in 2023) would have been had this farm continued as a conventional farm, similar to how the farm was farmed in 2018. While the litres sold have fallen, the price received has increased.

Kevin started supplying Glenisk last May and is currently receiving 45 cents per litre (cpl) for his milk. This price is a flat rate and there is no bonus for milk solids. Glenisk pay a summer rate for seven months and a winter rate for five months.

Last winter, that price was 70cpl, and 60cpl the winter before. Taking all this into account, Kevin is estimating a conservative average milk price of 50cpl in his figures, factoring in that the farm was selling its milk conventionally for the first four months of the year.

"By eliminating the chemical fertiliser bill and reducing the meal bill we have offset most of the financial loss in milk sales," says Kevin. "When you allow for a reduction in milk replacer purchases and an increase in paperwork costs, the reduction in costs fully offset the reduced milk cheque."

Increased profits

All cows are housed on cubicles (as permitted by organic standards) so the straw bill has not increased. When the Organic Farming Scheme (OFS) payment is added in, you can see that this farm is financially better off by approximately €29,000.

But this only tells one third of the story. The sustainability stool has three legs and in a truly sustainable system, these legs are of equal length.

Kevin has demonstrated that this farm is financially sustainable, but what about the other two legs, social and environmental sustainability?

Social sustainability is essentially the measure of one's quality of life or the work-life balance. Since organic conversion, many of the workers on the farm have managed to take an extra day off per week. "I can't precisely fully pinpoint why I have more time, but I find I have much more time off the farm than previously," says Kevin.

What about environmental sustainability? Plant diversity has increased significantly, primarily due to the multi-species swards.

When asked what he defines as a weed, Kevin answers "anything the cow doesn't eat" and adds that since he stopped spreading chemical fertiliser, the cows hoover up docks.

We know from recent research at Teagasc Johnstown Castle, that more diversity above the ground equates to more soil biology diversity below.

Kevin says he has noticed an explosion in earthworm numbers on this farm, especially in the multi-species swards.

Red clover fields are humming with increased numbers of insects, bees and butterflies, and Kevin has also noticed a considerable increase in the number of buzzards on the farm.

At an organic farm walk in July on the Pascale-Pollard farm, Teagasc climate change advisor, Colm Doran, estimated that this farm has reduced its GHG emissions by 25%.

More money, more time off, more biodiversity and GHGs slashed by a quarter. Perhaps there is room for a few more organic farmers in this country?

> More money, more time off, more diversity and GHGs slashed by a quarter – perhaps there is room for a few more organic dairy farmers in this country

Table 1: key farm statistics 2020 to 2023

	2020	2021	2022	2023
Cow Numbers	175	162	157	55
Other LU's	98	79.6	78	81
WF Stocking Rate (LU/Ha)	2.1	1.85	1.80	1.81
MP St. Rate (LU/Ha)	2.97	2.75	2.66	2.62
Milk Solids/cow (kgs)	560	526	436	480*
Total litres sold	1,234,009	1,050,225	900,000*	900,000*
Fertiliser purchased	36	0	0	0
Meal purchased/cow	1.2	1.2	0.8	0.6

Table 2: 2023 Conventional Vs Organic scenarios

	Conventional	Organic
Cow Numbers	175	155
Litres sold	1,234,000	900,000
Milk Price	43cpl 2.1	50cpl
Milk Sales	€530,620	€450,000
Fertiliser Purchased	98t	0
Fertiliser Cost/Ton	€600	n/a
Total Fertiliser Cost	€58,800	0
Concentrate feed purchased/cow	1.2	0.6
Cost of feed/ton	€430	€800
Total feed Bill	€85,140	€74,400
Milk Replacer	€12,375	0
Paperwork/licence fee	0	0

Table 3: crops grown on the Pascale-Pollard farm in 2023

Crops grown in 2023	(Ha)
Grass Clover Swards	36.6
Red Clover Swards	4.8
Multi Species Swards	54.9
Whole-crop (grain)	8.9
Whole-crop (silage)	20.6
Fodder Beet	4.4

Table 4: estimated financial impact of organic conversion 2023

Reduced Milk Sales	- €80,620
Reduced Costs	+ €81,915
OFS Payment	+ €27,700

ORGANIC DAIRYING: FACTS, FIGURES AND TIPS

Over a 5-10-year period, organic milk prices average out at 15-20% ahead of conventional milk prices

'Do the financial projections, but also factor in the social and financial benefits'

There are approximately 70 fully or ganic dairy farms in the country and a further 30 undergoing conversion. There are four organic milk processors: Aurivo, Glenisk, The Little Milk Company and The Village Dairy.

Milk prices range from 45cpl to 70cpl (May 2023). Bottled milk makes up a large percentage of the process ing capacity followed by yoghurt and cheese.

Three of the processors are involved in bottling milk and require year-round supply. The Little Milk Company processes all its milk into cheese and therefore will accept a spring calving system. Many of the organic spring calving farmers operate a once-a-day milking system.

The average stocking rate of organic dairy farmers is 1.5LU/ha. Farmers with high percentages of their farms under clover and other legumes are achieving whole farm stocking rates of 1.8LU/ha. Organic farmers are not permitted to exceed 2LU/ha.

Cubicle beds are permitted for housing as long as they are a minimum of 2.62m^2 each and that each cow has access to 3m^3 of total lying area within the house. As a practical example, this could involve housing 70 cows in a cubicle house with 80 cubicle spaces.

Cubicle beds must be bedded at all times. Most organic farmers use a mixture of (untreated) shavings mixed with cubicle lime for this purpose.

The cost of purchased concentrate when purchased from a miller is close to double conventional feed prices. This can lead to significant meal costs, especially for winter milk producers.

Many organic dairy farmers reduce this cost by purchasing directly from organic tillage farmers. Combinations crops (a 2-3 way mix of a legume; pea or bean mixed with grain; barley; oats or wheat) are the most commonly traded feedstock.

When averaged over a 5–10 year period, organic milk prices tend to be 15-20% ahead of conventional milk prices. The Organic Farming Scheme will pay organic dairy farmers €350/ha in the first two years of organic conversion and €300/Ha thereafter.

They will also receive a participation payment of €2,000 in year 1 and €1,400 thereafter. "If contemplating or ganic conversion, do financial projections, but also factor in the social and environmental benefits," concludes Kevin O'Hanlon.

Why now is the ideal time to plant a farm forest

The new €308m Afforestation Scheme is offering farmers grants of up to €8,555/ha for farm forests

Noel Kennedy
Teagasc Forestry
Development Officer

The 2023-2027 Afforestation Scheme presents farmers with fantastic incentives to consider planting forestry and further drive their farm sustainability and climate action ambitions.

Applications for the scheme, administered by the Department of Agriculture, Food and the Marine (DAFM), will open in the next few weeks.

A critical element in the €1.3 billion National Forestry Programme, the Afforestation Scheme is designed to deliver across a range of objectives from farm incomes and biodiversity to the production of high quality timber.

In addition to planting grants, farmers participating in the scheme are guaranteed annual premiums for up to 20 years with payments up to 66% higher than in previous forestry programme.

Main features of the new Afforestation Scheme

- 12 Forest Type options including a new Forests for Water option
- Afforestation grants for farm forests up to €8,555 per hectare
- Up to 20 year annual premiums for farmers* (NB 10 year annual premium for Agroforestry)
- Premiums up to €1,142 per hectare per year
- All grant and premium earnings are highly tax efficient

**Payment of the farmer premium will be determined by meeting scheme eligibility criteria.*

How does the Afforestation Scheme work?

The Afforestation Scheme provides establishment grants and annual premiums to plant and establish forests on suitable 'green field' sites. To plant a new forest a farmer must engage a registered forester to make their afforestation application. Afforestation grants usually cover the cost for site preparation, fencing, trees and tree planting. They are paid in two instalments:

- 1st instalment (75% of the total grant) following satisfactory planting works
- 2nd instalment or maintenance grant (remaining 25%) is paid after four years subject to the satisfactory establishment of the forest.

Annual premiums

Forestry applicants will also receive an annual forestry premium. Farmers will receive annual premiums for up to 20 years and non-farmer applicants for up to 15 years. The rate of afforestation grant and premium is determined by the particular Forest Type (FT) option planted (see table).

Which forest suits your farm?

There is a forest to suit every farm. The new Afforestation Scheme supports the planting of 11 different Forest Types, each with their own specific silvicultural, environmental and practical objectives. It is important that you choose a forest type or types that best reflects your own objectives.

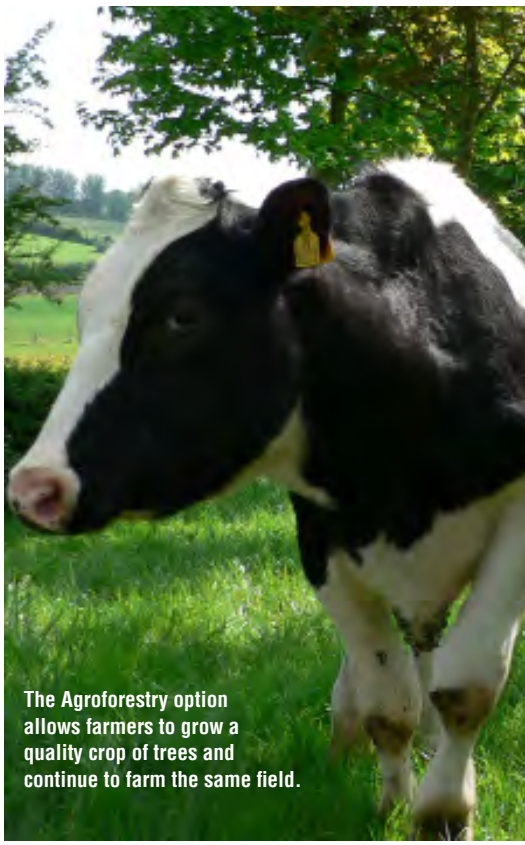
Forest Types

The following is a sample of the scheme's Forest Types

.

- **FT 1 – Native Forests** This category supports the establishment of new native woodlands. Its focus is on planting native trees such as oak, cherry and birch with minimal site disturbance and long-term 'close to nature' management. Afforestation grant €6,744 per ha (excl. fencing); Annual premium €1,103 per ha.

- **FT 2 – Forests for Water** Supports the targeted planting of native forests to protect a range of identified vulnerable and/or ecologically important waterbodies to intercept overland flow and "break the pathway" from the source to the receiving waters. Afforestation grant €6,744 per ha (excl. fencing); Annual premium €1,142 per ha.



The Agroforestry option allows farmers to grow a quality crop of trees and continue to farm the same field.

- **FT 8 – Agroforestry** Enables farmers to establish a quality crop of trees and continue growing grass, grazing livestock or producing food in the same field. Afforestation grant €6,000 per ha to €8,555 per ha (excl. fencing); Annual premium €829 per ha to €975 per ha. Organic farmers may also receive an Organic Farm Scheme payment on the agroforestry area.

- **FT12 – Mixed High Forests** Mainly spruce with 20% broadleaves: This category supports the establishment of Sitka spruce and 20% broadleaf species with the primary objective of creating a timber production forest. Afforestation grant €3,858 per ha (excl. fencing); Annual premium €746 per ha.

- **Native Tree Area Scheme (NTA1 and NTA2)** may be of particular interest to farmers considering planting smaller areas. NTA supports planting up to one hectare of native trees without the need to first obtain an afforestation licence. Annual premiums will be paid over 10 years rather than 20 at a rate of €2,206 per hectare annually for NTA1 and €2,284 per hectare annually for NTA2.

For information on other Forest Types available please see https://www.teagasc.ie/crops/forestry/grants/

Forestry and BISS

Planting a forest does not affect your entitlements under CAP and you can continue to claim the Basic Income Support for Sustainability (BISS) Scheme on your forested land, subject to the terms and conditions of the BISS Scheme. Your forest may also be entitled to receive CRISS and Eco-scheme payments subject to scheme T&Cs.

Taking the first steps

Forestry is new to most farmers and like all new enterprises can raise many questions, so what are the first steps?

- **Talk to your agricultural advisor or Teagasc forestry advisor about forestry in the context of your farm and family. Forestry is a permanent land use change and may have an impact on other farm schemes.**
- **Inform yourself – forestry is new to most farmers. Talk to neighbours who have planted and attend information meetings or forest walks in your area.**
- **Contact a registered forester. To plant a new forest you must engage a registered forester to make the afforestation application on your behalf. After approval is received, you have the option to employ that forester for the planting or you can organise the work yourself.**

Teagasc is planning a nationwide series of online and in person public information meetings on the new Afforestation Scheme over the coming weeks. For updates please check our website www.teagasc.ie/forestry

Table 1 New Afforestation Scheme 2023-2027 Grant and Premium Rates

	Forest Type	Grant Rates (excluding fencing) €/ha	Annual Premium Payments €/ha	Number of Premiums for Non-Farmers	Number of Premiums for Farmers
FT1	Native Forests	€6,744	€1,103	15	20
FT2	Forests for Water	€6,744	€1,142	15	20
FT3	Forests on Public Lands	€10,544	€1,103	15	n/a
FT4	Neighbour Woods	€10,200	€1,142	15	20
FT5	Emergent Forests	€2,500	€350	15	20
FT6	Pure Broadleaves, mainly oak or beech	€6,744	€1,037	15	20
FT7	Other Broadleaves	€4,314	€973	15	20
FT8	Agroforestry - silvoarable	€6,000	€829	10	10
FT8	Agroforestry - silvopastoral	€8,555	€975	10	10
FT8	Agroforestry - forest gardening	€6,000	€829	10	10
FT9	Seed Orchards	€10,000	€1,142	15	20
FT10	Continuous Cover Forestry	€5,421	€912	15	20
FT11	Mixed High Forests: conifer, 20% broadleaves	€4,452	€863	15	20
FT12	Mixed High Forests: spruce, 20% broadleaves	€3,858	€746	15	20
NTA 1	Small native forests	€6,744	€2,206	n/a	10
NTA 2	Small native forests for water protection	€6,744	€2,284	n/a	10

Please Note - Teagasc is planning a nationwide series of online and in person public information meetings on the new Afforestation Scheme over the coming weeks. For updates, please check our website www.teagasc.ie/forestry

Instant grassification

Laying pre-grown turf is challenging but possible for the non-professional

Paddy Smith
Lecturer at the Teagasc College at the National Botanic Gardens

Why turf? Establishing a lawn from seed is cheaper with seeding varying in price from €1-€2.50 per m². Turfing costs from €10 - €14.50 per m². However, the larger the area, the cheaper turfing should be per m². The nature and location of the site is also a factor. For example, if the turves can be driven close to the site and manoeuvred mechanically rather than manually, the time and cost should be lower.

The main benefit of turfing is that a highly manicured lawn can be created almost instantly. Turves can also be used to repair small damaged areas on a lawn.

These might have been caused by humans, pets or pests. Pests come in many shape and forms at different times of the year.

Another benefit of turfing is that it can be laid when seeding would not be desirable or recommended. A good example is the unfavourable weather patterns we experienced in July 2023 this year.

Throughout the month which set a record for rainfall, newly drilled seeded lawns looked like 'paddy fields' as seeds were sometimes washed away.

Turf laying

Good soil preparation in the form of firm, even, debris-free final soil level is key to the successful establishment of turf. Turves should be laid in a staggered pattern, close-butted. They should not be overlapped or stretched.

An over-extended turf creates tension resulting in joints pulling apart, especially if they dry out.

Along edges such as boundary walls, kerbing and paths, full turves should always be used, with cut-offs for infills. Smaller pieces dry out more quickly.

When laying turf avoid walking on the soil surface or directly on the turves. Work from planks (scaffolding boards are ideal) placed on the laid turves. This avoids hollows or cavities in the final lawn.

The person laying the turves should always take care with the position of their boots and avoid their toes digging into, or moving, previously laid turves.

The turfing process: work forwards from planks on top of the turves just laid.

Work boots can create voids and imprints into laid turves. In turn, this can create ruts in the lawn and lead to scalping of the grass at a later stage when mowing.

Pests on newly laid turf range from starlings, rooks and crows to rabbits, foxes and badgers. In this example, badgers looking for leatherjackets have dug up an established lawn.

Turfing on slopes

When turfing on slopes that exceed 30 degrees, turves should be laid in a stretcher bond pattern horizontally or diagonally on the bank.

In some cases, the turves may need to be pinned down using 3-4mm wire pegs in a U shape and at least 15mm in length.

A temporary wooden board in the form of a 4x2 timber should be pegged at the base of the embankment to prevent slippage until the turves have anchored themselves to the soil beneath with their new roots.

Establishing turfed areas

Irrigation is essential to ensure adequate root growth in the early stages of the turves' life, especially during dry periods.

A topdressing with a soil/sand mix will fill in any gaps formed between the turves.

Transferring the Family Farm Clinics 2023

Transferring the family farm is so much more than just a simple business transaction; there are a number of complex issues to be addressed.

To help you prepare, Teagasc is hosting six clinics across the country. You can register for your closest event at **www.teagasc.ie/farmtransfer** .

These clinics are designed to help farm families through the process and all aspects that need to be considered when transferring the family farm.

Date	Venue
Tuesday, 3 October	Ballygarry Estate Hotel and Spa, Tralee, Co. Kerry.
Wednesday, 4 October	Celtic Ross Hotel, Rosscarbery, Co. Cork
Thursday, 5 October	Newpark Hotel, Castlecomer Road, Co. Kilkenny
Monday, 9 October	Landmark Hotel, Carrick on Shannon, Co. Leitrim
Tuesday, 10 October	Lady Gregory Hotel, Gort, Co. Galway
Friday, 13 October	Errigal Country House Hotel, Cootehill, Co. Cavan
Clinics will begin at 10am	
Attendance free | Pre-booking is essential	

Scan the QR code to book

Register your place online at www.teagasc.ie/farmtransfer

Growvite

For Champion Results!

Supplies an oral drench of chelated Minerals, Vitamins & Trace Elements essential for fertility and thrive in Cattle and Sheep

UNIVET LTD

www.univet.ie

Manufactured in a GMP compliant facility ensuring consistently high quality products.