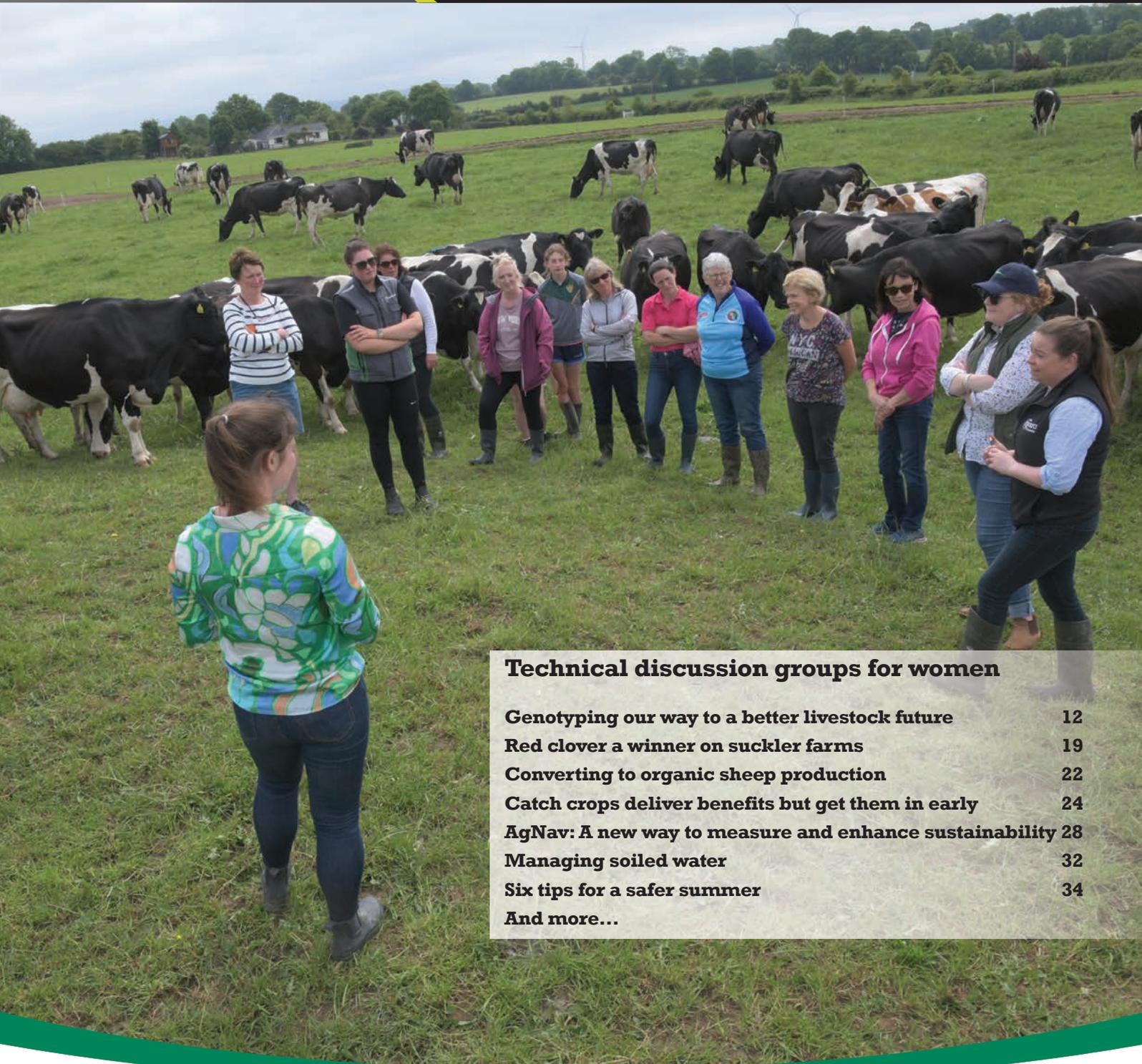




Today's Farm

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



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COMMENT



Mark Moore
Editor,
Today's Farm

A good place to start

In this day and age, anything to do with gender is a minefield. So we hope we will not offend anyone by drawing attention to the existence of women's farm discussion groups.

What attracts women to these groups (there are many women members in mainstream discussion groups too) seems to be the opportunity to begin gaining knowledge and insights without having to jump in at the deep end with a group of highly experienced and technically proficient male farmers.

The ultimate goal must be more conventional groups with a mix of male and female members. Greater diversity will benefit everyone.

Áit mhaith le tosú

Ceist achrannach inniu is ea ceist na hinscne. Mar sin tá súil againn gan olc a chur ar aon duine agus muid ag tarraingt aird ar na grúpaí plé feirme atá ann do mhná. Mar a bhíonn i gceist le gach grúpa, is trí chomhaontú frithpháirteach a ghlactar ballraíocht. Is éard a mheallann mná i dtreo na ngrúpaí seo (agus tá mórán ban ar baill iad sna príomhghrúpaí plé) ná an deis tosú ar shaineolas agus léargais a fháil gan léim isteach sa bhearna bhaoil i ngrúpa de dhaoine ar feirmeoirí iad ar feadh a saoil.



Genotyping our way to a more sustainable future

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

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Cover: The Limerick Ladies Discussion Group with Teagasc facilitator Deirbhile Browne. \ Mark Moore

Teagasc Signpost Advisory Programme

George Ramsbottom
Teagasc Oak Park

The Teagasc Signpost Advisory Programme has been established to help you to develop and implement a tailored Signpost Climate Action Plan for your farm. The programme is free of charge and available to all farmers, whether Teagasc clients or not.

We have recruited 21 additional advisors to lead the delivery of the programme.

They will offer a range of advisory activities, including:

- Signpost workshops focused on actions to reduce your carbon footprint.
- Support in interpreting your farm's greenhouse gas emissions and carbon footprint.
- One-to-one climate action advice from a Teagasc advisor.
- A farm specific action plan.



The Signpost Advisory Programme was launched by Teagasc in the Wicklow/Carlow/Wexford Advisory Region, on 22 June, at the Orchard Centre in Tinahely, Co Wicklow. From left: Eoin Woulfe, Signpost advisor, George Ramsbottom, Signpost Advisory Programme manager, Teagasc; Councillor Andrea Dalton, Carlow Co Council; Ger Shortle, Teagasc regional manager, Wicklow/Carlow/Wexford; Professor Frank O'Mara, Teagasc director; John Pringle, Signpost beef farmer; Colm Doran, Signpost advisor, Teagasc; Shay Ryan, Signpost dairy farmer; and Kay O'Connell, Teagasc advisor.

Four steps to improving your farm's sustainability performance

Teagasc recommends a range of "good farming practices" that will enable you to reduce gaseous emissions, protect and improve water quality, restore and enhance biodiversity, while enhancing farm profitability.

It is important that each individual understands their farm's sustainability metrics (or numbers), what contributes to those numbers, and the opportunities to improve them over time.

1. Know your farm's sustainability numbers

The starting point for anyone on the journey to becoming more sustainable is to establish your farm's numbers or current performance.

Over the coming years, as climate and the environment comes evermore to the forefront, you will undoubtedly become familiar with a range of new numbers including greenhouse gas emissions, ammonia emissions, nutrient balance and nutrient use efficiency.

These numbers will be available to you through the new AgNav programme.

2. Identify opportunities to improve your farm's sustainability numbers

There are many opportunities to reduce greenhouse gas emissions, capture carbon and reduce nutrient losses on every farm. The potential depends on the type of farming and your current practices.

Because the solution for each farm will be different, our advisors are on hand to help you to implement technologies and practices that can lead to improved sustainability. These include:

- Use of protected urea.
- Application of lime to correct soil pH.
- Correction of soil P and K deficiencies.
- Use of LESS slurry equipment.
- Timing of slurry application.
- Reduced fertiliser N application rates.
- Better grassland management/ use of PastureBase.
- Incorporation of clover.
- Provision of adequate slurry storage
- Improved herd health.
- Breeding better/ more efficient animals (EBI/DBI).
- Earlier age at slaughter.
- Optimum replacement rate.

3. Implement your chosen actions

Teagasc recommends that you identify, and then implement the priority actions on your farm.

The initial focus should be on those actions which are most suited to your farm and which can have the greatest impact.

For intensive grassland farms, switching to protected urea as your source of nitrogen fertiliser can have the greatest impact on reducing greenhouse gas emissions.

4. Keep records, monitor and review

Recordkeeping is essential to inform future decision-making, and to allow for the calculation of farm sustainability metrics over time.

How to get involved?

You can sign up to avail of our services at www.teagasc.ie/signpostsignup or by talking to your local Teagasc Advisor. See also the article by Jonathan Herron about AgNav on pages 28-29.

ADVERTORIAL

CECRA visitors

A group of 20 young advisors recently travelled to Teagasc Oak Park, Carlow, as part of the European Forum for Agricultural and Rural Advisory Services (EUFRAS) Training and Mentorship Programme.

The group consisted of 20 advisors from Slovenia, Austria, Ukraine, Latvia, North Macedonia and Ireland.

Also pictured are Teagasc staff George Ramsbottom, Rachel Clancy, Michelle Lavelle and Glindys Virginia Luciano from Young Professionals for Agricultural Rural Development (YPARD).

This training and mentorship programme is the first in partnership with EUFRAS and collaborating partners Chamber of Agriculture and Forestry (CAFS) in Slovenia, and (YPARD).

The goal of this programme is not only to up-skill 20 young advisors from across Europe, but to ensure a support system through the establishment of a European-wide network of young advisory experts.

The benefits of the programme include the opportunity to practise hard and soft skills that equip advisors with the tools to have an effective and rewarding career in extension and advisory services. Additionally, participants will have the chance to complete the

Certificate for European Consultants in Rural Areas (CECRA).

The participants have built a strong network between colleagues from the various countries, and they have learned first-hand that the challenges faced in agriculture are not unique to their individual countries, but are faced throughout Europe.

A programme such as EUFRAS, helps participants to understand these challenges and to develop the skills to find solutions.

During their time in Teagasc Oak Park, the participants completed two CECRA modules: Module 7 | Shaping Advisory Processes and Module 9 | Facilitation and Discussion Group Management. The group visited two farms and carried out a technical farm visit.

The EUFRAS programme is a great opportunity for young advisors to develop their professional network and learn new skills. Teagasc staff in Ireland are also building their 'soft skills' by participating in CECRA. To earn the CECRA certificate Irish advisors, Teagasc or independent, will complete learning modules and also make a short visit to another European advisory organisation.



Young EUFRAS advisors.



Weighing up stocks

Maeve Regan,
Head of Ruminant Nutrition, Agritech

It's vitally important that the next generation of milking cows don't fall between two stools in the quieter part of the year. Now that calving is a distant memory, and the breeding season behind us, the focus should be on the class of 2025 to ensure replacement heifer target weights are achieved over the next number of months.

Hitting target weights at certain milestones is crucial to ensure replacement heifers are on course to achieve the main goal of being 60% of their mature weight when bred at 15 months. Ideally at this point, 2023 born calves will have adjusted to a grass-based diet without set-backs and the transition period has gone smoothly.

For many the decision will have been made to remove supplementary concentrates from the diet and allow calves to maximise intakes of grass. As we move to the latter end of the grazing season, it will be important to assess weight gain from grass and reassess where these heifers are regarding target weight.

Weighing scales are by far one of the most underutilised management tools on farm. Timing of weighing can also be beneficial. By weighing in the weeks pre-housing, compared to weighing at the point of housing, allows farmers to identify heifers that are behind target. The best advice is to group accordingly and make alternative plans for those heifers under target weights.

The threshold figure for 2023 spring born weaning heifers is approximately 200kg in mid-September (33% of an assumed mature weight of 600kg). Heifers that are lighter than this should be separated and given priority access to the highest quality grass and re-introduce concentrates depending on their weight relative to the herds target.

1-2kg of concentrate/head/day should be sufficient. Research shows that youngstock at grass in summer can achieve weight gain of 0.85kg/day on grass only. While in the autumn where 1kg of concentrate plus high-quality grass is offered, average daily gain of 1 kg/head/day can be achieved.

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



www.agritech.ie

WEDNESDAY, 12 JULY 2023

Growing organics farm walk – Oliver and Anna Dixon

The second in a series of Growing Organics farm walks, takes place on the farm of Oliver and Anna Dixon, Athena Organic Farm, Claremorris, Co Mayo. Oliver and Anna converted to organic in 2010 and attained full organic status in May 2012. The entirely grassland farm of 44 hectares, runs a late spring-calving suckler herd, and finishes all stock off red clover silage alone.

- **Venue:** Athena Organic Farm, Claremorris, Co Mayo. Eircode: F12 VX29
- **Event time:** 2pm.



The winners of the 2022 NDC & Kerrygold Quality Milk Awards will host a farm walk in Tuam, Co Galway, on 19 July.

THURSDAY, 13 JULY 2023

Jarlath and Austin Ruane, DairyBeef500 demonstration farm walk

- **Venue:** farm of Jarlath and Austin Ruane, Corbally, Claremorris, Co Mayo. Eircode: F12 E928.
- **Event time:** 6pm.

Co Cork. Eircode: P51 R962.
• **Event time:** 2pm.

WEDNESDAY, 19 JULY 2023

Milk Quality Farm Walk: 2022 National Winners of the NDC & Kerrygold Quality Milk Awards

- **Venue:** Connelly family farm, Cloontua Road, Tuam, Co Galway. Eircode: H54 V273.
- **Event time:** 1.30pm.

Michael Walsh - Mixed Soils Grassland Farmer of the Year 2022

- Mixed Soils Category Winner in the 2022 Grassland Farmer of the Year Competition.
- **Venue:** Stanhope Street, Ballinakill, Co. Laois. Eircode: R32 VK16.
- **Event time:** 11am.

TUESDAY, 18 JULY 2023

Organic farm walk – Con and James Lucey

- Organic suckler beef and tillage farm walk
- **Venue:** farm of Con and James Lucey, Ballincurragh, Killavullen, Mallow,

THURSDAY, 20 JULY 2023

Energy & Farm Diversification Show

- **Venue:** Gurteen Agriculture College, Co Tipperary.
- **Event time:** 8.30am to 5.30pm.

THURSDAY, 31 AUGUST 2023

Michael Cunniffe - Drystock Enter- prise Runner-up - Grassland Farmer of the Year 2022

- Drystock Enterprise Runner-up in the 2022 Grassland Farmer of the Year Competition.
- **Venue:** Mount Prospect, Co Roscommon. Eircode: F42 DH79.
 - **Event time:** 6.30pm.



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Women-only discussion groups

There is a small, but growing, number of all-women Teagasc discussion groups

Mark Moore
Teagasc

It's late morning and having viewed the host farmer's dairy cows the Royal Tara dairy discussion group are seated and sharing their experiences with breeding technologies, bull selection, paddock management, etc.

With the universal discussion group proviso that what's said in the group, stays in the group, experiences, mistakes and solutions are shared. The only different thing about this group is that all members are women.

"Our facilitator Vincent Treacy approached me a couple of years ago and asked if there would be interest to start a technical discussion group for women in dairying," says Laura Hannon.

"Through word of mouth and Teagasc communication the group has grown to about 15 members most of whom are located in Meath but we also have members from Westmeath, Louth and Wicklow. Some are full-time, some are part-time but all are heavily involved in dairy farm businesses."

The Royal Tara group is one of a small but growing number of all-women discussion groups across the country. Teagasc also has groups in Kerry, Limerick, Carlow, Tipperary, Wexford and Kilkenny-Waterford. A number co-ops/organisations have women-only groups and there are a number of independent women's groups too. Women-only groups tend to be primarily associated with dairying but there are also drystock groups.

In a year which Teagasc has designated its 'Year of Diversity and Inclusion' it might seem slightly surprising that the organisation is encouraging women-only groups. "Our approach is that all clients are absolutely equal," says Tom Curran, head of the Teagasc advisory service.

"There are many women in our discussion groups who are more than capable of holding their own with the most experienced male farmers but where there is demand for a women-



Vincent Treacy, Teagasc; Ciara Lynch, Katie Hoey, Leyla Byrne, Tara Heaney and Laura Hannon.

only group we will support them."

According to Teagasc's Sandra Hayes, who has facilitated (with John Maguire) a women-only discussion group in Tipperary, and now facilitates one in Kilkenny-Waterford, membership can be a transition to membership of a mixed group.

“ Though it's a generalisation, it is sometimes easier to get engagement from an all-women group than a conventional group

"If you are coming into dairying, possibly from a non-farming background and with little practical experience, the idea of joining an all-male technically excellent discussion group is intimidating.

"I see women's groups as one way for women to build their knowledge and self-confidence in dairying before potentially joining a conventional group."

What's different about women's groups?

Most women-only groups are relatively new, just several years old on average, compared with conventional groups which may have been in existence for decades.

Evidence that women-only groups are different is largely anecdotal and subjective but some themes are frequently mentioned such as better engagement.

Linda Murphy, a current member of the Teagasc Kilkenny-Waterford group, farms alongside her dad and works in the banking sector. She says she has experience of predominantly male groups, her dad's, and also was a member of a mixed group when she was doing the Green Cert by distance. "When I was at my dad's group, which is very technically advanced, I would save up my questions and ask him later!

"It's certainly easier for a woman to ask questions in a women-only group and I think women generally ask more questions whatever group they are in."

Vincent Treacy of Teagasc Navan,



Catherine Colfer (second from left) with members of the south Wexford beef discussion group.

who facilitates the Royal Tara Group, has extensive experience of facilitating dairy discussion groups.

“At least in my experience, women-only groups can present a challenge for facilitators. They are generally very well prepared for a meeting and will sometimes ask you for a broader explanation of the background to technical issues than a conventional group might.

“Though it’s a generalisation, it is sometimes easier to get engagement from an all-women group than a conventional group.”

Group life cycle

“There’s a well accepted series of four psychological steps which any group of people who aim to work together goes through regardless of how the membership is made up,” says Pat Clarke, Teagasc Regional Manager for Galway/Clare.

- “Forming (the group membership meet each other for the first time).
- Storming (where there is some turbulence as the members get to know each other).
- Norming (where the group settles down and agrees how they will work together).
- Performing (where the group is working really effectively together

and making rapid progress).

A good facilitator will assist the group to get to the performing stage.

“I think the only difference with women-only groups might be that while they will go through these stages, they might get to the performing stage a bit quicker.”

Old boys’ clubs

Through personal experience many of us will have seen group situations where men’s egos have resulted in the group getting stuck in the ‘storming’ phase as hierarchies, etc, are established.

There are other issues which women mention in private, such as not being invited to join existing groups, when neighbouring male farmers of similar ability and experience are.

All-male groups may feel women will ‘limit the amount of craic’ they can have either at meetings or at social gatherings which are an important aspect of any group. Some farmers are simply uncomfortable in the presence of women in a work setting.

It’s no wonder that women feel uneasy when new to a group, particularly if they are the only female member. The result can be that women don’t have access to the benefits of membership of a good discussion group.

Male and female facilitators

“The aim is certainly not to develop a separate or parallel advisory service,” says Majella Maloney, Teagasc Regional Manager for Kerry/Limerick.

“Ideally, we will have more and more women in all discussion groups which I think will benefit everybody.

“As it happens, the women-only dairy discussion group (in collaboration with Kerry Group), the Limerick Ladies Discussion Group (facilitator Deirbhile Browne) and our women-only beef group centred on Kilmallock (facilitator Aileen Walsh) are facilitated by women but the idea is to provide good knowledge transfer not to create an exclusively female environment.”



Continued on p10



Continued from p9



ABOVE:
The Kilkenny-Waterford discussion group.

LEFT: Exactly as for a conventional dairy discussion group the Limerick Ladies Discussion Group share their data with each other and Teagasc facilitator Deirbhile Browne.

Not just dairying

Teagasc's Catherine Colfer facilitates the south Wexford beef discussion group: "We see every year when clients come in for Basic Payment discussions that there is a significant percentage of holdings which are owned and managed by women.

"We texted clients and used other communications to establish if there was a demand for a women's group in the region. You would rarely expect to have a women-only group from a local area as you would for a conventional group, so you tend to have group members from a much larger area, which is the case with the south Wexford group.

"As with any other group it's the members who suggest the range of topics which they want to address to the facilitator. In our drystock women's group, the themes are 80% related to technical or production issues but we also cover things such as succession which are equally important for a farm business."

Gender equality

In a recent statement, Minister for Agriculture, Food and the Marine Charlie McConalogue stated that: "Gender equality is a priority for my Department, as well as being a cross-cutting objective of the current CAP."

Encouraging greater gender equality will include initiatives such as the new TAMS scheme targeted at women farmers but also encouragement for female participation in discussion groups.

A new KT discussion group scheme coming in 2024 will almost certainly prioritise groups which have a certain percentage of female participants.

A greater level of involvement of women in all discussion groups, be it in an all-women or conventional group, can only be to the benefit of everybody. So how do you initiate a Teagasc facilitated all-women group?

Well, the first step would be to approach your Teagasc Regional Manager who can tell you if a group already exists. If not, and there is sufficient demand and adequate resources you could get to name the new group.

Diversity and inclusion strategy

Teagasc has a very comprehensive diversity and inclusion strategy. The inclusion piece is very important and Teagasc has found within its own organisation that sometimes setting up ally groups, such as mentoring circles for female staff, is the way to achieve real inclusion and a voice for staff who may be in the minority.

Teagasc also has a leadership programme for female staff, and the resounding feedback from the over 100 female staff who have attended is that it has been hugely positive in giving them more confidence, clarifying their ambition and their career goals.

Female-only discussion groups are very similar to the female mentoring circles that we have set up in Teagasc. The groups should be supported while they are needed, and there will be a time in the future when the mainstream groups will suffice.

Unless you have been in a minority position yourself, you don't really know how it feels, how isolating it can be.

There is huge power and support in female-only groups: ways of tackling problems and developing new approaches are discussed in a very inclusive way. With various CAP incentives for female farmers, this is a great time for women to get together and maximise their futures.

— Valerie Farrell,
Teagasc head of human resources

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1. Herds with high prevalence of IBR may need to vaccinate calves from 2 weeks of age intranasally. Next vaccine should be given at 3-4 months of age either intranasally or intramuscularly.
2. Intramuscular Vaccination.
3. Cowley DJB et al, Aspects of bovine herpesvirus infection in dairy and beef herds in the Republic of Ireland. Acta Veterinaria Scandinavica 2011, 53:40.
4. Kynotec data April 2020.

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IE-BOV-20040007 MAY 2020

dairy

Genotyping our way to a more sustainable future

Genotyping is one of the key tools that farmers and industry can leverage to increase productivity and profitability while also reducing the carbon footprint of Irish dairy and beef systems

Stuart Childs
Teagasc



Mark O'Sullivan
Teagasc



Gearoid Slattery
ICBF



Mark Waters
ICBF



Genotyping has been used since the late 2000s to identify genetically superior to be used in our breeding programmes.

At the end of May, the Minister for Agriculture Charlie McConalogue announced funding to commence the process of genotyping the national herd. The scheme opened for applications on 21 June. The National Genotyping Programme partners include the Department of Agriculture, Food & the Marine, Dairy Industry Ireland (DII), Meat Industry Ireland (MII) and participating farmers.

From 2024, the cost for genotyping a single animal of €18 will be divided equally between the three programme partners. Breeding animals being genotyped in 2023 will be free as funding from the Brexit Adjustment Fund is being used to 'kickstart' the programme.

Genotyping has been used since the late 2000s to identify genetically superior to be used in our breeding programmes. It was extremely expensive when it first came to market but the cost has come down and the potential of the test has increased dramatically.

Genotyping has been an option for all farmers for many years and schemes such as the Beef Data and Genomics Programme (BDGP) and, more recently, the Suckler Carbon Efficiency Programme (SCEP) have

incentivised genotyping. This has helped to identify cows that produce high quality, carbon efficient progeny while themselves being carbon efficient.

Benefits of National Genotyping Programme

- **Parent verification:** genotyping at birth will confirm parentage and correct any errors.
- **Cost:** herds accepted into the National Genotyping Programme will genotype their breeding stock FREE. From 2024 to 2027 (inclusive), farmers will be required to genotype ALL calves born at a reduced cost of approximately €6. This includes the farmer's contribution, the additional cost associated with a double tissue tag and postage cost.
- **Labour saving:** confirming parentage errors prior to registration prevents future issues and potential inspections. By sampling animals at birth, farmers avoid potentially having to round up and bring in animals for sampling at a later stage.
- **Higher reliability EBI/€uroStar**

figures: genotyping increases the reliability of these merit figures even before the animal has produced offspring.

• **Traceability:** genotyping ensures that there is full traceability of every meat and milk sample from birth.

The National Genotyping Programme will facilitate the genotyping of breeding females in herds across the country in 2023. Farmers will be genotyping all their calves from the spring of 2024.

For anyone who might think they never make a mistake when registering their calves, the pilot DNA registration programme which has been in existence since 2018, shows that sire or dam errors run at 10% to 15%. That means that 10 to 15 in every 100 animals do not have the correct parentage. DNA registration can resolve all this.



Continued on p14

Advantages for dairy beef farmers

The commercial beef value (CBV) gives a better insight into an animal's genetic merit on the basis of carcass weight, conformation, carcass fat, docility and feed intake. The CBV figure exists for dairy x dairy (dairy sire and dam) and dairy X beef (dairy dam and beef bull) as well as sucklers from beef sires and dams.

Higher CBVs mean better performance and higher carcass values at slaughter.

The CBV will make it easier for calf buyers to know what they are getting. CBV will be underpinned by the DNA registration scheme.

Only calves that have been genotyped will have a CBV giving the buyer confidence in what they are buying. Work by ICBF has shown that CBV significantly influences the price received for carcasses for both dairy x dairy and dairy X beef animals (Tables 1 and 2).

By differentiating the good from the bad, CBV will help reverse the trend to easy calving, poor beef merit

Table 1: Comparison of prices for dairy x dairy males at different stages of production based on CBV

CBV category (€)	Calf price (€)	Weanling price (€)	Carcass price(€)
-20 to -29	48	292	1,268
0 to 9	51	311	1,452
0 to 9	54	317	1,478
40 to 49	59	370	1,552
Difference	11	78	360

(Source: ICBF)

Table 2: Comparison of prices for AA x dairy animals at different stages of production based on CBV

CBV category (€)	Calf price (€)	Weanling price (€)	Carcass price(€)
10 to 19	122	518	1,592
50 to 59	160	499	1,712
90 to 99	180	528	1,908
130 to 139	186	593	2,160
Difference	64	75	568

(Source: ICBF)

animals in dairy herds. This is important at two levels.

Firstly, dairy farmers need to have buyers for their calves each year so the quality of the offering will be important in order to retain customers. Secondly, the better CBV animals will be more efficient beef animals with lower slaughter ages. This is one

of the key areas where beef farmers can reduce greenhouse gas emissions from their systems.

If interested in learning more about the National Genotyping Programme, scan the QR code on your smartphone.




National Genotyping Programme

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

The programme is based on a cost-sharing model between the DAFM, the beef & dairy industry, & participating farmers.

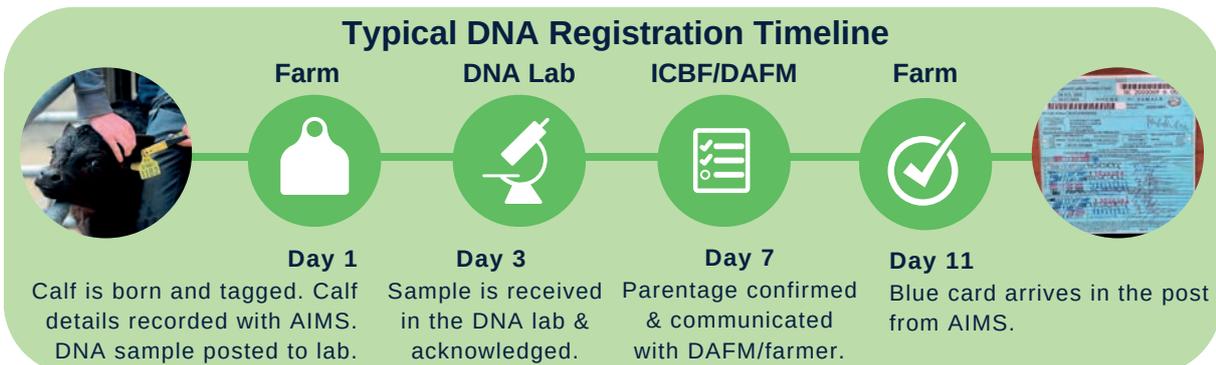
Online applications are open to all beef & dairy farmers. For more information, see

www.icbf.com

Benefits of DNA Calf Registration

- **Parentage verification:** Genotyping at birth confirms parentage & corrects any errors (on average 15% per herd).
- **Labour saving:** Confirming parentage errors prior to registration prevents future issues & potential inspections.
- **Cost:** Herds accepted into the National Genotyping Programme will genotype their breeding stock for **FREE**. From 2024 to 2027 (inclusive), farmers will be required to genotype **ALL** calves born at a reduced rate of €6.
- **Higher EBI & Eurostar reliability:** Genotyping increases the reliability of figures before the animal has produced any offspring.
- **Traceability:** Genotyping ensures that from birth there is full traceability of every meat & milk sample.

Typical DNA Registration Timeline





Continued from p12

Power of breeding

Genotyping brings much more to the table than just knowing who's who. Genotyping has been very effective in bull breeding. It has been used to identify the elite genetics that are required to increase fat and protein percentages and improve fertility.

However, that has only been through its application to the male population and in a limited way. AI companies spend the calving season trawling through lists of calves born each week trying to identify standout animals with the hope of finding the next table topper for the active bull list.

This is no easy task. The DNA registration process will make it easier to identify the elite animals but it will also dramatically increase the pool of animals that are being examined as potential sires.

With all bull calves in the programme being tested at registration, outliers will be found that might have slipped through the net. This will lead to more rapid genetic gain but also has the potential to widen the gene pool of AI bull panels.

If we apply this technology to the female population, what happens? Genotyping all females, will identify the best genetics in herds. These are the money-makers, the animals that will go in calf readily, produce high milk solids, and are healthy and carbon-efficient. These traits are going to underpin the future of the Irish dairy industry.

We want to breed cows that are efficient milk producers, calve each year and will last in the herd. We know that for every €10 increase in EBI, there is a 1% reduction in greenhouse gas emissions so increasing the rate of gain also speeds up our emissions reduction.

Work being done by Ben Lahart at Teagasc Moorepark has shown that there is variation between animals in terms of their enteric methane production.

This means that it may be possible to select for lower methane output into the future.

The power of breeding should not be underestimated. It is cumulative but, more importantly, permanent. We retain the advantages it achieves year and year and build on them. Genotyping of the national herd will allow the Irish dairy industry to exploit the power of breeding at a much faster rate than to date.



Farmer view: John O'Sullivan

John O'Sullivan and his family are milking approximately 300 cows on land overlooking the Bandon river near Kinsale. They supply Bandon Co-op and herd EBI is €232, which puts them in the top 1% of herds.

The herd EBI is made up of a milk sub index of €68 and a fertility sub index of €106. The carbon sub index, which was introduced in late 2022, is €9 for John's herd and the health sub index is five star at €9.

"I have always had a keen interest in the breeding side and we started genotyping in 2014 doing the heifer calves born that year," says John.

"I felt that at €22 a sample we were getting great value through the verification of parentage and the strengthening of individual EBIs and, consequently, the herd EBI figure."

As John was selling heifers, he was also able to identify the heifers to retain for his own herd from his maiden heifers. That is not to say that John was selling lesser stock, indeed on the contrary, the heifers being sold were still in the upper echelons of stock in the country but were just the lowest EBI animals of that particular year's group.

"We joined the ICBF DNA registration pilot programme," says John. "We had to genotype any breeding stock on the farm that were born prior to 2014 – when we had starting genotyping the heifer calves."

"Since 2019, we have registered all calves through the DNA registration programme. This involves taking a tissue sample when tagging the calf at birth and sending it to the lab for genomic verification. We record the date of birth and any calving difficulties that may have occurred and the DNA takes care of the rest such as the sex, the sire and the dam.

Samples

"By submitting samples to the lab regularly each week during calving, there is little or no delay in getting the blue card back for the calf and the registration is 100% correct.

"The DNA registration programme has also been useful when we have used high EBI Friesian bulls to pick up heifer repeats."

As well as knowing the genetic merit of the bulls, the DNA registration programme helps to identify the correct sires of the subsequent calves. In the past, John used to use different breeds of beef bulls with the cows late in the breeding season, so that he could easily identify the sire the following spring. This also allowed him to identify any potential calving difficulties with particular bulls.

With confidence in the ability of the DNA registration to differentiate, John ran all Aberdeen Angus bulls with the cows to 'clean up' towards the end of



Stuart Childs,
Mark O'Sullivan,
Sean O'Sullivan
and John O'Sullivan.

the 2020 and 2021 breeding seasons. He has since invested in heat detection collars and gone 100% AI in the cow herd.

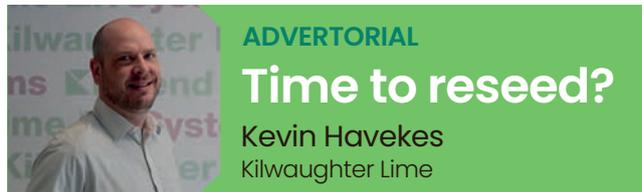
Beef AI is part of the breeding programme from day 1 of the AI season with John identifying those cows which he does not want a replacement from on the basis of their genetic merit and their milk recording performance.

However, he still depends on the DNA registration to ensure the correct parentage of any repeats in his maiden heifers as he puts a team of his own high EBI (genotyped) Friesian bulls with his maiden heifers to clean up following synchronised AI at the start of the breeding season.

The CBV, while relatively new, will be underpinned by the National Genotyping Scheme. John sells his beef calves to a few regular customers. He says DNA registration gives him huge confidence that the calves he sells to his customers are "exactly what it says on the tin".

"The simplification of life at calving and the improvement in reliability that DNA registration has brought means I can hand-on-heart encourage others to sign up immediately as they are getting their herd genotyped for free.

"And at just €6/animal to the farmer for genotyping of calves from 2024, the whole package is extremely good value and is an investment that no one will regret."



ADVERTORIAL

Time to reseed?

Kevin Havekes
Kilwaughter Lime

Research has shown that new varieties of grass can increase yield by 33% over a 5 year ley, with DM yields increased up to 10% for each of the next 4 leys. Sward performance is often reduced by poaching, or after a hard winter, allowing native grass and weed species to move in. These grasses and weeds are inefficient at converting nitrogen and nutrients into vegetative growth, resulting in lower yields and poor digestibility.

The decision to reseed should be based on assessment of individual fields to determine if:

- Sward productivity has fallen significantly
- The level of sown species has fallen below 60%
- There's a high proportion of native grass & weeds present
- There is evidence of soil compaction

If any of the above conditions are prevalent in any of your fields, the decision to reseed should be triggered. Key to establishing grass swards is to ensure the new seeding gets off to the best possible start. A recent soil test is critical to making management decisions, ensuring nutrients in the soil are readily available to the establishing crop. If seedlings struggle to access nutrients, reseed failure is possible.

pH is vitally important to nutrient availability, with 20% of applied nutrients locked into the soil, unavailable to the crop at pH 6.0, and increasing at lower pH. These conditions reduce plant counts of a newly establishing crop, as low energy and tiny root hairs, can't access enough nutrient to get established.

If your soil test in the intended reseed field is below 6.3, lime must be applied as part of your reseed program.

Applying G-Lime, a high quality, highly reactive, calcium-based lime is key component to ensure a successful reseed. G-Lime is the fastest acting, most reactive agricultural lime on the market. Unlike ground limestones, which are likely to contain large and ineffective chips, every pellet of G-Lime is 100% effective at raising soil pH. G-Lime raises and maintains your soil at the required pH and releases lost nutrients, ensuring your newly sown sward can access locked nutrients and gets off to the best possible start.

Every pellet of G-Lime is made up of highly-reactive calcium carbonate. The particles making up each pellet are microscopic, with the pellet breaking down on the soil surface immediately with as little as 1" of rain. G-Lime reacts fully to raise soil pH within 6 weeks of application, meaning your new grass seeding will have access to vital nutrients and get off to the best possible start.

G-Lime is available in 600kg, top-lift bags from agricultural merchants and co-ops across Ireland.

Contact us on **021 466 6400** or email kevin.havekes@kilwaughter.com to find your nearest stockist.



dairy calf to beef

Getting the dose right

A good strategy against stomach and roundworms is key in dairy calf to beef

Fergal Maguire
Teagasc DairyBeef500

Dairy calf to beef production is primarily grass-based. The most successful farms are those that optimise animal performance and achieve a high proportion of lifetime gain from grazed grass. However, these systems regularly experience outbreaks of stomach and roundworms.

Calves are particularly vulnerable to infection from stomach worms which can result in ill-thrift, with subclinical infection often resulting in reduced growth.

After their first grazing season cattle generally develop sufficient immunity to prevent clinical disease however there have been numerous cases where older animals suffer from a high worm burden.

Symptoms of stomach worms can include diarrhoea, decreased appetite and weight loss. Stomach worms can cause severe damage to the stomach and small intestine which will cause parasitic gastroenteritis.

Cattle are usually infected with a number of stomach worm species, the most common being *Ostertagia ostertagi* and *Cooperia oncophora*. The different species of stomach worms all have a similar life cycle, with free-living and parasitic stages.

Eggs laid by mature female worms in the gastrointestinal tract pass out with the faeces. The eggs develop in the faeces and the larvae hatch and feed on microbes in the dung.

Weather

The larvae develop into infective third-stage larvae after approximately four to ten days, depending on weather conditions. The infective L3 larvae migrate out of the faecal pat onto the pasture where they can persist for extended periods.

Once ingested by grazing cattle, the larvae pass to the gastrointestinal tract, where they develop into adults, mate and lay eggs within approximately three weeks.



Peter Byrne dosing cattle with Teagasc advisor John Brophy.

Control of stomach worms on dairy calf to beef farms is usually achieved by administering anthelmintic doses. There are currently three classes of anthelmintic licensed for the control of stomach worms in cattle: benzimidazole; levamisole and, macrocyclic lactone (Ivomec).

These products have been highly effective in controlling stomach worm infection in cattle and sheep for over 50 years. In recent years there have been a number of reports of anthelmintic resistance worldwide.

Anthelmintic resistance is defined as the inherited ability of worms to survive doses of drugs that would normally kill them.

Closer to home, a study on dairy calf to beef farms carried out by Teagasc

showed that benzimidazole (1-BZ) resistance was present on 60% of farms tested, levamisole (2-LV) resistance on 18% of farms, moxidectin (3-ML) resistance on 71% of farms and ivermectin (3-ML) resistance on 100% of farms tested.

Worm burden

The level of worm burden in a herd can be established by counting the number of worm eggs per gramme (epg) of faeces (faecal egg count or FEC). Most veterinary practices offer a faecal testing service to help determine if dosing for worms is required.

In order to avoid worm resistance building up, farmers should adopt a number of measures when implementing their dosing strategy.



Peter Byrne with Fergal Maguire.

FARMER EXPERIENCE: PETER AND AINE BYRNE

Peter and Aine Byrne operate a dairy calf-to-beef system alongside a tillage enterprise on their 70ha farm just outside Castledermot, Co Kildare.

"We buy in 130 calves at three weeks of age," says Peter.

"We buy 70% of them in the spring and 30% in the autumn." The Byrnes are participants in the Teagasc Dairybeef 500 programme.

"Traditionally, we have treated the calves for worms with an Ivermectin-based product three weeks after turnout and then every five weeks after this, whether they were showing signs of a worm burden or not.

"Yearlings were treated at least twice during the grazing season depending on weather conditions. However, since joining the Teagasc Dairybeef 500 programme, we have changed our dosing strategy," adds Peter.

"From the end of May, I start taking regular faecal egg samples to check the levels of stomach worm burden in all groups of stock. The results of these tests will determine when I dose. Last year I didn't dose the calves until the first week in June and the yearling

cattle wouldn't have received their first dose until July.

"Generally I won't go in with a dose until the FEC goes above 200epg. Performance of the calves remained good last year with average daily gain (ADG) for these animals through the summer being 0.8kg.

"With regards to lungworms, when the first signs of coughing start to appear I would administer a treatment. When treating I now would generally try to alternate between the different classes of the drug used to try and prevent any resistance building up on the farm.

"When dosing animals I always assess the weight of the animal and dose accordingly to ensure the correct volume is administered."

Continued on p18

dairy calf to beef

Best practice dosing programme for calves in first grazing season

The majority of spring-born calves are weaned off milk and turned out to pasture in April-May. Faecal egg samples should be taken from these calves from early June onwards to quantify the level of stomach worm burden the calves are experiencing.

Dung samples should be taken on a monthly basis and more frequently in high risk periods.

The results of the FEC test will be the main indicator of when these calves should receive their first dose. However, poor average daily gains (ADG) should also be investigated. Subsequent doses should again be based on the results of FEC tests.

Average daily gain for dairy-bred calves over the rearing period and through their first summer is 0.7kg to 0.8kg. Regular weighing of calves allows farmers to monitor ADG accurately, if calves are falling below the target weight gain this may suggest that a worm burden could be affecting calf thrive. However, investigation into calf nutrition and herd health care should be carried out.

Regular weighing of cattle will also allow farmers to accurately dose ani-



Regular weighing of cattle will allow farmers to accurately dose animals according to their weight.

mals according to their weight.

For treatment and protection of lungworms, the calves should be dosed when the first signs of coughing appear. With no known resistance to anthelmintic drugs in lungworm, there's an opportunity to use an alternative drug class to the ones normally

used on your farm to treat stomach worms.

When selecting a dosing product alternate between the different classes of drugs throughout the summer, be careful that you are not just using a different product that contains active ingredients are from the same class.

DOS AND DON'TS

Do:

- Watch for clinical signs and only dose when required.
- Take stock performance and faecal egg count (FEC) results into account when deciding on whether to dose.
- Pay attention to dose-to-weight calculations so animals receive a full dose.
- Dose based on the weight of the heaviest animal in the bunch (don't under-dose).
- If a large degree of weight variation exists, split the group into heavier and lighter groups and then dose based on the heaviest in each group.
- Read the label and instructions carefully to ensure that you know exactly what the dose can and cannot treat.
- Dose for lungworm in calves on the first signs of hoose cough.
- Complete a drench test to verify whether or not there is resistance on farm to the drugs used (consult your local advisor/vet for more information on this).
- Alternate the drug used to dose cattle using the three classes listed above where possible.

Don't:

- Don't use flukicide/wormer combination products unless intended for control of both stomach worms and fluke.
- Don't dose and turn out to clean pasture. It is best to dose and return to dirty pasture to reduce anthelmintic resistance.
- Don't dose based on calendar dates or anticipated worm burdens.
- Don't turn calves out to the same paddocks as previous bunches of calves in the same/previous year. Try to alternate the ground calves graze during the first months post weaning/turnout.

Red clover a winner on suckler farms

Red clover for silage is being established on four farms in the Future Beef Programme for the first time this year. It is not a new crop to Ireland, so why is it increasing in popularity now?

Aisling Molloy
Teagasc Future
Beef Programme



Swards containing red clover have the capacity to 'fix' over 200kg of N/ha and can yield over 15t DM/ha, without receiving any chemical (bagged) nitrogen. Research from Teagasc Grange also shows that animal intakes are higher on red clover silage than with grass silage, which should result in higher animal performance. These positives make the crop financially and environmentally attractive to farmers.

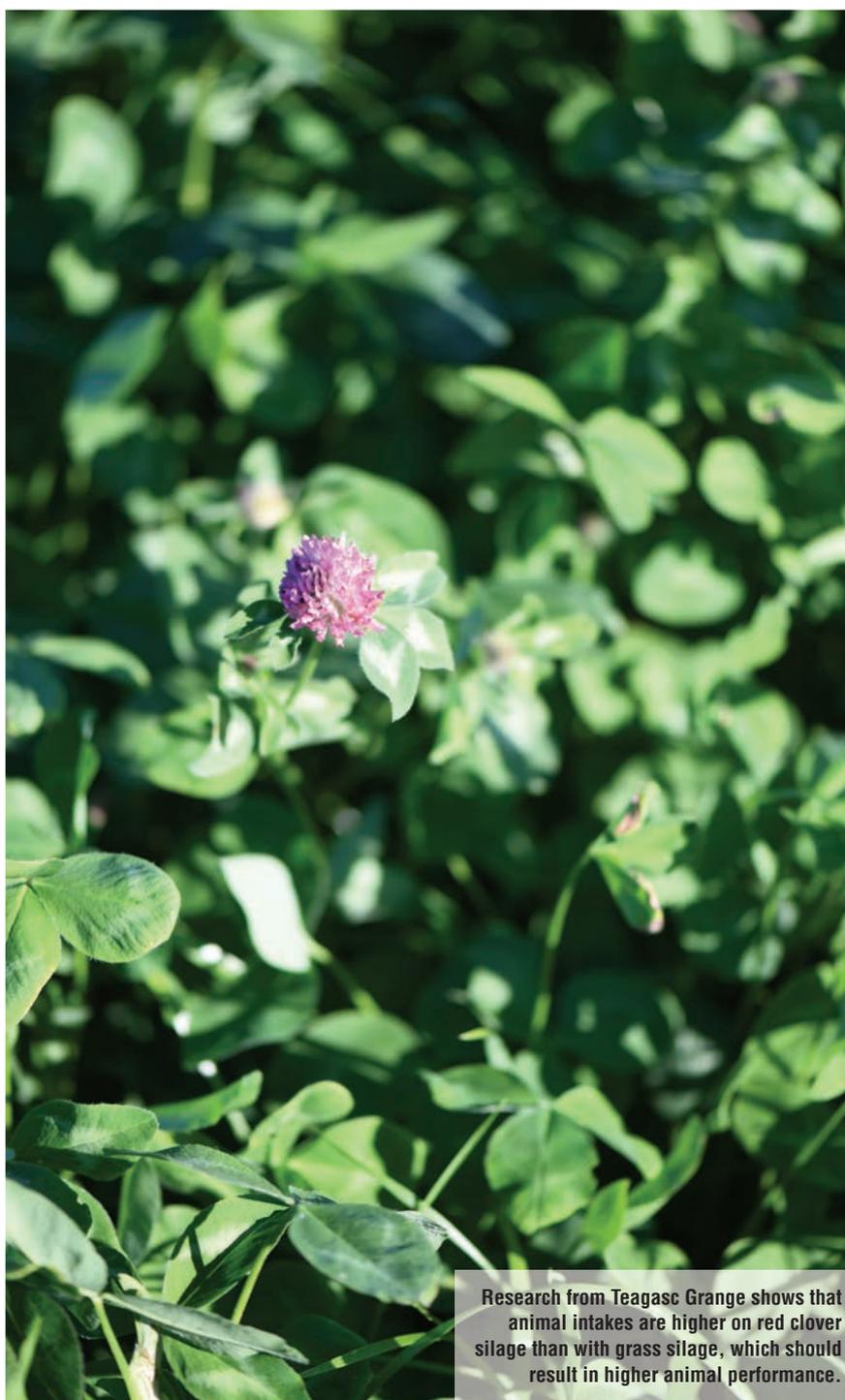
However, a red clover silage crop is not right for every farm, nor every field. It is generally unsuitable for grazing, has poor persistence of just three to four years and requires a four-year break between crops.

Also, it can be difficult to ensile if weather conditions are not suitable!

James Skehan in Ballynevin, Co Clare, has sowed a crop on his farm this year. "I wanted to produce better-quality silage for my weanlings over winter," says James. "The field hadn't been reseeded since 2007 and a lot of weeds were starting to take over.

"I had visited Teagasc Solohead and another Future Beef farmer and saw red clover working on those farms. I decided I would try it. The field I chose is 6.2 acres, an out block that is already in a three-cut silage system. I aim to graze it in the spring, but in this system I won't have to, which is an added bonus."

The field is one of James's drier fields and the soil pH is 6.8, which is on the right side of the target of 6.5. It is in index 3 for phosphorus, but only index 2 for potassium (K) so James is working hard to build K by spreading farmyard manure and slurry.



Research from Teagasc Grange shows that animal intakes are higher on red clover silage than with grass silage, which should result in higher animal performance.



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James says he will spread no chemical nitrogen on the field. He will spread a minimum of 2,000 gallons of slurry per acre and one bag of 0-7-30/acre for each cut to ensure the soil fertility is maintained and to replace the silage offtakes.

“The crop was sown in late May after grass silage was harvested. The mix contained two red clover varieties (Amos and Garant), a white clover variety and perennial ryegrass. I was trying to source red clover seed from the UK recommended list but it was hard to find. Amos is on the list and Garant is not, so I was happy to have at least one proven variety.”

There is no Irish recommended list for red clover varieties available yet.

James says he will be cutting the first crop of silage soon after it starts flowering, which he expects to be in late July.

The Climate Action Plan for Ireland has set a target to reduce chemical nitrogen usage by 30% by 2030. Using red clover as a nitrogen source is one way of helping to achieve this.

“If I can get 38 tonnes of silage from this field it will make up almost 50% of my silage for the winter and I will have produced it with no chemical nitrogen,” adds James.

“In 2021, I spread 123 units of chemical N per acre for two cuts on the same field. This made up 27% of the total nitrogen spread on the whole

farm for the full year. So if I can manage this crop right, I can reduce my chemical nitrogen use by 30%, which will be reducing my GHG emissions, and I think that will be a great achievement.”

Ken Gill, an organic farmer in Clonbullogue, Co Offaly, has been growing red clover farm for over 10 years. “For me the crop does two things: firstly, it provides nitrogen which is there for the following crop of oats. Secondly, it provides a high protein feed which is fed back to the yearlings so they don’t need any extra ration. This is hugely beneficial because organic ration is very expensive.”

While the crop produces its own nitrogen, as stated earlier phosphorus and potassium are very important. For every five tonnes of dry matter removed, 12 units of P and 100 units of K per acre are required. Ken spreads 2,500 gallons of cattle slurry/acre in spring and farmyard manure in autumn to help meet these requirements.

Red clover grows differently to white clover and it has one high growing point so management is a little different. “When you’re mowing it, the really important thing is that you keep the mower up,” says Ken.

“A rule of thumb is that if you put your fist down on the ground, the mower blade should be able to skim over it.

Ken Gill.



A rule of thumb is that if you put your fist down on the ground, the mower blade should be able to skim over it



“That’s important because of the way the crop grows – if you cut it too low you’ll cut the crop out of it.”

Ken aims to cut the crop three times in the year and mulches a fourth one in October to allow light down into the sward. Last year his first-cut silage test results showed the crop’s dry matter digestibility was 77% with 14.8% crude protein.

Both James and Ken applied for the red clover silage measure when the scheme was open earlier this year. This provides funding of up to €300/ha towards the cost of establishing the crop. To receive payment for it,

James Skehan with his local advisor, Thomas Gleeson, in the newly reseeded red clover field.

the crop type had to be indicated on the 2023 BISS application. The crop must be sown before 15 July, and successfully established by 30 September.

The mixture must include 4kg of red clover for each 12kg bag, with the balance of the seed mixture containing either perennial ryegrass or hybrid ryegrasses and it may contain some white clover.

Claims must be uploaded on Agfood.ie before 31 August 2023 and should include the invoice(s) and one seed label per species mix/batch of seed purchased.

Research is under way in Teagasc Grange to investigate the potential of red clover across Irish beef and dairy systems.

Researchers are examining the crop agronomy in terms of variety evaluation, nitrogen application, dry matter production and persistency, the feeding value and the farm system (ie nitrogen balance, economics, environmental effects and relative feed costs).

You can keep up to date with the latest news from the Future Beef farms and subscribe to the monthly newsletter by scanning the QR code, right, on your smartphone.



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sheep

Converting to organic sheep farming – the practical implications

Damian Costello
Sheep Specialist



The increase in payment rates for the Organic Farming Scheme (OFS) 2023 coupled with a reduction in the minimum stocking rate required has led to an almost doubling of organic farmers in Ireland. Approximately 2,000 farmers will commence conversion to an organic sheep system this year. This article looks at some of the key considerations to bear in mind when converting to organic sheep farming.

Suitability of farm

The most suitable holding to produce organic lamb is one with livestock and arable farming. The cereals grown on the farm will provide concentrate feedstuff and a source of straw.

Furthermore, forage crops can be added to the rotation as well as including white and red clover into subsequent reseeds. This system is only viable in certain, largely lowland, parts of the country.

A large number of hill sheep farmers are converting to organic farming this year; arable crops are rarely an option for them. In all cases it is important to check if establishing an organic enterprise will have any implications on the ACRES payment for your farm.

Grassland management

The first step is to have your soil analysed and optimise pH where necessary. Target slurry and FYM to maintain P and K indices with the op-

tion to import slurry from non-organic sources. Incorporating white and red clover into suitable swards will fix nitrogen naturally but you must have the fencing infrastructure to correctly manage these swards after establishment. For hill sheep farms, commonage can be grazed by sheep once they are properly hefted but the commonage area is not eligible for payment under the Organic Farming Scheme.

Animal housing

The preferred option for housing organic ewes is straw bedding – it can come from non-organic growers. A higher floor space allowance of 1.5 square metres per ewe and 0.35 square metres per lamb is required.

Sheep slats can only be used where an equal or greater sized area of straw-bedded lieback is also available.

On sheep farms with a cattle enterprise think carefully about the investment required to make existing cattle housing compliant with organic standards. Out-wintering is permitted once carried out extensively, and providing that no poaching occurs.

Flock health plan

The conversion plan includes a flock health element to be prepared in consultation with a veterinary surgeon. It must outline a system that is less dependent on veterinary medicines. Routine use of antibiotics is not permitted but in clinical cases they may be prescribed by a vet. Animal welfare is always the priority.

The plan will take account of farm history and will describe how to tackle health issues while conforming



to the organic farming standards. The withdrawal periods are at least double those indicated by manufacturers when used on organic farms. Some meat processors require three times the standard withdrawal period.

Breeding policy

As with all sheep systems a defined breeding policy is key. The target should be to breed replacements from within the flock. However, in an organic system, with a derogation from the Organic Certifying Body (OCB), up to 20% ewe replacements (that have not previously lambed) can be bought in from non-organic sources. Rams may also be sourced from non-organic breeders.

Approximately 2,000 farmers will commence conversion to an organic sheep system this year.



Nutrition

As feedstuff must come from 100% organic sources, the production of high quality silage offers the opportunity to reduce the level of expensive concentrates required by ewes in late pregnancy.

All purchased feedstuffs must be certified for use on organic farms. Cross fostering is the preferred option for dealing with surplus lambs as there is no organic certified colostrum substitute or lamb milk replacer currently on the market.

Where maternal milk is not available, non-organic milk replacer may be fed to lambs. These lambs must be clearly identified and must be marketed as non-organic lamb.

What is the Sheep Improvement Scheme?

Ignacio Mullin
Sheep Ireland

The DAFM Sheep Improvement Scheme (SIS) provides financial support to farmers for taking extra steps to improve the welfare of their flock. Farmers get €12 per breeding ewe for completing flock welfare measures.

The targeted welfare areas include:

- Lameness control
- Mineral supplementation of ewes post-mating.
- Meal feeding lambs post-weaning.
- Parasite control (faecal egg count).
- Management of pregnant ewes (scanning).
- Flystrike control.
- Mineral supplementation of lambs pre-weaning
- Genotyped ram action.

What is the 'Genotyped Ram Action' task?

The task requires participants in the scheme to purchase a ram that has been genomically tested via Sheep Ireland. On applying for the scheme, each participant had to select the year in which they would carry out the 'Genotyped Ram Task'.

Participants with less than 150 ewes will have to complete the task once in the first three years of the scheme. Participants with over 150 ewes will have to complete the task twice, once in the first three years and any other year after that.

What are the criteria for the 'Genotyped Ram Task'?

For lowland rams, the criteria are as follows:

- Genomically tested on the Sheep Ireland database.
- Four or five-star on the replacement or terminal index.
- Scrapie type 1, 2 or 3.

For hill rams (Blackface Mountain type or Cheviot type), the criteria are as follows:

- Genomically tested on the Sheep Ireland database
- Sire DNA-verified
- Scrapie type 1, 2 or 3

Looking for an SIS-eligible ram? Find it on Sheep Ireland's ram search

One of the easiest ways to find SIS-eligible rams is via the Sheep Ireland online ram search (www.ramsearch.ie) or going to our website (www.sheep.ie) and clicking on the Ram Search tab.

*Scan this QR code with your phone to access the ram search.



Also, a list of ram breeders with suitable rams for sale will be included in the Sheep Ireland Guide and Directory of Breeders, which is published every year (electronic version available on www.sheep.ie under the 'Publications' tab). Breed societies sales across Ireland will also be providing this information, so view our relevant breeds website/Facebook page to identify ram sale dates. Sheep Ireland also hosts the EuroStar multi-breed ram sale that will take place on Saturday 26 August at 11.30am in Tullamore Mart.

How do I know if a ram is SIS eligible?

On the Sheep Ireland ram search, you can select the SIS button for displaying only the eligible rams. Also, next to each ram ID you will find a green flag when the animal is eligible and a red flag when it's NOT eligible:

How do I interpret EuroStars on catalogues?

When looking at a catalogue, EuroStars attached to an animal remain to be WITHIN BREED, ranking each index in 20% groupings. The higher the stars, the higher the predicted profitability from that animal within that breed.

Each of the EuroStars are broken down into percentiles which facilitates farmers in identifying the top % of the best genetics within a particular breed, eg

- A five-star ram is in the top 20% within his breed,
- A four-star ram is in the top 40% within his breed.

Validation – how they can work for you?

One of the benefits of the Central Progeny Test (CPT) is to assess the performance of EuroStar rams progeny in a commercial setting and to validate the EuroStar ratings.

The results of the latest validation by comparing the performance of five-star v one-star genetics showed that consistently using five-star genetics increased the number of lambs born, reduced lambing difficulty and mortality, reduced ewe mature weight and increased lamb performance, which led to an increased flock profitability of €5 per ewe joined to the five-star ram v their one-star counterpart in a commercial setting.

Contact 023 882 0451 or email: query@sheep.ie

tillage

Catch crops yield multiple benefits... if you get them in early

Ciaran Collins
Teagasc tillage specialist



That cover crops reduce nutrient loss is beyond doubt. Multi-year research in Teagasc has proven that a mustard cover crop reduced mean soil solution nitrate concentrations by over 70% compared to no cover, under both reduced tillage and conventional ploughing. A cover crop can help to reduce phosphorous run off over the winter.

There is little nitrogen benefit to following crops from non-leguminous cover crops such as mustard. However, experiments with leguminous cover crops, clover for example, suggest that they reduce the fertiliser nitrogen requirements of succeeding crops.

Cover crops can also make a valuable contribution to soil organic matter and help to improve soil structure even if progress is gradual.

While there is a cost to establishing cover crops, this can be recouped if they can be grazed by livestock which is also an excellent way to recycle nutrients provided infrastructure like fencing and water are available.

Legislation

Recent changes to the Nitrates Directive require farmers in Carlow, Cork, Dublin, Kildare, Kilkenny, Laois, Louth, Meath, Offaly, Tipperary, Waterford, Westmeath, Wexford and Wicklow to shallow cultivate or sow a

crop within 10 days of baling straw or within 14 days of harvesting. A minimum of 20% and a maximum of 25% of cereal land on each holding shall not be subject to shallow cultivation post-harvest.

While there is no requirement to sow a cover crop, some farmers may choose to do so once the ground is cultivated. Farmers in the Agri-Climate Rural Environmental Scheme (ACRES), who have selected the cover crop option, are required to sow a cover crop before 15 September.

ACRES

Many tillage farmers entered ACRES and as part of their plan selected the catch crop option.

ACRES mandates that the seed mixture must consist of at least two species from the prescribed list. The minimum seed rates are outlined in Table 1. Including three or more seed species will extend the functionality of the mix.

Where this approach is followed, at least two seed species from the prescribed list above must be selected using at least the minimum rates. Any additional species may be used at whatever rate the participant deems appropriate.

This guidance is equally valid for those not in ACRES.

The catch crop must remain in place from the date of sowing until 1 January. After this date, light grazing or incorporation is permitted. No intensive strip grazing or zero-grazing is allowed.



Sam Deane.

FARMER EXPERIENCE: SAM DEANE

Sam Deane, who farms in partnership with his father, Jim, has no stock and is growing spring beans in a field that has been in tillage for over 40 years.

"Up until 10 years ago, the field grew a fairly intensive rotation which included sugar beet and cereals. Our aim now is to gradually improve soil organic matter and soil structure through no-till and catch crops.

System evolution

"We have evolved to a system which includes no-till and straw incorporation followed by a catch crop. We like a mixture of mustard, which has deep roots and phacelia, which has shallower rooting. Together, these increase soil organic matter and improve soil structure.



Our aim now is to gradually improve soil organic matter and soil structure through no-till and catch crops

Sam says catch crops require attention to detail if they are to thrive.

"We will drill and then roll afterwards to give them a good chance to get going. We think carefully about the coming crops when choosing catch crops... for example, if we are thinking we might grow oilseed rape in two or three years' time, we won't use brassicas to prevent the risk of club root"

Drill

Catch crops are sprayed off at the end of January and Sam says the catch crop residue allowed him to get in at the end of February to drill this year's spring bean crop.

Sam concludes by saying he believes the catch crops are already helping to improve rooting down the profile.

» Continued on page 26



»Continued from page 25

Cover crop species

It is very important to select cover crop species that suit the rotation. Growers of beans and peas should avoid legumes in their cover crop mixtures and growers of oilseed rape should avoid brassicas. Recent occurrences of clubroot in oilseed rape have been linked to brassica cover crops.

Other considerations are winter hardiness and end use.

Farmers who intend to graze cover crops with livestock should consider brassicas like fodder rape or leafy turnip.

Sowing date

Early sowing is essential to achieve good autumn growth.

An experiment in Teagasc Oak Park examined biomass production from three sowing dates: early – 30 July, target – 18 August and delayed – 8 September.

Two cover crops were used: mustard which is a fast-growing non-legume and hairy vetch, a winter hardy legume.

There was a linear reduction in the amount of biomass produced as sowing date is delayed. The mustard lost 2t DM/ha for each three-week delay in sowing.

Another notable point from the experiment was that there were virtually no weeds produced on the 30 July sowing date.

Between 40% and 60% of the biomass was weeds on the 8 September sowing date due to lack of competition from the cover crop.

Growers may be concerned with a large volume of biomass as they try to establish crops in the following spring but in this experiment all of the plots were successfully ploughed without the need for other interventions.

Grazing cover crops

Grazing of cover crops can increase economic return and is an effective way of recycling nutrients from stock which may leave excreted nitrogen for the subsequent crop.

However, there are a few important considerations. Firstly the infrastructure, water and fencing, must be in place.

Soil structural damage is possible, therefore grazing with sheep on light well-structured land is preferred and good grazing management is important to minimise poaching.

Shallow, reduced-cultivation sites may have a better livestock bearing strength but grazed cover crops may

Figure 1: Cover crop sowing date experiment

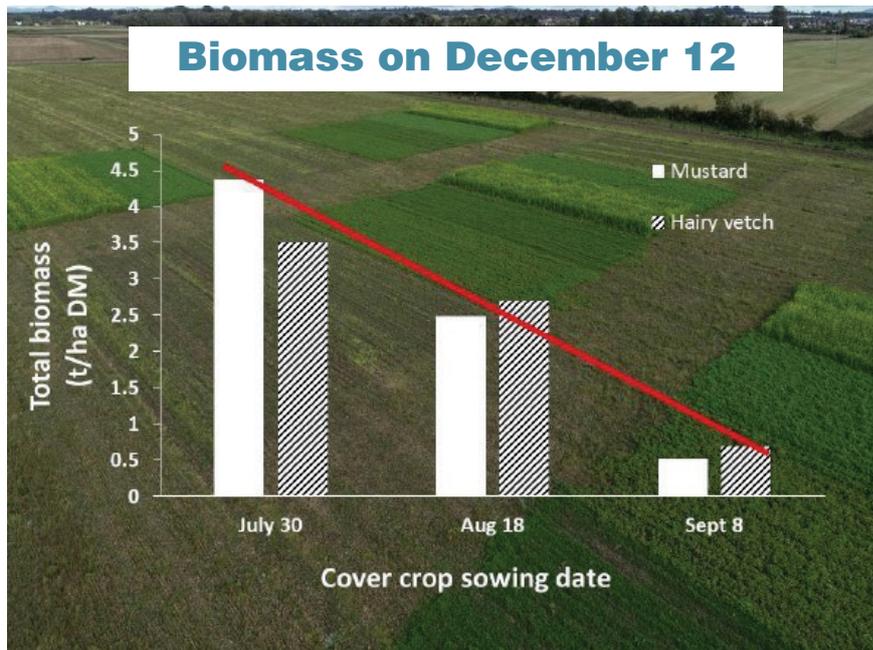


Table 1: List of prescribed catch crops

Catch crop species	Seed rate kg/ha	Catch crop species	Seed rate kg/ha
Buckwheat	30 – 40	Rye	60 – 75
Crimson clover	10 – 15	Tillage Radish	4 – 6
Berseem clover	10 – 15	Vetch	15
Forage/fodder rape	4 – 5	Leafy turnip	4 – 6
Mustard	8 – 10	Peas	40 – 50
Oats	60 – 75	Beans	70 – 90
Black oats	30 – 40	Linseed	15
Phacelia	4 – 5	Red clover	8 – 10
Sunflower	10 – 15		

(Lower value is the minimum seed rate to comply with requirement)

Table 2: Cover crop groups from ACRES prescribed list

Cereals/grasses	Brassicas	Legumes	Others
Oats	Forage/fodder rape	Crimson clover	Buckwheat
Black oats	Mustard	Berseem clover	Phacelia
Rye	Tillage radish	Vetch	Sunflower
	Leafy turnip	Peas	Linseed
		Beans	
		Red clover	

force the use of deeper cultivation post grazing. Farmers must comply with conditionality requirements, including GAEC 4 and GAEC 6.

You must maintain a grass/vegetated buffer strip of at least 4m along water feature boundaries where non-grass forage crops are being grazed in-situ.

They must also provide an adequate lieback area, which is always accessible to grazing livestock. The lieback area must be grassland.

The available lieback area must be at least equal in area to the adjacent non-grass forage area, e.g. 5ha of fodder rape will require at least 5ha of lie-back.



CLOCKWISE, FROM FAR LEFT: Vijaya Bhaskar. Quantity needed for resistance testing. For smaller seeds, eg blackgrass, Italian ryegrass, one to two mugs of seeds, eg wild oats, brome, one to two pint glasses of seeds.

Time to test for herbicide resistance

Vijaya Bhaskar
Teagasc Oak Park

Fields with large populations of herbicide-resistant grass weeds, especially blackgrass and Italian ryegrass, have been robbed of crop yield and rendered incapable of remaining in tillage.

If you have uncontrolled grass and/or broad-leaved weeds in your crop at harvest; or you have already identified, or suspect, herbicide resistance with blackgrass, Italian ryegrass wild oats, bromes, annual meadow-grass, canary grass, chickweed, poppy or corn marigold on your farm, it is a really good idea to get weed seed samples tested now.

Testing will let you know which herbicides will work and what integrated weed management (IWM) strategies to adopt to combat further spread and resistance development. This is an invaluable free service available from Teagasc Oak Park.

To date, herbicide resistance testing has shown:

- Increasing cases of resistance in key species.
 - 56% of blackgrass and 60% of Italian ryegrass were resistant to one or more herbicides.
 - 19% of wild oats were resistant to at least one herbicide.
 - We have found herbicide-resistant annual meadow-grass, and
 - We have confirmed herbicide-resistant poppy and chickweed.
- Resistance occurs across all crop establishment systems
- Some farms had more than one resistant grass weed (eg resistant blackgrass and Italian ryegrass), or mix of resistant grass and broad-leaved weeds (eg resistant blackgrass and poppy).

Seed sample collection

Good sample collection is essential for resistance testing. Follow these steps:

- Collect grass-weed seeds (not intact heads) when they are ripe and fall off the seed head when brushed, stroked, or shaken vigorously into a paper envelope.

- With broadleaved weeds, collect ripe seed heads or capsules or seeds directly into a paper envelope.
- Sample sufficient seed quantities.
- Fill-out the herbicide resistance testing form (downloadable).
- Send paper bags of dry seeds along with completed form to Vijaya Bhaskar, Teagasc Crops Research Centre, Oak Park, Carlow.
- The resistance testing form and seed collection instruction is accessible via <https://bit.ly/3MrlcgR> or scan the QR code. Your advisor will have all the details too.



Finally

Undetected resistance on your farm can rapidly lead to full resistance or multiple resistance developing, requiring long-term costly control measures. We need to adopt a zero-tolerance approach which begins with resistance testing.

Act now to ensure we can manage weeds, in the next cropping season and beyond.

AgNav: a new way to measure

The new digital platform, AgNav, will facilitate sustainability assessments farm by farm

Jonathan Herron
Teagasc Moorepark



Building on years of collaboration Teagasc, ICBF and Bord Bia have integrated Teagasc lifecycle assessment (LCA) models into the ICBF software infrastructure. This makes it possible to calculate the carbon footprint of Bord Bia-certified farms.

Farm data in existing databases (e.g. ICBF and Bord Bia) will be collated in AgNav to create a “snapshot” of each unique farming system. Using existing data for individual farms streamlines the assessment process, improves the user experience and enables more precise capture and analysis of data.

The AgNav platform is being developed using a co-design process where a series of workshops with the development team, farmers and advisors deliver feedback on accessibility, applicability interpretability and recommendations.

The AgNav platform provides the user with a live decision support tool that communicates the benefits of best practice adoption on a product, area and total enterprise basis. This tool will assist the farmer and advisor to create a sustainability plan tailored to each farm’s circumstances.

Step by step

1 Assess

A farmer conducts the Bord Bia sustainability survey, providing farm activity data on manure management, fertiliser, concentrate feed and more. A similar survey will be incorporated into the AgNav platform in the future.

The farmer can then, either on his/her own or in consultation with a farm advisor, establish the current farm performance against a number of environmental sustainability indicators on the AgNav platform.

2 Analyse

Farmers and/or advisors will



Eamonn Lynch, dairy advisor, Dungarvan; PJ Brennan, dairy farmer from Ballysaggart, Lismore, Co Waterford, and Dr Seamus Kearney, Teagasc, climate action and sustainability advisor Dungarvan, discussing PJ’s farm emissions figure as generated from AgNav.

identify opportunities for changes to practices on farm that could result in improved performance. They can determine the impact of implementing these practices by using the “Forecast” decision support tool available within the AgNav platform.

3 Act

Following the identification of the most appropriate actions for their farm, a farmer and/or the advisor will use the “Action Planner” to create a sustainability plan for the farm.

This plan will include targets and timelines for implementation/completion of specific measures. This plan will act as a guide for farmer/advisor engagement and demonstrate each farmer’s commitment to delivering on the action plan.

Future development

The initial phase of the AgNav platform will be available for beef and dairy farms which are Bord Bia quality-assured and have signed up for the Teagasc Signpost advisory programme.

The scope of AgNav will expand to accommodate all cattle systems as well as other enterprises (e.g sheep, tillage, pigs, forestry).

Future phases of AgNav will also cater for all farmers regardless of their affiliation to AgNav partners. It will be available to Teagasc clients but also non-client farmers.

The initial phase of the AgNav platform focuses on greenhouse gas and ammonia emissions. Future phases

will include other environmental indicators such as biodiversity, water quality, carbon sequestration, etc.

Where possible, AgNav will establish data flows with relevant databases to improve user experience and assessment quality.

Conclusions

AgNav is a digital platform that will assist farmers to implement practices that have been identified to improve overall sustainability (environmental, economic and social).

AgNav will inform farmers of their current performance across a range of indicators. The farm-specific action plan along with advisory services will help assist the farmer to implement positive changes.

What is AgNav?

- It is a new digital sustainability platform that will be used to create individual farm sustainability plans. It’s currently in its first phase.
- The platform will collate data from existing databases which will improve the accuracy of each farm assessment.
- It will encourage and support farmers in implementing management practices that will improve the overall sustainability of their farming system.
- Supports clear communication of progress achieved on farms and provides a mechanism to measure progress towards overall targets for the agriculture sector.

and enhance sustainability

First-hand experience in Waterford

PJ Brennan farms at Ballysaggart, Lismore, Co Waterford with his mother Helen, his wife Tracey and his children Éile (four) and Sean (two). PJ is farming 42ha and is milking 70 dairy cows in 2023. In 2022 PJ delivered 549kg milk solids per cow to Tirlán. For 2023 PJ has 32 calves on farm (of which 16 are Friesian heifer calves) and 30 cattle (of which 14 are Friesian heifers).

PJ is part of the Ballyduff/Ballysaggart dairy discussion group who completed one of the first Signpost advisory workshops in the country. As part of the Signpost advisory workshop each farmer received their farm emissions number. "I liked getting the emissions figure for my farm as it allows me to see where I am on the start of my journey to reduce farm emissions," says PJ.

"AgNav showed that our farm was generating 428,426kg of CO₂ equivalent before we started to take on

any mitigation actions. I used 205kg nitrogen per hectare in 2021 which is my latest AgNav figure and 79% of that nitrogen was in the form of protected urea.

"It was great to be able to see that on my farm that this one simple action reduced my farm emissions by 6.8% while at the same time saving me thousands of euro compared to using CAN fertiliser.

"I use 18:6:12 as the compound fertiliser on my farm and my new goal is to get to 90% protected urea to reduce my emissions further."

Having used AgNav PJ has set other goals for the next 12 months. The aims are to:

- Reduce chemical fertiliser by 20% through correcting lime, P and K levels, and incorporating clover and multispecies swards.
- Increase protected urea to 90% of

chemical nitrogen spread on farm.

- Continue to spread all slurry using Low Emission Slurry Spreading.
- Spread 75% of slurry in spring and the remaining 25% after first-cut silage.
- Increase grazing season length by 10 days.

Combining these actions will reduce PJ's overall farm emissions to 378,921kg CO₂ equivalent. This represents a reduction in farm emissions of 11.5%. According to PJ: "These are all actions that will save me money as well as being good for the environment."

The logo for AgNav, featuring the word "AGNAV" in a bold, green, sans-serif font. A stylized green leaf is positioned to the right of the letter "V".

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Soiled water storage

Many farms will need to raise their storage capacity to meet new requirements. TAMS can help

Tom Fallon
Teagasc infrastructure specialist



As of 1 December 2023 dairy farmers will be obliged to have capacity to store 21 days' worth of soiled water. The requirement will increase to 31 days in December 2024. Soiled water results mainly from parlour washings but also includes runoff from open silage pits, etc.

Farmers supplying liquid or winter milk will have a further year to meet the 31-day requirement. Spreading soiled water on land will not be allowed during the final three weeks of this year.

The storage requirement is for the cow numbers milked at peak during the year and does not relate to the numbers milked during December. Nevertheless, farmers milking cows through December need to provide ample storage to comply with the new closed period.

The amount of parlour washings produced on farms varies a lot. It depends on the type of parlour and the area cleaned with a volume washer, etc. The volume of dairy washings and slurry produced per cow is under review in the nitrates action programme.

On many dairy farms, there is a slatted tank in the collecting yard and the milking machine and bulk tank washings are pumped into it. These farmers will have a good idea of how much parlour washings they are generating by virtue of the time it takes to fill this tank.

Another possibility is to estimate soiled water production by measur-



The amount of parlour washings produced on farms varies a lot.

ing the duration of wash down by the output of the washdown hose.

The typical volume of parlour washings produced on farms is 30 litres per cow per day or 0.21m³ per week. Rainfall on unroofed collecting and return yards may bring the storage requirement up to about 40 litres per cow per day.

It's worth noting that if cows are eating silage while standing in the collecting yard, the contents of the tank is regarded as slurry and it has to be stored from 1 October until the end of the closed period for spreading slurry.

It is acceptable to store parlour washings in slurry tanks but it has to be stored for the full closed period. Parlour washings are classified as soiled water provided they have a biochemical oxygen demand (BOD) of less than 2,500 and a dry matter content of less than 1%.

Complying with the new requirements on farm

Tom and Ruth Downey own Golden Amber Dairy and milk 300 cows near Golden, Co Tipperary. Mick Dawson manages the farm and they employ a

full-time student Stephanie Stanley who is doing the new UCC/Teagasc degree in agricultural science.

"The full herd is dried off on 15 December with milking recommencing on 1 February," says Tom.

"There is approximately 33% extra slurry storage on the farm above the minimum required, thanks to a large overground slurry tower." This means that the farm is under no pressure to spread soiled water or slurry during the winter.

The two existing collecting yard tanks have a capacity of 190m³ but they can fill in two weeks. The farm is generating about 45 litres of soiled water per cow per day. "This reflects the fact that we completely wash down the collecting yard after each milking," says Tom.

It is clear that the farm needs to provide more than double the existing soiled water storage. "We plan to put in an underpass and extend the collecting yard," says Tom.

"This will involve a new double tank. Currently cows can be held after milking in the spring for on/off grazing. The proposed tank at the back of the collecting yard will

provide for this.” Tom Downey in his collecting yard. The yard is too rough in places (picture on right) to install an automatic scraper. The two existing tanks are connected via a 250mm pipe near the surface.

“We get a contractor to clean the silage pits and yards two to three times a month,” says Tom Downey.

“We plan to eventually buy our own yard sweeper. This is important because the runoff from open silage pits is regarded as soiled water unless it is kept clean.”

TAMS and accelerated capital allowances

Additional soiled water storage is eligible for grant aid under TAMS III. Planning permission must be sought and submitted when applying for TAMS.

Slurry/soiled water and farmyard manure storage, automatic scrapers, simple slurry aeration systems and the floors and walls of buildings used to house animals are eligible for a two-year write-off against income tax.

The Finance Bill Section 658A specifies that slurry/soiled water stores have to be covered. Slats meet this cover requirement.



Tom Downey with two of his water pumps.

THREE TIPS TO REDUCE YOUR SOILED WATER

1. Scrape yards instead of washing, where possible.
2. Reduce the soiled area, by for example confining cows leaving the parlour to a drafting chute. Holding yards where cows are held for AI will be clean for most of the year and any clean runoff should be diverted away from tanks where appropriate.
3. Switch from a high-volume low-pressure washer, typically having an output of 182 litres of water per minute to a low volume (45 litres per minute) medium pressure washer.

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Farm transfer – it's time

James McDonnell
Farm Management Specialist,
Teagasc, Oak Park Carlow



You'll certainly have heard the saying that the only certainties are death and taxes. Another unpalatable fact is that farmers, on average, are getting older. Hence the huge interest in farm succession. On the plus side, Government and EU incentives have improved significantly. On the other hand, sorting out your succession planning takes time and energy. The effort involved will pay dividends by ensuring a smooth transition and the optimum outcome for your family.

Time and timing

Putting the job 'on the long finger' often results in greater financial cost (tax). None of us knows when we will die. We might expect to live to a normal age and therefore assume we have plenty of time. But, before we know it, we may have missed out on important incentives and still have no plan!

Benjamin Franklin said: **"You may delay, but time will not, and lost time is never found again."**

Have you a will?

In Ireland, only about 50% of adults have written a will. Thinking about writing a will can be stressful, which seems to be a barrier. I have spoken to many people who felt as if a great weight was lifted off their shoulders once they had written their will.

A will is an important document as it sets out how you would like your possessions to be divided on your

passing. If you don't have a will, the Succession Act of 1965 decides as per Table 1.

Writing a will is the starting point in any succession plan and should be reviewed when your succession plan is completed.

Should you transfer your land your land while still living?

I have spoken to thousands of farming families, and it seems there is a never ending list of excuses to delay, some of which are trivial others are more difficult to resolve.

There are good reasons to transfer your farm, but this is a personal decision for every land owner. Financial incentives are aimed at the young person entering farming, while taxation incentives are aimed at both parties in the transaction.

Remember that just because you transfer the assets to your child(ren) does not mean that you have to stop farming, you could continue farming in partnership.

Many farming families start by bringing a child into the business in a partnership arrangement, then follow with asset transfers in a planned approach.

Government and EU policies incentivise early transfer for many reasons, unfortunately I don't have the space to discuss these in detail in this article.

Research in the area has shown, investing in the transferee gives the best results for Government money.

Get help

Putting together a succession plan will take time. Do not attempt it alone. There are lots of agencies



and professionals that can help you to shape your family farm succession plan. There's a lot of information published on this topic on the Teagasc succession webpage which is easily found by Googling Teagasc Farm Succession.

If you follow the "five steps" below it may help you with the task. Please note: Once the farm is transferred, you cannot reverse it, and any mistake made could have a hefty taxation or other cost. So it is important that no actions are taken until the right choices are made for your family situation. See Table 2 for a list of agencies and professionals that can help.

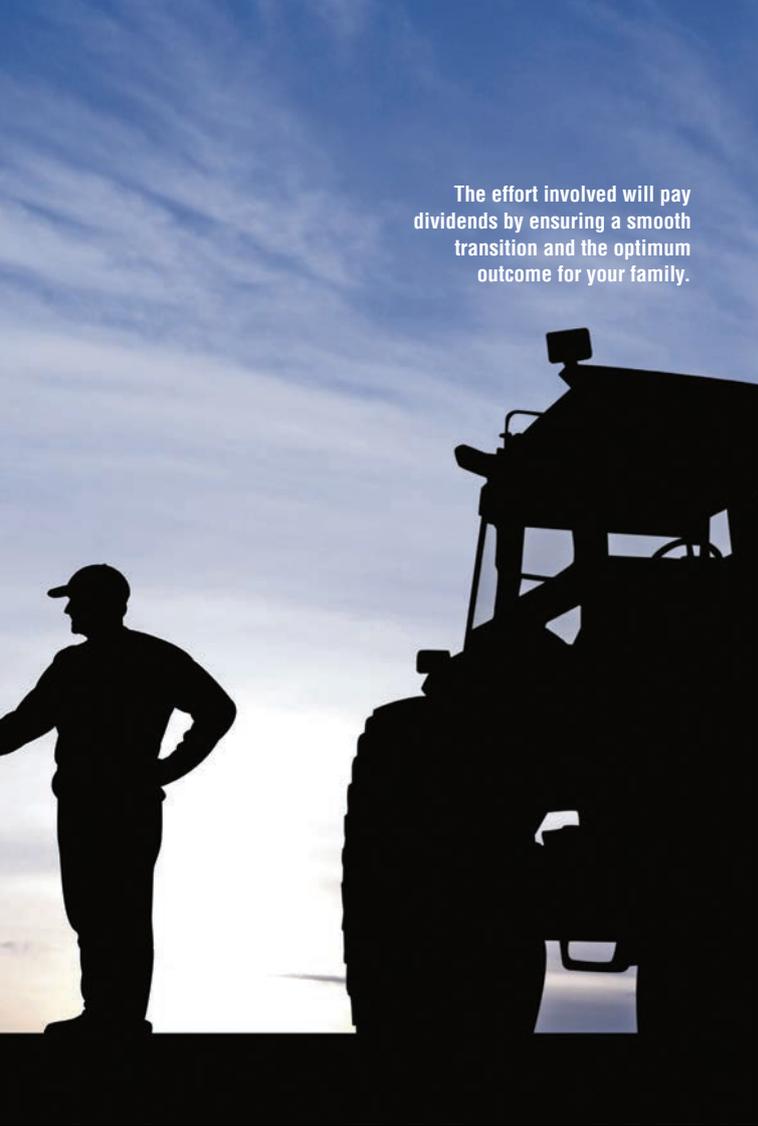
Communication

Effective communication is the key ingredient to successful succession planning. It allows family members to share concerns, decide on options available and what actions to take. This can be the most difficult step. Hiring a professional mediator can help with this process.

Good communication allows for effective planning and helps avoid disputes, misunderstandings and unnecessary anger. It is important to have the discussion early and with all family members. When planning any discussion on succession, consider

Table 1: Example of how an estate is distributed on intestacy (where you die with no will in place)

Surviving relative(s)	Share of estate received.
Spouse and children	Spouse gets two-thirds and children share the remainder
Spouse and no children	Spouse gets entire estate
Children and no spouse	Children share entire estate
Father, mother, brothers and sisters	Each parent gets one half
Parent, brothers and sisters	Parent gets entire estate
Brothers and sisters	All get equal shares
Nephews and nieces	All get equal shares



The effort involved will pay dividends by ensuring a smooth transition and the optimum outcome for your family.

Excuses for no succession plan

I have no obvious successor and I don't know where to start.

My children are all working away from home.

I still have young children to educate.

I'm afraid to pass over the farm in case my successor's marriage breaks up.

If I hand over the farm what will I do for an income?

I'm concerned about the Fair Deal Scheme as I don't know how it works.

Starting a conversation will end in a big row.

I'm afraid there could be a big tax bill on handover.

I don't want to lease my farm as I think I would be seen as a failure.

I have a large farm debt that needs to be paid first.

Five steps to develop a succession plan

- Write a will as a backstop until you have your succession plan worked out.
- Hold a family meeting to take account of everybody's position while developing a plan.
- Work out the cost (e.g. tax implications) and best timing for implementing the plan.
- If the financial cost is low proceed with the plan.
- Update your will if necessary.

Table 2: List of agencies and areas of expertise

Profession/agency	Area of expertise
Accountant	Capital taxes and tax returns relating to transfer, setting up partnerships/trusts
Solicitor	Completing legal documents, power of attorney, writing wills and other legal instruments
Mediator	Creating effective communication within family, dispute resolution.
Agricultural advisor	Education requirements, changing herd numbers, CAP payments, farm business advice, changing enterprise, farm partnerships, and forestry.
Auctioneer	Valuating the assets for the transfer
Citizen's Information Service	Pensions, entitlements, Fair Deal scheme.
Department of Social Welfare	PRSI record, pension qualification, entitlements

the following:

- Who should be involved in the discussion?
- What needs to be discussed?
- When and where to meet?
- What life stage are the children at?

Transferring the family farm clinics

Teagasc's "Transferring the Family Farm" clinics will take place in October. Thousands of farming families have attended these events around the country over the last decade.

There will be six events across the country. You should book a place

through your local Teagasc office, or online on the Teagasc events webpage in September.

So, finally, this is like the question about when is the best time to plant a tree; before now ... so now is the next best time; it's time to get going!

Right is a QR code that links directly to the Teagasc farm succession and inheritance webpage.

To use this, simply open the camera on your smartphone and scan the code.

This webpage contains links to articles and booklets that we have

published on farm succession and inheritance and it contains a booking link to allow your book into farm transfer clinics that we will hold in October more details on that will be included in the next issue of *Today's Farm*.



Six tips for a safer summer on the farm

It's the deadliest time of year so take great care and be sure to avail of financial supports for safety measures

Francis Bligh
Teagasc Farm
Safety Specialist



1 Make plans to keep children safe on the farm

July brings an increased responsibility associated with children out and about on farms. It is important to be vigilant and focused on managing the care and safety of children during the holiday period. Health and Safety Authority figures state 91% of childhood deaths on farms had a farm vehicle or a machine involved.

Young children should not be allowed near tractors or farm vehicles. Make plans to ensure that children always have adult supervision when on the farm. Even stationary tractors farm vehicles and machinery pose a high risk due to sharp edges, machine parts moving and the possibility of falls from the machine.

2 Support contractors in managing health and safety

Help your contractor manage workload during busy periods. It is important to listen to your contractor and proactively work with them in relation to planning work on your farm. Contractors are very aware of the impact of long working hours and fatigue on their driver's ability to manage machines in a safe way.

Take time also to prepare for their arrival on your farm. Tidy yards, hedges trimmed at gateways, animals

removed from sheds before slurry agitation are some examples of how you can help make your farm safer for your contractor.

3 Treat livestock with cautious respect

Put safety first when working with livestock. All animals can be unpredictable so regardless of how 'quiet' an animal may seem, care needs to be taken. It is important that time is taken to think before each animal handling task. Plan the task and carry out necessary preparatory work to avoid dangerous situations arising.

“ Grant aid under the scheme will be paid at a rate of 60% up to a maximum of €90,000

Planning and preparation will help to better manage animal behaviour, secure handling equipment and avoid high-risk activity.

Always cull dangerous animals, plan an escape route from fields and pens and keep a physical barrier between you and the cow during calving/dehorning.

4 Consider the benefit of new/upgraded farm safety equipment.



Is there equipment that you would like to purchase or upgrade to help improve safety and efficiency on your farm? If so, the Farm Safety Capital Investment Scheme, (FSCIS) under the new Targeted Agricultural Modernisation schemes (TAMS III) may be of interest to you. This scheme provides incentives to invest in equipment that would help improve safety on the farm.

- Grant aid under the scheme will be paid at a rate of 60% up to a maximum of €90,000.
- Where an application is made by two or more eligible farmers the maximum rate goes up to €160,000.

Talk to your advisor about the possibilities for your farm under this scheme.

There is a wide range of items available. See Table 1. Scan the QR code on your smartphone for more.



5 Revise your farm safety code of practice risk assessment document

The farm safety COP risk assessment document will help you identify hazards on the farm. It must be revised annually or when farming system changes or when new equipment or machinery arrives on the farm.



Trained staff in both Teagasc and agricultural consultancies provide a half-day training course on completion of the farm safety risk assessment document.

A farm safety COP training certificate must be submitted as part of the TAMS II and TAMS III payment claim process.

Contact your local Teagasc office if you would like more information or to attend a farm safety course.

6 Remember the new national farm safety measure

Minister of State at the Department of Agriculture, Food and the Marine with special responsibility for farm safety, Martin Heydon TD recently announced the opening of a new National Farm Safety Measure.

The measure will provide a financial contribution to participating farmers covering 60% of the eligible cost of quad bike helmets and power take off (PTO) shaft covers. A total of €1.5m has been allocated to support farmers in the purchase of this equipment.

Over the past decade (2013 – 2022) there have been 10 farm fatalities involving quads, of which two were under 18 and six were over 65 years.

Farm vehicles and machinery account for over half of all fatalities on farms and entanglement in power take-off (PTO) shafts has caused fatalities and life-changing injuries on Irish farms.

Planning and preparation will help to better manage animal behaviour, secure handling equipment and avoid high-risk activity.

Items that are eligible for grant aid under TAMS III

Calving pen
Bull pen
Unroofed fixed cattle crushes/races
Unroofed enclosures
Mobile sheep handling equipment
Fixed sheep handling equipment
Electronic tag readers
Mobile cattle handling unit
Head scoop
Leg hoist lifter
Cattle weighing scales
Protective fence around existing tank
Safety agitation platform for existing external tanks
New tank cover over existing open tank
Replacement tank extension cover
Replacement of damaged slats or removal of existing internal agitation point and replacement by gang slats
Tank extension to provide external agitation point
Circulation pipe (6") to allow for agitation of slurry
Simple aeration systems
Calving gate in existing house
Replacement of a hinged door/sheeted gate with a new sliding door/roller door on agricultural buildings
Safety rails on silo wall
Retrofitting roof-light with safety cages
Wiring/rewiring existing agricultural building
Yard lights (LED equivalent to min 200W halogen)
Calf dehorning crate
Horse handling facilities
Wheel changing equipment
Hydraulic motor to substitute PTO shaft
Livestock monitors
Bale slice

forestry

If you go down to the woods today you just might find a forest school

In a forest school setting, children can run, climb and play in ways that are not always possible in traditional classrooms. This can help them build strength, co-ordination and self-confidence

Michael Somers
Teagasc Forestry
Development Officer



Forest schools are innovative educational programmes delivered in outdoor environments. One of the aims is to connect children with nature. The Forest Schools Initiative provides children with hands-on, experiential learning opportunities. Benefits include fostering a love of nature but also facilitating children to develop essential life skills, such as problem-solving, teamwork and creativity.

In a forest school programme, children spend most of their time outdoors, engaging in activities which promote exploration, observation, and discovery. Children might plant trees, build shelters or cook food over an outdoor fire.

Through these experiences, the students learn to appreciate and respect the natural world and develop a deeper understanding of the importance of conservation and sustainability. Forest schools are becoming increasingly popular as parents and educators recognise their value.

One of the main differentiators of forest schools is that they provide opportunities for hands-on, experiential learning. This contrasts with traditional classroom-based education by allowing children to learn through

exploration and discovery rather than being simply told information.

By participating in activities like building shelters, planting trees and cooking food over a fire, children develop a deep understanding of concepts and ideas, which helps them retain this knowledge for longer.

Forest schools also foster essential life skills like teamwork and problem-solving.

Children are encouraged to work together in a forest school setting to achieve common tasks, such as building a shelter.

This fosters creativity and collaboration, essential skills for success in life. By facing challenges and overcoming obstacles in the natural environment, children can become more creative and innovative.

Forest schools also provide children with opportunities to learn about the natural world, fostering a lifelong love of nature.

Children who spend time in nature are more likely to appreciate and protect the environment, and to make sustainable choices in the future. This can have a positive impact on the health of the environment and help to ensure the survival of important species and ecosystems.



Forest school Cloughjordan, Kilkenny

In 2022, Mark Murphy set up a forest school. Since graduating as a primary school teacher, he has spent 16 years in the profession. "I noticed a growing disconnect between the children and the natural environment at the coalface of learning," he says.

"This was made worse during the pandemic, where the adverse social and emotional effects of COVID-19, added to pre-existing concerns about increased screen time and rising anxiety levels in children."

This was the main driving force for Mark to set up the forest school in his family's farm forest in Cloughjordan.

"Groups range from primary and secondary schools, after-school programmes, and customized programmes with an organisation or



Children learn more effectively in a forest setting.

Acorn project

The Acorn project is a community collaboration connected to the oak tree which was built on a set programme around teams using plans for food playing, medicine, shelter, etc.

This is a non-profit organisation delivering nature-based learning programmes which empower communities to take action in ecological restoration through reconnection with their local wild spaces.

Community seed saving, forest schools, nature connection, and sharing of traditional skills are also key components.

Central to the Acorn project's core themes is a natural heritage education and place-based learning programme that celebrates the heritage and living landscape of the riparian woodlands of the Nore through action-based learning initiatives.

Its in-school, community seed saving, and tree nursery project delivers biodiversity education, connecting communities to their local landscape. It empowers communities to become nature guardians through action-based events that build resilient communities and engage communities in local climate actions.

The programme helps to increase eco-literacy, the ability to understand and value the natural systems that make life on earth possible. Valuable learnings.

group, e.g. home-school networks, at-risk groups, or funded projects," says Mark.

"Sometimes a forest school leader will be hired by an organisation, or an organisation can have a certified forest school leader within it.

"For example, a school can have teachers trained as forest school leaders to run programmes for the school community as part of the curriculum.

"We offer bespoke forest school experiences to children of all ages that encourage connection to nature and each other in community and collaboration, an opportunity to learn and share ancient skills and get to know the plants, the trees and the other living beings.

"Our learning and wellbeing experiences take place in nature, are learner-led and fun. They encourage adventure, curiosity and play, reflection and rest, and are an invitation to each participant to meet their wild selves!

"Forest school is an opportunity to develop confidence through new

skills and learn lifelong personal skills in communication and resilience."

Maura Brennan is also a qualified primary school teacher based in Kilkenny. From an early age she fostered a love of nature and herbalism and used it in her teaching.

In 2012 she got a gift of a book about *Forest Schools in the UK*.

In 2016, forest school training arrived in Ireland through Forest Schools Ireland. Maura completed the course, and even before she qualified, she had her first forest school running in Kilkenny. Maura says her approach is to centre the child's learning in nature. Today she has 12 schools involved in a six-week programme. "I believe in a small one to eight teaching ratio," she adds. "Nature-based learning benefits the child's physical, mental and emotional health.

"While spending time in nature has been shown to reduce stress, improve mood and increase overall wellbeing, my approach is based on the heritage of trees and the use of wood. Understanding shade and light in a forest, shelter building, and how both live, and dead wood encourages biodiversity in forests."



Mark Murphy has set up a forest school in his family's farm forest.



Maura Brennan.

Soil – the hidden world beneath our feet

Carol Melody

Lecturer at the Teagasc College of Amenity Horticulture at the National Botanic Gardens*



Soils are at the foundation of all terrestrial plant ecosystems and land based economies. It takes thousands of years to form just centimetres of this finite resource. According to the Food and Agriculture Organisation (FAO), one-third of global soils are degraded.

Besides being a nutrient source for plants, soils act like a giant sponge, filtering water and storing carbon. There is more carbon stored in global soils, than in all plant and animal life combined.

Soils are derived from mineral rock and organic matter. They traverse a continuum from mostly mineral, think of beach sand, to, composed entirely from organic matter, e.g. peat.

When we speak of organic matter, we are talking about carbon. The organic component of mineral soils can vary but most improved pasture or cultivated land contains less than 5% organic matter.

Wet peat soils have the capacity to store at least twice as much carbon as an equivalent-sized woodland. This is the motivation behind recent rewetting proposals to offset carbon emissions.

As with the above-ground food web, the soil food web starts with plants, mainly discarded leaves, roots and exudates: 'juices' that plants secrete into the soil.

Plant-derived organic matter in varying stages of decomposition is



Most life in mineral soil is concentrated around plant roots – the rhizosphere.



Soils contain more than a quarter of all living organisms.

the food supply for soil organisms, who consume and decompose it, or consume something that lives on it.

These organisms produce or become organic waste themselves. All this activity is concentrated in the area immediately around plant roots, the rhizosphere.

Organic matter

Availability of organic matter (food), supports soil communities and nutrient cycling in soils, and in turn supports plant growth. The microscopic populations of the below-ground food web, e.g. microbes, fungi, protozoa, springtails, nematodes, and mites, are countless. They are the first levels of feeders in the soil, mobilising N, P and other nutrients. A complex diversity exists within each of the soil fauna groups.

For example, the thousands of known species of soil nematode can be categorised into at least five feeding groups that include bacterial feeders, fungal feeders, plant feeders, parasites and predators.

Larger soil organisms, such as soil feeding earthworms, while much fewer in species (28 in Ireland) play a less direct yet essential role in nutrient release, as well as a vital role for soil structure and aeration.

While much organic matter is food for soil organisms and in turn plants, humus (organic matter in an advanced state of decomposition) can be stored in the soil as a long term carbon resource.

All sources of organic matter are not equal. Slurry is an easily broken down source of organic matter because of the absence of bulky carbon rich organic waste. Due to this labile nature, slurry comes with an increased potential for leaching into water sources.

Traditionally, composted farmyard manure was spread on land to enhance soil fertility. This has available nutrients which can be immediately tapped by soil fauna, as well as higher C:N organic matter (straw usually).

The manure soaked straw is broken down slowly, acting as a slow release fertiliser and contributing to that long term humic carbon store in soils. This is where the organic principle of "feeding the soil rather than the plant" originates.

*Soil science modules and principles are taught to Horticulture students at Kildalton and the Botanic Gardens at levels 5, 6, and at level 7, in conjunction with SETU.

AGNAV

Teagasc, Bord Bia and ICBF have developed an **Online Farm Sustainability Toolkit** providing accurate and verifiable data to farmers working to deliver on Climate Action Plan targets.

There are 3 elements to the platform:

- Assess emissions for individual farmers
- Analyse opportunities to adopt technologies to reduce emissions
- Act by creating a custom made sustainability plan for individual farms

www.AGNAV.ie



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