TEAGASC

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Today's Farm

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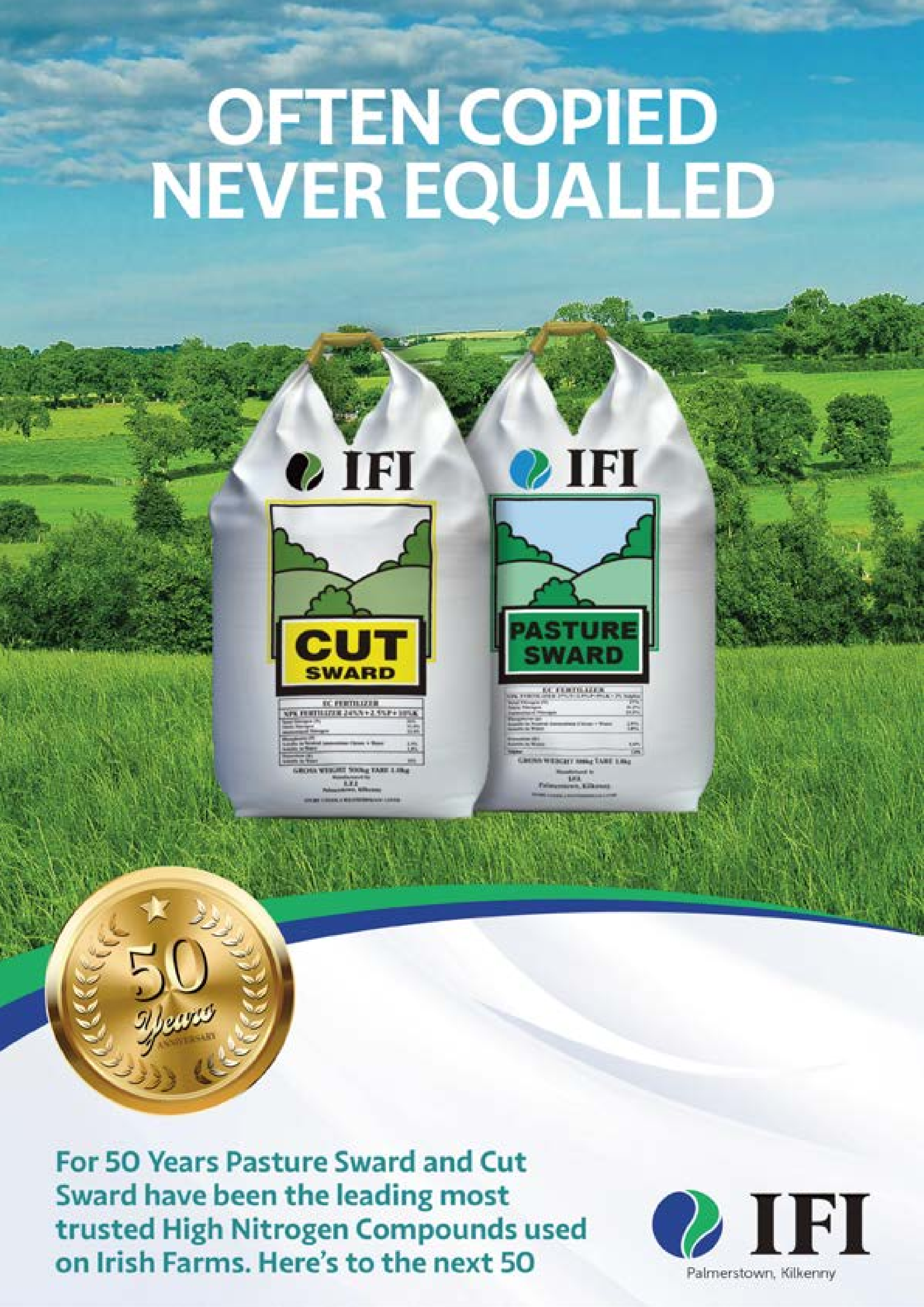
Agriculture and Food Development Authority



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contents

Don Somers and his son Conor view a bean/pea crop in Wexford.

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Editor: Mark Moore
Sub-editors: Naomi Richardson, Rosie McCormack, John Marrinan, Geneva Pattison
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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: Conor O'Reilly, John Greaney, and farmer Sean Hayes on his suckler farm at Lisduff near Tulla in east Clare.

Comment

As always, grass is gold

A fairly detailed analysis of dairy farm costings (see Patrick Gowing's article on P21) clearly indicates that the most cost effective way to make money is to make as much use of grazed grass as possible. The exact same applies for beef and sheep enterprises. The good news is that, after a couple of below-average years, grass growth in 2025 appears to be increasing back towards the 10-year average. Swards will have their best chance at reaching their potential if their soil pH is right. Nearly 40% of dairy soils sampled are below pH 6.2 and need lime. For samples taken on drystock fields, over 60% need lime. With prices healthy this year, farmers will hopefully enjoy a surplus and will invest some of it into lime.

Is fiú ór an féar, mar is iondúil

Tugann anailís sách mion-sonraithe ar chostais feirme déiríochta (féach alt Patrick Gowing) le fios go soiléir gurb é an bealach is costéifeachtaí le hairgead a dhéanamh ná a oiread úsáide agus is féidir a bhaint as féar innilte. Tá an scéal mar an gcéanna i gcás fiontair mhairteola agus caorach. Is é an dea-scéal go bhfuil fás féir ag teacht chuige féin arís in 2025 i dtreo an mheáin deich mbliana tar éis roinnt blianta a raibh sé faoina bhun. Is fearr an seans go mbainfidh báinseacha barr a maitheasa amach ach an pH a bheith i gceart. Nach mór 40% de na hithreacha déiríochta a ndearnadh sampláil orthu, bhí siad faoi bhun pH 6.2 agus aol ag teastáil uathu. I gcás na samplaí a tógadh ar pháirceanna stoic thirim, bhí aol ag teastáil ó 60% acu. Agus praghsanna go maith, tá súil againn go mbeidh barrachas ag feirmeoirí agus an claonadh iontu beagán a infheistiú in aol.

Mark Moore
Editor, Today's Farm

Chipping away at food waste

With national production reaching approximately 300,000t annually, it's no surprise that potato processing side streams are a major source of food waste.

Ireland has the highest per capita consumption of potatoes in Europe – around 80 to 90kg per person, per year. With national production reaching approximately 300,000t annually, it's no surprise that potato processing side streams are a major source of food waste. These include whole potatoes discarded due to shape, size or colour imperfections, as well as leftover scraps from cutting and peeling.

Additionally, wastewater used for washing and starch extraction represents another major challenge, with three to five cubic metres of water used per tonne of potatoes. This wastewater is essentially a mix of water, starch, peels and pulp.

"The high chemical oxygen demand and biochemical oxygen demand of this wastewater make it a pollution risk if not managed correctly," explains Giulia Romano, postdoctoral researcher at Teagasc Food Research Centre. "But what if we could turn this problem into an opportunity?"

Potatoes and their wastewater contain around 2% valuable proteins, with exceptional nutritional and functional properties.

Unlike many other plant-based proteins, these are allergen-free and highly soluble, making them attractive for food applications. Some even exhibit bioactive properties, such as anti-inflammatory and anti-tumour effects.

Starch recovery is another promising avenue. With an average starch content of 18% in whole potatoes and 9% in wastewater, reclaiming this valuable resource can significantly reduce food waste, while generating economic benefits for processing companies.

"By efficiently extracting both proteins and starch, we achieve a dual benefit," Giulia states. "Less waste for the environment, more value for the industry."

At Teagasc, researchers are developing eco-friendly extraction techniques to maximise nutrient recovery.

These include traditional methods like grinding and sedimentation for starch recovery, as well as advanced green technologies such as ultrasound-assisted extraction and enzymatic hydrolysis, which break down cell walls to release proteins.

"The right combination of these techniques allows us to optimise extraction yields," says Giulia.

"For instance, enzymes can break down starch into sugars, which can then be used for fermentation to produce bioactive compounds, enzymes or even organic fertilisers."

"In the future, every part of these side streams should be repurposed, not just to benefit the companies themselves but also to protect our planet," Giulia emphasises.

"This is the next big step for the food industry."

By rethinking food waste as a resource, Ireland's potato industry, and the food sector as a whole, can lead the way towards a more sustainable, circular economy.

Business strategy for farming

In collaboration with the UCD Michael Smurfit Business School Teagasc has been offering this accredited course once a year since 2014. Subject matter includes:

- Managing yourself and others
- Strategic financial management for farming
- Understanding leadership
- Negotiation Skills
- Creating the right strategy for your farm
- Corporate Governance and Board/Director Effectiveness

The course will be delivered at the Horse and Jockey Hotel on October 14, 15, 16 and also December 2 and 3 January 21. In addition, participants will complete their own strategy document. This is a challenging but highly rewarding course. There are no academic requirements providing you have been running a farm business for at least five years. For more details on cost etc please contact Mark.moore@teagasc.ie

Alumni of the Teagasc/UCD Michael Smurfit course at a meeting in December 2024.

Green light for VistaMilk Phase II

Phase II of the VistaMilk Research Ireland Centre was launched recently at Teagasc Moorepark, Fermoy, Co Cork. This marks a significant step forward in the centre's mission to enhance sustainability and innovation in Ireland's agrifood sector, through pioneering research and technology. Launching the second six-year phase of the centre, Minister Heydon, TD., stated: "Ireland's agri-food sector, and particularly our world-renowned dairy industry, plays a vital role not just in rural communities, but also the national economy. It is critical that we continue to invest, through initiatives like VistaMilk, to ensure that we remain global leaders."

VistaMilk Phase II marks a significant boost to the local economy in North Cork, with the centre set to recruit more than 130 personnel – most of whom will be based at Teagasc Moorepark.

Phase II has set a similar target to Phase I: securing more than €20m in competitive EU funding, critical for driving world-class research and innovation. Industry backing remains strong, with over 50 partners contributing €12m during the initial phase and continuing their support into the second phase. This investment reflects a balanced mix of local enterprise and foreign direct investment from leading multinational companies.

Upcoming Events

WEDNESDAY, 09 JULY 2025

Growing Organics Farm Walk – Tillage
Venue: farm of Tommy Delahunt, Ballinaclogh, Co Wicklow. Eircode: A67 T660.
Time: 11am.

Teagasc/Aurivo Signpost farm walk – Donegal
Venue: farm of Richard Starrett, Killendarragh, Lifford, Co Donegal. Eircode: F93 VH30.
Time: 11am – 1pm.

THURSDAY, 10 JULY 2025

DairyBeef 500 farm walk – Charlie and Charles Smyth
Venue: farm of Charlie Smyth, Virginia, Co. Cavan.
Eircode: A82 DA00. All aspects of a dairy calf to beef farm in action will be on full display.
Time: 7pm.

WEDNESDAY, 16 JULY 2025

Lowland BETTER Sheep farm walk – Michael Forde
Venue: farm of Michael Forde, Annagh West, Corrandulla, Co Galway. Eircode: H91 XP27.
Time: 7pm.

WEDNESDAY, 23 JULY 2025

Growing Organics farm walk – field scale vegetables
Venue: farm of Emmett Dunne, Durrow, Co Laois.
Time: 2pm.

FRIDAY, 25 JULY 2025

FutureBeef farm walk – Kay O'Sullivan
Venue: farm of Kay O'Sullivan, Mallow, Co Cork.

ADVERTORIAL

Achieving Replacement Heifer Weights

Maeve Regan,
Head of Ruminant Nutrition, Agritech

Over the coming months, farmers must prioritise their next generation of milking cows by ensuring that the target weights of replacement heifers are realised.

Taking this into account, heifers should reach 30% of their mature bodyweight at six months of age and achieve 60% of mature weight when bred at 15 months.

As grass growth/quality declines over the next few months, in addition to more challenging grazing conditions, optimal average daily gain may be difficult to maintain. So it is important to consider where your replacement heifers are in relation to targets (% of mature weight) currently.

By weighing heifers during early autumn rather than weighing at the point of housing, farmers can identify which animals are behind target. The best advice is to group accordingly and make alternative plans for heifers below their target weights.

Underweight heifers are considered to be those that are 5% or more below target bodyweight. Therefore, the regular weighing of heifers can help farmers to keep track of performance through the season.

Heifers that are lighter than this should be separated and given priority access to the highest quality grass and re-introduced to concentrates depending on their weight relative to the herd's target.

Higher weight gains can be achieved from grass rather than from winter/silage diets and a good response to autumn supplementation can be attained. Should grass be in short supply and quality or when conditions are deteriorating, under-target replacement heifers should be fed a supplement until housing time to maintain weight. To increase growth rates, 1-2kg of concentrate/head/day should be sufficient.

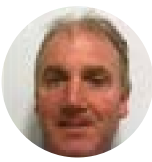
Research shows that, during the summer, youngstock at grass can achieve a weight gain of 0.85 kg/day on grass alone. Come the autumn, where 1kg of concentrate plus high-quality grass is offered, an average daily gain of 1kg/head can be achieved.

For further advice, contact your local Agritech Sales Advisor or visit www.agritech.ie

Leasing land for solar projects

While leasing land for solar projects can offer attractive returns, the decision requires careful consideration

Barry Caslin
Teagasc



Energy companies are actively looking for land to install solar panels. They typically offer an option agreement lasting three to five years.

The option period gives developers time to establish the basics of a project. These include:

- Obtaining planning permission,
- Setting up grid connection,
- Conducting surveys, and
- Bidding into a Renewable Electricity Support Scheme (RESS) auction.

A successful auction bid guarantees financial support for the project. If the developer exercises the option, you will lease your land to them for 25 years or more ,with potential rents of between €900 and €1,400 per acre per year.

If you are considering leasing your land to a solar company, seek professional tax advice – especially if succession or transfer of the land to a child or family member is part of your long-term plan. The tax implications can be complex and could significantly affect your finances.

Key questions to ask

Before deciding whether to lease your land for solar projects consider:

- What type of developer are they?
- What's their track record? How many sites have they built? Where? When? Testimonials from other landowners?
- What is their financial backing – where is the project funding coming from?
- Who will they own and operate the project, or will it be sold to another party?
- What's the ethos of the company?
- Where else do they operate?

Large solar sites

Development is now shifting towards larger schemes of 40MW or more, to benefit from economies of scale. Typically, 1MW of installed capacity requires about two hectares (ha) of land. Therefore, many new sites require at least 80 hectares, depending on the project design.

What makes a suitable site?

Developers look for sites with the following characteristics:

- **Proximity to a suitable power supply:** Sites near a 33kV distribution line or substation are ideal. Smaller 10kV lines are usually unsuitable and 110kV transmission lines (carried on steel pylons) are often too large to connect to.
- **Minimal third-party land requirements:** Sites should ideally avoid the need to cross third-party land, as this adds costs and complications.
- **Flat or south-facing slopes:** These provide the best orientation for solar panels.
- **Seclusion from residential areas:** This helps minimise potential objections from local communities

Know who you are dealing with

There are three main types of solar developers and it is crucial to know who you are dealing with.

- Site finders offer terms to landowner and conduct grid application/ planning, but then sell the project on to a developer to build.
- Developer with financial backing (for example, from pension fund or other investor) to build projects that they may then sell on.
- Funded developer, who is in it for the long-term – developer takes on full planning, construction and operation of the site for the long-term.
- While leasing land for solar projects can offer attractive returns, the decision requires careful consideration. Always seek professional tax advice and understand both the short-term and long-term implications before proceeding.

Grid restrictions remain

Spare capacity on electricity grids remains limited in many parts of Ireland, potentially restricting new developments. If grid capacity is available, act quickly as it may only be sufficient for one scheme in the area.

What returns can be expected?

Rents typically range from €950 to €1,400 per acre per year, with some developers offering an additional payment linked to the site's turnover. However, developers are increasingly opportunistic and €900 to €1,200 per acre is more common.

Key factors influencing returns:

- Location and sunlight levels.
- Scale of the project.
- Grid connection costs.

Other considerations:

- If battery storage is added to the site, negotiate an additional payment.
- Rental income is typically linked to inflation, with agreements often lasting 30 years or more.
- Ensure clarity on the total area being rented, as security fences may create narrow, uneconomical strips of land around field boundaries.

Additional considerations:

- Ensure the developer covers all costs regardless of whether the project is completed – for example legal and professional fees, planning and grid applications.
- Developers handle the planning application, but landowners may need to engage with the local community to build support.
- Avoid exclusivity agreements until the full heads of terms have been agreed upon.
- Ensure provision is made for decommissioning and site reinstatement – for example, a clean-up/ security bond or insurance policy
- Ensure there are plans for site cleanup and reinstatement after the lease ends. This could include a security bond or insurance policy.
- Verify that the developer has sufficient indemnity insurance during both the options agreement and lease periods.
- Address practicalities during/ after construction, such as timing and duration of construction, access requirements, impact on drainage/soil structure, post-construction clean-up and fault correcting. It is very important to provide for these as some landowners have been left with significant damage after lengthy and messy construction.

What are the tax implications?

Key tax points to note

- **Lease income tax:** Income from solar farm leases does not qualify for traditional farming tax relief. All lease and option income is fully taxed, with no opportunity to offset expenses.
- **Capital Gains Tax (CGT):** Farmers aged over 55 who have owned and farmed the land for at least 10 years can transfer land with solar panels tax-free to a child, provided less than 50% of the area is covered by panels. If the land value exceeds €3m, the excess may be subject to CGT.
- **Keeping farm status:** Leasing less than 50% of the land for solar panels, allows the farm to retain its status as a working farm for tax purposes.
- **Agricultural relief:** Land used by solar panels does not qualify for agricultural relief unless less than 50% of the total farm area is covered by panels.
-

Example: tax and income breakdown - leasing

- A 20-year lease at €1,000 per acre generates €20,000 per acre over 20 years.
- After income tax at 40%, the net income is €12,000 per acre.

Key Consideration

- Potential Capital Acquisitions Tax (CAT) liability (33%) on this net income could amount to €3,960 per acre.
- Always seek professional advice to understand the tax implications fully and make an informed decision.

BISS eligibility and solar panels

While, in general, parcels with solar panels will be considered on a case-by -case basis, they will be considered eligible for the purposes of claiming payments under the BISS and other area-based schemes, with the solar panels being considered as ineligible features within the parcel.

A key requirement for land to be deemed eligible is that there must be an agricultural activity in the parcel. In the case of areas with solar panels, grazing with sheep is a suitable agricultural activity.

Other requirements to make land eligible, as set out in the terms and conditions for the various area-based schemes, must also be respected.

The solar panels will be addressed in the same way as any other ineligible feature within the parcel, eg scrub, rock, hardcore or a roadway, as set out in the 2023 *Guide to Land Eligibility* booklet published by the Department of Agriculture, Food and the Marine.

Therefore, the eligible area of the parcel will have to be reduced to take account of the impact of the solar panels, including the supporting structures on forage availability along with any other ineligible features in the parcel.

If the reduction is greater than 70% the area will be considered ineligible.

If the impact on the eligible area is less than 70% an appropriate percentage reduction must be made by applying a reduction coefficient, as set out in the 2023 *Guide to Land Eligibility* booklet.

Ways a parcel can be ineligible

- No agricultural activity on the land.
- Applicant doesn't own, lease, or rent the land.
- No written agreement to access the land.

Potential eligibility

- Less than 70% solar panels.
- Agricultural activity continues without interference

Sucklers are still to the fore in the west

Sean Hayes farms a 50-cow suckler-to-beef enterprise and a dairy-calf-to-beef system in east Clare

John Greaney
Teagasc

Sean Hayes and Conor O'Reilly.

Sean Hayes farms at Lisduff, just outside Tulla in east Clare. He runs a 50-cow suckler-to-beef enterprise as well as a dairy-calf-to-beef system rearing 50 dairy calves. A mixture of under-16-month bulls, steers and heifers finish on the farm. Sean is very busy as he also works off-farm full time, providing machinery services.

Conor O'Reilly, Teagasc Clare, has worked with Sean now for a number of years and has seen the farm go from strength to strength in key areas, such as infrastructure, grassland management, breeding and animal health.

Sean is one of 60 farmers across Ireland participating in the Climate Farm Demo project. Climate Farm Demo is a unique pan-European network of 1,500 Pilot Demo Farmers (PDFs) across 28 countries.

Its overall aim is to "accelerate the adoption of Climate Smart Farming (CSF) practices and solutions by farmers and all actors of the Climate Smart Agriculture Knowledge and Innovation Systems (AKIS)".

The goal is to see agricultural production systems adapting to climate change and to achieving a carbon-neutral agricultural sector by 2050, thereby meeting the targets of the EU climate strategy. The Climate Farm Demo project has almost identical aims to, and is closely aligned with, the Teagasc Signpost Farms programme.

Sean, with help from his wife Marica and son Charlie, has been steadily increasing the output on the farm.

Limousin cross cows

Running a herd of Limousin cross cows, Sean has focused on breeding performance.

"I was calving a few more cows a number of years ago but I've reverted back to 50 now, tightening the calving spread. It's busy in the spring but it's manageable when you're only calving for an eight-week period."

Sean's calving interval stands at 375 days, running 24 days ahead of the national average at 397. Artificial insemination is key to the success on this farm, with Sean having a keen interest in breeding quality stock.

"I try to pick maternal Limousin sires with good milk figures, but also keep an eye on terminal traits like carcass weight and conformation. Certain cows continually get a terminal Charolais straw as they might just not have the replacement qualities I am looking for. That's the beauty of using AI really."

On signing up to the project, Sean completed a sustainability survey highlighting areas of the farm with potential for improvement. An audit using AgNav was also carried out on

Continued on p10

the farm, providing Sean with support to identify mitigation strategies for his farm to deliver on climate action goals.

As a requirement of the Climate Farm Demo project all farmers must:

- Complete an audit of their farm to establish the baseline performance across a range of environmental factors.
- Complete an adaptation and mitigation plan.
- Host demo events over the duration of the project.

The three key areas Sean is focusing on are soil fertility, reducing the age of slaughter and reducing chemical fertiliser usage on the farm. All three measures will reduce emissions on farm, but also increase profitability.

Funnily enough, prior to joining the project, Sean was focusing on these three key areas – evident given the impressive performance across the KPI's outlined.

Currently, the farm's footprint is 9.88kg CO_2 equivalent/kg LW gain, ranking Sean as one of the most carbon-efficient beef farmers in this European project.

Soil Fertility

Improving soil fertility can be slow and tedious, but Sean is now reaping the rewards. All but 12% of his ground is at index three and four for P and K. Cattle slurry is seen as a valuable resource on the farm and the paddocks that are lower in P and K are given priority each year.

Finishing a lot of cattle on the farm provides Sean with good-quality slurry.

"We have our own dribble bar, which gives us greater flexibility to get slurry out when conditions are favourable," adds Sean.

Reducing chemical fertiliser

Reducing the level of fertiliser on the farm is one action Sean hopes to implement on his farm over the duration of the Climate Demo project. Reseeding each year has now become the norm, with 10% of the farm reseeded each year.

Poorer performing paddocks are identified through the pasturebase tonnage report and are pulled out each year.

Lime is applied at reseeding, with clover included in any mixes used. Protected urea is the main nitrogen source used on the farm, with a total of 100kgN/ha of chemical nitrogen spread last year.

Reducing the age of slaughter

The Climate Action Plan targets an average slaughter age of 24 to 25 months for prime cattle by 2025. Sean's system is proof that this KPI can be achieved.

His cattle's average age at finishing stands at 22.3 months, helped by the fact a proportion of his suckerborn bulls leave the system under 16 months.

Friesian steers are finished at 24 months of age, with early maturing Angus calves slaughtered under two years of age.

The dairy-cross heifers performed well, being slaughtered at 20 months averaging a 276kg carcass.

Interestingly, the Commercial Beef Value (CBV) of the Angus-cross heifers slaughtered ranged from €115 to €49. Table one outlines the difference between the two animals – the highest and lowest rated dairy cross animals slaughtered in 2024.

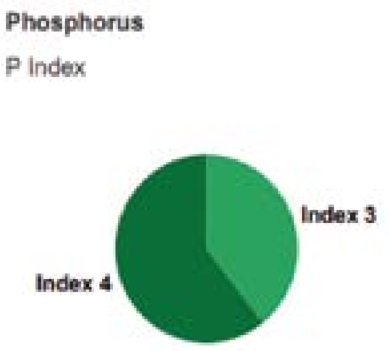
The CBV value is a tool that gives farmers an insight into the genetic value of animals destined for beef production. The tool includes traits that are of economic importance, for example carcass weight, conformation and feed intake.

"I keep a close eye on the CBV value when purchasing animals as I see real merit in it. The animals in my herd with higher values are performing a lot better," says Sean.

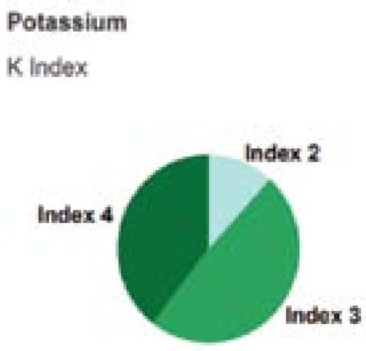
Continued on p11

Table 1: Differences between animals

CBV	Age at slaughter	Carcass Weight	Grade	Fat Score
€115	18 months	279	O=	3+
€49	21 months	274	O–	3+



Index	Ha's	%
1	0.00	0%
2	0.00	0%
3	18.95	39%
4	29.17	61%



Index	Ha's	%
1	0.00	0%
2	6.79	12%
3	28.16	49%
4	22.93	40%

Animal health and nutrition

Sean hasn't reduced the average age of slaughter overnight. He has made progress by placing greater emphasis on animal health and nutrition ensuring cattle are fit to kill at a younger age.

"All calves are vaccinated with Rispoval RS + P13 Intranasal and done for IBR. They get the initial shot followed by the booster. Calves are also vaccinated to prevent clostridial diseases. Cows are done for leptospirosis. I have a closed herd here apart from the calves that are sourced from local farmers I deal with every year," says Sean.

All stock are dosed for fluke at housing and the beef health check report is coming back clear, ensuring the treatment is effective. Sean advocates regular weighing, targeting average daily gains of at least 1.25kg/head/day in suckler-bred bull weanlings prior to weaning and 1.1kg/head/day for females. The heaviest of the bull calves are finished under 16 months and getting as much cheap weight on them prior to being housed after weaning is extremely important.

"I've become more selective in the type of bull I'm finishing under 16 months to keep meal costs down. They need to be well on their way to 500kg at 12 months otherwise you're eroding profits with meal costs chasing your tail. I've also sold a handful of bulls live, with the recent trade being so good," Sean adds.

Good grassland management is a non-negotiable on the farm. Reseeding is a big part of the jigsaw on this Tulla farm, with 10% of the farm reseeded annually. Early turnout isn't always possible depending on the nature of the spring but Sean targets getting lighter cattle out in February if possible.

"The dairy-bred yearlings get priority when it comes to turnout. In general, they do between 0.6-0.7kg/day while housed and over the 1kg/day when turned out. They are light and get the silage ground cleaned off. If spring weather was as pleasant as it was this year it would make life very easy. Stock got out early and you'd know it too as thrive has been great," says Sean.

Sean sees the dairy-calf- to-beef system becoming a big part of his farming enterprise and hopes to install an automatic calf feeder for next year.

The pendulum is slowly changing again as the outlook on suckler-to-beef systems looks very positive on the back of a strong 2024 and bumper start to 2025. It's clear that Sean's strong focus on a number of adaptation and mitigation measures is now reaping rewards; not only reducing the carbon footprint on his farm but also increasing profitability.

Climate Farm Demo farm locations.

Conor O'Reilly, John Greaney and Sean Hayes.

CBV's role in the suckler beef sector

Continued from p11

Commercial Beef Value is still relatively new. Here's how it works and how to differentiate between a good and poor CBV

James Mullane
Teagasc FutureBeef Programme

While suckler farmers have heard of the Commercial Beef Value (CBV), some are still unsure of how it works and how to differentiate a good and poor CBV. Although its impact will be most significant in the trading of dairy beef animals, a CBV figure can also be very beneficial when trading suckler breed stock.

The CBV is made up of breeding traits which are economically important where animals are being traded for non-breeding purposes, i.e. the animals will be finished by the purchaser. Such enterprises want animals with good growth rates and good conformation to generate a high value carcass.

Age of finish is key as these buyers want animals that will finish as young as possible. Feed intake and docility are also important traits. Animals with low feed intake cost less to keep, while those with good docility require less labour and are safer to work with. The carbon cost is now also factored into the CBV.

Figure one gives a breakdown of the traits included in the CBV.

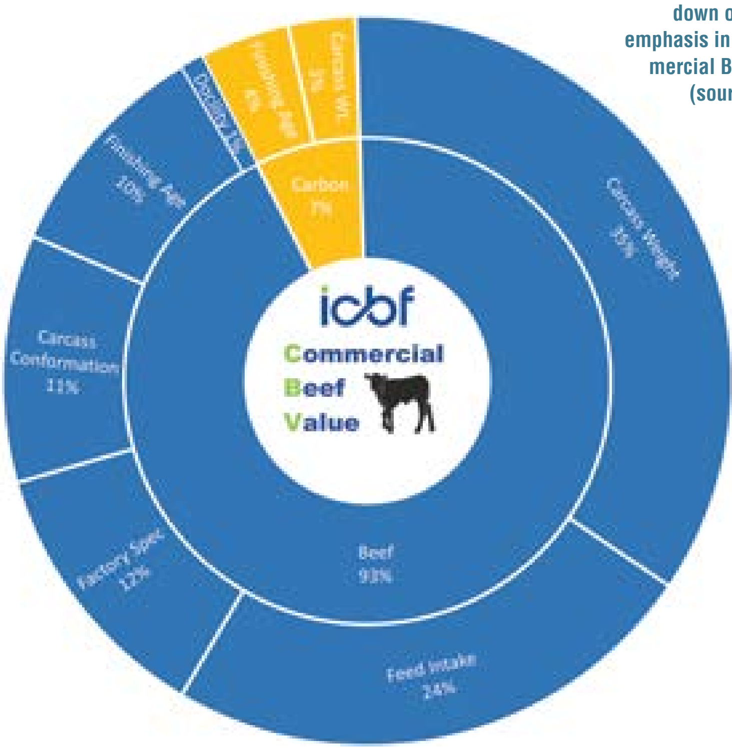


Figure 1: A breakdown of the trait emphasis in the Commercial Beef Value (source ICBF).

CBV Breed Percentiles	★★	★★★	★★★★	★★★★★
Across Breeds	€33	€91	€171	€261
Suckler	€205	€244	€272	€299
Dairy x Beef	€63	€82	€101	€131
Dairy x Dairy	€-23	€-8	€4	€19

Source ICBF March 2025

How can it help in the trading of suckler animals?

The CBV has star ratings similar to the Eurostar index. There are 'across breed' stars, which rank an animal's CBV against the entire population and 'within breed' type stars, which rank an animal's CBV only against animals of the same breed type.

There are three breed types:

- Suckler (beef sire and beef dam)
- Dairy X beef (one dairy parent and one beef parent)
- Dairy X dairy (dairy sire and dairy dam)

How can it help in the trading of suckler animals?

A high proportion of suckler-bred animals are generally sold after weaning. For the most part, this is at seven to eights months of age and upwards. At this age, they have had a chance to mature and express their genetic potential for traits such as growth and conformation. A visual assessment of these animals will give a good indication as to their growth and muscling potential. However, traits such as feed intake and age of finish cannot be easily assessed by simply looking at an animal.

Take the example of a farmer purchasing suckler weanlings in the mart next October/November.

There could be multiple lots passing through the ring where the animals are of a similar age, breed, weight and conformation. In the absence of a genetic value, the farmer will have to make a decision based on a visual assessment alone.

The heaviest animals may leave the highest value carcasses at finish, but they may not be the most profitable. The CBV looks at the overall profitability.

The CBV profile is available to all farmers on the ICBF portal if purchasing privately at home. Most mart boards will display the animal's information if it has been genotyped.

Future Beef Survey CBV survey of under-16-month young bull finishing systems

As part of the Future Beef Programme a number of under-16-month young bull finishing systems was analysed with the aim of identifying the effects of the CBV on age of finish, and carcass traits.

Young bull finishing systems were examined as this system of finishing was uniform across all participants in the programme allowing for a good comparison between cattle of different CBVs.

Of the 23 participating farms in the programme, eight farms are finishing bulls under 16 months of age. The cows on these farms are generally high-replacement-index cows, mainly bred by Limousin, Simmental, Angus, Saler and some Aubrac.

The terminal sires used are predominantly Charolais, Limousin and Simmental.

Within the group, 184 young bulls were finished. Using the beef finishing report on ICBF, the bulls were grouped according to their star rating. The number of bulls in each category are outlined in table two.

From the beef finishing report, the beef carcass data was analysed for each star rating. The bulls were finished at an average of 15.3 months of age, ranging from 15.1 months to 15.6 months.

The carcass weight difference between the star ratings was significant, with the five-star animals having the highest carcass weight of 414kg versus 387kg and 355kg for three-star and one-star animals respectively.

This difference in carcass weight resulted in a sale price difference of €362 and €120 when comparing three-star and one-star animals' sale price with the sale price of five-star animals. This difference is significant and shows the value of producing suckler-bred offspring with a high CBV.

A similar analysis was carried out within the Future Beef participants, focussing on suckler-bred steers and heifers. The results outlined show the differences in carcass traits and values for both steers and heifers across the star ratings.

For the steers, the difference in carcass weights between the five-star and one-star animals was 81kg, which resulted in a difference in sale price of €755, favouring the five-star animals. The difference in finishing age between these star ratings was 75 days, with the one-star animals finishing 75 days earlier.

This may be partly due to the animals achieving an ideal finish at a younger age due to early maturing genetics. If we cost each extra day on farm at €1.65 (11kg dry matter (DM) @15cent per kg DM), the five-star animals consumed an extra €124 worth of feed. Allowing for the extra cost in feed, the five-star steers left an extra margin of €631 (€755-€124) over their one-star counterparts.

Similarly for the heifers, the difference in carcass weights between the five-star and one-star heifers was 79kg in favour of the five-star animals. Again, this difference in carcass weight resulted in a €621 difference in sale price in favour of the five-star animals.

The five-star heifers were finished at 23.7 months of age versus 22.5 months of age; which is a difference of 36 days. Taking the extra feed cost per day into account for the five-star animals – €60 for the extra days on farm (36 days @ €1.65 per day for feed costs) – this results in an increased margin of €561 (€621- €60) for the five-star heifers over their one-star counterparts.

The traits which resulted in the differences in sale price between these animal categories include carcass weight, feed intake, carcass conformation and age of finish.

These traits cannot be easily assessed by simply looking at an animal. Using genomic evaluations and the availability of the CBV on mart boards, farmers can make much more informed purchasing decisions.

Yes, a visual assessment of an animal is still important, but access to genetic value in the form of the CBV will give farmers an extra tool when buying animals.

Table 1: Percentage of bulls in each star rating across the Future Beef Farms

Star Rating	No. of bulls	Star %
5 STAR	46	25%
4 STAR	54	29%
3 STAR	47	26%
2 STAR	24	13%
1 STAR	13	7%
Total	**184**	

Table 2: Carcass values of bulls finished from each of the star ratings.

CBV Beef Finishing profile for 184 bulls slaughtered from 1st Jan 2024 to 15th April 2025 on the Future Beef Farms

Star Rating	CBV €	CBV ★	Days on Farm	Age in Months	Weight	Price/ Kg	Sale Price	Life Time €/day	Difference €
5 STAR	325	5	455	15.1	414	5.52	2288	5.00	
4 STAR	288	4	460	15.1	397	5.52	2194	4.79	-€94
3 STAR	260	3	459	15.4	387	5.60	2168	4.64	-€120
2 STAR	228	2	[illegible]	15.6	[illegible]	5.49	1979	4.21	-€309
1 STAR	191	1	437	15.1	355	5.42	1926	4.21	-€362

Table 3: Carcass values of steers and heifers finished from each of the star ratings.

Steers finished from 01/01/2024 to 28/05/2025									
Star rating	CBV €	CBV ★	Days on Farm	Age in Months	Carcass Weight	Price/Kg	Sale Price	Life Time €/day	Difference
5	317	5	757	24.8	391	6.83	2618	3.42	€0
4	285	4	724	23.8	385	6.70	2585	3.66	-€33
3	262	3	730	24.0	371	6.26	2314	3.28	-€304
2	225	2	726	23.9	358	6.34	2314	3.39	-€304
1	155	1	678	22.3	310	5.99	1863	2.90	-€755
Heifers finished from 01/01/2024 to 28/05/2025									
Star rating	CBV €	CBV ★	Days on Farm	Age in Months	Weight	Price/Kg	Sale Price	Life Time €/day	Difference
5	323	5	677	23.7	354	6.09	2146	3.08	€0
4	284	4	651	22.4	358	6.15	2184	3.28	€38
3	256	3	656	24.2	324	6.16	1989	2.88	-€158
2	227	2	639	22.7	291	5.96	1721	2.62	-€425
1	180	1	629	22.5	275	5.68	1525	2.38	-€621

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CASE STUDY: Wesley Browne, Leagh, Dunraymond, Co Monaghan

Conal Murnaghan and Wesley Browne.

Wesley farms 65.7ha in four blocks made up of 7.3ha planted forestry and 58.39ha grassland in Leagh, Co Monaghan.

He runs a spring-calving suckler herd.

All male progeny are finished as under-16 month bulls, while the suitable high-index females are retained or sold to repeat customers for breeding, with all other heifers finished at 23 to 24 months.

He is passionate about breeding and has been looking at replacement and terminal indexes when selecting stock bulls for several years. There are currently three five-star stock bulls on the farm; Limousin, Simmental, and Angus. The bulls are five stars for replacement traits across breeds and five stars for terminal traits within breed.

From the 1 January 2024 until now, the average finishing age for Wesley's bulls was 15.2 months.

The animals achieved an average carcass weight of 398kg and graded U= with a fat score of three=.

Wesley's bulls were part of the study on CBVs within the Future Beef programme, 53% of the bulls finished were five-stars, with 27%, 12% and 10% achieving four, three and two stars respectively.

"My aim is to maximise the sale price of bulls by breeding high CBV-type animals while also maintaining a high replacement index within the herd," says Wesley.

Of the last four bulls sold for beef on 3 June, the carcass performance was achieved.

The four- and five-star bulls achieved a sale price of €470 more than the two- and three-star bulls finished at a similar age.

Case study: Jim and Audrey Parkinson, Marlhill, New Inn, Cahir, Co Tipperary

Jim and Audrey farm 70ha in two blocks near New Inn, Co Tipperary. Jim runs an 80-cow autumn-calving herd.

Most of the male progeny are sold as weanlings, with the later-born males finished as young bulls. The heifers are finished between 24 and 26 months of age.

The herd consists mainly of Limousin-type cows and there are some first-cross Limousin cows from the dairy herd.

Some of the herd is pedigree, with bulls mainly being sold locally to both dairy and suckler herds.

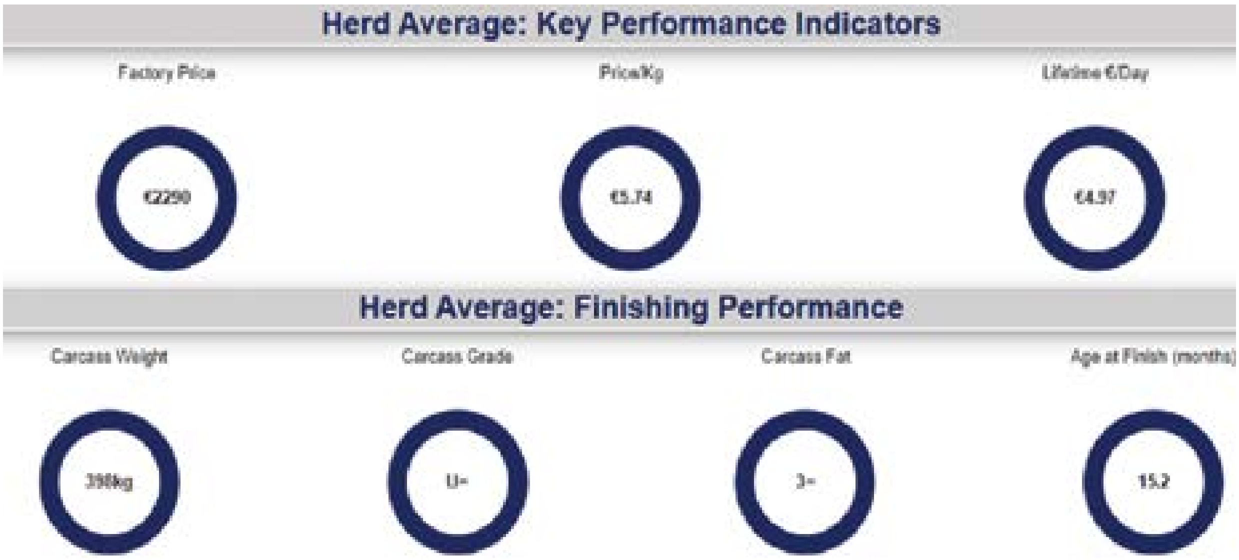
"I place heavy emphasis on easy calving traits. However, I also focus on breeding high CBV progeny," says Jim. "This is important as these calves will command a higher price as weanlings."

Jim also buys in cattle for finishing and will use the animal's CBV if available in order to decide on the purchase price.

Jim Parkinson and Sean Cooney.

Up to 50 cows are synchronised to fixed-time AI and a team of high replacement/terminal Limousin bulls are then run with the herd.

"I use the ICBF CBV prediction tool online to decide which sires to select for breeding. CBV works for me," concludes Jim.



CBV €	CBV *	Age in months	Weight	Grade	Fat	Price/kg	Sale price
363	5	15.7	437	U=	4-	7.8	3409
258	3	15.5	408	U-	3+	7.8	3182
299	42	15.6	436	U+	3+	7.86	3427
228	24	15.6	319	U-	3+	7.74	2469

Age: Eligible | All   Breed: All | Beef | Dairy   Select Result: CBV Prediction

Enter Animals

#	AI Code/Tag
1	372213368120282
2	LM9577
3	LM8929
4	LM5443
5	LM2014
6	LM5887

Figure 4. Predicted CBVs for 2025 born calves

Freeze Brand	Animal Number	Date of Birth	Breed	372213368120282 (LM)	LM9577 (LM)	LM8929 (LM)	LM5443 (LM)	LM2014 (LM)	LM5887 (LM)
1673	[illegible]	09-MAR-14	HO (43.75%), LM (50%), SN (6.25%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆
1579	[illegible]	26-OCT-14	LM (100%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
1603	[illegible]	17-FEB-15	LM (100%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
829	[illegible]	12-MAY-15	HO (18.75%), FR (6.25%), LM (75%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
1653	[illegible]	12-SEP-15	LM (100%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
1446	[illegible]	26-MAR-16	HO (43.75%), FR (6.25%), LM (50%)	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆
1741	[illegible]	04-SEP-16	HO (21.88%), LM (71.88%), SN (6.25%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆
1681	[illegible]	29-JAN-17	LM (100%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
856	[illegible]	23-FEB-17	HO (12.5%), FR (12.5%), LM (50%), AA (25%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
1623	[illegible]	16-AUG-17	LM (100%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
1625	[illegible]	22-AUG-17	HO (21.88%), LM (75%), SN (3.13%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
326	[illegible]	27-APR-18	HO (9.38%), LM (87.5%), SN (3.13%)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

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Impressive DairyBeef 500 walk in Cavan not to be missed

Farming outside Virginia, Charlie Smyth and his father Charles run a thriving dairy-beef operation maximising beef output from grass.

Gordon Peppard
Teagasc DairyBeef 500 specialist

They achieve key target weights and manage inputs to obtain a healthy net margin.

The Smyths have been tweaking their system to make it high-performing and profitable, while implementing environmental and animal health best practice.

As part of the DairyBeef 500 programme, the Smyths – supported by their Teagasc DairyBeef 500 programme advisor Fergal Maguire – have developed a farm plan focusing on calf rearing, animal health, soil fertility, grassland management, animal nutrition and financial performance.

The Smyth's farm acts as a demonstration farm for other farmers looking for ideas on how to improve animal performance in an efficient manner, while remaining financially, socially and environmentally sustainable.

Production system

Charlie and Charles purchase approximately 100 calves each spring from dairy farmers across the country. These consist of male and female calves, with the balance depending on availability at the time.

The heifer calves are reared and ultimately slaughtered at between 21 to 24 months of age from November to March. Male calves are castrated and slaughtered as steers from January to May at 23 to 27 months.

The animals are all from dairy herds and are predominantly Fleckvieh-cross animals, with some Aberdeen Angus, Hereford and Friesians too. There are also smaller numbers of continental-cross animals like Belgian Blue, Limousin and Charolais.

Farm walk event

On Thursday 10 July 2025 at 7pm, the Smyths will open their farm gates to welcome everyone for a DairyBeef 500 farm walk. The event will be of great interest to anyone interested in seeing an exceptionally well-run dairy calf to beef system. Visitors will see first-hand how good planning, attention to detail, and efficient resource use can maximise performance and output on a dairy-beef system.

What to expect

The event will focus on four key areas that are vital to the Smyth's dairy beef production system.

1 Maintaining calf thrive at grass

The transition from a predominately milk based diet to a grass based diet following turnout is key. We will look at the steps taken by Charlie to ensure that this transition to grass runs smoothly.

Key topics include:

- Ensuring calves are well-weaned and eating concentrates before turnout.
- Managing parasite risk, especially from stomach worms and coccidiosis.
- Using sheltered, well-fenced paddocks to reduce stress and support early grazing behaviour.
- Monitoring weight gain and adjusting management if performance dips post-turnout.

2 Grassland management to protect water quality

Environmental sustainability is increasingly important in our beef systems. Charlie Smyth is involved in the European Innovation Partnership (EIP) Agri Project, which supports farmers to adopt low-cost, high-impact environmental practices.

Key actions implemented on the farm include:

- Fencing off watercourses: to prevent direct livestock access.
- Nutrient management planning: using slurry and fertiliser strategically.
- Buffer zones and riparian margins: to filter runoff and protect local

waterways.
- Proper slurry storage and spreading: aligned with weather and soil conditions.
- Correct use of pesticides and sprayers.
- Visitors will see how small changes in practice can deliver real results – both for water quality and farm efficiency.

3 Selecting heifers for finishing over the next 50 -70 days

Lower age at slaughter is a key component in reducing Greenhouse Gas emissions.

"We need to select out heifers that have the potential to reach the correct fat cover and carcass weight in 50 to 70 days from early July," says Charlie. These animals are run and fed as a separate group to achieve an 'in spec' carcass by the end of September/ early October.

Teagasc beef specialists will deliver a practical and interactive demonstration looking at Charlie's heifers on how to select animals that are ready for finishing. And also how to select those that need more time to grow before entering their finishing period.

The demo will explore:
- Live weight and body condition scoring to determine readiness to start their finishing diet.
- Differences in finishing strategies – grass-only, grass + concentrate or house and finish indoors.
- Planning ahead to match market specifications and factory requirements.
- This discussion will help farmers make confident, timely, decisions that align with both animal performance and market demands.

4 Costs and margins of producing a 20-month-old heifer system

A detailed cost breakdown at each stage of production in a 20-month-old heifer finishing system will be outlined. This is the system used so successfully on Charlie's farm. It is a system which, when done well, provides strong cashflow benefits and reduces the need for a second winter housing period.

The effect of beef price at the time of slaughter and the cost of the calf at the time of purchase have a huge bearing on the profitability of this system. Advisors will outline the beef price required at different calf purchase prices to highlight the large range of profitability within the system.

Key cost components include:
- **Calf purchase:** Could be 20-30% of the total cost. Choosing healthy, well-bred calves is essential.
- **Rearing costs:** Milk replacer, concentrate, straw, and veterinary during the first eight to 10 weeks.
- **Grazing and grassland inputs:** Fertiliser, lime, reseeding, fencing, and paddock maintenance.
- **Housing and winter feeding:** Silage, concentrates, slurry etc during the first winter.
- **Animal health and veterinary:** A robust herd health plan minimises disease and associated losses.
- **Finishing feed costs:** concentrate use in the final 50 to 70 days if required to meet slaughter specs.
- **Transport and slaughter levy deductions:** factored into final margin analysis.
- **Labour:** often overlooked but hugely important to ensure that there is a return for the investment and work involved in getting a calf reared to beef. The bottom line figures will show what margin is left for the farmer at different calf prices paid.

Outline target heifer weights

Farmers will be shown how these costs add up and what slaughter weights and prices are needed to return a positive margin.

Well-managed dairy calf-to-beef systems, in which grass is the main driver of performance, have the potential to achieve a solid return.

Why attend this event?

Whether you're already involved in dairy-beef or considering making the move, this event offers:
- Real live examples from a high-performing dairy calf to beef farm
- Practical advice from Teagasc specialists and experienced advisors
- Key tips on animal health, grazing, finishing, and cost control
- Opportunity to meet with other progressive farmers in your area

Charlie Smyth's farm shows what's possible when technical performance, environmental care, and financial planning all come together.

For further information on this event please visit the Teagasc website page for **Charlie Smyth's Farm** or scan the following QR code:

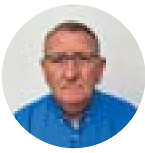
1st February Born Heifer Calf – 40kgs		
1st April	80kgs	8 weeks
1st May	100kgs	12 weeks
15th Sept	200kgs	Ploughing match
1st Feb	300kgs	Pre turnout
1st June	400kgs	Mid Summer
1st August	450kgs	Start of finishing
1st October	510kgs	Slaughter

Target weights over the lifetime of a February-born heifer calf.

Building a bill of quantities

Teagasc Dairy Specialist Team launched a Dairy Bill of Quantities (BoQ) tool in November 2024 to help dairy farmers benchmark their inputs and put more focus on the costs of producing milk

Padraig O'Connor
Teagasc Grange



Have you ever thought about the number of individual items that are bought each year to keep a dairy farm running?

From the big-ticket items like feed and fertilizer, to services paid such as insurance and accountant fees, to the "bits and pieces" picked up in the local merchant's on a Saturday morning – fence posts, milk filter socks and the like.

That's all before bank repayments, labour and depreciation are considered! It adds up to hundreds of individual direct and indirect transactions each year and, when the euros are counted, it also determines a farm's annual cost of production.

Over the last three to four years production costs have jumped significantly on dairy farms from around 27 cents to 35 cents per litre.

In real terms this equates to an extra €42,000 in annual costs for the average milk producer, or €813 per week to be covered by the milk cheque.

From analysis of over 1,000 farm Teagasc Profit Monitors each year; however, we also see a consistent and very wide range in milk production costs among farms. Some of this is structural e.g. loan interest, but much of it also comes from routine inputs like feed and machinery costs.

To get to grips with costs it is vital to look not only at the unit cost/price inflation side, but also to examine the input usage levels on a line-by-line basis.

In response to the significant cost differences between high margin and low margin dairy farms, the Teagasc Dairy Specialist Team launched a Dairy Bill of Quantities (BoQ) tool in November 2024.

This simple tool helps dairy farmers benchmark their inputs and put more focus on the costs of producing milk. Cost categories are broken down into variable and fixed costs under the same headings as the Teagasc Profit Monitor.

The BoQ itemises the quantity of each input used across the year e.g. tonnes of purchased concentrate, number and type of vaccine shots used, hectares of silage made by contractor, milking parlour detergent used, and electricity kwH consumption etc.

Level of inputs for each item are based on Teagasc best-practice protocols. Annual feed budgets are balanced for stocking rate, annual pasture growth and level of milk solids production. For the purpose of this exercise, the following assumptions were made:

1. 120 cow herd with 25 replacement units
2. 60 ha farm – 40 ha owned, and 20 ha leased
3. Overall Stocking Rate of 2.42 LU/ha
4. Planned milk production of 472kg of Milk Solids (MS)/cow delivered
5. 11 t/ha of grass DM utilized

Examples of variable costs

This typical spring calving herd has 120 cows plus 25 replacement units delivering 472kg of (MS). This BoQ itemises each of the category costs into unit type, unit rate, units per cow, cost per unit and €/cow.

If we take a category like Animal Health and Vet for example as outlined in Table 1, this section goes through all the veterinary items needed for the animals in this herd.

There is also a distinction made between vet general and vet vaccines. When the total cost of all items are added together, it amounts to €109 per cow per year.

Table 1: Veterinary items needed for the animals in herd

Category	Line Item	Unit type	Usage units	Units/cow		Totals		€/cow
Total Vet					€	13,085	€	109.0
Vet General	Vet call outs	Visit	6	0.05	€	360	€	3.0
Vet General	Antibiotics	Bottle	10	0.08	€	300	€	2.5
Vet General	Lactating cow tubes	3 Tubes Per Case	90	0.75	€	234	€	2.0
Vet General	Dry cow tubes	Per Tube	400	3.33	€	880	€	7.3
Vet General	Teat sealers	Per Tube	480	4.00	€	682	€	5.7
Vet General	Calcium (Milk Fever)	Bottle (400ml)	10	0.08	€	115	€	1.0
Vet General	Flutter valve & needle set	I unit	1	0.01	€	22	€	0.2
Vet General	Syringes and needles	Multiple	1	0.01	€	20	€	0.2
Vet General	General farm disinfectant	Litres	5	0.04	€	75	€	0.6
Vet General	Milk & Blood Sampling	Per Sample	10	0.08	€	300	€	2.5
Vet General	Hoof Pairing	Per Cow	48	0.40	€	1,200	€	10.0
Vet General	Foot Bath Solution	Litres	374	3.12	€	2,431	€	20.3
Vet General	Faecal Sampling	Pooled Sample	5	0.04	€	145	€	1.2
Vet General	Worm Dose Injection	Litre	0.5	0.00	€	24	€	0.2
Vet General	Worm Dose Oral	Litres	3.5	0.03	€	60	€	0.5
Vet General	Fluke Dose	Litres	2.5	0.02	€	225	€	1.9
Vet General	Poron (Lice)	Litres	10	0.08	€	600	€	5.0
Vet General	Worm dose	Litres	0.5	0.00	€	9	€	0.1
Vet General	Fluke dose Cows	Litres	15	0.13	€	240	€	2.0
Vet General	I box of Electrolytes (48sachets)	Box	1	0.01	€	140	€	1.2
Vet General	Arm length gloves	Box	2	0.02	€	40	€	0.3
Vet General	Iodine	Litres	2	0.02	€	24	€	0.2
Vet General	Calving Disinfectant	Litres	2	0.02	€	20	€	0.2
Vet General	Calving Superlube	Litres	2.5	0.02	€	13	€	0.1
Vet General	Calving Jack Ropes (Pair)	Pair (2 Ropes)	1	0.01	€	8	€	0.1
Vet General	Herd Test	Annual	1	0.01	€	850	€	7.1
Vet Vaccines	Salmonella	Shot	170	1.42	€	1,071	€	8.9
Vet Vaccines	BVD	Shot	170	1.42	€	612	€	5.1
Vet Vaccines	Lepto	Shot	170	1.42	€	408	€	3.4
Vet Vaccines	IBR	Shot	170	1.42	€	408	€	3.4
Vet Vaccines	Rotavirus Vaccine	Shot	120	1.00	€	936	€	7.8
Vet Vaccines	Calves RSV-PI3 intranasal	Shot	25	0.21	€	138	€	1.2
Vet Vaccines	Calves IBR Live injection	Shot	50	0.42	€	120	€	1.0
Vet Vaccines	Calves Clostridial	Shot	50	0.42	€	50	€	0.4
Vet Vaccines	Calves RSV-PI3 Injectable	Shot	50	0.42	€	325	€	2.7

Another category under the variable costs section is purchased concentrate.

This accounts for all concentrate fed to cows and replacement stock. It also includes the cost of dry cow minerals and the cost of two silage samples taken annually for analysis.

The allowance of concentrate per cow is 800kg fresh weight and this figure is calculated based on utilizing 11t DM/ha of grass (growth of 12.9 ton DM/ha at 85% efficiency). The total calculated figure for this category is €332 per cow per year.

Examples of fixed costs

Under the fixed costs section, for example, Machinery Running and Repair. All costs associated with machinery were included here, for instance a tractor service plus a front and rear tractor tyre replaced annually.

The total average cost for machinery running and repair amounted to €59 per cow per year.

Machinery Depreciation is the next example that is outlined under fixed costs.

In order to work out a realistic figure for a farm of this size, a list of machinery that would be typical on a farm of this size and their net values were compiled,

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showing a depreciation value of 10% deducted each year. If any machinery is brought going forward, this will also be added in. The machinery depreciation figure works out at €94 per cow per year for this herd.

How can dairy farmers make use of the BoQ?

It is important to say that the figures generated in the BoQ, Bill of Quantities, are not 'target' levels per se, but are a reference point for individual farmers to start looking at their own input costs. Some years will understandably see higher repair costs for example, but the figures generated by the BoQ give a good approximation based on several years.

The first step in utilising the BoQ tool therefore is that dairy farmers compile their own figures for their farm and input them into the Teagasc Profit Monitor system.

This can be completed by the farmer's advisor or the farmer themselves. A number of different reports can then be generated.

The Consolidated Dairy Report is one such report and this can be used to benchmark and compare your figures with the BoQ figure on a per cow basis.

The BoQ may not be exactly right for your farm but can be used as a guide or an indicator. The comparison can be made on usage units, units per cow and €/cow.

If your figure is higher or lower than the BoQ figure, you can drill down and explore the differences. Is it unit rate or price?

The BoQ may also create a good discussion around category costs between you and your advisor or within a discussion group setting.

For example, under Breeding and Artificial Insemination (AI), the comparison can be made between using all AI as opposed to using AI at the start of the breeding season and then using a bull to mop up. How much straw is used for bedding? How do contractor charges compare?

Table 2: Purchased concentrate

Category	Line Item	Unit type	Usage units	Units/cow		Totals		€/cow
Total Concentrates			103.5	0.86	€	39,810	€	331.8
Dairy Concentra	14% Dairy	Tonnes	96	0.80	€	35,520	€	296.0
Youngstock Con	Replacements	Tonnes	7.5	0.06	€	2,625	€	21.9
Dairy Concentra	Dry Cow Minerals	Tonnes	1	0.01	€	1,500	€	12.5
Dairy Concentra	Standard Silage sample	Samples	2	0.02	€	70	€	0.6
Dairy Concentra	Mineral Silage Sample	Samples	1	0.01	€	95	€	0.8

Future developments

The BoQ tool will be updated annually in the autumn of each year to reflect the prevailing market price per unit of each item. By and large, the usage units should remain static unless there are policy changes e.g. change with the derogation.

This will allow the effect of price changes to be disaggregated from changes to input levels, creating a dairy inputs price index over time.

It is also planned to work on other scenarios, where the farmer is contract rearing replacements for example, or for a fully leased farm with 100% paid labour; the same process will help show how these situations impact on overall costs.

> The first step in utilising the BoQ tool therefore is that dairy farmers compile their own figures for their farm

Table 3: Machinery running and repair costs.

Category	Line Item	Unit type	Usage units	Units/cow		Totals		€/cow
Total Machinery running					**€**	**7,044**	**€**	**58.7**
Machinery Running	Tractor Sercice	Annual	1	0.01	€	700	€	5.8
Machinery Running	Tyre Repair & Call Out	Per call out	2	0.02	€	226	€	1.9
Machinery Running	Rear tractor tyre	Tyre	1	0.01	€	730	€	6.1
Machinery Running	Front tractor tyre	Tyre	1	0.01	€	470	€	3.9
Machinery Running	Car trailer tyre	Tyre	2	0.02	€	210	€	1.8
Machinery Running	Grease cartridges	Per Cartridge	5	0.04	€	29	€	0.2
Machinery Running	Quad service	Annual	1	0.01	€	300	€	2.5
Machinery Running	Petrol for Quad	Litres	480	4.00	€	835	€	7.0
Machinery Running	Disc blades for disc mower	Per disc	12	0.10	€	24	€	0.2
Machinery Running	Vacuum Pump Oil	Litre	10	0.08	€	50	€	0.4
Machinery Running	Tractor Insurance	Annual	1	0.01	€	550	€	4.6
Machinery Running	Fuel	Litres	1200	10.00	€	1,200	€	10.0
Machinery Running	Repairs	Annual	1	0.01	€	500	€	4.2
Machinery Running	Quad Insurance	Annual	1	0.01	€	220	€	1.8
Machinery Running	Machinery Maintenance	Annual	1	0.01	€	1,000	€	8.3

Table 4: Depreciation

Machinery (net of salvage)		Depreciation @ 10%	Depreciation / Cow
Tractor with Loader (100hp)	45000		
Slurry Tanker	14000		
Slurry Agitiator	5500		
Fertilizer Spreader (1 Tonne)	5000		
Disc Mower (8ft)	7000		
Trailers (Cattle Box 12ft x 6ft)	6000		
Trailers (Bale 24ft)	6500		
Trailer (Twin Axle Jeep Trailer, 8ft x 4ft)	3000		
Quad	6000		
Sprayer	3000		
Other Equipment - Bale Handler	1300		
Other Equipment - Shear Grab	2000		
Other Equipment - Post Driver	2000		
Other Equipment - Tractor Loader Fork	1000		
Other Equipment - Tractor Loader Bucket	1000		
Other Equipment - Generator (New 33KVA	5000		
Total	€ 113,300.00	€ 11,330.00	€ 94.42

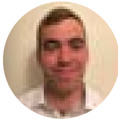
Conclusions

The BoQ is a tool that lists all of the inputs and costs for a typical dairy herd run to best practice protocols. It separates the effect of price and usage rates for each input to allow farmers compare their own situation on a per cow or per litre basis. To make the most of the BoQ, the farmer should have their own figures completed for their farm and then benchmark these figures against the BoQ with the help of their advisor. If there is a large variance, then the farmer and the advisor can do a comparison of the actual inputs the farmer is purchasing against what is required. It should also create a platform for a good discussion in a discussion group setting. For further information contact your local Teagasc advisor.

Grazed grass drives profitability

Input costs have risen dramatically in recent years. Rates of use vary greatly between farms. The result is a wide range in the profitability of dairy businesses. The more profitable producers are better at utilising grass

Patrick Gowing
Joe Patton
Teagasc, Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy, Co Cork



From 2014 when quotas were abolished to 2020, year-to-year variability in farm profitability was mainly determined by the milk price/litre. Costs were more or less static; agri-inflation very low.

This changed abruptly in 2022 driven primarily by the economic shock resulting from the illegal Russian invasion of Ukraine. Costs jumped by more than one-third (34%) to record high levels in a single year. This much-changed cost structure continued through 2023 and into 2024.

While production costs have risen for all farms, the variability in costs and profit between individual dairy farms has also increased significantly. Farmers responded to the new cost level and regulation pressures in different ways.

Let's take a look at the drivers of costs and profit using Teagasc Profit Monitor results from 2023 and 2024.

Trends in dairy costs 2023-2024

The profit trends shown are based on data from a cohort of 780 farmers within the Teagasc Profit Monitor system, who have multiple years' data completed, and had full variable and fixed cost data submitted for 2023 and 2024.

Note that the average costs and margins for this group should not to be taken as representative of national averages, however the objective is to illustrate trends and relationships for the wider dairy farm population.

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Farms were ranked based on net profit per hectare (whole farm) and the top 10% and bottom 10% were grouped together for comparison (i.e. 78 farmers per group).

Figure 1 shows the variation in profit between the top 10% and bottom 10% of farms.

For a standard 40Ha farm the difference in profitability between the top 10% and the bottom 10% is €127,400 or €3,185/Ha. As already mentioned, the degree of profit variability across farms has grown as costs and milk price have increased.

From a business planning perspective, using 'average costs' is no longer sufficient. It is essential for individual farms to complete their own cost benchmarking to establish their performance relative to the average and range.

So, what physical characteristics underpin these differences? The lowest-profit farmers were less heavily stocked on a whole farm basis compared to the top 10% but had similar stocking rates on the milking platform (Table 2).

Annual concentrate feeding was similar across the high, average and low profit categories; however, the top 10% profit farms delivered 90kg MS/cow more than the bottom 10%.

Increasing grass utilized per hectare through more pasture intake per cow drove productivity on the top 10% farms. With no additional feed cost, more grass utilised delivers increased profitability.

This gross output benefit from grass accounted for 68% (more than two-thirds) of the profit difference between the top and bottom 10% (Figure 3). This was higher than in 2023 when gross output accounted for 52% (just over half) of the variation in profit, reflecting higher milk prices received in 2024 compared to 2023. This trend is likely to continue into 2025.

It is important to avoid a potentially misleading conclusion from this data. Namely that 'higher output drove higher profit'.

On the contrary, when we examined the direct relationship between output and profitability, it accounted for only 3-4% of farm-to-farm differences in profit. It's how the higher output is achieved which is key.

The differences between high and low profit farms were delivered entirely from additional pasture consumed. The top 10% herds consumed an additional 576 kg of grazed grass per cow, or 1.57kg DM/cow/day.

This is reflected in both the grass utilized per hectare and the net pasture per cow (Figure 2). It is essential that output of milk solids is driven by maximizing pasture eaten.

Relying on purchased feed supple-

Table 1: Cost changes from 2020 to 2024 on a cent per litre basis

Year	Gross Output	Supplement Feed	Contract	Fert	Total Dep	Land Lease	Total Costs	Net Profit
2020	39.1	5.7	2.5	2.5	2.3	1.3	26.1	13.0
2021	45.3	6.4	2.5	2.7	2.5	1.4	28.2	17.0
2022	65.4	9.0	3.1	5.2	2.8	1.5	36.4	29.0
2023	48.8	9.2	3.5	3.8	3.0	1.8	37.6	11.1
2024	57.8	9.3	3.8	3.0	3.0	2.1	37.9	19.9
Ave 24-20	**51.2**	**7.9**	**3.1**	**3.4**	**2.7**	**1.6**	**33.3**	**18.0**

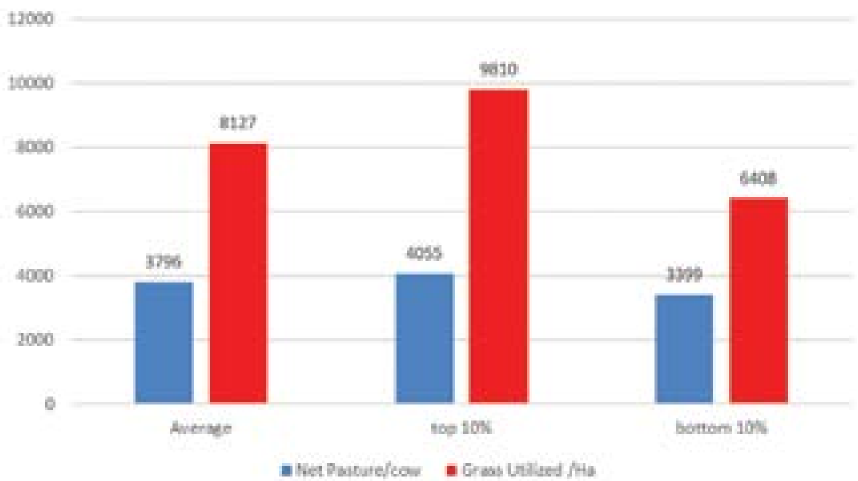
Figure 1. Profit comparison for 2024 based on profit ranking per ha

Table 2: Physical performance of dairy farms ranked by margin per hectare.

	Farm Stocking Rate (MPSR*)	Cows	Milk Solids kg/cow	Milk Solids kg/ha	Conc. fed €/Cow	Conc. fed Kg cow	Forage purchase €/cow
Average	2.14 2.89	154	485	1,040	483	1,274	47
Top 10%	2.43 2.92	152	522	1266	478	1,259	45
Bottom 10%	1.90 2.71	134	431	819	475	1,251	62
Diff	0.53 0.21	18.8	91	447	3.09	8.13	-17.0

Milking platform stocking rate

Figure 2. Net pasture and grass utilized per ha



ment (concentrates) to boost output will adversely change cost structures, limiting or reducing profitability.

Cost control remains a significant issue on dairy farms. While there will always be differences between farms based on their stage of development and structures, the average difference in costs between high and low margin farms in 2024 was €387/cow or €38,700 per 100 cows.

This range in costs must be examined and any significant variances explored. To aid in establishing what the appropriate cost structure may be for a given farm, Teagasc has developed a cost model that quantifies levels of inputs across each cost item on farm. This 'bill of quantities' can be used in conjunction with a farm's own profit monitor reports to identify and address cost issues (see also article by Padraig O'Connor, page 18).

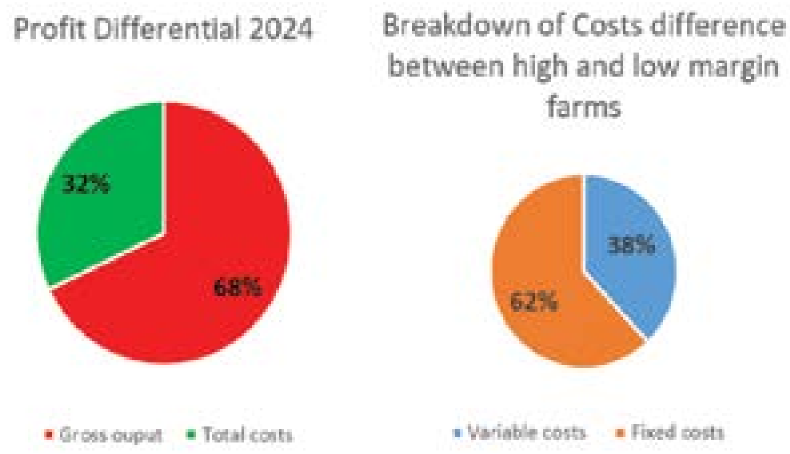
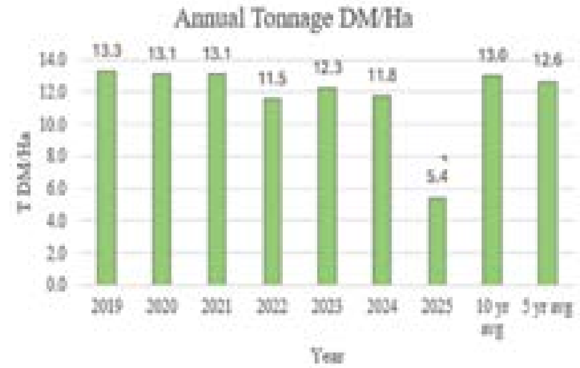


Figure 3. Source of difference High v low margin farms



Conclusions

More pasture utilised, converted to improved levels of milk solids production, and aligned with good cost control, will deliver better financial returns for dairy farmers.

Consistent with many previous studies, the data show that concentrate feeding level, and indeed milk output per cow per se, are relatively poor predictors of farm profit.

For extra milk solids to contribute to higher margins they must come from better pasture intake in the paddock, and not simply additional concentrates. On that basis, the details on how better pasture utilisation and cost control are achieved tactically (day-to-day decisions) and strategically (annual farm system decisions) should be in constant focus to drive cost competitiveness and profitability.

More farms can and should conduct close examination of costs and inputs usage on a line-item basis.

"Relying on purchased feed supplement to boost output will adversely change cost structures

Summary

- The rate of increase in farm input costs has accelerated in recent years, driven by unit price increases and greater input usage on dairy farms
- Feed budget costs have increased significantly while pasture utilisation has been declining (see grass growth chart). Given the strong link between pasture utilisation and farm profit, this trend must be reversed
- Compared to farms with low net margins, higher margin farms utilise more pasture to produce extra milk sales for no increase in supplement fed.
- Higher margin farms have lower variable and fixed costs indicating better cost control across a range of categories. Differences in labour costs were minor.

Grass growth in 2022, 2023 and 2024 was, on average, below the 10 year figure. This contributed to reduced grass utilisation. Grass utilisation is a key driver of profitability. Fortunately, grass growth in 2025 is already ahead of long-term averages.

Don Somers and his son Conor view a bean/pea crop in Wexford. With a renewed interest in plant-based proteins and sustainable farming, could growing peas come back into favour?

Beans unlock pea potential

The renewed interest in plant-based proteins and sustainable farming is making pea crops in tillage rotations more appealing, despite some of the risks involved

Ciaran Collins
Research Officer,
Teagasc Oak Park

Once a common crop on Irish farms, peas have largely disappeared from tillage rotations due to high risks, especially from pre-harvest lodging. But with a renewed interest in plant-based proteins and sustainable farming, researchers at Teagasc are taking a fresh look at the crop. And the results are encouraging – particularly for those willing to try intercropping.

Factors driving renewed interest in peas

- Demand for home-produced native protein sources for the animal feed sector.
- Rising demand for plant-based proteins for the food sector like pea flour and protein isolate.
- Environmental benefits, including improved soil health, biodiversity, and reduced greenhouse gas emissions.
- Support from the EU Farm to Fork strategy, which prioritises local protein production to reduce reliance on imports.

Our climate is well suited to pea production. Irish yields are amongst the highest in Europe, but despite this, only about 650 hectares of peas are grown here each year. This is a fraction of what could be grown.

> With a renewed interest in plant-based proteins and sustainable farming, researchers at Teagasc are taking a fresh look at the crop. And the results are encouraging – particularly for those willing to try intercropping

A key advantage of including peas in an Irish arable rotation is their suitability for lighter soils, whereas faba beans can struggle – particularly in dry years. Additionally, peas benefit from a later sowing date in the spring and an earlier harvest than faba beans.

But for Irish farmers in Ireland to embrace peas again, we must address the biggest challenge which is lodging.

The lodging problem

Peas are very prone to lodging, where plants fall over before harvest. This leads to significant yield loss and difficulties with combining.

Teagasc researchers at Oak Park, led by Dr Sheila Alves, have tackled the problem by intercropping peas with faba beans. It is a simple idea where the stronger stems of faba beans support the lodging-prone pea plants. The beans act as a scaffold for the peas.

Starting with plot trials in Teagasc Oak Park and expanding to six commercial farms across Laois, Tipperary, Cork, and Wicklow in 2024 the trials compared sole pea plots with intercropped plots using a 70:30 pea-to-bean ratio (Carrington peas and Louhi beans).

Key outcomes from the 2024 trials

- Reduced lodging: Faba beans help support the pea canopy, resulting in taller, more upright pea plants.
- Extended harvest window: Intercropping delayed maturity slightly, giving farmers more flexibility at harvest without compromising yield.
- Yield stability: Across trials, there was no significant yield loss from intercropping compared to sole pea crops.
- Faba beans with strong stems and early maturity (eg Louhi) are the most effective partners for peas.
- Results to date suggest that intercropping peas with beans does not eliminate the lodging risk and the crop will eventually lodge but it can delay lodging and reduce risk of crop deterioration.

Recommendations for growers based on 2024 experiments

- Sow in April. Plant 80 seeds/m² using a 70:30 pea-to-bean ratio.
- Select early-maturing faba bean with good stem strength to maximise support. Variety Louhi used in 2024.
- Pre emerge herbicide essential, eg Nirvana 4.0L/ha
- Two fungicides three weeks apart from early flowering, similar to faba beans.
- No specialist machinery required, sow and harvest both crops together for ease of management.

Farmer experience

Don Somers farms in an informal partnership with his uncle James Somers in Munroe, Enniscorthy, Co Wexford. They grow winter and spring cereals and break crop, sharing machinery and labour.

"Cullen Mills, based in Ballymurn, Co. Wexford, who are keen to see peas grown locally, asked me to drill a combination crop of peas and beans to try the concept," says Don.

"Our break crop options on some of our very light soils are limited so having seen the Teagasc research results, I decided to give it a go and drilled 17 acres of a combination crop of peas and beans in 2024.

"The idea is that the bean acts as a scaffold for the pea, reducing the level of lodging, which has always been an issue. It did well because, in addition to a reasonable yield and margin, the crop attracts the Protein Aid Payment and a livestock farmer was keen to buy the pea straw. It was by some distance my most profitable crop per acre in 2024.

"Teagasc report a 1.5t/ha increase in wheat yields after break crops compared to continuous tillage, so that is obviously a huge additional benefit." In 2025 the rotation determined that I followed the pea/bean combination with a crop of winter barley for seed which is looking very well. After a good break crop like the peas/beans I am able to drop N applied by about 20 units an acre.

The combination is really the best break crop for some of the very sandy soils we have down here.

Despite the great financial result Don and his Teagasc advisor John Pettit decided to tweak the varieties used in light of the 2024 experience. "Last year we had the Carrington pea variety and a Finnish bean variety called Louhi," says Don.

"This year we are growing Ingrid peas and Vire beans. We believe the beans will be relatively stronger this year; last year the peas were too dominant.

"The crop, like most crops was late last year. We combine in September. We expect to be cutting in the middle of August this year."

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Herbicide resistance – protect your yields

Testing suspect weeds is the ideal way to help you stay ahead of the issue and protect the effectiveness of programmes into the future

Ciaran Collins
Teagasc Tillage
Specialist

Vijaya Bhaskar
Research Officer
Teagasc Oak Park

Do you have weeds in your crop that didn't die after spraying? If you used the correct herbicide and sprayed in good conditions, but the target weeds are still there, it might be worth testing them for herbicide resistance.

With recent sampling highlighting potential resistance issues, testing suspect weeds could help you to stay ahead of the problem and protect the effectiveness of your herbicide programmes into the future.

The EVOLVE project, funded by the Department of Agriculture, Food and the Marine (DAFM), has launched the Weed Watch 2025 campaign and now is an ideal opportunity to get involved by testing suspect weeds on your farm.

Stark findings

Resistance testing carried out on suspect weed samples has uncovered some stark findings:

- Over 60% of blackgrass and more than 80% of Italian ryegrass tested were resistant to ACCase and/or ALS herbicides.
- The first confirmed case of triple-resistant Italian ryegrass (resistant to glyphosate, ACCase, and ALS herbicides) has been reported.
- 34% of wild oats tested showed resistance to ACCase herbicides.
- Some meadow grasses were confirmed resistant to ALS herbicides.
- Resistance to ALS herbicides was also detected in several broad-leaved weeds including poppy, chickweed, common field-speedwell, and corn marigold.

These findings show that resistance is not only spreading but evolving and that it's not limited to grasses alone.

Above: For smaller weed seeds, for example blackgrass, Italian ryegrass, meadow grass, one to two mugs are needed for testing.
Left: For larger weed seeds, such as sterile brome and wild oats, one to two pint glasses of seeds are required for testing.

Herbicide group	Trade names
ALS inhibitors	Pacifica Plus, Broadway Star, Ally Max, Cameo Max
ACCase inhibitors	Axial Pro, Falcon, Stratos Ultra, Centurion Max

Without proper identification and management, resistant weeds can significantly reduce yields, increase production costs, and limit herbicide options for future seasons. This is especially relevant where blackgrass and Italian ryegrass populations are present, they should be treated as resistance suspects.

What you can do

To stop the spread of resistant weeds, resistance testing is an essential tool. It helps identify which herbicides will still be effective and supports better long-term management through integrated weed control strategies.

> Resistance testing is an essential tool. It helps identify which herbicides will still be effective and supports better long-term management through integrated weed control strategies.

As part of the Weed Watch 2025 campaign, Teagasc are offering free resistance testing for both grass and broad-leaved weed samples. All you need to do is to collect and send in samples of weeds that have survived herbicide treatments or appear suspect. You can then use the test results to guide the best herbicide and cultural control options for your specific situation.

For more information or support, visit Weed Watch.


Martin Bourke and Tommy Delahunt take a close look at the crops on Tommy's farm in Wicklow.

Making strides in an organic tillage journey

Wicklow farmer Tommy Delahunt discusses his progression into organic tillage farming and his key message – rotation, rotation, rotation

Martin Bourke
Teagasc Organic Tillage Specialist

Tommy Delahunt, who farms just outside Wicklow Town, is a relative newcomer to organic tillage but is already making confident strides. In January 2023, he converted 18 hectares of his conventional tillage farm to organic.

So pleased was he with the performance of his crops in that first year, he decided to convert another 14 hectares the following year, bringing his total organic area to 32 hectares (80 acres).

At the heart of Tommy's organic philosophy is one key message: "Rotation, rotation, rotation!"

"Rotation is always important in tillage farming," Tommy says, "but with organic crops, it's absolutely critical. You're managing fertility, weeds, and disease without chemicals, so you need to think ahead."

His first two years under organic management featured spring oats, a pea/barley mix, a pea/bean intercrop, and a multi-species grass sward for fertility building.

This year, he has introduced winter oats and winter barley, and is experimenting with organic maize, testing the limits of what can be achieved in an organic system.

Multispecies grass: fertility, feed and field performance

A key component of Tommy's rotation is the use of multispecies grass swards, which serve multiple functions in an organic tillage system. These swards are typically a mix of grass, clovers, plantain, and chicory.

The swards yield multiple benefits:

- Nitrogen fixation from legumes like white and red clover.
- Deep-rooting species like chicory help break up compacted soils and improve soil structure.
- Improved drought resistance and grazing resilience from diverse root systems.
- Enhanced soil biology and organic

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- matter from a variety of root exudates.
- Natural weed suppression through dense ground cover.

Tommy sowed his multispecies sward in 2023 and grazed it with hoggets. "I was blown away by both the performance of the sheep and the sward itself," he says. "The lambs thrived on it, and the grass just kept coming back."

After ploughing down the sward this spring, the benefits were immediately clear – the spring oats following the sward are some of the best-looking on the farm. Encouraged by this result, Tommy plans to continue incorporating multispecies grass into his tillage rotation in the years ahead.

Intercrops are a key part of Tommy Delahunt's rotation

National Open Day

Tommy's farm is also set to host a major event on 9 July as part of the Teagasc Growing Organics Programme.

This open day will focus heavily on the importance of crop rotations. Farmers attending will be able to see a wide range of organic crops, including winter barley, winter oats, spring oats, maize, and several innovative intercrops.

These include both two-way and three-way cereal-legume and legume-legume mixes. Different pea varieties will be on display, along with comparisons between early-sown and late-sown spring oats, and high vs low seed rate trials of spring oats. It promises to be a valuable opportunity for knowledge exchange and peer learning

From weed worries to weed wisdom

"Before making the switch, weed control and crop sales were my main concerns," says Tommy.

One persistent problem on the farm was wild oats, which had become resistant to all the herbicides available to Tommy. "To be honest, that was part of what pushed me toward organic," he explains. "I thought – what have I got to lose?" The result? A very pleasant surprise.

In his first two years of organic cropping, wild oats have been virtually absent, and overall weed levels have stayed under control. While weeds are still present, Tommy has found that a quick-starting crop with strong vigour often outcompetes them. "The crop just needs to get ahead early," he says. "Species choice plays a big part."

Oats: The organic champion

It's no accident that oats make up over 60% of all organic crops grown in Ireland. Not only is there strong market demand – especially from buyers like Flahavan's, who contract Tommy's oats – but oats also have a natural edge in the field.

Oats have a unique characteristic: they release natural compounds into the soil that suppress the germination and growth of nearby weeds. This built-in weed-fighting trait gives them an advantage in organic systems where synthetic herbicides are off the table.

That said, even with their benefits, oats need to be rotated carefully. Over-relying on them in the same field can lead to a build-up of Oat Mosaic Virus (OMV), a soil-borne virus that can linger for up to five years and affect future oat crops. One key risk is leaving spring oat volunteers growing in the autumn and early spring, which effectively acts like a continuous crop of winter oats – giving the virus a chance to take hold.

Getting a well-established catch crop or cover crop – without oats in the mix – can greatly help reduce the carryover of oat volunteers to the next crop and break this damaging cycle.

Every crop has a home

Another major part of Tommy's success is how he plans for the market before planting. His oats are grown on contract for Flahavan's, and his intercrops are sold to organic livestock farmers for use as protein-rich, homegrown feed. This forward selling means he's not taking chances at harvest – every crop has a home before the seed goes into the ground.

Driving innovation in organic protein crops

Tommy is also one of 13 participant farmers in the Department of Agriculture, Food and Marine-funded Teagasc Growing Organics Programme – a five-year monitor farm initiative aimed at supporting and showcasing best practices in organic farming. A key feature of this programme on Tommy's farm has been the on-farm trialling of protein crops for the organic animal feed market.

In 2024, Tommy achieved a yield of 5.5 tonnes per hectare from his pea/bean intercrop, which was subsequently sold to an organic dairy farmer.

This year, he's introduced a pea variety called 'Ingrid', known for better standability to reduce lodging in his barley/pea and bean/pea mixes. He's also using a very early Finnish variety of bean called 'Vire' to ensure simultaneous ripening of the peas and beans – critical for a clean, efficient harvest.

Beyond feed markets, Tommy's farm also participates in trials for the VALPRO Path project, a Horizon Europe Innovation Action led by Teagasc. The project is designed to create sustainable and competitive plant protein crop systems across Europe, with a special focus on value-added uses such as incorporating protein crops like peas into the human food market – think pastas, breads, and other plant-based alternatives. The project balances profitability with environmental and social responsibility to future-proof the European protein supply chain.

> The organic part of my farm is winning hands down. That's why I'm now planning to expand more of the farm into it. It's also a way of diversifying risk

Tommy began organic tillage farming in 2023, and has expanded his operation since.

Profit over yield: A fresh look at margins

"One of the most striking realisations for me since moving into organic tillage has been the difference in profitability," says Tommy. "While many conventional tillage farmers focus on high yields and clean-looking crops, there are hidden costs behind that glossy image.

"The margins in conventional tillage are razor thin," he says. "You've huge input costs, and then you're hit with depressed grain prices. It's a tough model to make work."

For Tommy, going organic hasn't just been an environmental or philosophical decision – it's been a financial one. He's found that the organic side of his farm is delivering a better return per acre, even if the yields aren't as high.

"You have to be honest with yourself," he says. "Is it really about yield? Or is it about profit? Because it's the profit that keeps the farm going."

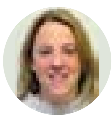
The switch in mindset wasn't easy. Like many conventional growers, Tommy had become accustomed to the pursuit of perfect-looking crops. But once he started measuring success in profit per acre instead of tonnes per acre, the picture became much clearer.

"The organic part of my farm is winning hands down. That's why I'm now planning to expand more of the farm into organic," he says. "It's also a way of diversifying risk – with multiple buyers and lower input costs, the business is more resilient."

For any farmer wrestling with the decision to convert, Tommy has a simple message: take a hard look at your books, not just your crops.

Fatal accidents involving livestock rise 7% nationwide

The recent Teagasc National Farm Survey shows a worrying increase in livestock-related farm fatalities



Martina Harrington
Manager, Teagasc Future Beef Programme

John McNamara
Health and Safety Specialist

Fatal accidents involving livestock account for 21% of all farm fatalities over the last ten years – up from from 14% in the previous ten years. In the most recent period to 2024, 36% of these fatalities were associated with cattle, 31% with bulls and 25% with cows with calves.

Teagasc National Farm Survey (NFS) farm accident data shows a disturbing trend. Over the last 20 years, livestock-related injuries have increased from 27% to 47% of all reported farm accidents. The most recent NFS survey indicated that 62% of accidents on drystock and 37% of accidents on dairy farms involved livestock.

Improved cattle handling with Miriam Parker

Miriam Parker MBE, Livestockwise UK, is a renowned expert in livestock behaviour and low stress, safe handling of cattle. Miriam recently spent a day with Future Beef farmers from around the country to consider livestock safety. The following are a number of observations from those who attended.

"One of the key lessons we learned is the importance of remaining cool, calm, and collected when handling animals. It's essential to consider the animal's point of view – understanding their flight zone, point of balance, and sensory perception is critical."

Cattle see the world differently from humans. According to Miriam and the AHDB booklet *Improving Cattle Handling for Better Returns*, they have panoramic vision (around 330°) but poor depth perception. They are more sensitive to movement and contrast in light and dark, and they struggle with judging distances. Sudden changes in lighting, shadows, and unexpected movements can startle them. Because of their vision, cattle respond best to calm, consistent handling and environments with few visual distractions.

Wearing goggles that simulate bovine vision was particularly eye-opening. It highlighted how limited their forward sight is, reinforcing the need to give them more time to assess their

> One of the key lessons we learned is the importance of remaining cool, calm, and collected when handling animals. It's essential to consider the animal's point of view – understanding their flight zone, point of balance, and sensory perception is critical

surroundings and move confidently through space.

By adapting our handling techniques in this way, we can significantly improve animal welfare, reducing stress and the risk of injury.

Another critical insight relates to handling facility design. Often, facilities are built to fit available space or human convenience, rather than the needs of the animals. However, effective design should prioritise natural cattle movement:

- Use curved chutes and pens instead of corners to encourage forward motion.
- Ensure movement is continuous, with no visual or physical obstacles.
- Avoid layouts where, for example, the crush gate faces a solid wall, which can create hesitation or stress.
- Maintain consistent lighting; avoid transitions from bright to dark areas which can confuse or startle animals.
- Keep the environment bright and open to support calm, predictable behaviour.
- In summary, good handling is not just about technique—it's about empathy, design, and creating an environment that works with the animal's instincts, not against them. When we do this, we not only improve safety and efficiency, but also promote better welfare for the animals in our care.

Breeding for a Quieter Temperament

Genetic studies show that heritability of genetic factors controlling docility is in the 0.2-0.4 range, which allows considerable scope to breed for docility over several generations. Breeding from aggressive animals should be avoided and such animals should be culled, Miriam Parker added.

Cow aggression around calving is a genetic trait that can also be reduced through breeding. Bovine maternal aggression has been viewed as a 'physiological condition', but this is not the case and it has a genetic component.

A case-study involves a prominent livestock farmer who was not happy with the fractious nature of his herd and consequent number of injuries and difficulties in handling cattle. To achieve a 'calm' herd he embarked on a strategy of culling fractious animals, breeding from calm animals along with use of ICBF docility data. This approach along with upgrading handling facilities and using positive behaviours around cattle, led to a much safer workplace.

Overall livestock safety hinges on using a number of approaches including breeding, facilities and human behaviour towards cattle associated with understanding cattle behaviours. Having facilities on out farms is vital for safety.

These approaches fit in well with the 'principles of prevention' underpinning safety management. Breeding and enhanced facilities make the work environment safer by removing danger in a collective way. Applying behavioural approaches to cattle handling, is an individual skill. Watch our Teagasc video on safe cattle handling facilities. or scan the QR code.

Safety with Bulls

In the last 10-years 34% (11) of livestock related deaths were associated with bull attacks. The well known saying "never trust a bull" is absolutely true. Research by the H.S.A. indicates that a bull of any breed can kill. Never "turn your back" on a bull.

At pasture, always have a means of protection available such as a farm vehicle. A bull should have a chain fitted to the nose ring – this is the last means of gaining control of a bull should an attack occur.

Place a warning sign at entrance to fields with a bull, this is particularly important at field adjacent to public roads or rights of way.

Bulls are habitual animals and should never be isolated from other livestock either at pasture or when housed. Give consideration to winter housing of bulls.

A bull pen, should allow the bull to see the herd, and have adequate space. Never enter a pen with a loose bull and have a headgate installed where the bull can be restrained if the pen has to be entered. Cull animals showing aggressive signs.

Cows Attacks.

Cow attacks around calving have accounted for 25% of all animals related fatalities over the last 10-years. Cows attack at close range. A surgeon who has treated cow- attacked farmers has described the injuries as being like being 'struck by a juggernaut'.

It is vital to have a robust physical barrier between yourself and a cow when handling or treating a calf, for example tagging, treating naval or dehorning. Excellent calving gates are available for calving. It is important that the cow can be restrained before entering a pen.

TAMS3 Grants

DAFM TAMS3 Grants are available for farm buildings and facilities and 60% for eligible health and safety items. Speak to your advisor about using grants to make your farm as safe as possible.

Breeding advances in the sheep industry

The Sheep Ireland improvement programme is helping farmers to identify the most profitable flock sires for their farm

Michael Gottstein
Head of Sheep KT,
Teagasc, Macroom,
Co Cork

"An ounce of breeding is worth a tonne of feeding."

Like most old sayings, this one contains wisdom. However, while it is easy to measure a tonne of feeding, it can be quite difficult to measure an ounce of breeding. That's the dilemma that livestock farmers have always grappled with.

Over the next few weeks and months, the country's 35,000 sheep farmers will be making breeding decisions that will impact the performance of their flocks for years.

It is hard to believe that buying a ram can influence a flock for 15 years, but this is certainly the case if replacements are being kept from his offspring.

On the plus side, a farmer who invests in superior genetics in terms of a ram purchase, will harvest the benefit of those superior genetics every time the ram sires a lamb.

In the case of a ram being used to produce flock replacements, the superior or beneficial genes will, in part, be passed on through his daughters. The benefit will be gained every time each one of those replacement ewes lambs down.

So the next challenge is to identify the superior rams. Or, put another way, what defines superior genetics? Ask any breeder and they will claim they have the best animals. Traditionally, superior animals were selected by eye. Show specimens were the best. And it is still the case that the show stoppers are the ones fetching the big prices.

However, most of the 35,000 farmers in Ireland are not showing their sheep – they don't have the opportunity or the interest in selling showstoppers. They sell their lambs to the factory, butcher or in the mart. For them, profit is measured by the amount of money that is in the bank account after expenses have been deducted.

This is where Sheep Ireland comes in. Sheep Ireland has been tasked with running a sheep breed improvement programme. Sheep Ireland measures the performance of sheep in terms of the estimated additional profit that rams are likely to bring beyond an average sheep in that breed.

The programme is called LambPlus. In this programme, lambs from pedigree recorded flocks are evaluated based on their own performance and the performance of their relations and ancestors. The performance data is fed into a sophisticated computer programme, which evaluates the animals based on a number of desirable traits.

Animals that demonstrate superior performance when compared to sheep

in other flocks are given higher rankings through a star rating system and a financial rating (euro value).

In short, the star rating system allows sheep to be compared within a breed. So, if for example a farmer has decided that they wish to purchase a ram of a particular breed that will produce fast-growing lambs, the star system should be used. This is because rams of the same breed are being compared.

However, if the farmer is unsure of the breed and is, for example, simply looking for a ram to breed the most profitable replacement ewes, then the euro value of the replacement index should be used.

Access to performance-recorded sheep helps sheep farmers to identify the most profitable flock sires. The difference between selecting rams by eye versus using a visual assessment in addition to performance records is as follows.

1. Visual assessment

It is important that the ram is a good specimen and is correct in terms of feet, mouth and reproductive organs. It is, however, important to remember that the biggest ram may not be the best. The ram's physical appearance is often a reflection of the breeders ability to turn out sheep. An example of "feeding as opposed to breeding"

2. Traits that drive profit on commercial farms

- **a.** Number of live lambs (lamb survival and lambing difficulty are key).
- **b.** Growth rate (days to slaughter and daughter's milk).
- **c.** Mature weight. Big, heavy ewes are great to have when you are culling them. But they eat a lot more grass and are much more costly to keep than lighter ewes.

Getting information on performance recorded rams has never been easier. Approximately 1,600 ram breeders are recording information with Sheep Ireland. To access this information, simply go to www.sheep.ie and use the ram search functions. You will be able to search for rams by breed, index, sub index, county or by individual tag number or pedigree identifier.

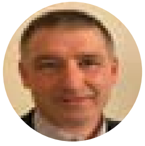
> "Sheep Ireland measures the performance of sheep in terms of the estimated additional profit that rams are likely to bring beyond an average sheep in that breed … In this programme, lambs from pedigree recorded flocks are evaluated based on their own performance and the performance of their relations and ancestors.

Today'sfarm

Twelve steps to reduce Greenhouse Gas Emissions

Strategies to reduce emissions can also enhance efficiency and animal welfare

Sean Keane,
Equine Specialist,
Teagasc



1 Soil test and prepare a fertiliser plan
Soil sampling is the critical first step in effective pasture management. It provides detailed information about the soil's nutrient levels, such as lime, phosphorous (P) and potassium (K) as well as pH balance and organic matter content.

This data helps identify nutrient deficiencies or excesses that can affect crop health and productivity.

Soil test results are the basis for your customised fertiliser plan. They guide you in applying the right nutrients in the right amounts and at the right time. This targeted approach enhances both quality and crop yield as well as reducing unnecessary input costs. It prevents over-fertilisation and nutrient imbalances, while minimising environmental risks, such as soil degradation and water contamination.

Soil samples should be taken from the top 10cm of soil, following a W pattern route, avoiding areas like gateways or latrines. Collect at least 20 cores per 2ha to 4ha. Don't sample a field within three to six months of a phosphorous (P) or potassium (K) application, or within two years of the last lime application.

2 Apply lime if needed
For optimal grass production, aim for a pH of 6.3 to 6.5 on mineral soils and 5.5 to 5.8 on peaty soils. This is crucial for nutrient availability (N, P, & K) and will enhance grass productivity each year. Lime application guidelines include:

- The maximum single application is 7.5t/ha, with the remaining lime applied two years later.
- Avoid over-liming soils, as this can reduce nutrient availability, particularly phosphorous (P).
- Lime can be applied at any time of the year, but it's most effective when applied to low grass covers (eg after grazing or cutting, or to prevent residue build-up).
- Maintaining soil pH helps release nitrogen (up to 70kgN/ha) from organic matter in the spring, which supports early season growth.
- For soils with high molybdenum (Mo) levels, maintain a pH below 6.2 to reduce problems with copper deficiency. Alternatively, follow lime recommendations and supplement animals with copper. High molybdenum levels can interfere with calcium, phosphorous, and copper utilisation – all essential for healthy development.
- For heavier and organic soils, apply lower rates (< 5t/ha), more regularly to avoid 'softening' the soil and to reduce the risk of poaching

Some farmers may opt for low-input permanent pasture, with restricted use of fertilisers, lime, and pesticides. While production will be greatly reduced, the result will be a more diverse sward, which benefits both flora and fauna.

3 Build and maintain good soil fertility
The Nitrates Action Plan regulations (March 2022) specify that the "phosphorous (P) index for soil shall be deemed to be index four unless a

soil test indicates a different P index is appropriate in relation to that soil".

This means that no phosphorous (P) chemical fertiliser can be applied without prior soil testing, with tests no more than four years apart.

For productive ryegrass swards, the goal is to achieve P and K index of three. Maximising grass production on haylage and hay areas is important for both yield and quality.

However, for grazing areas used by equines, this may not be necessary due to lower grass demand. Maintaining a P&K index of two may be sufficient for more extensively grazed farms and lower stocking densities of equines, depending on grass production requirements.

Apply fertiliser when soil and weather conditions are appropriate. This means when soils are at or above 5°C, the conditions allow machinery to work without damaging the soil structure, and there is a forecast of 48 hours of dry weather after application.

4 Make better use of farmyard manure (FYM)

Horse owners must decide whether to retain or export farmyard manure (FYM), a decision that should be based on several key factors:

- **Composting system:** The effectiveness and duration of the composting process should be evaluated. Proper composting reduces pathogens, parasites and weed seeds, making FYM safer for land application.
- **Anthelmintic resistance**: If there is evidence of anthelmintic (wormer) resistance on the farm, all FYM should be exported off-site to prevent further contamination and spread of resistant parasites. It is also good practice to test manure for parasites. Only spread if it is clear.
- **Land availability and use:** Land should be rested after FYM application to ensure the breakdown of manure and to get the growth benefits.

5 Better grassland management.

Mixing cattle or sheep with horses can help maintain a healthy and evenly grazed sward, reducing overgrazing in specific areas, and helping with parasite control. Cattle and sheep break the life cycle of the worms and are vital in the battle against parasites.

Sheep are great at cleaning up the grass that horses leave behind and in winter don't poach the land as much. Cattle are great if grass is too long as they will eat up all the toppings.

6 Improve animal health

The long-term benefits of proactive health management for equines – financially and environmentally – are immense. Reducing the need for antibiotics, lowering veterinary expenses, and minimizing feed waste not only make for a more efficient system but also support a more sustainable and ethical approach to equine care.

Prioritising disease prevention through vaccination, monitoring, and biosecurity practices will lead to better overall animal welfare, higher performance, and lower environmental impact.

7 Aim to breed sound horses

Incorporating genetic testing into breeding decisions is a key step in advancing responsible, effective, and sustainable breeding practices. It helps reduce the burden of veterinary interventions, minimises the risk of genetic diseases, and contributes to the overall welfare of the animals.

8 Improve breeding husbandry

Focus on reducing the number of matings per cycle while enhancing reproductive fertility indicators offers numerous benefits in terms of both sustainability and economic viability. By improving the reproductive efficiency of mares, equine enterprises can reduce resource use, lower costs, and increase productivity.

9 Maximise and maintain farm hedgerows

Hedgerows play an important role in sequestering carbon by storing it in woody growth, roots, leaf litter, and soil organic matter.

While newly planted hedgerows offer the greatest potential for carbon sequestration, allowing hedgerows to grow one metre outward and upward can also increase carbon capture by one to two tonnes per hectare per year.

Native trees and shrubs are especially valuable for heritage and biodiversity. In addition to carbon storage, hedgerows provide habitats for pollinators, plants, and wildlife, help prevent soil erosion, intercept water flows and offer shelter and stock-proofing.

10 Protect water quality

Protecting water sources (such as drains, watercourses, streams, lakes, wells, and abstraction points) from nutrient, sediment, and pesticide runoff is a key aspect of the nitrates regulations.

When applying fertilisers, cultivating, or spraying fields, it is important to consider buffer zones to reduce nutrient loss, sediment, and pesticide runoff, and to disrupt the flow of surface runoff.

A riparian buffer zone is an area adjacent to a water body where no chemical and organic fertiliser applications, cultivation and spraying can be carried out. Zones vary in width tailored to the specific landscape and water bodies they protect.

Runoff is most likely when soils are waterlogged, with excess rainfall causing fertilisers, chemicals, and sediment to be carried over the surface. In fields with poorer drainage, widening buffer zones enhances water protection.

Natural vegetation or native wooded or scrubby buffer zones help absorb nutrients, trap sediment, and improve water infiltration, while also supporting biodiversity, carbon sequestration, and riverbank stability. Your local ASSAP advisor can provide free guidance on riparian buffers.

11 Allocate field margins to nature

Field margins are crucial in supporting biodiversity and maintaining healthy ecosystems. They are strips of naturally growing vegetation along the edges of fields, adjacent to linear features like hedgerows. Here's a brief summary of key points:

- **Protection:** Fencing off field margins from livestock helps maintain their ecological integrity.
- **Mowing:** Cutting field margins in autumn, after flowering and once every three years helps prevent the vegetation from becoming overgrown and turning into scrub.
- **Spraying and fertilising**: Ensure a minimum distance of 1.5 meters between the crop and the field margin when applying chemicals. Avoid blanket spraying and refrain from using chemical fertilisers or manure within the margins.
- **Natural regeneration:** Allow natural plant growth and regeneration to enhance local biodiversity, without the need for sowing seed mixes.

This approach balances agricultural productivity with environmental conservation, creating habitats for wildlife and maintaining ecological health.

12 Reduce fossil fuel reliance

Integrating renewable energy sources, such as wind and solar, can diversify income streams, support sustainable energy production and offer long-term benefits.

However, it is crucial to conduct careful planning, understand regulations – including permits, grid connection requirements, environmental impact assessments, and planning permission – and perform comprehensive financial evaluations before initiating renewable energy projects.

By carefully considering these factors, equine owners can make informed decisions about incorporating renewable energy into their enterprises, leading to both environmental benefits and economic resilience.

Hedgeschools reborn: the Forest School

If you go down to the woods today...you might be greeted by the Forest School. An initiative by forestry enthusiast Greta Ryan – it seeks to educate young people about nature and how plants interact with each other

Michael Somers
Teagasc Forestry Development Officer

Greta sharing her plant knowledge with youngsters in the Forest School.

Francie McPeake from Belfast wrote 'Wild Mountain Thyme' in 1947. To many, it's a classic Irish song that has been sung by generations inspired by the Clancy Brothers from Tipperary.

Indeed, we all walk the fields and forests of the countryside, but have we ever paid real attention to the abundance of plants that are all around us, especially in the late summer and early autumn? These teem with animals, and insects who live, and feed and breed and thrive. We know this as 'biodiversity'.

Plants can cure all kinds of ailments, but plants can also kill under a different set of circumstances; beef wellington anyone? Several herbs commonly found in Irish forests include hawthorn, comfrey, nettle, wild garlic, burdock, meadowsweet, and yarrow. Some of these herbs, such as hawthorn and others mentioned, are also considered sacred in Celtic traditions.

They have been used for centuries. Irish award-winning playwright Máebh de Brún demonstrated this in her recent play "Dead Man's Bells," where the tragedy centred on the understanding of the power of plants. Knowing and understanding plants is something that all farmers should have at least a basic understanding of. And while the Clancy Brothers were inspired by the landscape around Carrick on Suir, a young woman has been equally inspired by the landscape of the Slieve Felim mountains in another part of Tipperary.

Greta Ryan has combined her interest in forests and her local landscape with her knowledge of herbs, plants, and forest biodiversity to establish her Forest School. She has launched a business training program to educate others on using forest plants and herbs. Having qualified as a primary school teacher in 2017 Greta admits that teaching in the classroom did not fulfil her love of active learning within nature.

"I always had an interest in walking. When walking, I looked at the plants in the hedgerow and became interested in what each plant was," says Greta. This love of identifying plants was brought to another level when she rambled through the hills and native woodlands on her uncle's farm.

"I would see tall trees, mosses, and lichens grow—the leaves at the top and lots of plants and flowers. I learned about them, their names, and their part in folklore and culture.

When the pandemic hit, Greta, like many others, revaluated her career. While she acknowledges the value of teaching, she longed for something more. In 2020, she turned her interest in forest plants and herbs into a profession, enrolling in an herbalist degree program. By 2024, she had qualified as a herbalist and had set up her forest school, sharing her knowledge with the next generation, Forest schools, in their essence, are about learning about how plants interact with each other. And how we can build and share our knowledge of wood as a material that creates our houses, cooks our food, and produces the air we breathe.

"The forest school is the start," Greta said when asked about the driving force of her interest in nature. Greta is also an accomplished accordion player. "It's a wind instrument. The reeds come from wood. Someone somewhere grew the tree, and it's now used to make music.

"As a teacher, I've examined various education systems and types of learning. Do we allow free thought, or do we allow students choices within our system? How do we pass on essential skills, or are we overwhelming students with the overuse of textbooks? I allow my students to engage with nature and learn through thorough observation and questioning. This, I believe, shows them that they, too, are part of this web or ecosystem of life.

"I intend to develop foraging workshops for adults shortly and allow participants to cook and prepare what they have collected. Our woodlands are full of many different food types, including game, leaves, seeds and nuts, fruits, tubers and roots, sap, gum, and fungi, to name but a few."

Greta has begun this venture, which is still in its early stages. A solid foundation is half the battle. For people to understand our environment, it's necessary to show them that woodland provides many products and uses. She draws upon her knowledge of her Tipperary heritage and the surrounding hills' plants. For the most part, this is the most crucial part. We all come from somewhere. We are all going somewhere. This is what grows every one of us.

Several herbs commonly found in Irish forests include hawthorn, comfrey, nettle, wild garlic, burdock, meadowsweet and yarrow.

Native trees and medicinal properties

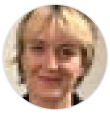
- Whitethorn manages heart conditions, including high blood pressure, angina, and heart failure.
- Blackthorn, especially their berries (sloes) and flowers, have a long history of use in traditional medicine for various ailments. Sloes have been used to make gin, wine, and jelly. However, the berries are also used to treat gastrointestinal issues and serve as a source of antioxidants, vitamins, and minerals. Additionally, the flowers and leaves have been used for their astringent and anti-inflammatory properties.
- Alder is used for its anti-inflammatory, astringent, and antiseptic properties. The bark and leaves have been used to treat various conditions, including sore throats, fever, and skin ailments.
- Scots pine needles are rich in vitamin C and have been used to prevent and treat scurvy. The needles, bark, and resin contain essential oils with antiseptic and anti-inflammatory properties. These oils can treat respiratory conditions such as colds, bronchitis, and sinusitis. Inhaling steam infused with pine oil can help clear nasal passages and relieve congestion.
- Rowan berries have a long history of medicinal use. They are rich in vitamin C and antioxidants, which can help boost the immune system and promote overall health. Traditionally, rowan berries have been used to treat digestive issues, such as diarrhoea and indigestion. Additionally, various parts of the rowan tree, including the bark and leaves, have been utilized in folk medicine for their astringent and anti-inflammatory properties.
- Oak bark has been utilized in traditional medicine for its astringent and antiseptic properties. It is applied externally to treat skin conditions such as eczema, cuts, and insect bites. Additionally, oak leaves and acorns have been used in folk remedies for various ailments.
- Birch bark contains betulin and betulinic acid, which are known for their anti-inflammatory and analgesic properties. The inner bark has been used in teas and poultices to treat arthritis, rheumatism, and skin disorders. Birch sap is harvested in many parts of the world, including Ireland. It's used for its detoxifying and diuretic effects.

Just like most of our polinating insects many bee species are under threat from factors including pesticides and habitat loss.

Why solitary bees are perfect pollinators

Ireland is home to 100 bee species, including one honeybee species, 20 bumblebee species and 80 solitary bee species. These insects are important pollinators for crops and wild plants alike, due to their ‘terrible’ pollen-collecting skills

Sarah Simpson
Technician at the Teagasc College at the National Botanic Gardens



Honeybee and bumblebees collect pollen very efficiently, carrying it neatly on their hind legs in pollen ‘pockets’. Solitary bees by contrast carry the pollen on the hairs on the underside of their bodies. This messier technique means lots of pollen falls off when the bee lands on the next flower, so pollination is more likely to be successfull.

You could easily mistake many of the solitary bees for flies or even wasps. They are often much smaller than the unmistakable bumblebee and their other features, like their colour, shape and hairiness vary enormously. Some are hairy and black and yellow as you may expect, but others are entirely black, orange or even purple like the ‘Violet Carpenter Bee’.

Habitat

As the name suggests, solitary bees live alone, rather than forming colonies as with the honeybee or bumblebee. The nests of the solitary bees contain cells, where the female will lay an egg, with a food parcel of nectar and pollen for the larvae to eat once it has hatched.

The majority are ground nesting, digging narrow burrows into banks of soil, clay, peat or sand. The bees need to warm up in the spring before they can emerge so they will generally use south or east facing surfaces. The other group are cavity nesters. They use holes in dead wood, hollow stems or the soft mortar of old walls. One solitary bee species even occupies empty snail shells.

Threats

Just like most of our pollinating insects, many species are under threat from factors including pesticide use and habitat loss. Even the repointing of old houses has led to a reduction in bee populations. They utilise the cavities in soft lime-mortar jointing, which is often replaced with much harder, cement based products.

Supporting solitary bees on the farm

Creating habitat for solitary bees on the farm is easy. The ground nesting bees look for bare banks of dry soil. To provide this habitat, find an east or south-facing slope which won’t be disturbed, possibly under a field hedge. Remove any vegetation by scraping the soil surface with a spade.

The bees will need a nectar and pollen source nearby so there must be flowers as close as possible and the area mustn’t be sprayed.

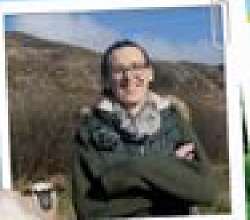
Nest sites for cavity nesting bees are also easily made. Take a piece of wood, maybe an untreated post or a tree stump, and drill holes into the end grain using a drill bit. The diameter should be 4-10mm and the depth of the holes should ideally be ten times the diameter, but should not go all the way through the wood. Hang it at least 1m above ground, facing the sun.

For more information see the National Biodiversity Data Centre’s guide named ‘How to create a solitary bee nest on your farm’ or visit *https://biodiversityireland.ie/.*

GROWING ORGANICS

Organic Farm Walks

An excellent opportunity for anyone considering entering organic production to see first-hand the differences in operating an organic system. Teagasc Advisors, DAFM representatives, the Organic Certification Bodies and of course the farmers themselves are all available on the day to answer questions and give guidance.



Sarah Turner Sheep & Cattle

Wednesday, 25 June

Sarah Turner, Castlecove, Co. Kerry **V93 X7K5**

2pm

Wednesday, 9 July

11am

Tommy Delahunt, Ballinaclogh, Co. Wicklow **A67 T660**

Tommy Delahunt, Tillage

Emmett Dunne Vegetables

Wednesday, 23 July

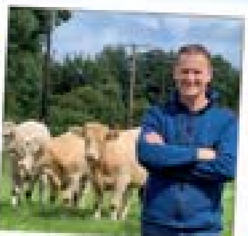
Emmet Dunne, Durrow, Co. Laois

2pm

2pm

Tuesday, 23 Sept

John O'Hanlon, Ballymahon, Co. Longford **N39 K0Y8**



John O'Hanlon Cattle