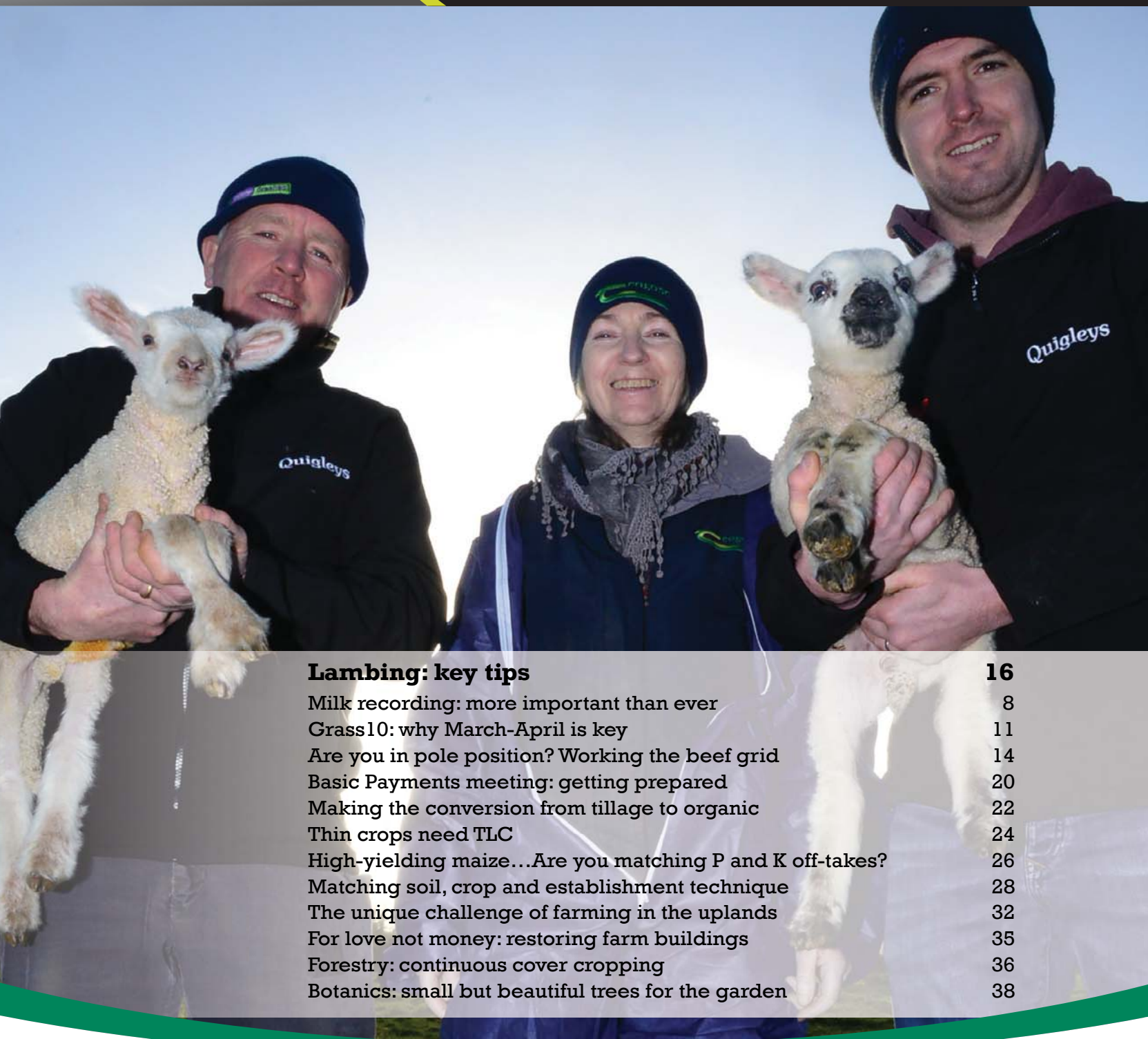




Today's Farm

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



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PREDICTABLE PROTECTION AGAINST BRD

- ✓ Starts with intranasal administration
- ✓ Protects against the latest BRD strains¹
- ✓ Enables a flexible vaccination calendar

BRD is a relentless hacker, with direct impact estimated at €48 per dairy calf and €91 per suckler calf². Make sure you have proven protection against circulating strains of BRD-causing pathogens¹.

References: 1. Phillippe-Reversat et al. (2017) Acta Vet. BRNO 86: 325-332 2. Andrews AH (2000) Calf Pneumonia Costs! Cattle Practice 8(2). Using exchange rate of €0.90/£.

Bovalto® Respi Intranasal, nasal spray, lyophilisate and solvent for suspension contains Bovine parainfluenza 3 virus (PI3V), modified live virus, strain Bio 23/A 10^{6.0} - 10^{7.8} TCID₅₀, and Bovine respiratory syncytial virus (BRSV), modified live virus, strain Bio 24/A 10^{6.0} - 10^{6.8} TCID₅₀. Bovalto® Respi 3 Suspension for Injection and Bovalto® Respi 4 Suspension for Injection contain inactivated bovine respiratory syncytial virus, strain BIO-24, inactivated bovine parainfluenza 3 virus, strain BIO-23 and inactivated *Mannheimia haemolytica*, serotype A1 strain DSM 5283. Bovalto® Respi 4 also contains inactivated bovine viral diarrhoea virus, strain BIO-25, IE: POM (E). More information available in the SPCs or from Boehringer Ingelheim Animal Health UK Ltd, RG12 8YS, UK. Tel: 01 291 3985. Email: vetenquiries@boehringer-ingelheim.com. Bovalto is a registered trademark of the Boehringer Ingelheim Group. ©2019 Boehringer Ingelheim Animal Health UK Ltd. All rights reserved. Date of preparation: Sep 2019. AHD12763. Use Medicines Responsibly.

BOVALTO
Respi INTRANASAL

BOVALTO
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COMMENT



Mark Moore
Editor,
Today's Farm

A reminder of nature's ingenuity

Calves and lambs are arriving left, right and centre. For their first hours, these newborns are dependent on their mother's colostrum "beestings". As well as fat and protein, this first milk contains antibodies to diseases which the mother has encountered and survived or been immunised against.

Today, the whole human population, like newborn calves and lambs is faced by a virus – COVID-19 – against which we have no immunity and no vaccine. It's a chastening reminder of our true nature.

Meabhrú ar chlisteacht an dúlra

Tá laonna agus uain ag teacht ar an saol ar fud na háite an taca seo bliana. Sna chéad uaireanta dá saol, braitheann na hainmhithe nuabheirthe seo ar ghruth nús a máthar. Chomh maith le saill agus próitéin, tá sa bhainne seo antasubstaintí in aghaidh galair ar tháinig an mháthair slán astú nó a bhfuair sí imdhíonadh orthu.

Inniu, amhail na laonna agus na huain nuabheirthe siúd, tá an pobal ar fad i mbaol víris – COVID-19 – nach bhfuil aon imdhíonacht ná vacsaín againn ina aghaidh. Meabhrú é sin gur luachmhar an rud í an bheatha.

BEEF
Review of QPS grid
>> 14-15



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Cover | Anthony Smyth of Weston, Ahascragh, east Galway, with his son John and Teagasc Ballinasloe advisor Bernie Leahy.

events

COLLEGE OPEN DAYS, FRIDAY 6 MARCH 2020

Apologies if your copy of Today's Farm has arrived after 6 March. If you wish to visit a college after the open day, simply contact the college principal to arrange an appointment. Alternatively, there will be open days again in October.

Ballyhaise Agricultural College open day

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

Clonakilty Agricultural College open day

- Venue: Teagasc, Clonakilty Agricultural College, Darrara, Clonakilty, Co Cork, P85 EK80.
- Event time: 11am.

Kildalton College open day

- Venue: Teagasc, Kildalton College, Piltown, Co Kilkenny, E32 YW08.
- Event time: 10am.

TEAGASC GREEN ACRES FARM WALK, CARLOW WEDNESDAY 11 MARCH 2020

The second phase of the Teagasc Green Acres Calf to Beef Programme was launched in April 2019. The primary aim of the programme is to achieve a net margin of €500/ha (excluding premia). The main areas being focused on are: calf rearing, animal health, grassland management, soil fertility, financial management and farm planning.

- Venue: Farm of Shane Cranny, Ullard, Myshall, Co Carlow. Eircode: R21 X224.
- Event time: 12pm.

SUPPORT SCHEME FOR RENEWABLE HEAT (SSRH) INFORMATION SEMINAR, CORK, WEDNESDAY 11 MARCH 2020

- Venue: Teagasc, Moorepark, Co Cork.
- Event time: 1.30pm.

ASSAP FARMERS' INFORMATION MEETING: INNY RIVER AND LOUGH SHEELIN CATCHMENT, CO MEATH WEDNESDAY 11 MARCH 2020

Agricultural Sustainability Support and Advisory Programme (ASSAP) farmers' information meeting for Inny River and Lough Sheelin Catchment.



Financial management is one of the areas that will be focused on at the Teagasc Green Acres farm walk in Carlow on 11 March.

- Venue: Ballinacree Community Centre, Ballinacree, Oldcastle Co Meath (A82 XR12).
- Event time: 7.30pm.

GURTEEN COLLEGE OPEN DAY, WEDNESDAY 11 MARCH 2020

- Venue: Gurteen College, Ballingarry, Roscrea, Co Tipperary, E53 TP93.
- Event time: 10.30am.

COLLEGE OF AMENITY HORTICULTURE, BOTANIC GARDENS OPEN DAY THURSDAY 12 MARCH 2020

- Venue: Teagasc, College of Amenity Horticulture, National Botanic Gardens, Glasnevin, Dublin 9, D09 YV29.
- Event time: 12am.

SALESIAN AGRICULTURAL COLLEGE, PALLASKENRY, OPEN DAY THURSDAY 12 MARCH 2020

- Venue: Salesian Agricultural College, Pallaskenry, Co Limerick, V94 V8N3.
- Event time: 10.30am.

FOREST AND WOODLAND ESTABLISHMENT EVENTS

Baillie Hotel, Baillieborough, Co Cavan, Thursday 12 March 2020

Buses will depart between 10am and 11.30am. The event will take approximately 2.5 hours.

- Contact: Kevin O'Connell,
- Mobile: 087-121 6159
- Email: Kevin.oconnell@teagasc.ie

Saint Laurence's Community Hall, Garrynageragh East, Dungarvan, Co Waterford.

Thursday 19 March 2020

Buses will depart between 10am and 11.30am. The event will take approximately 2.5 hours.

- Contact: John Casey.
- Mobile: 087-2242283.
- Email: john.casey@teagasc.ie

A range of important issues and activities will be discussed and displayed at each of the events:

- Overview of current forestry schemes including afforestation, native woodland, agroforestry and forestry for fibre.
- Improving farm income.
- Applying for grants and how to get the work done.
- Land suitability for planting.
- Ground preparation and early management of established crops.
- Forestry interaction with other agricultural schemes, e.g. BPS.
- Forestry, biodiversity and water management.

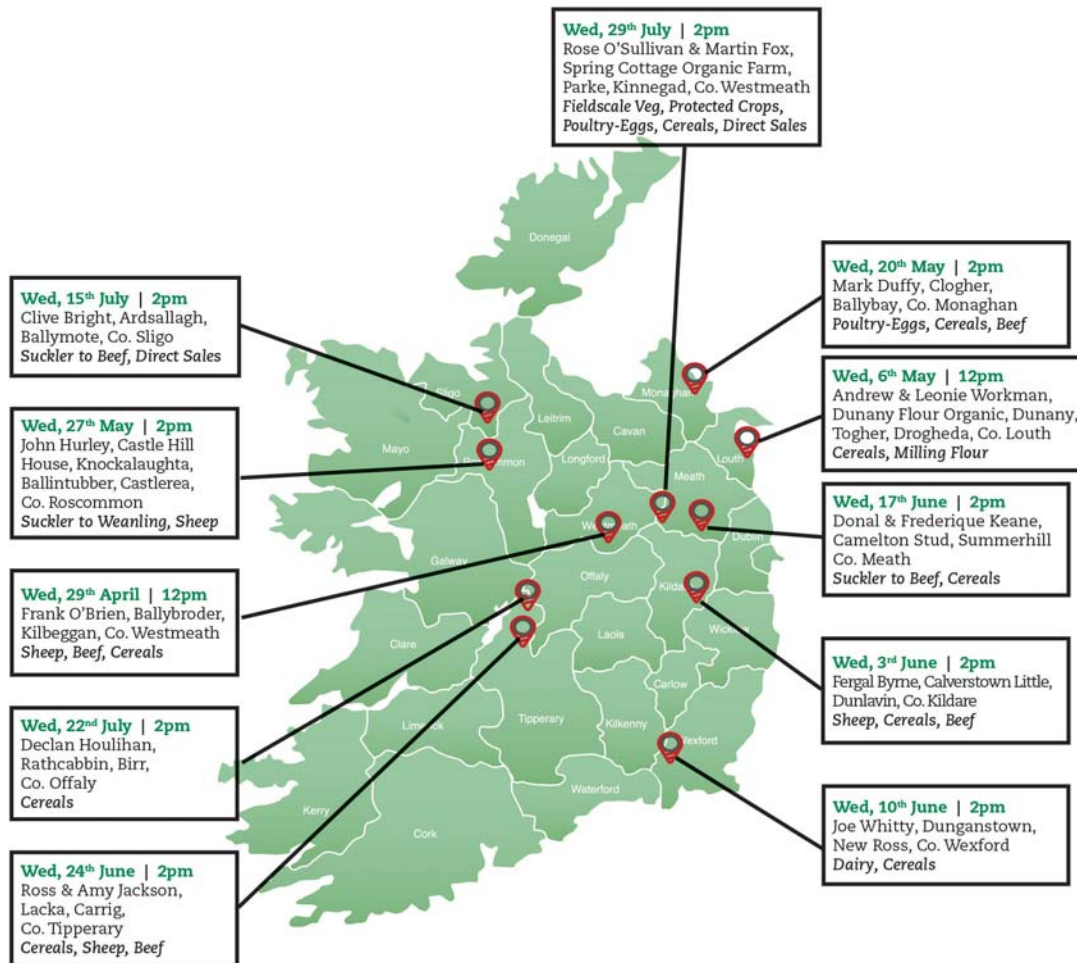
INTRODUCTION TO FOOD INNOVATION AND NEW PRODUCT DEVELOPMENT, WEDNESDAY 1 APRIL 2020

Whether you are new to food innovation/product development or want to improve your pipeline of innovative food products, this one-day workshop will introduce you to a wide range of best practice options and real-life case studies.

Who is this workshop designed for?



Organic Demonstration Farm Walks 2020



For more information visit: www.teagasc.ie/organics

- Entrepreneurs who have a development project to complete and who have a food product idea.
- Individuals currently not working in the food processing area but feel they have a potential food product idea worth pursuing.
- Staff working in the food and beverage sector who have responsibility for or involvement in innovation/NPD activities.
- What will I learn if I attend?
- Obtain an overview of the innovation/new product development (NPD) process.
- Be able to apply a structured approach to innovation/NPD.

- Be able to identify gaps in your own innovation/NPD practices and implement improvements.
- Hear how one food entrepreneur has made it work.
- Obtain an overview of your regulatory and labelling responsibilities.
- Learn about Teagasc expertise and NPD facilities available.
- The event will be in the format of a one-day workshop including presentations, group-based activities, case studies and a tour of pilot facilities.

Course venue and fee

- Teagasc Food Research Centre, Ash-town, Dublin 15 on 1 April 2020.

The fee for this course is €300 per participant. This includes all course materials, lunch and tea/coffee.

2019 GRASSLAND FARMER OF THE YEAR OPEN DAYS APRIL 2020

- Wednesday 8 April: Paudie O'Brien, Ballinvarrig, Firies, Killarney, Co Kerry. Eircode V93 HE02.
- Wednesday 15 April: Bryan Daniels, Raheenarran, Kilmoganny, Co Kilken-ny. Eircode R95P202.



The farmers in the 2019-20 cohort of the Teagasc/UCD Michael Smurfit Business School course in Business Strategy. Back row (from left): Bernard Ging (Laois), Michael Clancy (Cork), JP Hammersley (Tipperary), Edward Egan (Teagasc mentor), Micheal Doyle (Carlow), Eavaun Carmody (Tipperary) and Donal Brennan (Carlow). Middle row, from left: Thomas Fitzgerald (Carlow), David Henry (Sligo), Ciaran Hickey (Teagasc mentor), MJ Scallan (Wexford) and Shane Crean (Cork). Front row (from left): Edward Treanor (Monaghan), Michael O'Callaghan (Limerick), Catherine Millerick (Tipperary), Cathal Herlihy (Waterford) and Harry Lalor (Laois). Absent from the picture: Aoife Flanagan (Meath) and Patrick Greenan (Monaghan).

Teagasc/UCD Michael Smurfit course in Business Strategy

The sixth cohort of farmers recently completed the Teagasc/UCD Michael Smurfit course in Business Strategy. The level 8, fully accredited, course challenges participants to create a strategy for their own business regardless of their enterprise. This year's class included farmers with dairy, beef, tillage and poultry as their primary enterprises.

"The course is challenging but it made us think outside the box and I'd say we are more clear in our decisions about where we are going down the line," says Catherine Millerick, a dairy farmer from Kellenaule in Tipperary.

The course is based on "executive training" so there is a high degree of interaction between course leaders and participants. A range of subjects related to strategy are covered in the course including strategy formulation, management of oneself and others, investment, etc. "I found the material on managing and preparing for negotiations extremely useful," says Catherine Millerick.

The course is based on two modules, one of three days and another of two days which are held in a hotel where the participants stay overnight.

There is a gap of four weeks between

the modules. The modules are held in a hotel with participants staying overnight.

Between the modules, students work on their individual strategies with guidance from Teagasc mentors.

The course will be run again in autumn 2020 (a slightly less busy time for many farmers) and Teagasc has partnered with Macra Skillsnet to generate partial financial support for participants. The course is sure to be full this year, so to find out more and reserve a place, please contact Mark.Moore@teagasc.ie or ring 087-417 9131.

Teagasc scientists investigating possible whiskey 'Terroir'

Irish whiskey (uisce beatha Éireannach) is one of the oldest spirit drinks in Europe and is a geographical indication product approved by the EU, which is a designation used to identify a product whose quality and reputation is linked to its geographical origin.

Although each step of the distilling process plays a vital role in establishing the flavour complexity of the whiskey, the cereal crop imparts a distinctive sensory profile, which is allegedly directly attributable to its geographical origin and therefore may impart a "terroir" aspect to whiskey.

"Terroir" is the set of all environmental factors that affect a crop's phenotype, including unique environment contexts, farming practices and a crop's specific growth habitat. Collectively, these contextual characteristics are said to have

a character and the term "terroir" refers to this character.

"Terroir" forms the basis of the French wine appellation d'origine contrôlée (AOC) system, which is a model for wine appellation and regulation in France and around the world. However, "terroir" has not yet been established for whiskey but researchers in Teagasc are attempting to answer this question as part of an Enterprise Ireland Innovation partnership with Waterford Distillery.

— Teagasc TResearch

BovINE beef network launched

A new trans-European beef network, called BovINE, has been launched by Teagasc in conjunction with EU research and farming partners. BovINE will stimulate the exchange of knowledge and ideas at an international level under the headings of: socio-economic resilience, animal health and welfare, production efficiency and meat quality and environmental sustainability.

Teagasc tendered and was awarded funding of €2m by the European Union to develop this project, which will be shared with 17 other EU partners. The BovINE project will engage with beef farmers from nine member states, covering 75% of the suckler cow population in Europe and 70% of beef output.

Focused on responding to farmer-identified needs, the BovINE network will provide beef farmers with access to information about innovations that could improve sustainability of their farms and the wider industry.

Professor Maeve Henchion, head of the Department of Agrifood Business and Spatial Analysis of Teagasc, and BovINE coordinator: "We will ask farmers to identify their most urgent needs and we will respond to these needs in two ways.

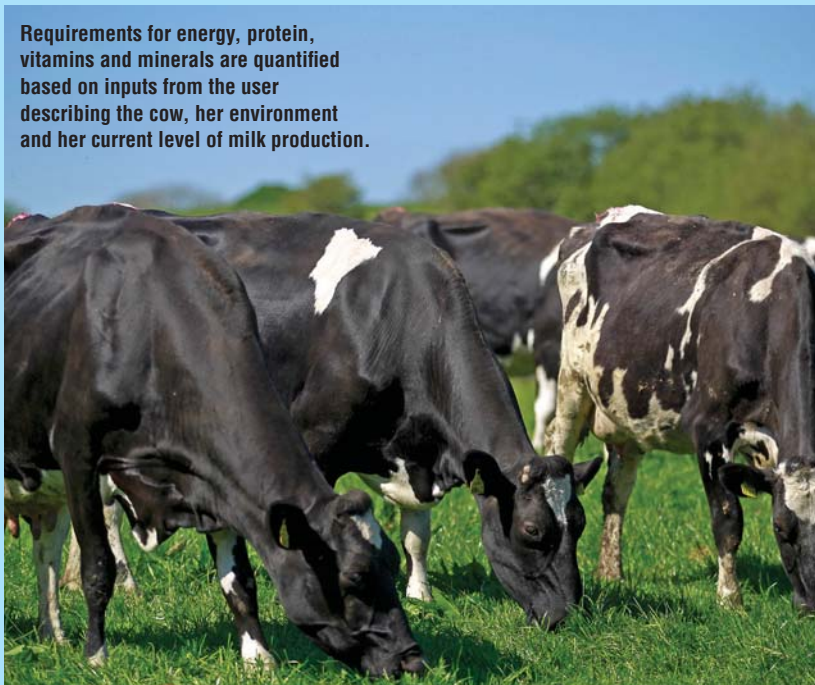
"Firstly, drawing on the international network of our 17 partners which include farmer associations, breeder associations, agricultural advisory organisations and applied research institutions, we will look to identify and share examples of solutions used by other farmers across the EU-wide network.

"Secondly, drawing on the same network, we will identify solutions from research results that have not yet been put into widespread practice. Any proposed solutions that have not yet been applied in practice will be subject to scrutiny in a demonstration farm context before being promoted for widespread adoption."

Kevin Kinsella, director of livestock with the Irish Farmers Association, said: "The project will provide a structure that will enable us to learn more and improve, and share our experiences with other European beef farmers. We are committed to working with Teagasc and many European farm organisations and research colleagues through BovINE, to help Irish and European beef farmers."

Join the mailing list for project news at bovine@minervacomms.net

Requirements for energy, protein, vitamins and minerals are quantified based on inputs from the user describing the cow, her environment and her current level of milk production.



The true nutritive value of grazed pasture

Ruminants have a unique ability to convert the most abundant human-inedible organic compound on earth, cellulose, into human-edible food. A primarily pasture-based diet involves the consumption of homegrown human-inedible forage, which minimises environmental impact and supports a resilient business model for the farmer.

There are, however, opportunities to increase the efficiency and productivity of pasture-based systems by incorporating more nutrients (i.e. nitrogen and carbon) into milk and meat products. A Teagasc collaborative project with Cornell University is exploring new nutritional management tools for pasture-based dairy production systems to increase the capture of nutrients into milk.

Nutritional modelling provides greater understanding of the balance between nutrient supply from the diet and the animal's requirements. The Cornell Net Carbohydrate and Protein System (CNCPS) is a tool that is used widely for formulating dairy cow diets in the US, with growing usage across the world.

Requirements for energy, protein, vitamins and minerals are quantified based on inputs from the user describing the cow, her environment and her current level of milk production.

The supply of each of these nutrients is also quantified based on the animal's intake and the characteristics of the diet the cow is consuming. The CNCPS utilises novel feed chemistry techniques to characterise each feed and hence the cow's diet.

In pasture-based systems, there are a number of dietary strategies available to enhance the capture of nutrients. To select the optimal strategy, however, knowledge of how the diet interacts with the host and the nutrients it supplies is critical. The CNCPS can help to provide this increased understanding through the combination of mathematical modelling allied with in-depth feed chemistry analysis.

These new tools can provide a greater understanding of the nutrition of cows grazing pasture-based diets and also provide far-reaching insights; for example, how to optimise concentrate supplementation of cows grazing on pasture-based systems or to describe future plant breeding objectives.

Improved swards, optimised for traits such as reduced ruminal digestion of plant AA, could increase net human food production, lower environmental impacts and increase the financial resilience of pasture-based systems.

— Teagasc TResearch

We're not making enough use of milk-recording

We're falling behind in our use of this tool, which can yield financial and disease control benefits

Stuart Childs
Dairy specialist,
Teagasc Animal and
Grassland Research and
Innovation Programme



Why milk recording?

The first piece of information about milk recording dates back to 20th century France. The first full-scale trials were carried out between 1900 and 1910, with the first milk recording syndicate coming into operation in the Seine Maritime Department in the Normandy region of Northern France in 1907.

The first milk recording in Ireland took place, not much later, in 1910. Milk recording is an important management tool in dairy farming, however, in Ireland the level of milk recording is disappointingly low (Table 1).

There are many benefits to milk recording and more dairy farmers in Ireland should be doing it, because it allows farmers to:

- Track the best and worst producers, allowing you to identify superior cows that are more suitable for breeding replacements.
- Track somatic cell count (SCC) of each cow, which will facilitate management of repeat offenders. This, in turn, can improve milk revenue as cows with high SCC milk less.
- If you are in the unfortunate situation of having a reactor to a TB test, milk recording records increase the compensation available for animals that have to be culled.
- Milk recording results feed into

ICBF's genetic evaluations, which improve EBI reliability. If you are not milk recording, you are not allowed to complain about EBI (if you are inclined to do so!)

If this is not enough to convince you, then consider this – recent analysis performed by the Agricultural Economics and Farm Surveys Department of Teagasc in Athenry and the School of Business and Economics in NUIG found that:

- Milk recording helps farmers to select a better performing herd that will yield approximately 400l per cow extra per annum (€120 per cow at 30c/l).
- Milk recording reduces avoidable costs associated with poor udder health by identifying cows at risk of mastitis and reducing the herd level SCC by approximately 25%.

From improvements in milk quality from both fat and protein percentages, better cows and SCC through better management, using milk recording results in better milk prices being paid. This equates to at least a 4% increase in gross margin.

Then, there is the issue of antimicrobial resistance (AMR) which is fast approaching. Antimicrobial resistance, or antibiotic resistance, is the term used to describe infection-causing bacteria that can survive exposure to an antibiotic that would have previously killed it.



Continued on p10

Table 1: Proportion of cows and herds milk recording in a selection of significant dairy producing countries (ICAR 2018).

Country	Number of recorded cows	Number of recorded herds	% of total cows recorded	% of total herds recording
Denmark	518,682	2,850	91	91
The Netherlands	1,471,431	14,784	90	86
New Zealand	3,615,000	8,242	72	71
Norway	219,360	8,331	93	94
Average	N/A	N/A	87	86
Ireland	699,520	6,191	51	35



Investigating an outbreak

When Mastitis/high SCC strikes, it can have a profound impact on the smooth running of a dairy herd. Farmers going through it often say that the mental challenge is as hard as the financial burden. When investigating a mastitis outbreak in a herd with milk recording, versus a herd without milk recording, the absence of recording can result in a delay of months to even years before the problem is controlled.

What to look for

The pattern of infection can be seen from your farm summary sheet. You can see how many cows from each lactation are infected and if the infection is spreading through the herd or is confined to a particular lactation. The problem cow sheet is a great tool, as it will rank the cows in order of percentage contribution to the bulk tank based on SCC and milk yield.

We can also see if these cows were a problem in the previous lactation, as the average SCC for the last lactation is highlighted in this report. The CellCheck farm summary report is also very helpful and it shows the overall SCC performance of the herd.

In this report, an analysis of the previous dry cow treatment is assessed, assuming the first milk recording is carried out within 60 days of the first cow calving. This report highlights how the dry cow procedure went and, most importantly, how the in-calf heifers have performed at calving in relation to SCC counts.

As a tool to monitor, maintain and most importantly, an insurance policy when an outbreak occurs to preserve optimum herd performance, milk recording is absolutely vital. Remember – you can get help from your advisor in interpreting your reports.

**– Don Crowley, Dairy Advisor,
Milk Quality Specialist, Teagasc, Clonakilty**

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Continued
from p8

Resistance to antibiotics is a very real threat, as we have only a limited number of antibiotic groups to treat both human and animal infection. It is estimated that AMR will be responsible for the deaths of up to 50,000 people each year by 2050.

In light of increasing resistance, new European legislation will take effect from January 28, 2022 (just under two years from now). This legislation will mean that the administration of dry cow tubes to all quarters of cows in the herd, or blanket dry cow therapy, will no longer be allowed. Selective dry cow therapy (SDCT) will have to be practiced instead.

SDCT is when only cows that have known infections receive antibiotic tubes – those that do not have an infection will receive teat sealer only.

The new legislation targets blanket dry cow therapy, as this is seen as an unnecessary or unjustified use of antibiotics, which could be fanning the flames of the resistance fire. Use of antibiotics to treat known infection will still be allowed. However, it will require individual cow evidence of infection in the form of milk recording data and culture and sensitivity analysis for your farm.

For those already milk recording, remember that to get full benefit



Milk recording reduces avoidable costs associated with poor udder health by identifying cows at risk of mastitis

from your first recording, it should be completed within 60 days of the first cow calving at the latest. This is to ensure that important information relating to cure rates over the dry period can be calculated accurately for your herd.

This has always been important information, but it will be of even greater importance in the coming SDCT era. Furthermore, milk recording early in lactation can help to head off any potential problems that may have arisen. Early detection can help prevent infections from becoming established and also prevent further spread in the herd.

It should be obvious by now that milk recording won't cost you money. In fact, it will actually make you money.

Yes, there is a time and hassle factor associated with the process, but the benefits far outweigh the negatives. It takes the same time to milk a good herd of cows as a bad one, so you might as well be milking a good one!

If you are not already milk recording but are interested in starting, the following are the contacts that you will need:

- Munster Bovine: 022 43228.
- Progressive Genetics: 01 4502142.
- Tipperary Co-op: 062 33111.

High EBI herds

"When advising new entrants, I always recommend that they source their stock from high EBI milk recorded herds.

These milk recorded herds provide the best of genetics to underpin the establishment of the new entrants farm,

helping them to achieve a milk price well ahead of the co-op average.

This advantage is of great importance, as it can help to cushion the new business if milk price is low at any stage during the development phase. It could take 10 years to breed the same capability into an average herd. By selecting from high EBI milk recorded herds, new

entrants can propel themselves into the upper tiers of milk solids performance within their respective co-ops, getting them off to a very strong start in their new enterprise."

– Patrick Gowing,
Specialist Dairy Advisor, Teagasc
Dairy Expansion Service



Bryan Daniels
with his wife Gail
and son Eli.

Getting grazing right

John Douglas
Teagasc Animal and
Grassland Research and
Innovation programme.



John Kilboyle
Dairy advisor, Teagasc
Mullinavat



1 Grassland excellence rewarded
Last December, the Overall and Sustainability Farming Grassland Farmer of the Year was awarded to Bryan Daniels from Kilkenny. The Kilmoganny native farms alongside his wife Gail and their three children Shannon, Toby and Eli. They operate a spring-calving system, milking just over 300 cows.

Over the last three years, they have grown an average of 17t of grass DM/ha, while achieving an average of 10 grazings per paddock on their grazing platform. This was the highest number of grazings per paddock achieved in the competition. This is particularly impressive, as some paddocks are up to 1,000ft above sea level. While they excel in all areas of

grassland management, this has been achieved while maintaining a strong focus on the sustainability of their farm system.

The incorporation of clover on the farm has led to a considerable reduction in compound nitrogen fertiliser usage. In addition, the Daniels are strong advocates of using Low Emission Slurry Spreading technology (LESS) and protected urea. The GFOY competition promotes excellence in grassland management and farms are scored on soil fertility, grazing infrastructure, grazing management, grass measurement, reseeding and sustainability.

2 Making the most of grass in spring

Bryan's spring grassland management involves spreading slurry using LESS technology, applying protected urea and getting out to grass early. From experience, Bryan knows the grazing decisions made in the coming weeks can increase grass utilised and reduce the level of meal fed in 2020, by starting the second rotation on time.

"It hasn't been the easiest spring, given challenges with weather, how-

ever the cows have been out grazing every day since 30 January, with the exception of only two days where snow prevented grazing. We have been using on/off grazing to good effect to keep grass in cow's diets, getting two by three-hour grazings in each day.

"To help achieve this, we have targeted drier paddocks with multiple access points using back fencing to minimise damage on grazed sections. Initially, all lower covers were targeted and this really helped reduce damage and get through more area. Keeping grass in the diet has limited silage feeding for February to 1kg DM silage/cow/day, along with 3kg meal/cow in-parlour, with the remainder of diet comprising of grazed grass.

"For ourselves on the farm, getting out to grass in spring has had huge benefits in terms of reducing cost of production, while improving cow performance. It also takes pressure off labour on-farm at a very busy



Continued on next page

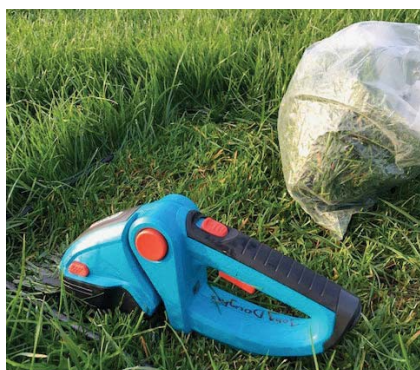
time of year. Milk solids percentage has increased to an average of 3.8% protein and 4.74% fat for February, which is new high for this farm for the time of year. As of the 1 March, we have 33% of the milking platform grazed, which has put us in a good place for having enough grass back on these paddocks for start of the second rotation on 10 April.”

• **Getting it just right.** This means starting the second rotation when there is a cover of 1,100-1,200kgDM/ha back on the first paddock. There must also be three other paddocks around 1,000kgDM/ha. The grass wedge should be shaped like a step of stairs, where there is a continuous supply of quality grass coming on.

This should also coincide with ‘Magic Day’, the day that grass growth is equal to the demand for grass. When to start the second rotation will depend on how early you started grazing, when fertiliser was applied, soil type, climate and stocking rate. As a rule of thumb, early, dry farms should target early April and heavy, late farms should aim to start two weeks later.

• **Starting too early.** The first paddocks grazed will not have recovered and livestock will be forced to graze low covers, which will reduce their performance. Grass growth will also struggle to meet the demand for grass if the AFC drops below 500kgDM/ha, as it takes grass to grow grass. It will require additional supplementation to bridge the gap. This leads to lower grass utilisation and increased feed costs.

• **Starting too late.** Bryan highlights: “The target during the main grazing season (April to August) is to graze covers of 1,300-1,400kgDM/ha every day. If the start of the second rotation is delayed, the pre-grazing yields will be too high. Hence it will be difficult to graze these paddocks out, grass will become stemmy and animal performance will suffer. Increased concentrate supplementation would be required, therefore spring grassland management is key to controlling cost of production on-farm.”



Carry out a farm cover and check regrowths.



3 Graze the ‘right’ grass on your farm

Follow the spring rotation plan. This is a grazing plan that calculates the area that can be grazed every day to keep grass in the animals’ diet during the spring, until the second rotation begins. Every day at grass is worth €2.70 per cow.

Normally, 30% of the farm should be grazed by March 1 (to have 1,100-1,200kgDM/ha covers on them in early April), another 30% by St Patrick’s Day and the final 40% grazed by early April, when the second rotation starts. With the difficult grazing conditions, many will have to aim for 30% by St Patricks day, 60% by 1 April and 100% by mid-April, as a suggested plan.

• **Walk the farm.** Identify which paddocks need to be grazed by St Patrick’s Day to reach your grazing target. With stocking rate and animal intake increasing, the heavier grass covers should be grazed before St Patrick’s Day, as sward quality declines rapidly after this.

Silage ground can also be grazed in March, but be careful and ensure the first 30% grazed will be available

for grazing in the second rotation. Tackle the wetter paddocks when the weather is drier and pick out a couple of dry paddocks that can be grazed on wet days to keep grass in the diet, and meet the spring grazing targets.

• **Carry Out a Farm Cover.** Use PastureBase to complete a farm cover. The Average Farm Cover (AFC) should not drop below 600kgDM/ha by 1 April and never drop below 500kgDM/ha at any stage.

Breaking this rule will limit grass growth on the farm in April, when demand for grass is high. Aim to have AFC 550-600kgDM/ha and 180kgDM/LU (12 days ahead) at the start of the second rotation. Five farm covers should be carried out before May 1, which are detailed in Table 1.

Table 1: When to do a farm cover.

Farm Cover
March 17
April 1
April 10
April 17
April 24

Grassland winner farm open day



LEFT: Pictured in Teagasc Moorepark, Fermoy, Co Cork at the Grassland Farmer of the Year Awards 2019 are overall winner Bryan Daniels, Kilmoganny, Co Kilkenny, his wife Gail and son Eli with sponsors Tadhg Buckley, AIB; Liam Woulfe, Grassland Agro; Michael Creed, Minister for Agriculture, Food and the Marine; Padraig Walsh, FBD Insurance and chair, Teagasc Grass10 stakeholder committee; Aidan Brennan, Irish Farmers Journal; Liam Herlihy, Teagasc chair; and Professor Gerry Boyle, Teagasc director.

As winner of the Grassland Farmer of the Year award, the Daniels family will host an open day on their farm on Wednesday, 15 April at 11am. On the day, there will be a selection of demonstrations, discussions and displays.

The emphasis is on highlighting the technologies and management tools the Daniels use to operate a sustainable farming system. Technologies related to low-emission slurry spreading, protected urea and the benefits of clover will be on display. The open day will provide an opportunity to meet with the Grass 10 industry stakeholders, with a selection providing various display stands on the day.

According to local Teagasc dairy advisor John Kilboyle: "The Daniels farm open day will provide an excellent opportunity to witness first-hand the key technical efficiencies involved in operating a high-performing, family-run dairy herd that has consistently achieved top results over the last number of years sustainably. Looking forward to seeing you."

“ We have been using on/off grazing to good effect to keep grass in cows diet, getting two by three-hour grazings in each day

• **Check regrowth on St Patrick's Day.** If you aim to start the second rotation in early April, you need to assess what regrowth is back on the first grazed paddock on St Patrick's Day. See Table 2, which shows two scenarios that will help determine when to start the second rotation.

Assuming a growth rate of 25kgDM/ha/day, Scenario 1 shows the regrowth is on track to be at 1,100kgDM/ha on 5 April, which is ideal. Scenario 2 is when growth rates have been poor, where the spring rotation plan has to be stretched out to

the 12 April by grazing a smaller area and increasing supplementation.

• **Accelerate grass growth.** Demand for grass in April is high, so dairy farms should have 70 units N/ac spread by April 1 and drystock farms should have 46 units N/ac out by the same date. If 23 units N/ac was applied in January or early February, dairy farms should apply another 46 units and drystock farms should apply another 23 units.

This can be in the form of slurry or protected urea. In the spring, LESS slurry contains 9 units of N per 1,000 gallons of slurry, compared to 6 units of N per 1,000 gallons using the splashplate. So, 2,500 gallons/ac of slurry applied by LESS will supply 23 units N/ac.

Follow the guide above or contact your local Teagasc advisor and get grass right in 2020. Best of luck from all on the Grass10 team.

Grass 10 upcoming events:

- **Wed 8 April:** Paudie O'Brien, Disadvantaged Land Winner, Ballinvarrig, Fries, Killarney, Co. Kerry Eircode V93 HE02
 - **Wed 15 April:** Bryan Daniels, Sustainable Farming and Overall Winner, Raheenarran, Kilmoganny, Co. Kilkenny Eircode R95P202
- Both events begin at 11am. Discover how these farmers are growing and utilising high levels of grass, and reaping the benefits it provides for their families. These are public events open to everyone. All are welcome!

Table 2: Calculating when to start the second rotation.

First grazed paddock	St Patrick's Day regrowth (kgDM/ha)	Growth rate (kgDM/ha/day)	Start second rotation (Cover at 1,100kgDM/ha)
Scenario 1	650	25	5 April
Scenario 2	450	25	12 April

Teagasc review of Quality Payment System grid

Aidan Murray
Teagasc Animal and Grassland
Research and Innovation Programme

The beef price has been contentious for over 20 months now, with producers vexed at returns they receive for a premium product with full traceability for the consumer.

Much of this frustration has been evident, as the farm organisations have pushed for increased transparency within the beef sector at both processor and retailer level during Beef Taskforce meetings, which have been taking place since last August.

At one of the first meetings, the farm organisations called on DAFM to have the current differentials on the QPS grid reviewed. This task was given to Teagasc because the original differentials came as a result of work carried out by Dr Micheal Drennan.

His research, which was carried out in 2008, recommended the establishment of the 15 point payments grid. The grid was recommended following extensive research in Ireland, which determined the actual meat yield differentials, for both conformation and fatness, based on a dissection of almost 336 carcasses.

For many years the Irish beef sector had been seeking the introduction of a pricing system that rewards producers for quality production. Prior to December 2009, cattle were graded based on fatness (on a 1 to 5 scale) and conformation (based on E, U, R, O, and P grades). Prices within the grades did not have standardised price differentials, as they were determined by the open market.

Drennan's work involved establishing 13 cuts from the pistola (loin/hindquarter) and a further 11 cuts from the forequarter. The amount of bone, lean and fat was calculated for each cut within the various grades. A wholesale value was put on each component. Once summed, this gave an overall value for the carcase. Better quality carcasses would deliver a greater amount of higher value cuts and the producer would be rewarded.

As Table 1 shows the price differential between a U= 3 and O=3 is 36c/kg

At the time of the original study, the base price (R=/R- 2+ to 4=) was €2.96/kg. In the intervening 10 years, we have seen the base price rise signifi-



Aidan Murray and Michael McManus, Teagasc Derrypatrick herd.

Table 1: Price differentials on QPS grid

	U+	U=	U-	R+	R=	R-	O+	O=	O-	P+
2+	24	18	12	6	0	0	-18	-24	-30	-36
3	24	18	12	6	0	0	-12	-18	-24	-30
4-	24	18	12	6	0	0	-12	-18	-24	-30
4=	24	18	12	6	0	0	-12	-24	-30	-36
4+	18	12	6	0	-6	-6	-18	-24	-30	-36
5	0	-6	-12	-18	-24	-24	-36	-42	-48	-54

cantly. It was this rise that prompted the request for the review to determine if the differentials should change.

What did the review tell us?

The review was conducted by Prof Donagh Berry of Teagasc who, using

all the original data, went back and looked for current wholesale values for the original 24 cuts and used these values to calculate carcase values. The wholesale value was the 2017 and 2018 average.

•In the original study, the base price was €2.96. A unit change in conforma-

tion was originally worth 5.63c, which was rounded up to 6c by the industry. A unit change in fat was worth -5.09c.

•Using the updated wholesale prices the base price had risen to €3.96. A unit change in conformation had increased to 6.86c and a unit change in fat had gone to -6.09c.

For many it would appear strange that we only got a one cent increase in per-unit conformation change considering we had a €1 increase in base price. This is particularly disappointing for producers with quality stock.

The reason for such a small increase in conformation relates to how the wholesale prices for the various cuts changed between 2009 and 2018. The higher value steak cuts increased by 8%, while the cheaper forequarter cuts increased by 57% over the same period.

This is reflected in the market, where demand for products such as mince has steadily grown, while the value of dearer steak cuts has stagnated. Therefore, most of the rise in overall carcass value has come from the increased value of forequarter cuts, which can make up 55-60% of the overall carcass.

Meeting the specifications for the QPS

In order to qualify for payments as outlined in Table 1, farmers need to have in-spec cattle and be quality assured. If cattle are to be deemed in-spec, they must be:

- Under 30 months (heifers and steers).
- Meet the necessary fat and conformation grades.
- Have had a maximum of four residencies.
- Be on a QA farm for at least 60 days pre-slaughter.

If heifers or steers comply with the above, they qualify for QPS and quality assurance. Before the beef talks, we had essentially one rate of QA, which for qualifying cattle equated to 12c/kg.

At the talks, there was a lot of pressure to include over 30-month cattle in the additional QA payment. The case for this was made easier when it was revealed that cattle between 30-36 months from a QA farm could carry the QA label once it left the processor.

After a weekend of negotiations, it was agreed that prime heifers and steers under 30 months would get an increased payment of 20 c/kg, cattle between 30-36 months would qualify for 8c/kg and O- and 4+ cattle under 30 months would get 12c/kg.

Based on 2018 slaughterings, this would deliver an extra €24m to producers.



Table 2: Value changes between the original and revised review.

Value	Base Value	Conformation	Fat
Original	€2.96	5.63c	-5.09c
Revised	€3.96	6.86c	-6.09c

Table 3: New rates of QA bonus.

	Three New QA Rates		
	20c/kg	12c/kg	8c/kg
Under 30 Months	Yes	Yes	30-36mths
Max. 4 Residencies	Yes	Yes	Yes
Conformation Grade	Min O =	O-	Min. O=
Fat Grade	2+ to 4=	4+	2+ to 4=
Min. 60 day residency on QA Farm	Yes	Yes	Yes

Table 4: Proportion of prime cattle meeting QPS in-spec bonus criteria (2018).

Category	Steer	Heifer	Young bulls (<16 months)
Age (<30 months)	73%	84%	21%
Conformation	70%	86%	85%
Fat	89%	85%	73%
70 days on the last farm	92%	92%	98%
Four farm residencies or less	98%	99%	100%
Satisfying all in-spec criteria	44%	59%	17%

Table 4 shows that only 44% of all steers qualified for the QPS bonuses, with cattle being over 30 months and conformation grade the prime reasons for them being ruled out. As we process more cattle from the dairy herd, achieving the higher QA bonus (20c) will become more of an issue.

Even though many producers view the over 30 month rule as a way of managing supply, it could prove difficult in the long-term to relax this because of future environmental requirements for beef to reduce its carbon footprint and Greenhouse gas emissions.

Fifty-nine per cent of the heifers qualify for QPS bonuses. Age, fat score and conformation are the main reasons why they miss out. For beef producers, age at slaughter and fat

score are areas that potentially need to be worked on if returns are to be improved.

What next?

Teagasc has been tasked, as a result of the last Beef Taskforce meeting, to scope out how the current payment system could be improved.

We will review the work carried out by Dr Michael Drennan to see if the results could be enhanced by increasing the dataset to include a larger number of carcasses and perhaps take account of any newer cuts at processor level.

There is also the possibility of considering the feasibility of using meat yield and/or meat quality as a basis for future payments, but no doubt all this will be up for negotiation.

More lambs, more profit, fewer antibiotics

Reducing lamb mortality and unnecessary use of antibiotics are key goals for the lambing season

Michael Gottstein,
Head of Teagasc Sheep KT Programme, Teagasc Animal and Grassland Research and Innovation Programme



Estimates suggest that, on average, nearly one in every five lambs conceived does not make it to market. Apart from the reduced returns associated with losing lambs, there is a financial cost when treating sick/weak lambs and a significant amount of time spent looking after them.

For the last three years, Teagasc has been running lambing workshops aimed at helping farmers to improve key management practices and skills. Another goal is to reduce preventative use of antibiotics for conditions such as watery mouth and joint ill. The following is an outline of the topics that are covered at the workshops.

Nutrition

Adequate and appropriate nutrition is essential to ensure that ewes are free from metabolic diseases such as twin lamb disease, milk fever and prolapse. It's vital to feed ewes according to litter size, expected lambing date and body condition score.

In practical terms, this means at a minimum separating singles, twin and triplet-bearing ewes. Thin, single-bearing, ewes should be housed with twin-bearing ewes. Thin, twin-bearing ewes should be housed with triplet-bearing ewes.

The amount of concentrate to be fed to each category of ewe will depend on the forage type, quality and feeding method. High DMD and chopped,

silages will result in the highest intakes and consequently necessitate the least amount of concentrate supplementation (see Table 1).

Feeding levels should be targeted to deliver lambs that are born large enough to maximise survival, but at the same time minimising lambing difficulty resulting from oversized lambs. Optimum lamb birth weights for lowland lambs are; single 5.5–6kg, twin 4.5–5kg and triplets 3.5–4kg.

It is also important to feed the ewe adequate protein to ensure she can produce sufficient good-quality colostrum. This is where soyabean meal comes in. Aim to feed ewes approximately 100g of soyabean meal per lamb carried per day (i.e 200g for ewes with twins, 300g for triplets) in the last two weeks of pregnancy.

If feeding a compound, this means having at least 20% soyabean meal in the ration. For rations with lower levels of soyabean meal, simply top up the meal by sprinkling additional soya on top of the concentrate feed for the last two weeks of pregnancy.

Trough space

As important as providing enough feed for the sheep is, it is equally important that they have sufficient trough space. All sheep must be able to eat at the same time. (See article in Jan/Feb edition of *Today's Farm*). *See link to short clip on nutrition of the ewe pre-lambing (right). To view the video associated with this QR code, simply turn on your smartphone camera and point it at the QR code and follow any further instructions.*



Causes of mortality

The two main causes of death in newborn lambs are infection and hypothermia/starvation. Successfully reducing lamb mortality involves addressing these two issues, by paying particular attention to hygiene and colostrum feeding.

Hygiene

Think of the level of hygiene we see in human medicine – it's not realistic for the lambing shed, but we should strive to get as close to it as possible. There are simple practices available that can help farmers to sterilise equipment when lambing/feeding newborn lambs. *See video clip on a simple bucket system that can be used to sterilize all your lambing and feeding utensils.*



The use of arm-length gloves and lubricant are important when assisting in the birth process. A new glove should be used for each lamb delivered, to prevent dirt and straw entering the womb of the ewe.

Clean clothes are also important. Regular cleaning and washing down with a suitable disinfectant will help to prevent the spread of bugs to newborn lambs when they are being handled after birth.



A clean environment is essential to prevent the newborn lamb from being challenged by disease immediately after arrival. Plenty of clean straw provides a useful barrier between the dung/dirt in the pen and the lamb during the birthing process.

Shortly after birth, the ewe and newborn lambs should be moved to an individual pen. This will allow for a strong mother-offspring bond to develop, which allows for better supervision of suckling, etc. More importantly, it allows for the lamb to be placed in a clean environment. Lambing pens should be cleaned out and disinfected using a suitable product, such as hydrated lime, cubicle lime, etc, between lambings.

See video clip on reducing lamb mortality with hygiene.



Navel disinfection

The navel is essentially a tube offering bugs direct access to the internal organs of the lamb. Consequently, it is important that it is disinfected properly to prevent infection while it is drying and shrivelling up. The navel of the lamb should be disinfected as soon as is practical after birth and again four to six hours later. Immersing the navel in disinfection fluid is preferable to spraying.

Colostrum – nature's antibiotic

Colostrum, the first milk produced by the ewe is a wonderful product with three very important characteristics:

- It contains disease-tackling antibodies, which protect the lamb in early life (before it has a chance to develop its own immune system).
- It acts as a laxative, cleaning out the digestive tract of the newborn lamb.
- It supplies the lamb with a complete feed, which meets all of its nutritional needs.

Key points regarding the management and feeding of colostrum to lambs are:

- Ensure that each lamb gets 5% of its body weight of ewes' colostrum in the first four hours of life to get the animal off to a good start. Five percent of a lamb's bodyweight for the average 5kg lamb is 250ml. Many farmers give at best two or three 60ml syringes per lamb, which is totally

inadequate for all but the smallest of lambs. In addition, giving a small feed stimulates the gut of the lamb to start closing, thus preventing immunoglobulin transfer later on.

- Make sure that all lambs get at least some ewe colostrum. Colostrum substitutes, while useful to have on hand, are not an effective substitute for ewes' colostrum in terms of supplying lambs with relevant immunoglobulins against diseases, for which your ewes have been vaccinated.

Where an ewe has insufficient colostrum to meet the needs of her lambs, divide the available colostrum equally between her lambs and make up the shortfall with colostrum from another ewe in the flock (best case scenario) or, failing that, make up the shortfall with a colostrum substitute or cows' colostrum.

If using cows' colostrum, it is important to mix the colostrum from two or more cows. Some cows have antibodies in their colostrum that will cause death in lambs. The advice is to mix colostrum from several cows to dilute the effect. If using cows colostrum, it is important to increase feeding levels by 30%, as cows colostrum is more dilute than that from ewes.

- Be aware that Johne's disease in cows is transmissible to sheep in the colostrum.

- If the lambs are not able to suck, then the colostrum should be administered using a stomach tube.

For advice on the correct procedure for stomach tubing lambs please follow this link:



Conclusion

Keeping lambs alive is in everyone's best interest. Reducing mortality and illness in newborn lambs increases profit and reduces labour associated with nursing sick lambs. It also reduces the need for antibiotics to help fight disease and therefore is helpful in the global fight against antimicrobial resistance. This is truly a win-win scenario for man and sheep. May I wish all our readers the best of luck with lambing 2020.

Table 1: Recommended meal levels (kg/day)- unshorn twin bearing lowland ewes in good condition– ad lib silage (20% DM).

Silage quality	Weeks pre-lambing					Total (kg)
	10-9	8-7	6-5	4-3	2-1	
Excellent (75% DMD)			0.2	0.4	0.6	16
Good (70% DMD)		0.2	0.3	0.5	0.7	23
Moderate (65% DMD)		0.2	0.4	0.6	0.8	28
Poor (60% DMD)	0.2	0.4	0.6	0.8	1.0	42

sheep

Today's farm

Damian Costello,
Teagasc sheep
specialist.



Sheep farming in east Galway

Bernie Leahy
Teagasc Advisor, Ballinasloe

Anthony Smyth of Weston, Ahascragh is one of 4,128 flock owners in East Galway. DAFM census figures for 2018 show that there are 408,835 sheep in Co Galway alone. Census figures also indicate that Galway has the highest number of lowland sheep (14%), with 181,638 lowland and lowland-cross ewes out of a total of 277,536 breeding ewes in the county.

Anthony is farming approximately 49ha, comprising a mixture of loamy, and lowland soil types, some shored and only suitable for sheep, in addition to commonage land.

“We also run a suckler cow, calf-to-weaning enterprise with 31 sucklers. We breed our own replacements by natural service,” says Anthony. “Breeding stock is produced according to the Department of Agriculture BDGP scheme.”

The suckler cow enterprise is complimented by Anthony’s lowland breeding enterprise, which is made up of a mixture of Suffolk, Charollais and Texel cross ewes. He is increasing his breeding ewe numbers to 140 (including 50 hogget ewes). All of his five-star rams, two Texel and one Border Leicester are bought from a local pedigree breeder. The Border Leicester ram is used on hogget ewes.

It is fitting that Anthony’s son John has come on board to farm with him. Both are nurses are attached to St. Brigids Hospital, Ballinasloe. This busy partnership requires them to efficiently divide their farming between their job and their mixed farm enterprise.

“A good friend of mine, an electrician who is sadly recently deceased, installed cameras in the lambing sheds and linked them to our phones. It’s great that I can ring John when I see a ewe getting sick on the phone while I’m on night duty!”

The first batch of lambing started in early February with 50 ewes and finished between 10 February and mid-month.

After a break of a few weeks, the second lambing period kicks off from St. Patrick’s day onwards with the remaining ewes and hogget ewes.

Anthony pointed out that housing all in one batch was not possible because of limited shed space, hence the two batches. Further investment in sheep housing is a likely option, now that John is doing his Green Cert.

Early lambing flocks are scanned approximately 90 days post-ram turnout and grouped according to whether they are carrying triplets, twins and singles.

“I tend to be strong on triplets, which



Anthony Smyth of Weston, Ahascragh, east Galway, with his son John and Teagasc Ballinasloe advisor Bernie Leahy.

can be labour intensive,” he says.

We noted the fine body condition of the ewes. They are grazed outdoors and housed at night nearer to the lambing period.

Anthony believes in carrying on the tradition of feeding his ewes from Christmas onwards.

A locally purchased feed mixture is barley-based, with distillers, grains, beet pulp, soybean and molasses also included.

Anthony feeds ewes with high protein concentrate (20% CP) at least three weeks before lambing. He feeds the recommended mineral mixture (2.5kg per T) separately to ensure all ewes get an adequate amount.

Anthony and John hosted a recent Teagasc lamb mortality workshop, where the benefits of good lambing management practices could be seen.

Carefully limed and cleaned pens were bedded with fresh straw. The two nurses set about delivering a sick ewe, with the lamb navel dipped promptly and the lamb sucking ample supplies of colostrum by the time the workshop ended. No stomach feeding of colostrum was needed here!

Figures from Anthony’s KT Farm Improvement Plan have shown a constant improvement.

No of lambs scanned per ewe	1.8 (2016) increasing to 2.0 (2018).
The number of lambs weaned per ewe	1.7 (2016) to 1.8 (2018).

It is also interesting to note that the Smyths have worked very closely with their veterinary surgeon, Conor Geraghty, to comply with The KT Flock Health Plan and Sheep Welfare Scheme.

At the workshop, Killeen Farrell, part of Geraghty’s vet team, informed farmers about a flock health mortality study conducted by Excel Vets Ireland. By adopting veterinary recommendations in managing vaccination, abortion, clostridial diseases and treatment for worms and fluke, lamb mortality figures can be reduced to under 10%.

Anthony and John Smyth, with their careful and simple work practices, have done even better, maintaining a lamb mortality figure of 5%.

Basic Payment application – your most important job this year?

James McDonnell
Financial Specialist,
Teagasc, Rural Economy,
Development Programme



Last year, Teagasc advisors completed more than 40,000 Basic Payment Scheme (BPS) applications with farmer clients. Each one-to-one is a significant investment of time for advisor and client. To get the most from your BPS one-to-one:

- Prepare for the meeting (by reading through the information the DAFM has sent you).
- Update the advisor on the farm situation.
- Bring a list of items you'd like to discuss. You may want to review your farm plan, farm finances, increase the amount of silage conserved, or plan an investment. You may need a visit and, if so, make an appointment for a future date.

Table 1: Average value of direct payments and contribution to family farm income (FFI) 2018

Farm enterprise	Average direct payment	FFI contribution
Dairy	€21,022	34%
Cattle rearing	€13,098	158%
Cattle other	€16,226	111%
Sheep	€18,980	143%
Tillage	€22,451	55%
All enterprises	€17,244	74%

The importance of the Basic Payment in farm income

The “cheque in the post” continues to be one of the most important sources of income for Irish farm families. From Table 1, we can see that in drystock farming it contributes to keeping the farm solvent. These are average figures and 2018 was a tough year. If figures like these represent your farm and are repeated again over time, some tough conversations need to be had with your advisor.

The 2020 application

It is important that application and associated forms are done on time and with great care. In this article, I will discuss the completion of the 2020 Basic Payment Application Form.

The BPS is an application that must be made if you wish to participate in other schemes, for example: GLAS, TAMS, and organics, etc.

There are other schemes intertwined in the BPS process. It encompasses:

- Greening payment.
- GLAS and organics.
- Continuation of the Young Farmers Scheme if you were an applicant in 2016, 2017, 2018 and 2019.
- Aid for protein crops (peas, beans and lupins).
- Areas of natural constraint.

Making changes to the herd/crop/flock identifier

Every year, a significant number of farmers make changes to the herd/crop/flock number for one reason or another. For example, a herd number (identifier) in a single name was “joined” by a child to avail of the National Reserve and/or the Young Farmers Scheme (YFS). Registered farm partnerships and farming “companies” are other examples.

If you are planning to make changes to the herd identifier number, it must be completed in good time to allow the Regional Veterinary Office to process the application;

Making changes to the “identifier” can result in late, or slow, processing of the BPS application as there are extra steps:

Please note:

- If a change must be made it should be completed immediately, to allow the RVO adequate processing time.
- The date the application is received, becomes the date of change. When making a change to the identifier, include a copy of the application and a stamped addressed envelope and request the copy be returned “stamped received.”) This should be given to



your advisor to upload with the BPS applications.

- If no correspondence is received by you from the RVO by the time of your BPS appointment, you must inform your advisor, as a new blank online BPS application must be completed instead of the pre-populated one.
- The partnership registration office will not accept applications between 1 March and 1 June this year. This is to help make the BPS application process more efficient.

If you plan to make changes to your farm, consult with your Teagasc advisor early so that all the relevant application forms and tasks can be lined up and completed in good time.

Farm succession.

The average age of farmers continues to increase. This is not just an Irish trend, it is happening throughout the farming world. It is important that every farmer thinks about farm succession. The first step is to write a will. This becomes the insurance policy in case you pass on unexpectedly.

Have a conversation with your advisor about farm succession. Success-

Making the appointment

Before you visit your advisor, review all the documentation you have received from the Department of Agriculture, Food and the Marine. If you plan to make significant changes to the 2020 application, state that you may require a longer appointment than usual, so that it can be completed in one visit.

More complex cases may require a solicitor, accountant and valuer and involve some or all of the following transactions:

- Adding and/or changing the name(s) on the herd number.
- Completing a partnership application.
- Transferring entitlements using the transfer application.
- Completing a capital gains tax return.
- Completing a VAT return.
- Updating your will.



It is important that every farmer thinks about farm succession.

sion is a complex subject with lots to be considered. This is an area where leaving things to the last minute can result in things going horribly wrong. Early discussions allow planning to take place. There are taxation reliefs available, to minimise the tax due on succession transactions, but they have very specific conditions, for example, “age” or “active farmer”.

Farm forestry

There has been a small rule change (less restrictive) for farmers considering planting forestry in 2020. If you are considering planting land in 2020, contact your local Teagasc forestry advisor.

National Reserve

This scheme is aimed at new entrants to farming. This year, the National Reserve has opened for applications also. The funding available is similar to last year, so all applicants who meet the requirements have a good chance of being successful.

Successful applicants can expect to receive entitlements worth just over €183. There may be a cap applied, similar to previous years. On top of this,

all of the applicants were also paid Greening, which was worth a further 44% (€77). Some of these applicants also qualified for the YFS (~€68).

The National Reserve Scheme has two mandatory categories:

- Young farmers.
- New entrants.

The full terms and conditions are available to download from your Agfood online account. Applications can be submitted through this online service also.

Young Farmers Scheme

This scheme delivers a “top-up” to young farmers who have recently taken up farming depending on when they started. To be eligible, you must have started in the last five years and you must be 40 or younger in 2020. Once you qualify, you can avail of the payment for up to five years.

The date your name appeared on the herd number is the year you started. If you start farming in 2020, you are guaranteed to get at least one payment. The final payment depends upon what happens in the next CAP negotiations or interim measures.

The payment is made on a maxi-

mum of 50 entitlements. The payment is worth about €68. The terms and conditions are similar to last year. Applications can be completed on the Agfood online web service. The funding for this scheme is similar every year during the current CAP agreement.

Successful applicants in previous years must reapply for the next payment on the online BPS application system as part of the BPS application. New applicants will have to complete a separate online YFS application.

Deadlines

The deadline for all schemes (BPS, NR and YFS) is Friday 15 May 2020. This will not be extended. As with other years amendments can be made after submission of the application until the end of May.

Reasons for making an amendment include:

- Correcting an obvious error (minor clerical error).
- Adding or deleting a parcel.
- Change of use of a parcel
- Ticking/unticking the ANC box.
- Ticking of the YFS box (where applicable).

organic farming

Making the conversion from tillage to organic

Prior to converting to organic production, Tipperary farmers Ross and Amy Jackson operated a predominantly tillage farm with a cattle system

Elaine Leavy
Teagasc Organic
Farming Specialist



Five years ago, Ross and Amy Jackson farming in Lacka, Carrig, Co Tipperary, embarked on a journey, which has taken their farm business from a conventional tillage and beef enterprise to a fully organic cereal, sheep and cattle business. “When we entered organic conversion, we had a five-year plan and we have just got to where wanted to be at this stage,” says Amy.

Prior to converting to organic production, it was predominantly a tillage farm with a cattle system which consisted of buying store cattle in the autumn and finishing over the winter months. On the farm today is a cereal enterprise of malting barley and spring oats. There is also a sheep enterprise with 125 ewes and a cattle enterprise where organic cattle are bought, grazed for the summer and sold in autumn.

The couple describe themselves as part-time farmers, with Ross working as an agricultural consultant and Amy working in nearby Gurteen College.

Ross's brother converted his farm to an organic system. “Observing how that went we became very interested in organic farming as an option for ourselves,” says Ross. “We both liked the idea of reducing the amount of chemicals being used on the farm and also the challenge of an organic farming system.

“We also believed there was potential to increase farm profits,” says

Ross. Amy, having experience working with sheep, was very interested to mix the two enterprises of sheep and tillage in an organic system.

After careful consideration, the farm entered conversion in 2015 with full organic status for the land and produce being achieved in 2017.

Changes on the farm

When the farm entered organic conversion in 2015, a number of changes were made:

- Between 2015 and 2016, the entire farm was reseeded. This was to build soil fertility allowing cereals to be grown once full organic status was achieved.
- In the first two years, cattle were housed over the winter and finished off grass over the summer. A sheep enterprise was introduced and built up to a flock of 125 ewes.
- In May 2016, a herbal ley mixture was sown. The herbal ley contains a diverse range of grasses, herbs and clovers. Its aim is to produce well-balanced forage and not just large volumes of grass. It does not demand high fertiliser inputs and is therefore ideally suited to organic farming. It is being used to finish lambs
- Initial fencing, farm roadways and water were put in at a cost of approximately €15,000. A further investment of €40,000 was made between 2017 and 2019 on fencing, which was grant-aided through the Department of Agriculture Food and the Marine TAMS at a rate of 60%.

Growing organic cereals

“There is strong demand for organic cereals both for livestock and human



consumption and potential to make a good financial return,” says Ross.

“Coming from a tillage background weed control was my greatest concern, but you can manage that.”

In 2019, there were 22ha of land devoted to cereals. This was made up of spring oats and spring malting barley with a small area of lupins and oats being grown.

“The malting barley is grown on contract for the organic distilling market as an organic single farm distillation for Waterford Distillery and spring oats is grown on contract for Flahavan's organic porridge market,” adds Ross.

Lupins with oats were grown last year as a trial for feed for the sheep. In 2019, the oat crop yielded 2.2t/ac and the price achieved was €350/t, while the malting barley crop yielded 2t/ac and the price achieved was €472/t.

Crop rotation

“We follow a rotation of a two- to three -year fertility building phase followed by two to three years of cereals and then back to a grass/ clover ley. The rotation provides the principal mechanism to provide crop



Ross and Amy Jackson run a sheep flock with 125 mature ewes, 20 ewe lambs and five rams in Lacka, Carrig, Co Tipperary.

Figure 1
Jacksons' land use (2019)

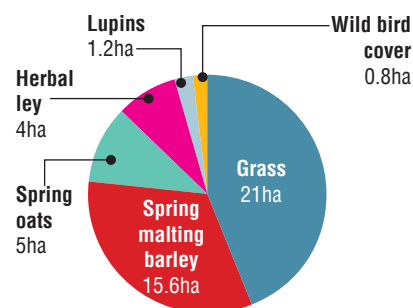


Table 1: Estimated cost per acre of growing the malting barley crop on the Jacksons farm in 2019

	€/ac
Materials	
Seed	59
Fertiliser	37
Hire machinery	
Manure spreading	20
Fertiliser spreading	5
Plough, one-pass and rolling	76
Harvesting	49
Miscellaneous	
Interest (6%)	6
Total variable costs	252

nutrients and is a major way to control pests/diseases.

“This is our planned rotation but it may vary depending on soil type, weed burden and fertility. The plan is to have a winter grazing forage between cereal crops to provide winter grazing for the sheep.

“After the cereal harvest, a winter forage crop is broadcast; the seed mixture includes vetch, radish, buckwheat, forage rape and turnip. This is grazed by the sheep from late November onwards.

Sheep enterprise

Amy, not from a farming background, credits her godmother, who manages a 1,200-head lowland flock in Northumberland, with influencing her interest and love of farming. Amy “always looked up to her” and spent a lot of her younger years helping out on the farm, mainly at lambing time. Amy went on to study environmental management at Northumbria University in Newcastle upon Tyne.

“I actually like keeping records,” says Amy, who keeps details on lambs from the time they are born right through until they are sold. Her interest and attention to detail is very evi-

dent and all management practices of the system are recorded which Amy then uses to help make future plans for the development of the flock.

The sheep flock consists of 125 mature ewes and 20 ewe lambs with five rams. The aim is to operate a closed flock, only buying in rams. The breeds of rams presently on the farm are Charollais and Border Leicester. The ewe flock is made up of Suffolk cross, Texel cross, Scotch/Blackface cross and homebred Border Leicester crosses.

“The majority of lambs are sold from mid- June to mid-November;” says Amy. The carcass weight varies from 20kg to 23kg depending on the time of the year. All lambs are sold through the Offaly Quality Lamb Producer Group to Irish Country Meats (ICM) based in Camolin, Co Wexford, with the majority going into the organic market at a premium price of 15% above conventional price base price.

Cattle enterprise

Cattle are no longer wintered on the farm. In 2019, organic store cattle were bought in the spring grazed for the summer and then sold to the or-

ganic processor and another organic livestock farmer.

Performance of the farm

The Jacksons aim to maintain a good level of production while minimising the costs of production.

They do all their own ploughing, tilling, sowing, harvesting and silage making. Their aim is to achieve a premium price for all that is produced on the farm. They have made good use of DAFM grant and scheme support.

Future plans

Ross and Amy’s farm is one of 12 organic farms in the 2019-2020 Department of Agriculture Food and the Marine (DAFM)/Teagasc organic demonstration farm programme, which showcases successful organic producers of various enterprises.

Their farm walk will take place on Wednesday 24 June 2020 at 2pm.

Over the next five years, they plan to make further investments in infrastructure and experiment with different crops, “while keeping an eye on the market and looking out for more market opportunities”.

Thin crops need TLC

Autumn 2019 sown cereal crops have struggled to get through the wet winter and will need careful management over the coming months

Shay Phelan
Teagasc tillage specialist

Veronica Nyhan
Teagasc tillage advisor, Portlaoise

Farmers face some key decisions in the next two months including whether to re-sow poorer crops. Before any decision is made growers should carry out some plant counts, as the profitability of spring crops can be low, even at fairly high yields, when you add the costs already incurred in autumn.

The above figures are only guidelines as it will be the number of ears per metre square and 1,000 grain weight that will determine final yield. In two-row barley, the target is 1,000 ears per metre square, in six row barley 700 to 800. For wheat, ear number is not as critical as the crop can compensate, however crops will still need 550 to 600 ears for optimum yield.

The oat panicle can also compensate. However you should still aim for 350 to 450 panicles per square metre.

Fertiliser

Many barley crops will receive compound fertilisers in early to mid-March, depending on weather. This application is aimed at applying sufficient P & K for the crop and also 30kg/ha to 40kg/ha of nitrogen to encourage tillering. However, tillering will only occur if temperatures are adequate. First applications on wheat and oats will normally happen in early to mid-March.

Once the first applications have been made, farmers need to estimate the yield potential of the crop. Have they the potential to yield up to 10t/ha? Many will not. Therefore, the question facing farmers is how much nitrogen do I actually need to apply? Table 2 shows the total Nitrogen requirement for winter wheat and

Table 1: Plant counts

Winter cereal plant count/m²

Plant count	Wheat	Barley (two-row)	Barley (six-row)	Oats
Target	200+	250+	170+	275+
Viable	90 – 200	120 – 250	90 – 150	90 - 275
Not viable?	< 90	< 120	< 90	< 90

Table 2: Nitrogen requirement for winter wheat and barley

Yield t/ha	7	8	9	10
N kg/ha				
Winter wheat	170	190	210	230
Winter barley	150	170	190	210

barley at different yields on Index 1 soils.

Trying to estimate yields at this stage is difficult. In many cases, due to poor establishment, some fields have areas within them that have poor potential. Cutting the amount of nitrogen in these areas will reduce total spend and lessen the risk of nutrient losses.

Where the total amount of nitrogen applied is to be reduced on a particular area, maintain the rates at the second application and make the cut in the last application. Aim to complete final application of nitrogen by GS 31/32 in barley, GS 37 in wheat and GS 32 in oats.

“ Ramularia infection will need to

be carefully monitored this year as most barley crops have been stressed over the winter months

Trace element deficiencies are common this year. Treat crops that are suffering manganese deficiency, for example, as soon as possible. Manganese deficiency can reduce tiller production or, worse still, kill off existing tillers.

Plant growth regulators (PGRs) can assist thin crops by reducing the apical dominance of the plant's growing point and encouraging growth in the tillers. There are a few key guidelines when using PGR's such as chlormequat chloride CCC to stimulate tillering:

- Only apply a PGR to a growing crop,

if there is no growth then they are ineffective.

- Do not apply a PGR to a crop under pressure as it will stress the crop even more.
- A PGR will be more effective after nitrogen has been applied as there will be more growth.
- If there are trace element deficiencies in the crop, treat these before applying the PGR.
- Avoid including a PGR in complicated tank mixes as this can result in crop scorch.

Disease control in winter cereal crops plays an important part in the final yield. However, the strategies employed are entirely different. In barley, disease control is all about protecting the tillers, therefore early applications can be very important.

Some varieties, e.g. Tower, can be attacked by net blotch during late tillering. This can cause substantial tiller death and so, earlier treatment is sometimes warranted. The first fungicide application is normally targeted at growth stage 30 of the crop. This is then followed at GS 32/33 and again, finally, as the awns emerge.

Ramularia infection will need to be carefully monitored this year as most barley crops have been stressed over the winter months. Susceptible varieties, such as Pixel, are at particular risk. Fortunately, chlorothalonil is still available for use on winter barley crops up to 20 May for Ramularia control.

In wheat, especially late-sown crops, T0 has to be questioned this year. Trial results in Oak Park have never recorded a yield benefit in late-sown crops, so this is an area where some savings could be made. In oats, a three-spray strategy is advised, starting at growth stage 30, mildew and crown rust being the main targets.



Veronica Nyhan, Marie Keegan and Aisling Keegan.

FARMER FOCUS

Marie Keegan and her daughter Aisling run a tillage and drystock farm in Ard-nagross, Co Kildare, just outside Athy. The tillage enterprise comprises of spring malting barley, along with winter barley and winter wheat. This year, for the first time, the Keegans are growing Craft, a winter malting variety, primarily to spread the workload at harvest time.

Like many tillage farms, the Keegans experienced a tough autumn but they managed to get the winter barley, both feed and malt, and the winter wheat planted over the last two weeks of October. Today, the crops are looking very clean, with good establishment and even distribution.

"Plant counts are up around 300 plants/m² for the winter barley crops and 290 plants/m² for winter wheat," says Marie. "We advocate putting a little extra seed in the ground at sowing to generate a strong crop." The practice has stood to them in this challenging year.

Herbicide

"The herbicide application happened later than intended in early February, but due to the slow growth rates, should still prove effective against what little annual meadow grass is evident."

Marie and Aisling apply a compound fertiliser in late February/early March as

soon as the growth commences to help maintain tiller numbers. "Normally, we apply three to four bags of compound as needed according to the recommendations from soil reports," says Aisling.

"This is followed by 100kg to 115kg/ha (80 to 90 units per acre) of CAN in mid to late March with the last application in early April. The barley receives a PGR to help maintain the tillers and a fungicide will also be applied again to protect those tillers.

"I like to have a good thick barley crop," adds Marie.

"I find thin crops on our farm tend not to yield, and have less straw which is also valuable to us."

tillage

High-yielding maize – are you matching P and K off-takes?

Martin Bourke
Tillage Advisor, Wicklow

Mark Plunkett, SM Ashekuzzaman and Patrick Forrestal
Teagasc Crops Environment and Land Use Programme

Over 85% of maize grown in Ireland is now sown under plastic. The advent of plastic coupled with advances in maize breeding, has led to significantly higher maize yields than 30-plus years ago. Cob yield and maturity has improved significantly. The current Teagasc fertiliser advice (Table 1) is based on a crop yielding 15t dry matter per hectare (~ 18.5t/ac fresh material @ 30% DM). However, in a high-yielding year like 2019, are farmers applying enough P and K to match crop off-takes?

A maize crop has a large demand for major nutrients such as N, P and K and high-yielding crops on south-facing favourable sites can produce maize silage yields which exceed the standard advice. When planning the nutrient applications for a maize crop it is important to consider the following factors to ensure the crops nutrient demands are satisfied:

- Soil fertility levels (P, K and Mg) and soil pH.
- Crop yield potential.

• Availability of cattle slurry or alternative organic fertilisers.

The first step is to take a fresh soil sample or consult previous soil samples to establish the soil pH, P and K levels. Apply lime where recommended to adjust the target soil pH 6.5. Apply recommended levels of P and K as per the soil test but consider the site yield potential (aspect, elevation and starting soil fertility). Table 1 shows nutrient advice for a crop of maize silage yielding 15t/ha dry matter (DM) and receiving 33m³/ha of cattle slurry.

The available N, P and K values for cattle slurry have been taken into account in Table 1 and fertiliser advice adjusted. Suggested fertiliser products are also shown and these products may change depending on soil test results and organic manure type and application rates.

Efficient use of organic manures can supply large amounts of N, P and K for maize crops and offers the opportunity to reduce production costs. It is recommended to test the nutrient content of organic fertilisers such as cattle slurry to ensure the crops N, P and K requirements are balanced correctly.

Nutri2Cycle project

Nutri2Cycle is an EU Horizon 2020-funded project. One of its core objectives is to examine how grains produced on arable farms to feed ani-



mal/poultry production systems can incorporate nutrient rich bio-based fertilisers such as cattle slurry, poultry manure and emerging bio-based fertilisers such as dairy processing sludge into arable systems to move towards closure of N, P and C loops. Table 2 shows the typical values for organic fertilisers applied in the trial.

Nutri2Cycle will run for four years. The arable site was established on the tillage farm of Sylvester Bourke, Arklow, Co Wicklow. Each year, for the next four years, the same trial site plots will receive recycled organic

Table 1: Nutrient advice (N, P and K) for a continuous maize (kg/ha), assuming a dry matter yield of 15t/ha and an application of 33m³/ha of cattle slurry

N, P & K soil index	Nutrient advice (kg/ha)			Cattle slurry @ 33m ³ /ha			Nutrients required as fertiliser (kg/ha)			Suggested fertiliser programme Product and rate kg/ha
	N ¹	P	K	N	P	K	N	P	K	
1 ²	180	70	250	33	13	105	147	57	145	695kg 12-8-20 + 138kg Urea ³
2 ²	180	50	225	33	13	105	147	37	80	460kg 12-8-20 + 270kg Urea ³
3	180	40	190	33	26	115	147	14	75	280kg 10-5-25 + 330kg Urea ³
4	180	20	120	--	--	--	147	0	120	390kg Urea ³ + 240kg 50% K

¹ Nitrogen advice for continuous maize (Soil N Index 1) assumed

² Cattle slurry P & K reduced to 50% and 90% availability, respectively on index 1 and 2 soils

³ Fertiliser N source is protected urea (urea + NBPT) unless incorporated. Omit slurry application on Index 4 soils



Over 85% of maize grown in Ireland is now sown under plastic.

Efficient use of organic manures can supply large amounts of N, P and K for maize crops, reducing production costs

bio-based fertiliser balanced to crop nutrient requirements using conventional mineral fertiliser appropriate to the crop grown in that year as part of the overall rotation. Crop performance, soil fertility and organic matter effects of treatments including bio-based fertilisers will be compared to conventional mineral fertiliser and control plots over the course of the project. As part of the project, a similar experiment with a greater number of bio-based fertilisers is also running on grassland at Johnstown Castle.

In the first year (2019) maize was the crop grown, and preliminary results show that the fertiliser programmes incorporating organic manures yielded as well as the mineral only fertiliser programmes, showing potential for cost savings and delivering carbon in addition to just N, P, K and S from the mineral fertilisers.

Maize yield and crop off-takes

One of the interesting findings from examining the trial data was the trend for soil P and K levels at the recommended fertilisation rate to drop

between planting and harvest. Table 3 shows the P and K status of the soil before planting the maize and after harvesting the maize.

The plot yields of maize recorded in this trial were approximately 24t dry matter per ha (~ 29.5t/ac fresh material @ 30% DM). This highlights the importance of maintaining optimum soil fertility (P and K Index 3) and producing high yields of maize silage.

On this site, table 3 shows that both P and K levels dropped, with K levels dropping from Index 3 to Index 2. This drop can firstly be explained by the very high yield of maize silage harvested and the large removal of nutrients (P and K) at harvest time. Secondly, the soil type in this field is a sandy loam and soil P and K levels will change more rapidly compared to a heavy soil type containing more clay.

The higher the clay fraction, the larger the supply of P and K in the soil and this reserve of soil P and K replenishes the soil's available P and K from season to season. In the 2019 trial the maize yield exceeded the fertilisation advice yield by 9 t DM/ha, the high-yielding maize crop removed a significant proportion of the available P and K. In order to maintain optimum fertility status (Index 3) on this soil type it will be important that the slurry is returned before the next crop is planted or additional P and K is applied in the form of fertiliser.

Table 2: Available nutrient content for organic fertilisers (kg/m³ or tonne)

Organic fertiliser	DM (%)	N	P	K	S
Cattle slurry	6.3	1.0	0.8	3.5	0.4
Poultry manure	55	11.5	5.5	12	4
Broiler manure	60	14	6	18	2.5
Activated ¹ dairy sludge	11	2.0	3.8	0.5	0.6
Actisoft ² dairy sludge	28	2.1	30	1.1	0.8

¹ Sludge from dairy food processing wastewater treated by aeration and a biological flocculation with Alum (aluminium flocculent) dosing;

² Lime treated dairy food processing sludge

Table 3: Soil test results before sowing the maize crop and after harvesting

Time of sampling	Soil P level (mg/L)	Soil K level (mg/L)
Before planting	9.5 (Index 3)	109 (Index 3)
After harvesting	8.66 (Index 3)	89 (Index 2)

Matching soil, crop and establishment technique



John Crowley and Eoin Lyons examine the depth which the furrow press is reaching.

In a difficult spring for tillage farmers, this Wexford malting barley grower is constantly aiming to optimise his system

Eoin Lyons

Tillage advisor, Teagasc/Boortmalt programme

John Crowley, a monitor farmer in Teagasc/Boortmalt joint programme, grows winter barley, spring beans and spring malting barley on a Clonroche series soil close to Ferns in north Wexford. The spectacular view from many of John's fields are thanks to their elevated and hilly location.

Nonetheless, this is ideal land for growing malting crops. The free-draining Clonroche series, which is found in abundance throughout Wexford, allows for early drilling in the spring, which is ideal for producing good yields of malting barley within specification.

"Choosing the right crop is vital on this soil type," says John. "Winter wheat does not do well here, but spring malting barley thrives. I've only been under 3t/ac once in the last eight years."

John's success is due in large part to careful soil management at drilling, which is essential to avoiding prob-

lems during the growing season.

"For a number of years, I ran a one-pass drill consisting of a power harrow unit and an Accord drill. While this method was effective for completing drilling quickly, I felt that the soil was being over-cultivated, which was leading to a reduction in the overall quality of the soil and to issues such as crop manganese deficiency during the growing season."

To achieve the necessary fine, firm seedbed, John's approach is to "press, press and press again." The ring or furrow press allows for perfect consolidation of soil, leaving the seedbed firm and in ideal condition for drilling. The process begins at ploughing, where John uses a furrow press attached to the plough.

This initial consolidation of the soil helps prevent important nutrients such as phosphorus and potassium being washed through the free draining soil during periods of heavy rain. Before drilling takes place, a land press is used. The large diameter rings on the machine consolidate the soil below the surface, but also leaves an adequate tilth on the surface.

Drilling is carried out with a trailed disc drill, which cultivates to a shallow depth. The shallow drilling depth means that the area where the land press has consolidated below the surface will not be disturbed at drilling. Post-drilling, the seedbed is rolled, which further firms the soil surface.

The Horsch drill that Johns runs on the farm allows for combination drilling of seed and fertiliser. Trial studies have shown that combination drilling of NPK can improve rooting and early crop performance, compared to broadcasting into the seedbed or post-drilling.

The advantages of this are even greater on low-index P and K soils. "I've seen a marked improvement in early crop development since moving to combination drilling and it is now a key management tool for producing top-yielding crops of malting barley," says John. His approach to crop selection and seedbed preparation has evolved over time. Gaining a better understanding of what crop choice and soil management techniques suit his farm has allowed him to optimise his farm performance.

Farmer health – the news is mixed

John McNamara
Teagasc Health and Safety
Specialist*



Farming is often perceived as a healthy outdoor occupation. After all, farmers are out in the fresh air, getting lots of exercise, consuming plenty of wholesome fresh food. Also, as farmers are their own boss they can plan your own work schedules.

Regrettably, the scientific health studies in Ireland show a different picture. In the working age category of 16 to 64 years, Irish farmers have a death rate which is five times higher for cardiovascular disease (CVD) and three times higher for cancer, than white-blue collar workers. A further study shows that 56% of farmers suffer a musculoskeletal injury annually, with back injury being the most prevalent (37%).

There appears to be a mis-match between perception and scientific facts regarding farmers' health.

To improve health status means being knowledgeable about health issues and being actively engaged in managing one's own health. It is considered that about 70% of non-communicable diseases such as CVD and cancer can be prevented in the longer term by active management.

Managing health

Preserving one's health is a long-term approach rather than a quick-fix. It crucially depends on the health-related actions taken by individual farmers. However, like every journey, it's a question of making a start and "quick wins" give motivation to continue and embed healthy habits.

There are huge lifestyle and farming benefits to be gained from managing one's health. Farmers in poor health also have more accidents. Health affects farm viability as poor health is associated with reduced farm income. A huge and welcome trend in the population is that people are living longer. This means that preserving health is crucial to enjoying one's later years.

Having increased awareness of farmer health issues is the first step to maintaining health. This article gives an overview of a number of



Preserving one's health requires a long-term approach rather than a quick-fix.

key issues associated with farmers' health. Teagasc is engaged in a number of farmers' health research projects with health professionals. We plan to publish findings of this research in 2020 in the interests of assisting farmers to improve their health status.

Cardiovascular health (CVD)

CVD onset can be prevented by having a regular blood pressure check with your GP. Exercise regularly. However, farm work activity on its own may not be active enough and may not lead to aerobic fitness required for cardiovascular health. Eat a balanced diet by consulting the food triangle available from the HSE. Including fruit and vegetables in your diet is crucial. Maintain a correct weight in relation to your height.

Cancer prevention

Modifiable risk factors for cancer prevention include ceasing smoking, lowering alcohol use, altering diet and weight control. Notably, farmers smoke and use alcohol less than other occupations groups. Use farm chemicals safely in accordance with instructions and use personal protective equipment. As farmers work a lot outdoors, sun protection is necessary to prevent skin cancer. Bring a change in bodily function or change in skin to the attention of your GP. Late diagnosis and treatment leads to poorer treatment prospects.

Preventing musculoskeletal disorders

Musculoskeletal disorders (MSD) are prevented by ensuring that access throughout the farm is satisfactory.

Slips, trips or falls are a common cause of debilitating MSD injury while having sound livestock handling facilities cuts the risk also. Always assess a load before attempting to move it. Using mechanical lifting mechanisms to avoid injuries, e.g. hydraulic loader. If lifting physically, use a sound lifting technique.

Managing stress

Major farm stressors include farm finance issues; dealing with paperwork, poor farm safety conditions, excessive workload and poor health. Signs of stress include irritability and disturbed sleep pattern.

Stress is managed by recognising the signs and taking action to remove the sources. For example, stress can be reduced by modifying farm procedures to cut work time. Having positive working and personal relationships helps to prevent stress. Consult your GP regarding stress issues where necessary.

**John McNamara is a trainer with Engage – the National Men's Health Training Network*

FURTHER INFORMATION

The following booklets can be sourced at www.teagasc.ie

- *Staying Fit for Farming – A Health Booklet for Farmers.*
- *Coping with the Pressures of Farming.*
- *Positive Mental Health in Farming.*

environment

Changes resulting from the derogation review

The Nitrates Derogation permits higher stocking rates. In order for this to continue, new environmental targets must be reached

Tim Hyde

Environment Specialist, Teagasc Crops Environment and Land Use Programme

Ireland's Nitrates Derogation allows stocking rates, above 170kg livestock manure nitrogen/ha up to 250 nitrogen/ha, (up to 2.9LUs cows/ha) across the entire land declared on BPS). This concession is subject to additional conditions designed to protect the environment. However, recent declines in water quality and increases in greenhouse gas and ammonia emissions, unless reversed, will make it difficult to secure future derogations.

If you are one of the roughly 7,000 derogation applicants in 2020, then the following changes will affect you and you will need to discuss the changes with your agricultural advisor. You must then put a plan in place to meet these requirements in 2020 and beyond. If you don't follow these new rules, you may well not be eligible for derogation.

A national review of the Nitrates Derogation was carried out in 2019. As a result, the following measures are being introduced in 2020 to further protect water quality and to assist in the application process for NAP 5 in 2021.

New measures for applicants

1 *Compulsory liming programme* Q: What are the requirements of the new liming programme?

A: From 2020, the liming programme must be implemented and based on a current Nutrient Management Plan (NMP) and associated soil analysis results. Lime must be applied based on soil test results and invoices should be retained for inspection.

Check what your NMP says you need for 2020 and apply to paddocks during spring/summer and on to silage ground after silage has been cut for the year.

Farms that must soil-sample for derogation 2021 should leave six months between liming and sampling.

2 *Low-emission slurry spreading (LESS)*: LESS equipment shall be used for any slurry applications; and all slurry remaining on the holding after 15 April 2020 must be spread using LESS. All slurry on the holding from the 12 January 2021 must be spread using LESS.

Q: How will DAFM capture and record the volume of slurry spread by LESS?

A: From 2020, DAFM will request the volume of slurry spread by LESS for 2019, 2020 and 2021 in m³ (1m³ = 220 gallons) on a yearly basis. It is anticipated that TAMS II grants may be available up until 15 April 2021 (one year after the mandatory introduction of LESS for farmers in derogation).

3 *Crude protein*: a reduction is required in the crude protein in concentrate feeds for grazing livestock. Q: What will be the level of crude protein in concentrate feeds to complement grazing livestock at grass?

A: From 2020, livestock with a 100% grass forage diet during the main



grazing season (1 April to 15 September) must follow these rules:

- A maximum of 16% CP between 1 April and 15 September in 2020.
- A maximum of 15% CP between 1 April and 15 September in 2021.

Note: If higher levels of crude protein are required, this must be certified by an appropriate advisor.

4 *Training programme*: farmers must attend a training programme in adopting best practice in nutrient use efficiency and management and the protection of water. This must be completed by the end of 2021.

Q: What mandatory environmental training has to be completed by farmers?

A: Farmers in derogation must complete training, and the course content must contain modules including, but not limited to nutrient management planning, water quality, gaseous emissions and biodiversity.

5 *Clover*: new grass reseeding completed by derogation farmers must include clover.

Q: What will be inclusion rate of clover/ha?

A: From 2020:

- A minimum of 1.5kg/ha naked clo-



Intensive dairy and beef farming systems will come under increasing pressure to reduce the environmental impact if they wish to continue farming at higher stocking rates.

THE NEXT DEROGATION?

A full review of the derogation and Nitrates Action Plan will take place in 2021. Given the deterioration in water quality, it is likely that a wide range of options will be considered to help reverse this trend. DAFM has indicated that the following could be considered:

- A recalculation of dairy cow excretion rates, increasing from 85, to reflect changes in genetics and feeding.
- Reduced chemical fertiliser allowances to reflect increases in N retention from the use of low-emissions slurry spreading.
- Additional requirements for farmers above 130kg NpH and those exporting organic manures to come below 170kg NpH.
- Protected urea use could be mandatory to replace % overall chemical N usage and limits on the use of unprotected urea. (There is a provision for this to be regulated in 2021).
- Modified requirements for slurry storage time, and facilities may be reviewed considering the number of slurry spreading extensions in the past.
- Stocking rate restrictions on the grazing platform.
- An extension of the LAWPRO/AS-SAP initiative to work with farmers to reduce impact on water quality.

ver seed, ie un-pelleted clover seed is required for all new grass reseeds.

- Either white (grazing) or red (cutting) or a mixture of clovers can be used.
- Over-sowing of grass seed mixtures with clover post weed control will be permitted.

6 *Derogation allowance:* commonage/rough grazing will not be eligible for the derogation allowance of 250kg livestock manure N/ha.

Q: How will DAFM define commonage/rough grazing for the purposes of the nitrates derogation?

A: From 2020, this will be defined based on the declaration of commonage/rough grazing on the Basic Payment Scheme application.

Stocking rate calculations will need to be done for these farms on a case-by-case basis as this change will affect approximately 350 derogation applicants with commonage.

7 *All-Island Pollinator Plan:* implementation of measures from the All-Island Pollinator Plan

Q: What measure will farmers have to adopt from the All-Island Pollinator Plan?

A: Farmers must adopt at least one measure from the following list:

- Leave at least one mature whitethorn/blackthorn tree within each 300m of hedgerow.
- Maintain hedgerows on a minimum three-year cycle. Cutting annually stops the hedgerow flowering and fruiting.

8 *Record:* derogation farmers must record, through appropriate software technology, the grass produced annually on the farm from 2020.

If derogation farmers do not have the required skills to undertake this measure, they must undertake training in grassland management and complete it by the end of 2021.

Q: How many grass measurements are required?

A: A minimum of 20 grass measurements (falling plate meter or cut and weigh only) on the main grazing platform only, must be taken per annum and inputted in the months below.

The following measurements are required per month over the season:

- February (one).
- March (two).
- April to September (14).
- October (two).
- November (one).

Summary

It is very noticeable that many farms are taking ongoing action on climate change, water quality, emissions and biodiversity. This will benefit their environmental footprint but more needs to be done by more farmers. Collectively, we must use all the tools available in order to deliver the improvements required. These measures can provide a win-win for biodiversity, nutrient use efficiency, GHGs, water quality and increased profitability and sustainability for the dairy industry.

environment

Forming commonage groups through SUAS

Farmers in Glassamullen commonage in the Wicklow uplands set up a formal commonage group under SUAS to manage their commonage as a group rather than individuals for the first time in their lives

Declan Byrne
SUAS Project Manager,
on secondment from Teagasc

SUAS is the Sustainable Uplands Agriculture-environment Scheme pilot project, which was launched by the Wicklow Uplands Council in 2019. The aim is to rejuvenate stock numbers and enhance vegetation management on the hills. The five-year project received €1.95m in funding from the Department of Agriculture, Food and the Marine, under the EIP AGRI initiative.

“The first step was for us to form a formal commonage group, complete with constitution and officers,” says farmer George Power. “We worked with an ecologist working on the project, Faith Wilson, to develop a com-

monage management plan. People are more likely to “buy into” a plan they have helped to develop and it means everyone is working towards common objectives rather than each farmer doing his own thing.”

SUAS has pioneered this co-design approach on commonages, and has already completed the process with seven commonages. As a result, SUAS has been able to produce a “Guide on how to form commonage groups” and a template for developing their constitutions.

George Power is one of five farmers who has rights in Glassamullen commonage, just south of Enniskerry, and one of the first three commonages to join the SUAS project. The commonage also includes lands within the boundaries of the Wicklow Mountains National Park owned by



the state, and other land owned by the Powerscourt Estate. Coillte also has grazing rights but it is not currently exercising them.

The lands within the commonage are of international importance for the habitats and species they contain and hence are included within the boundaries of the Wicklow Mountains Special Area of Conservation (SAC) and the Wicklow Mountains Special Protection Area (SPA). The commonage provides access to the Wicklow uplands and is used by large numbers of hill walkers, particularly at the weekends.

The five farmers in Glassamullen commonage applied to join the SUAS project, and went through a series of meetings with the project manager and a facilitator. They formed their commonage group and adopted their constitution on 2 January 2019, appointing Peter Molloy as chair, George Power as secretary and Johnny Power as treasurer.

“This was the first time that everybody on the commonage met at the same time to talk about the commonage,” says George Power. “We had always talked informally among ourselves about sheep going up or down, but we never really had a chance to plan anything.”

“It’s good to have everybody involved,” adds Peter Molloy. “One person can’t really do much on their own.”

The first task for the commonage group was to walk the commonage with Faith Wilson to discuss, from a



Peter Molloy and Richard Turner discussing their commonage with Minister Andrew Doyle and project manager Declan Byrne ahead of the official launch of the SUAS project in November 2018.

Enda Mullen, divisional ecologist at the National Parks and Wildlife Service, speaking on the uplands above Glenasmole Valley.



farming and an ecological perspective, what is there, why it is important and how it should be managed.

“We soon realised that what we both want is not too far apart,” says Faith Wilson. “One shareholder remarked that even though the commonage is an SAC, an SPA and part of Wicklow Mountains National Park, which was created almost 30 years ago, this was the first time anybody had come out to tell the farmers why their commonage received all these designations and how they should be managing it.”

In consultation with Faith Wilson, the National Parks and Wildlife Service (NPWS) and the SUAS project manager, a management plan was agreed for the commonage. The plan focuses on bracken control, rejuvenating areas of tall leggy heather through cutting and controlled burning, and improving grazing management, particularly over the winter.

In February 2019, with support from the SUAS project manager, the Glassamullen Commonage Group carried out “controlled burning” on a targeted area of the commonage. In advance, fire control lines were cut in the heather by a local contractor to allow small areas to be burned and the fire to be controlled.

The SUAS project provided training equipment and safety gear to the farmers.



Continued on next page

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Declan Byrne, project manager of the SUAS pilot project, delivering a presentation at the Glenasmole Community Centre.



From page 33

All necessary notifications and paperwork were completed in advance.

“There was a lot more involved in controlled burning than we expected,” says George Power. “You need at least five people for the controlled burning and it is very difficult to organise, but the heather is recovering much quicker on the areas that were burned than on the areas that were mechanically cut.”

Sheep numbers grazing over the winter increased and areas were targeted for grazing using sheep feed buckets, purchased by the SUAS project on behalf of the farmers. These buckets are used to entice sheep that were not on the hill earlier in the year to move up the hill for grazing rather than remaining around the grassy areas at the bottom.

A 2ha area was targeted for bracken control in 2019. While the farmers themselves didn't have suitable machinery, a local contractor was sourced to spray the area using a tractor mounted sprayer with Asulox herbicide. The commonage group identified the areas to be sprayed, sourced the contractor, improved access on to the hill and were on hand on the day to identify hazards such as rocks and holes to prevent damage to the machinery.

Innovation

One of the main reasons cited by farmers for not putting sheep out on the commonage is the work involved

in going to look at them. Some farmers work off-farm; some are not physically able for it; and some haven't the time. An optional innovation in the SUAS project is a payment for communal shepherding of the sheep on the commonage.

The new measure involves paying one farmer to go up the commonage to shepherd everybody's sheep; other graziers don't need to go up there as often. The person doing the shepherding would be decided by the commonage group and the job can be rotated around or someone can be hired in to do it if required.

The farmers on Glasnamullen commonage chose to look after their own sheep. Both George and Peter thought it was great to be rewarding the farmers actually grazing the commonage and that the payment should be available to everybody to look after their own sheep.

It is expected at the end of this five-year project to have the farmers on these commonages working together to create a more sustainable future for themselves and for the habitats they are farming. There will also be a better understanding of how to support them in a way that delivers the benefits to those who are actively farming and managing these habitats for future agri and agri-environmental schemes.

The importance of our uplands and the preservation of its healthy, thriving biodiversity, cannot be underestimated. The work of the SUAS project is to discover and promote the best approaches and methods for land management, to create a better understanding of the appropriate grazing and to better support hill-farming communities.

The story of commonage

Catherine Keena
Teagasc Countryside
Management Specialist

There are up to 15,000 farmers in Ireland farming 4,500 commonages on over 340,000 hectares. Approximately sixty per cent have a nature designation (Natura). Increased stocking rates in the 1980s in response to headage payments led to some overgrazing.

In an effort to address this, over 4,400 commonage framework plans were prepared, covering more than 440,000 hectares during the period from 1998 to 2002, and where necessary destocking was prescribed and implemented through Agri-Environment Schemes such as REPS, AEOS and the NPWS Farm Plan Scheme.

The Single Farm Payment introduced in 2003 resulted in a reduction in sheep numbers on commonage. Some areas now suffer from undergrazing.

Key principles

The current agri-environment scheme GLAS incorporated two new key principles. For the first time, a Sustainable Stocking Rate is the target. Secondly, the GLAS commonage management plans aim for this sustainable stocking rate on a collective basis for each commonage.

There are currently five upland European Innovation Projects: Wicklow (SUAS); Carlow (Blackstairs Farming Futures); Donegal (Inishowen Uplands EIP); Galway (North Connemara Locally Led EIP); and Kerry (MacGillycuddy Reeks EIP), addressing how farmers can deliver the optimal balance of food and other increasingly recognisable high value ecosystem services, by developing a “least cost” farming system to maintain our uplands in “Favourable Conservation Status”.

A report on facilitation process, a template for commonage group constitutions and a how-to guide on forming commonage groups have all been completed by the SUAS project and are available on <http://www.wicklowuplands.ie/suas-reports/>

Traditional Farm Buildings Grant through the Heritage Council and GLAS

Eimear Connery
Teagasc ASSAP advisor



1

Long before Dermot Bannon (whose father, we should add, worked for Teagasc) picked up an architect's pencil, farmers were restoring farm buildings out of respect for their forebearers, to enhance their surroundings and to give something back.

Joseph and Margaret McCarthy run a traditional suckler farm in Lisgoold, east Cork. As current GLAS participants, they were delighted to receive funding from the Heritage Council under the Traditional Farm Buildings Grant for an old stone building on the farm.

The building was constructed prior to 1846 and is present on the Ordnance Survey map from that period. It originally housed cows and pigs, and the lofted section stored grain. The farm itself is located close to the Owennacurra River, which flows into the protected Owennacurra Estuary outside of Midleton.

The building was in a dangerous condition, with a large crack along the south-east gable end of the building, which was being held upright using large ESB poles.

Picture 1: Building prior to restoration work

"We applied for the grant for restoration of old farm buildings, which is only available to farmers in the GLAS scheme and got through the first stage of the grant application process," says Joseph. "Once we had secured full grant approval, the next step was to carry out a bat and bird survey. No bats were present in the building, which allowed work to commence during the summer months."

With the expertise of Chris Southgate, a local conservation consultant based in Midleton, a method statement was prepared and local conservation builders Queenstown Restoration Ltd were secured to carry out structural repairs.

"An imperative part of the Heritage Council grant is to promote repair, rather than replacement," says Anna Meenan, project manager, GLAS



Joseph and Margaret McCarthy outside their restored stone building



Traditional Farm Buildings Grant Scheme at the Heritage Council. "So, whenever possible, building materials are reused." For the McCarthy's shed, original stone was reused and a lime mortar mix was used for repointing.

Picture 2: General view of site while restoration work was underway

The Heritage Council administers the GLAS Traditional Farm Buildings Grant Scheme for the conservation and repair of traditional farm buildings and other related structures on behalf of the DAFM.

Grants awarded will not exceed 75% of the cost of the project, with a maximum grant of €25,000 and a minimum

of €4,000. The aim is to restore these buildings to be structurally sound with minimum intervention. Grants will also be available for other related structures, such as historic yard surfaces and landscape features like walls, gate pillars and gates.

To be eligible for the scheme, buildings and other related structures (constructed before 1960) must have architectural or vernacular heritage character, make a contribution to their setting and not be overwhelmed by large-scale modern buildings.

The scheme has closed for the year, but all building projects move slowly, so perhaps it's worth thinking about entering a project for next year.

Continuous Cover Forestry scheme

Integrating profitable timber production with forest conservation

Jonathan Spazzi
Forestry Development
Officer, Teagasc Crops
Environment and Land Use
Programme



Forests are increasingly valued for their timber products but also for their potential to deliver diverse “ecosystem services”, important to our overall well-being as a society. These services include biodiversity, water regulation and recreation. Increasingly important is their ability to offset greenhouse gas emissions by sequestering carbon into their biomass and the soil.

Recent European and national forestry policy is promoting a range of management systems known as Continuous Cover Forestry (CCF), which allow commercial timber harvesting while retaining forest cover.

CCF is not an option for all forest sites as factors such as elevation, exposure and soil quality can pose forest stability issues (eg wind). Sheltered sites with free-draining soils are the most suitable.

The thinning process in CCF requires greater management input than for conventional forestry.

A pilot scheme was launched in 2019 by the Department of Agriculture Food and the Marine (DAFM) to fund transformation of existing plantations to CCF. The new scheme is offering three support payments of €750/ha as part of a 12-year transformation plan for mixed-species plantations up to 10 ha. Thirty forest owners were approved under the scheme in 2019 with work to be carried out from 2020 onwards.

Among these are Liam and Helen Bresnan who own and manage a 22ha mixed farm-forest in Co Limerick comprising Sitka spruce, Norway spruce and mixed broadleaf species. The forest, planted in 1999, complements 37ha of grass.

Since then, Liam has developed forest road access and carried out first thinning, availing of DAFM forest road and woodland improvement grants. “Early thinning is very important as it offers an opportunity to remove inferior trees, allowing

the remaining trees to develop,” says Liam. “It also encourages rooting for long-term stability against wind.”

Wind is a key factor when managing under CCF as trees are retained for longer periods and attain greater size when compared to conventional management.

Liam is very hands-on in the management of his forest and over the years has hosted a number of open days for forest owners in association with the local Teagasc forestry advisor (Jonathan Spazzi) and the Limerick Tipperary Woodland Owners (LTWO) group.

He and his family greatly value their forest resource and spend a good deal of time in it. Liam’s daughter, Aoife and her husband Colm, live next door to the forest and their children use it for play. Liam’s son Lee and son-in law Colm often join forces with him as all enjoy helping tend the forest.

“My goals include a mix of timber production, personal satisfaction and legacy,” says Liam. “That’s why I’ve chosen CCF.” He applied under the new CCF pilot scheme to assist him through the early transformation period for a 10ha spruce/broadleaves mixed section.

Grant approval and felling licence were secured in 2019. A plan of action was put in place for 2020 by “the management team” (pictured) Liam Bresnan, Sean Ryan, local forestry contractor and Pdraig O’Tuama, forester and CCF specialist.

Initial works took place early this year. These included: selecting, marking and pruning of quality “crop” trees for retention, selecting and marking trees for removal, thinning of spruce and broadleaves and under-planting of small groups of trees (beech and Douglas fir).

The final operation was the completion of a forest survey to provide baseline information to inform future management.

Unlike conventional spruce thinning, where removal focuses on smaller, poorer-quality trees, under CCF, thinning focuses on the removal of large, lower quality, trees.

This helps with short-term thinning economics while in the long



run facilitating the development of commercial sawlog by retaining the best quality trees. This will ensure high-value and a high proportion of sawlog from later selective harvesting operations.

Liam actively participates in management operations and this year carried out chainsaw thinning of the broadleaves and, with Colm’s help, all pruning and under-planting.

Pdraig and Liam, selected and marked trees for retention and removal, while Pdraig facilitated the forest inventory.

As Pdraig puts it: “If you can’t measure it, you can’t manage it. The success of the system relies on regular monitoring and review.”

TIMBER PRODUCTION

Timber production from private forests reached one million cubic metres (m³) in 2018, and has the potential to increase to 3.35 million m³ by 2027. Timber prices have shown fluctuations in recent times, given EU and UK related developments.

However, returns from farm-for-estry remain attractive with a typical annual equivalent value (AEV) of between €400 and €500 per hectare (ha) for productive conifer forests including 15% broadleaf and 15% biodiversity components.

While our well-established sawmilling sector will continue to compete in a challenging market environment, it is also well placed to have continued access to ready markets for our homegrown forest produce given our proximity to the UK, the second largest net importer of timber at global level.

CCF application

CCF is not an option for all forest sites as issues with elevation, exposure and soil quality may pose forest stability issues (e.g. wind) during development.

Sheltered sites with free draining soils are the most suitable. Also, the thinning process requires greater management input than conventional forestry.

Currently the TranSSFor project, led by the Teagasc Forestry Development Department in collaboration with University College Dublin (UCD), with support from Coillte and a private forest owner, is testing a range of methodologies for CCF application to spruce plantations.

CCF ultimately enables commercial timber harvesting while retaining a forest cover in the long term.

This is achieved through regular selective thinning and felling combined with progressive under-planting or natural regeneration from seed. This can deliver a steady flow of quality timber without interrupting forest ecosystem services.

- See <https://www.teagasc.ie/crops/forestry/advice/management/continuous-cover-forestry/>



Liam Bresnan (centre), Sean Ryan, local forestry contractor (left) and Padraig O'Tuama, forester and CCF specialist.

Sean carried out the first thinning of the spruce section four years ago and was contracted again this year, by Liam, for the second thinning using conventional purpose-built forestry machinery.

Sean was unfamiliar with this management approach: "CCF is new to me but the fact that trees are marked with paint makes it easier for the operator. "Larger trees come out first. This helps as it results in a good proportion of higher-value logs (e.g. palletwood material) which gives better harvesting efficiency. For us, it was straightforward and I look forward to coming back for the next thinning and seeing the whole process develop."

Liam says he is happy with the progress to date: "The work is progressing well and the forest is being thinned carefully. I am happy with thinning returns and I can see the value of the forest increasing with every thinning while it also gets brighter and more diverse."

The next round of thinning will be needed in three to four years with some natural regeneration expected to emerge with possible additional under-planting also carried out then.

"The last job for this year will be to remove the brush from the footpath and cycle path for the grandchildren to return to play in the forest," concludes Liam.

botanic gardens

Small but beautiful trees for the garden



Acer Sango-Kaku.



Luma apiculata.



Sophora Gnome.



Wisteria sinensis.



Hamamelis 'Pallida'.



Tamarix.

Chris Heavey, Lecturer at the Teagasc College at the National Botanic Gardens



When we think of amenity trees, we often think of the traditional large parkland trees that we see in abundance throughout the countryside. Sometimes, these can be daunting because they appear so big and, when even partially grown, would never fit into our modern gardens. There are, however, many and varied alternatives available, which can give us interest, atmosphere and a scale perfectly appropriate for small to medium-sized gardens.

There are many that will provide wonderful flower colour, including Prunus 'Kursar' with its rich pink flowers, which only attains a height of 4m. Although traditionally used as a wall plant, Wisteria is equally as stunning as a specimen tree in a south-facing aspect. In May, the whole tree is covered in the most beautiful lilac flowers, heralding the

beginning of summer.

The yellow-flowered Sophora 'Gnome' is often forgotten as a candidate for a small garden and yet it adds a much needed injection of colour in April, when little else is happening. This particular tree is slow growing and requires little in the way of maintenance, which makes it a perfect choice for a novice gardener.

If interesting bark is required, then Acer griseum is ideal, as it requires a west-facing aspect, if only because it can be illuminated by late afternoon sun, making it a magical sight. The bark shines so beautifully that it looks like someone took a polishing cloth to it and it gives even more with a wonderful red autumn colour.

Trees for coastal location are tricky, not least because they have to withstand salt laden winds, but nature has given us the Tamarix, which is a showy, pink-flowered tree, well capable of holding its own against the elements.

When planning a new garden, trees are the backdrop that gives the garden maturity. Without them, a garden can lack height and overall structure,

relying on smaller shrubs to give it added interest.

Providing winter interest might not be your first thought when embarking on a garden makeover, but for me, it's a major requirement for any garden. Acer 'Sango-Kaku' gives not one, but three, seasons of interest. The beautiful fresh lime green leaves in spring fade to a wonderful gold in autumn, before revealing coral coloured stems in winter. This is a hard working tree and deserves a space in any garden, big or small.

Scent is also a consideration, especially in winter, because there is very little competition, so a tree with a scent can really stand out. The perfect candidate is witch hazel (Hamamelis 'Pallida'), with its funny-looking yellow flowers that appear almost spider-like along the stems, but with the perfume this tree offers in the coldest months of the year, it is indeed the star of the show in early spring.

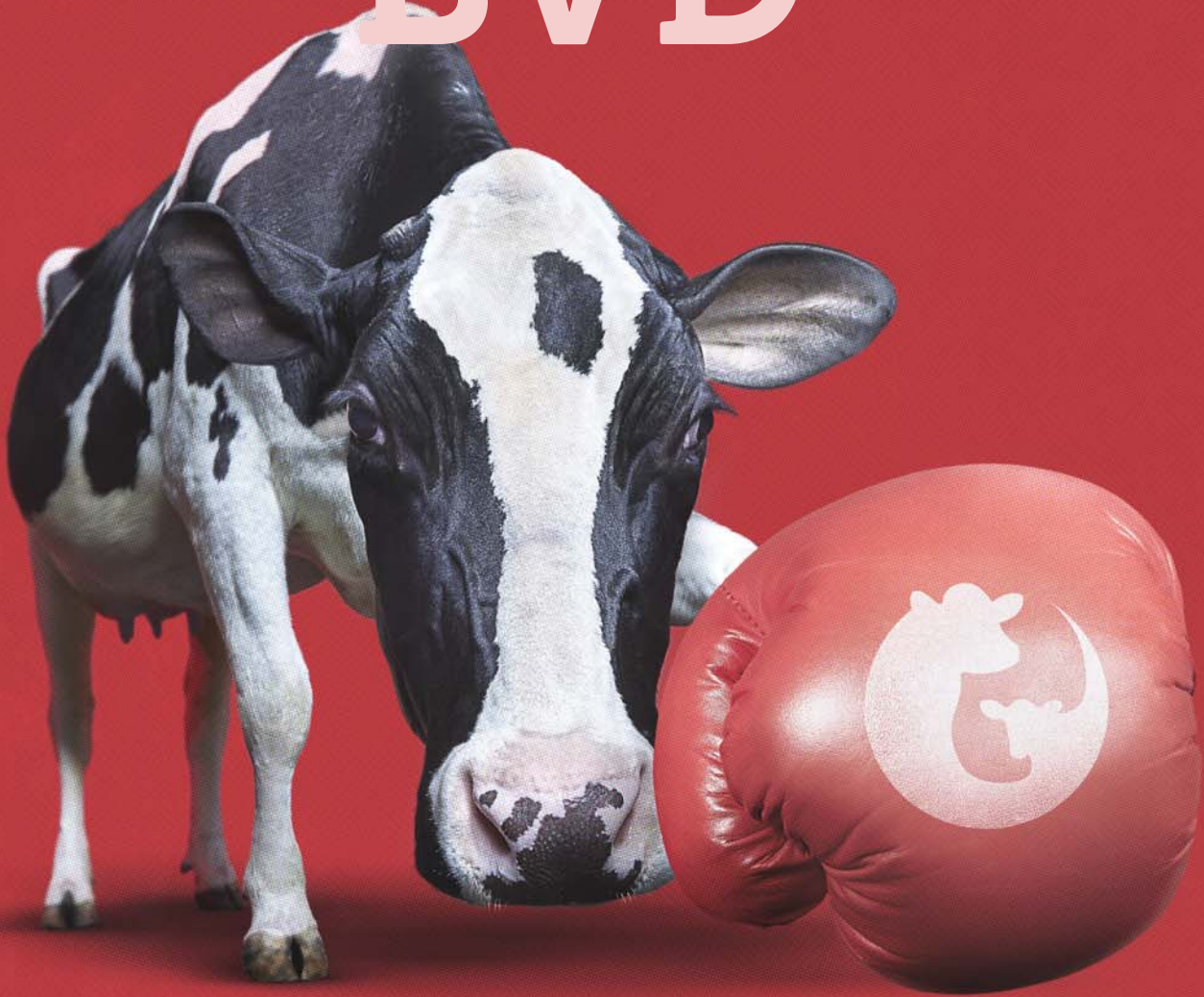
Never be afraid to introduce trees into a garden. After all, they are the backbone to achieving maturity, interest and structure all year round.

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