



Today's Farm

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

Teagasc courses: challenge, opportunity, progression

Building a fodder backup	6
Contract-rearing heifers	8
A good start is key to calf-to-beef profit	11
Efficient housing eases workload	13
Ten benefits from discussion group membership	16
PastureBase Ireland: not just for dairy farmers	18
Why 75 is the magic number when making silage	20
Micronutrients, major impact	22
The Nitrates Derogation 2019: Key points	28
BPS: preparing for your one-to-one	30
It's nice to have options	32
Adding value: Dunany Flour Organic Farm	34
Generations planting towards continuous cover	36
To prune or not to prune?	38

MAKING BVD HISTORY

DELIVER THE LIVE VACCINE DIFFERENCE

TAG & JAG

Naive herds are at risk from severe BVD breakdowns¹, so it has never been more important for your clients to have a full 12 months' protection. Bovela[®] prevents the birth of PIs through the latest in live double-deleted (L2D) vaccine technology, proven to provide both cellular and humoral immunity². Immunity that has already protected over 9 million cattle in Europe³.

Speak to your Boehringer territory manager about offering your farmers subsidised BVD tag testing, saving up to €250 for a 100 cow herd⁴.

BOVELA

Dual protection made simple

References: 1. Doll and Holsteg (2013) Cattle Practice 21(3): 216 2. Platt *et al* (2017) Vet Imm. and immunopath. 187: 20-27 3. BI data, November 2018. 4. Based on Farmlab Diagnostics BVD testing costs for NHS suspended or withdrawn herds.

Bovela lyophilisate and solvent for suspension for injection for cattle contains modified live BVDV-1, non-cytopathic parent strain KE-9; $10^{4.0}$ - $10^{6.0}$ TCID₅₀, modified live BVDV-2, non-cytopathic parent strain NY-83; $10^{4.0}$ - $10^{6.0}$ TCID₅₀, IE: POM. Further information available in the SPC or from Boehringer Ingelheim Animal Health UK Ltd, RG12 8YS, IE Tel: 01 291 3985 (all queries). Email: veterinquiries@boehringer-ingelheim.com. Bovela is a registered trademark of Boehringer Ingelheim Vetmedica GmbH, Ingelheim, Germany. ©2018 Boehringer Ingelheim Animal Health Ltd. All rights reserved. Date of preparation: Dec 2018. AHD11807. Use Medicines Responsibly.

Events

4 Events in March and April

Dairying6 Building a fodder backup
8 Contract-rearing heifers**Beef**

11 A good start is key to calf-to-beef profit

Sheep

13 Efficient housing eases workload

Discussion groups

16 Ten benefits from being in a discussion group

Grass management18 PBI: not just for dairy farmers
20 Why 75 is the magic number when making silage**Tillage**

22 Micronutrients, major impact

Education

24 Challenge, opportunity, progression

Farm management28 Nitrates Derogation: key points
30 Preparing for your one-to-one**Diversification**

32 It's nice to have options

Organics

34 Adding Value: Dunany Flour Organic Farm

Forestry

36 Generations planting towards continuous cover

Botanic gardens

38 To prune or not to prune?

COMMENT

**Mark Moore**
Editor,
Today's Farm

Outsourcing your calf-rearing

A friend of mine and his brother were sent to a boarding school just 12 miles from home. This was influenced by pragmatic rather than educational considerations.

For their above-average size family it made more sense to "outsource" their accommodation rather than build a bigger house.

Contract-rearing heifers is a bit like that. It doesn't make sense to rear heifers on the milking platform; nor to rear them yourself when workload is already extreme.

Done well, contract calf-rearing is a win for the dairy farmer, the rearer, and the calf herself.

Tógáil gamhna a chur amach ar conradh

Cuireadh cara liom agus deartháir leis chuig scoil chónaithe nach raibh ach 12 mhíle ón mbaile. Cúinsí praiticiúla seachas cúinsí oideachais ba bhun leis sin. I gcás an teaghlaigh ina raibh níos mó ná an gnáthlón páistí, ba chiallmhar an rud é a gcóiríocht 'a chur amach ar conradh' in ionad teach níos mó a thógáil. Tá cosúlacht éigin idir sin agus bodóga a thógáil ar bhonn conartha. Níl ciall le bheith ag tógáil bodóg ar an ardán bleáin, ná iad a thógáil thú féin más rud é go bhfuil brú mór oibre ort cheana féin. Ach tabhairt faoin obair go stuama, rachaidh tógáil gamhna ar bhonn conartha chun tairbhe an fheirmeora déiríochta, an té a bhfuil an gamhain á tógáil aige, agus an ghamhna í féin, a bheidh á tógáil ag saineolaí.

BETTER SILAGE

Making better silage for drystock farms

>> 20-21



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

Editor: Mark Moore
Sub-editors: Anthony Murphy and Regina Horan
Cover design: Design at DBA
Imaging: Carol Dunne and Alice O'Sullivan
Printing: Boylan Print Group, Drogheda, Co Louth

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

All advertising enquiries to: Shane O'Grady, IRN Publishing,
First Floor 121-123, Ranelagh, Dublin 6
Tel: (01) 412 7828 E-mail shane.ogradey@irn.ie

The publishers do not accept responsibility for any private and trade advertisements or advertising insertions included in this publication. Occasional reference in this magazine to trade names and proprietary products may be inevitable. No endorsement of named products is intended, nor is any criticism implied of similar products which are not mentioned.

Cover | Louise Carroll of Tullow, Carlow, who completed the Advanced Certificate in Machinery & Crop Management Level 6 at Teagasc Kildalton College says participating on the course included a wide range of experiences and opportunities which have enabled her to progress academically and as a business person.



Grass10 farm walks will take place in Cavan, Tipperary and Limerick.

GRASS10 DAIRY WALKS

Early turnout to grass and the use of proven grazing technologies will improve animal performance, reduce fodder requirement and the costs of production. These events will cover:

- How to manage animals during difficult grazing conditions.
- Spring nitrogen (N) and phosphorus (P) fertiliser plan.
- Setting up for early grazing.

Cavan

- 7 March 2019.
- Event time: 11am.
- Venue: Owen Brodie, Ryefield, Virginia, Co Cavan, A82 R886.

Tipperary

- 20 March 2019.
- Event time: 2pm.
- Venue: Tim Meagher, Clonan, Roscrea, Co Tipperary.

Limerick

- 21 March 2019.
- Venue: Sean and Pat Barry's farm, Ballyluddy, Pallasgreen, Co Limerick.
- Event time: 11am.

COLLEGE OPEN DAYS

National Botanic Gardens

- 7 March 2019.
- Event time: 2pm to 4pm.
- Venue: Teagasc, College of Horticulture, National Botanic Gardens, Glasnevin, Dublin 9.

Clonakilty

- 8 March 2019.
- Event time: 11am and 12pm.
- Venue: Teagasc, Clonakilty Agricultural College, Darrara, Clonakilty, Co Cork.

Ballyhaise

- 8 March 2019.
- Event time: 10am to 1pm.
- Venue: Teagasc, Ballyhaise Agricultural College, Ballyhaise, Co Cavan.

Gurteen

- 13 March 2019.
- Event time: 10.30am to 12.30pm.
- Venue: Gurteen College, Ballingarry, Roscrea, Co Tipperary.

ORGANIC FARM WALKS

Meath

- 17 March 2019.
- Suckler to beef, cereals.
- Venue: Donal Keane, Camelton Stud, Summerhill, Co Meath.
- Event time: 12pm.

Cork

- 24 April 2019.
- Beef finishing, cereals.
- Venue: Stuart and Jean Kingston, Upper Forrest Farm, Farnanes, Co Cork.
- Event time: 12pm.

TEAGASC BERRY SEMINAR

- 25 April 2019.
- Venue: Ashtown Research Centre, Ashtown, Dublin 15.
- Event time: 9.30am to 1.30pm.

Apologies if your magazine arrives after a listed event.

TEAGASC CALF REARING MANUAL



Best Practice from
Birth to Three Months



AVAILABLE AT TEAGASC OFFICES

Dairying

The value of a fodder reserve

As well as peace of mind, a fodder reserve can potentially save you money

Brian Garry
Teagasc Animal and Grassland Research and Innovation Programme

Given the ongoing unpredictability of the weather, it stands to reason that all farmers with grazing livestock should plan to have a fodder reserve.

Due to the cascade of weather events over the past 15 months – the wet autumn in 2017, the poor conditions in spring and the prolonged summer drought – fodder supplies were stretched or completely exhausted on many farms.

Fortunately, the mild autumn allowed for additional fodder crops to be grown and grazed or preserved. This, in addition to the extra grass growth over the autumn and winter months, helped address the immediate fodder supply issues.

However, a survey carried out by Teagasc in January 2019 found that up to 25% of farms, one in four, are still reporting a fodder deficit (Fig 1).

Building a fodder reserve

When planning to establish a fodder reserve, farmers have a number of options.

The first is to harvest extra silage off the existing land base. This can be achieved through improved grassland management, including effective use of fertiliser and manure.

Closing up extra ground for first-cut is a way to allow a greater proportion of the farm's requirement for silage to be harvested early.

This means later cuts can go towards a fodder reserve. A stocking rate of four livestock units per hectare or a demand of 70kg DM/ha should be manageable on the grazing



area during May and early June at peak growth.

A second option is to harvest silage from rented land; however, this will depend on land availability and its suitability for silage production.

Another possibility is to approach a neighbouring farmer with spare capacity and come to an arrangement to cut silage on their land. Wholecrop cereals or fodder crops are also worth considering if they are available at a competitive price.

Whichever option you choose it is important that you have a plan to develop a fodder reserve on the farm over the next 12 to 24 months.

Silage: safe storage

When stockpiling fodder on the farm, it should be stored in an area that is not in contact with, or obstructing, machinery or livestock.



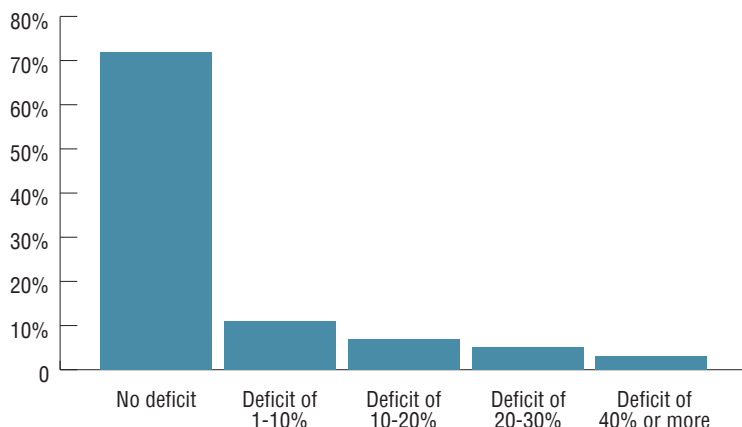
All farmers with grazing livestock should plan to have a fodder reserve

Where silage bales are chosen as the best option for a long-term fodder reserve, take care to ensure that the bales are wilted to 30% DM and well wrapped.

Extra layers of plastic can help prevent storage losses and ensure good silage quality at feed out. On larger farms, having a standalone silage pit

Figure 1

Proportion of farms reporting a fodder deficit in January 2019



Farmers should plan to harvest extra silage to create a reserve.



Ensure silage bales are wilted to 30% DM and well wrapped.

can be useful to keep costs down and to reduce labour at feed-out, although some of the flexibility of silage bales is lost.

On many farms, the availability of a silage slab and facilities to collect effluent will determine whether bales or pit silage form the feed reserve.

How much fodder reserve is required?

All livestock farms regardless of their location, soil type, stocking rate, enterprise, need a fodder reserve.

Depending on fodder demand, and risk of a shortage due to inclement weather, aim to have at least an additional 400kg DM per livestock unit. This equates to roughly two silage bales per livestock unit. For example, on a dairy farm a fodder reserve for 100 cows would consist of at least of at least 200 bales.

When costed at €30/bale this equates to €6,000 of silage in a fodder reserve. Initial Teagasc Profit Monitor figures report that on dairy farms in 2018, concentrate input per cow increased by 400 kg per cow, on average.

When costed at €250/tonne, this corresponds to €10,000 of extra spending on concentrate to make up for the lack of forage in the diet per 100 cows.

In essence, the approach to having a fodder reserve in the yard should be seen as insurance against weather conditions and unforeseen events.

To this end, the fodder shortages in 2018 have highlighted the importance of grazed grass to livestock production systems and also the importance of a fodder reserve to avoid stress for both farmer and livestock.

GLAS WILD BIRD COVER SEED



- Sowing Rate 88 Kgs/Ha. Pre mixed with the preferred recommended varieties and rates
- Triticale used instead of Oats as the oats draws vermin in large numbers
- Contains; 75 Kgs Triticale, 7.5 Kgs Linseed, 5 Kgs Mustard and 0.50 Kg Phacelia
- Sold in 22 Kg bags. 4 Bags/Ha
- Cost €40/Bag ex Rathcormac

Discounts on group purchasing. Nationwide delivery service

Stockists:

McDonnell Bros, Fermoy and Saleen, Co. Cork. 025 31166.

O Sullivan's Beaufort Bridge, Killarney, Co. Kerry. 064 6644397.

Creamery Farm Supplies, Croom, Co. Limerick. 087 4155233.

Pat Tierney Supplies, Kilkishen, Co. Clare. 086 2406035

- Wildflower meadow seed €20/100 square Metre pack
- John's Delight Game crop €75/ac bag

Sunnyside Fruit Ltd. Rathcormac, Co. Cork

Telephone: 025 36253

E-mail: sunnysidefruit@eircom.net

Buy online from www.rathcormacgunclub.com

dairying

Contract rearing a winning choice

Contract heifer rearing is good for the dairy farmer, the contract rearer and the heifer herself

Tom Curran

Teagasc Rural Economy Development Programme

- 
- Are you struggling to find enough labour?
 - Are there too few hours in the day?
 - Are you short of housing for young stock?
 - Are you fighting to stay under the Nitrates regulation limits?
 - Do you have a land lease that is coming to an end?
 - Are your heifers underperforming, not lasting in your herd?
 - Are you missing heats in your herd during the breeding season?
 - Have you health issues in calves due to overcrowding or poor housing?
 - Are you carrying replacement heifers on your grazing platform?

If you can answer yes to any of these questions you should seriously consider having a competent calf-rearer rear your heifers on contract. As with anything, outsourcing heifer-rearing won't suit everybody, or every situation, but the benefits are so compelling that virtually all dairy farmers should seriously consider the possibility.

"If your cows can walk to a piece of ground you shouldn't be using it for heifer rearing," says GD Young, who farms near Mullingar, Co Westmeath. But for GD, the benefits of sending calves to Diarmuid Conway and his father Ciaran go beyond optimising grass management.

"The ideal for any dairy farm is to have a person focusing almost exclusively on calf rearing but that's difficult when there are so many other

things to do in spring; by working with a good specialist calf-rearer you have that."

How do you establish a successful contract-rearing partnership?

"It's really about trust and give-and-take," says GD Young. "If you know the contract rearer, or they have been recommended to you, that's a good start. But you will also want to visit the farm to get an impression of how things are done before you make an agreement. And during the first year you'll likely visit regularly to see how the heifers are getting on.

"Communication is another key thing. If there are any problems you can work them out together. Regular weighing is essential, obviously, and the data is the basis for a discussion about whether heifers are on track. But it's important to have a bit of give and take. The dairy farmer can't expect perfection – none of us achieve that!"

For the rearer, success is achieving the heifer performance required and getting paid the agreed rate, on the agreed date each month and by the agreed method. For the dairy farmer, success is well-reared heifers that reach the weight targets (Table 1) on key dates such as housing and breeding, and that 95% are in-calf within six weeks.

Each agreement can be different. Jim Dwyer, a dairy farmer who farms near Borris-in-Ossory, Co Laois,



Jim Dwyer.



sends heifers to be reared by Henry Whiteford but manages the synchronisation and AI of his heifers. "This arrangement has worked very well for us," says Jim who has one year under his belt.

"Drystock farmers have to have excellent animal husbandry skills as their animals get less handling. I think Henry was pleasantly surprised at how placid Jersey crosses can be.

"There's no doubt that contract rearing can be a win-win with many benefits for both sides. It allows us to focus entirely on producing milk solids and the rearer hopefully has a profitable system with good cash-flow. But nothing with animals is 100% controllable so senders can't expect everything to always running perfectly smoothly but on the other hand rearers must be realistic about what they charge. It's a question of balance."

What does it cost?

The thing for dairy farmers to realise is that, whatever the cost, you are already incurring it if you are rearing



Table 1: Costs associated with rearing replacement dairy animals with current cost and prices

Category	Cost (€)
Variable costs	
Concentrates	165
Fertiliser, lime and reseeded	155
Land rental	200
Machinery hire	15
Silage-making	90
Vet, AI and medicine	128
Total variable costs	753
Fixed costs	
Car use, water and electricity	30
Labour	203
Machinery operation and repair	20
Phone	10
Insurance, A/Cs, transport, sundries	39
Interest repayments- term loan	86
Total fixed costs	388
Depreciation costs	
Buildings	55
Machinery	22
Total costs	1,218
Initial value of the calf	350
Sales of heifers failing to conceive	-23
Net cost of rearing a replacement heifer	1,545

the animals yourself (Table 1).

The overall cost is less visible on most dairy farms because it is included in overall farm costs. What does contract heifer-rearing actually cost?

The simple answer is that it depends on how the arrangement is structured and how the costs and tasks are divided.

Typically, dairy farmers pay for breeding costs such as AI straws, heat detection aids and providing stock bulls. Where calf rearing is involved, the dairy farmer often pays for the milk replacer. Contact your local Teagasc advisor to give you a good steer on what contract rearing will cost per day. But first you should work out what it is costing you to rear your heifers.

The biggest challenge for the dairy farmer in terms of cost is to budget for paying the contract rearer at lean times of the year such as January, February and March before milk cheques start to arrive again. The bottom line is you must pay the contract rearer as agreed.

GD Young and Diarmuid Conway.



Continued on p10

DAIRYMASTER

The most efficient tank on the market... **SwiftCool Milk Tanks**

- ✓ Two way communication
- ✓ Reduced energy costs
- ✓ Faster, cleaner washing
- ✓ Easy to use controls
- ✓ Advanced temperature measurement
- ✓ Robust design
- ✓ Heavy duty

Call us on **1890-500-24-7**

100% IRISH Distributors Nationwide

Email: info@dairy-master.com • www.dairy-master.com

Milking - Feeding - Cooling - Manure Scrapers - Health & Fertility Monitoring



Tommy O'Riordan.



From p9

What veterinary issues arise?

The best advice is to consult with your own vet about your farm disease history and any risks of rearing heifers on contract. You should also contact your local district veterinary inspector for advice in relation to minimising your risk of TB. It makes good sense to look into moving your annual TB test to the middle of the year so that in the event of a problem that you have every chance of being clear when animal movements need to take place.

"There is a major benefit if your rearer doesn't have any other stock on his land," says Jim Dwyer. "That eliminates a lot of the risk in terms of disease transfer."

Do I need a written agreement?

Yes. Many farmers don't bother and this is fine if everything goes well. But, if nothing is written down, the details of a verbal agreement can become fuzzy as time goes on. This can lead to disagreements over minor things that can grow into bigger issues.

Most farmers who are contract rearing rarely look at the agreement as they work on the relationship with the rearer but it is always there as a reference point.

Don't fear a written agreement. It is simply a record of what you have agreed with the rearer. This includes

the identity of the animals involved, the dates of the agreement, the payment rate and date as well as dates for administration of vaccines, doses and details of how breeding is to be handled.

What are the obligations of the dairy farmer?

The key obligation for the dairy farmer is that calves are healthy when they arrive at the contract rearer's farm. Have all calves received three litres of good quality colostrum in the first two hours of life? A random blood test can be carried out to test for immunity levels of calves.

If there is a history of pneumonia, the calves should be treated for this prior to departure. Healthy calves delivered to the rearer means fewer issues and the calves can thrive from day one of the arrangement. Weaned calves should be at their weight target for their breed before they arrive on the rearer's farm. For example, Holstein Friesians need to be 90kg at weaning.

"Calves have to be in really good shape when they leave here," says GD Young. "If they don't have a good start, they can't perform as well during rearing."

Contract rearing discussion group network

Teagasc is forming a national network of discussion groups exclusively for contract rearers. These will be facilitated by a Teagasc advisor. These groups will focus on issues such as rearing calves, grassland management, weighing and profit from the

enterprise. If you are looking to make contact with a farmer to rear your heifers, call your local Teagasc office to get in touch with a local contract rearer discussion group facilitator.

Tommy O'Riordan who farms near Clonakilty in west Cork is calving down 350 cows and has been in a contract rearing arrangement with Denis O'Hea for the past 10 years. "The offer of contract rearing came a bit early for me but I went with it because I knew Denis and knew he would do a good job.

"Contract rearing simplified my dairy farming system and the main benefits I see are great quality stock returning; compact calving because heifers are reaching their weight and breeding targets. We can focus on cow management and it is easier to manage the home farm.

"Working with the right person and regular weighing are the key success factors," said Tommy.

"We meet on the rearer's farm to weigh the heifers together and it is a good social outlet for both of us to have a chat and discuss the performance of the heifers.

"As dairy farmers, we sometimes have a tendency to focus on the here and now – i.e. the milking herd and not on the future herd. A competent contract rearer solves this issue and helps to bring the breeding policy of the farm to its full potential. Find someone you can have a good working relationship with and trust. If you can find this person, the details of the contract arrangement are easy to negotiate and it'll be a win for all involved."



A good start is key to calf-to-beef profit



The early months determine lifetime performance

Sean Cummins
Teagasc GreenAcres Programme

“We source all our calves from local dairy herds and they have to be healthy from day one,” says Pat Collins, who farms alongside his father Matt, near Castlemartyr, Co Cork.

“By dealing directly with dairy farmers we reduce the calves’ exposure to disease; we can look at the cows in the herd, the farm management practices and the emphasis placed on health and hygiene by the dairy farmer.”

Pat operates a mixed farming system consisting of 27ha of grassland and 36ha of tillage. It is one of 14 farms in phase two of the Teagasc Green Acres Programme.

Having first ventured into calf rearing in 2015, with the purchase of 30 calves, bought-in calf numbers have grown considerably. In spring 2018, Pat bought and reared 168 calves and he plans to purchase a similar number this spring.

“At first, we operated a calf-to-store system, with animals sold to meet rising demand from grass buyers,” says Pat. The focus has since transitioned to a mainly bull beef system, with 100 of last spring’s Holstein Friesian bull calves planned to finish this summer at 18-22 months.

Angus steers and heifers account for the remainder of last year’s calves and these will be sold as stores at targeted times during the year, to aid cashflow. Over the three years of the programme, the aim is to move completely to a calf-to-beef operation. All animals reared on the farm will be brought to slaughter.

Calf rearing and health

Shortly after arrival on the Collins farm, calves are vaccinated for pneumonia and IBR. Coccidiosis has also been a problem over recent years and now all new arrivals are dosed with anticoccidial medication too.

Growth rates achieved during the first three months (the rearing phase) of a calf-to-beef system are critical to lifetime performance and profit-



ABOVE: Pat Collins.
TOP: Sean Cummins, Pat Collins and Ruth Fennell.

» Continued on page 12

ability. Calves arrive on Pat's farm at approximately 14-21 days and are fed milk replacer twice a day until they reach one month of age.

"Once the calves reach one month, they are moved on to once-a-day feeding," Pat explains, "and this greatly reduces the workload associated with calf rearing. Each calf consumes about 42kg of milk replacer and they are weaned when they are eating approximately 2kg of concentrate per day."

A focus on grazing

Over recent years, Pat has invested heavily in grassland. As some of the ground was previously under tillage, a large degree of reseeding has been undertaken with high-yielding perennial ryegrass varieties. The grassland area has also been serviced by a paddock and water system, bringing the total number of grazing paddocks on the farm to 17.

"We're very early down here and we can also graze late into the year," says Pat. "We aim for 10 months grazing each year, with cattle turned out in late January/early February and housed again in late November/early December. With the mild spring, we had some of the lighter bulls out at grass by day in early January to graze off some of the heavier covers."

Pat's local Teagasc advisor, Ruth Fennell, says the farm has been mapped and set up on the PastureBase Ireland system: "Pat will be grass measuring on a weekly basis during the grazing season, which will help him with key management decisions including taking out paddocks for surplus bales; slowing down the rotation on the farm to stretch out grass during the shoulders of the year; and to monitor the performance of individual paddocks."

Synergies between the beef and tillage enterprise

As mentioned, Pat also runs a tillage enterprise, with assistance from his Teagasc tillage advisor Eamonn Lynch, and this benefits the beef enterprise in a number of ways.

Pat says: "We grow approximately 16 hectares of GLAS cover crops each year and we've used them to carry the Angus heifers and steers over the winter. We finished up grazing these crops in mid-February and these cattle were turned straight back onto grass. The cattle were very healthy when out and they thrived well over the winter."

Home-grown cereals are also used in the diets of the cattle, with protein and fibre sources purchased to formulate a balanced ration for the calves, out-wintered cattle and



finishing bulls.

Pat says that last year, he paid an average price of €80/head for the Holstein Friesian bull calves; the

Angus average (for bulls and heifers) was closer to €210/head. Pat says: "The price of calves is something we're going to have to look at this year. It's not financially viable for farmers to be paying what we have been paying for calves for the last number of years. At the same time we must control what's in our own hands and rear them as well as we possibly can."

Buying calves

Key factors to consider when buying calves

- Do your sums before you enter the market – a calf might seem cheap on the day but will they leave a margin at slaughter?
- Only buy healthy calves from reliable suppliers; ensure calves are a good weight for age.
- Ideally, calves should be sourced from dairy farms that feed calves adequate levels of colostrum and have a high herd health status (control programmes for calf scours, BVD and IBR are desired).
- Seek information on the herd's health and feeding protocol, vaccination programme and any current or previous disease issues.
- Examine the calf thoroughly prior to purchase.
- Ask for the sire details; target calves sired by bulls with positive carcass weight and conformation characteristics. Use the Dairy-Beef Index where available.
- Don't purchase very young calves. It's preferable not to transport calves until they are three weeks of age. This will reduce the high risk of scours and stress.

The Green Acres Programme

Pat Collins is one of 14 farmers to enrol in phase two of the Teagasc Green Acres Programme. The target for the Programme is to reach or exceed a net margin of €500/ha (excluding premia) over the next three years.

The programme will demonstrate best practice in the rearing and finishing of purchased calves through to beef (heifers/steers/bulls) on a whole-farm basis.

Along with his local advisor, Ruth Fennell, I have been appointed as a dedicated programme advisor to offer intensive one-to-one advice and technical support.

The main areas to be focused on include: calf rearing; animal health; grassland management; soil fertility; financial management; and farm planning.

The second phase of the Green Acres Calf to Beef Programme is supported by: AgriLand; Drummonds; Liffey Mills; MSD Animal Health; Munster Cattle Breeding Group; Volac; and Whelehan Crop Protection.

Efficient housing eases workload



Lambing time is stressful. Good planning and plentiful pens can reduce the strain

Damian Costello
Sheep Specialist, Teagasc Animal and Grassland Research & Innovation Programme, Athenry

In 1999 and 2000 Teagasc conducted an in-depth labour study on 30 sheep farms nationwide. One conclusion was that farms with good sheep housing were 25% more labour efficient than farms where facilities were rated as poor. The study also found that lambing time accounted for one-fifth of the total year's work.

The message is still valid. Well designed and well managed housing and lambing facilities alongside good flock husbandry can help ease the burden during this extremely busy period.

Table 1: Feeding space requirements

Type of Ewe	*Meal Feeding mm	Roughage (hay rack)	Easy Feed Silage
Large (90kg)	600	200	200
Medium (70kg)	500	200	200
Small (50kg)	400	175	175

Source: DAFM S146 (2016)

Table 2: Floor space

Type of ewe	Slats m ²	Bedded m ²
Large (body weight 90kg)	1.2	1.4
Medium (body weight 70kg)	1.1	1.2
Small (body weight 50kg)	1.0	1.1

Source: DAFM S146 (2016)

Sheep housing: Key considerations

- Sufficient feed space so that all ewes can comfortably eat concentrates at the same time; being fed by one person without them needing to enter the sheep pens (see Table 1).
- Adequate floor space, depending on

- housing system (see Table 2).
- Adequate pen divisions so that ewes can be grouped by expected lambing date (raddle colour) and scanned litter size.

» Continued on page 14

- Access to a suitable water supply in all pens.
- Easy access to individual lambing pens (ideally under same roof).
- Feed passages wide enough for machinery access and/or using for individual pens.
- Removable penning for ease of cleaning out and the option to use building for other purposes during the rest of year (straw bedded).
- Suitable lighting and power sockets.

In general, 10 medium-sized ewes will be able to eat meal together in a standard 4.8m bay. On farms where there are issues such as non-infectious abortion cases, prolapse or twin lamb disease, the feed space available should be measured. Take off 600mm from the total for each corner in sheds where walk through troughs are in place.

Where all concentrate feeding is from the central feed passage along the front of the pen, relatively shallow pens of 2.5 to 3.0m will provide enough floor space. If pens are, say, 6.0m in width, walk through troughs will be needed to optimise the number of ewes that can be accommodated in pens, balancing floor space and feed space.

Tips for reducing labour demand at lambing time

- Follow a late pregnancy nutrition plan which optimizes lamb birth weight and enables ewes to produce enough quality colostrum to feed her newborn(s).
- Provide ample individual pens and have them set up well in advance of the expected start of lambing.
- Install a pipe system with ballcock to provide water to a number of individual pens.
- Clearly identify problem ewes so they can be culled from the flock before the 2019 breeding season.
- Compile a list of essential supplies and stock up well in advance.
- In high-prolificacy flocks have a definite policy for dealing with surplus lambs.

Late pregnancy nutrition

In practice, most ewes are supplemented with bought-in concentrates in the form of a nut or ration along with hay or silage. A representative silage sample analysis will allow you to decide how much, and for how long, you will need to feed concentrates. Ewes should be grouped and fed according to expected litter size (scanning) and expected lambing date (raddle colour at mating). Look for a nut or a ration with top quality ingredients, where soya bean is the main protein source, to ensure plenty of top quality colostrum is available to your newborn lambs.



Peter Musgrave

Joanne Masterson, Teagasc Advisor, Athenry

Peter farms in Cleggan, Co. Galway and has 450 ewes. The flock includes Mule ewes, Lanark Crosses and Scottish Blackface ewes. Blue Leicester rams are crossed with the Lanark flock to produce mules. The farm has both lowland and mountain grazing which is suited to the breeds of ewes that are kept on the farm.

"In 2013 after a long time planning we built a five bay (24m x 15.3m wide) straw bedded sheep shed," says Peter. "Our aim was to reduce the labour requirement on the farm, in particular in the busy spring period when lambing starts. Planning ahead for jobs like feeding, organising lambing pens, bedding, moving freshly lambed ewes, watering and cleaning out were all elements we had to think about when designing the shed."

The structure is positioned facing east so the prevailing westerly winds are towards the back of the shed. This provides protection against the severe weather often encountered in this part of the country. The building is well ventilated with vented metal sheeting alongside the length of the structure for inlet of fresh air combined with a raised ridge

cap to allow stale air to escape.

It makes for an environment free of airborne pathogens, but also free of draughts. There are three sliding doors on the shed allowing excellent accessibility. As well as this the superstructure is a portal frame design which eliminates internal stanchions. As all penning can be dismantled the shed can be easily and safely cleaned out by mechanical means.

"Our lambing is split with the mule flock kicking off in early March followed in late March/early April by the Scottish Blackface and Lanark flock," says Peter. Because Peter regularly changes the raddle colours on the rams during mating, ewes can be housed in batches based on expected lambing date.

"I prefer to delay housing until a few weeks pre lambing and I've noted a drop in lamb mortality due to better observation since building the new shed," he says.

The internal layout comprises a central feed passage and is divided into eight pens allowing ewes to be grouped and fed according to expected litter size. To strike the balance between required floor space per ewe and required



Individual pens

Set up pens (1.5m x 1.5m recommended) before lambing starts, having cleaned and disinfected the area beforehand. As a guide, one individual pen per 8 – 10 ewes is sufficient. It should be up to one pen per six ewes where lambing is compact. You can never have too many.

Water to individual pens

A sealed pipe with strategically cut slots and fitted with a ballcock can provide water to a number of individual pens and is a big time saver.

Culling to reduce labour

Ewes that are found to present issues such as prolapse, difficult lambing, poor mothering ability, inadequate milk supply, etc, soak up time and should not be given the opportunity to reoffend the following year. Apply a permanent mark such as a management tag to identify such ewes for culling, marking spray fades, or is shorn off.

Orphan lambs

Some ewes, with correct post-lambing management, will be able to successfully rear three lambs. If not, generally the best option is to cross foster surplus lambs on to single-bearing ewes. Most flocks will still end up with some pet lambs and the higher the expected litter size the more significant the numbers are likely to be.

For these lambs the option is to either sell them or rear them artificially. Small numbers are generally bottle reared which is labour intensive at an average of four feeds per day for five weeks. Where bigger numbers are being dealt with there is the option of providing a simple ad lib milk feeder. The main thing is to have a strategy.

trough space to feed concentrates walk through troughs were installed. These also serve as pen dividers. This provides 500 to 600mm of feed space per ewe so that all can get access to concentrate feed at one time.

The central feed passage provides enough space for a tractor to drive in and drop off bales of hay or silage. There is also access to a fresh supply of water in each of the pens which is important as housed ewes on dry feed can consume as much as six litres of water per head per day in late pregnancy and even more after lambing.

Finishing

"The penning is designed so that it can also be used for finishing lambs indoors later in the year," says Peter. "The building is well serviced with LED lighting both inside, and for the surrounding yard outside. While the electrician was on site we got him to install some power points adjacent to the individual pens."

Once lambing starts, ewes that have lambed are moved to a dedicated lambing unit which is set up in the same shed. The area is thoroughly cleaned out and disinfected in February each

year before lambing begins. Mobile penning units (1.8m x 1.2m in size) are set up in this individual penning area.

Peter pays particular attention to using lots of straw in these pens and also uses hydrated lime to provide a warm and dry environment.

"As far as possible individual pens are cleaned out, limed and freshly bedded after each use," says Peter. "After a day or two for ewes and lambs to bond they are moved to a group pen in another shed on the farm for a couple of more days before being turned out to grass. This maintains enough space in the lambing unit for the next batch of ewes to lamb. Having this extra space at hand during lambing has proved priceless.

"I am very pleased with the layout of the shed and the convenience it has brought, in particular in the busy spring months. It provides enough space for the current flock size and, combined with the use of other sheds on the farm, I can utilise it fully for lambing time. Having a well-designed sheep shed with appropriate facilities really can help reduce time and labour spent on the farm," Peter concludes.

Ten benefits of being in a discussion group

Teagasc facilitates more than 600 discussion groups in dairy, drystock, tillage and forestry. Mairead Kirk, a drystock advisor in Monaghan and dairy specialist George Ramsbottom outline the benefits from joining, or remaining in, a discussion group

1 You'll make more money
Independent research by Dr Pat Bogue has shown that farmers who are in discussion groups make more money than farmers who aren't, almost certainly due to a combination of all of the points below. GR/MK

2 The social aspect
Farming can be a lonely occupation. Throw in difficult weather and market conditions and the going can get really tough. The social aspect of discussion groups is often the first benefit mentioned by group members. Discussion group meetings give you a chance to share your farming experiences, good or bad, with like-minded individuals. MK

Joining a group allows farmers to get out of their own working environment for a couple of hours each month and meet people that they would have little opportunity to meet otherwise. GR

3 Awareness of schemes
In the drystock end of the business, a sizeable chunk of income comes from the successful participation in schemes such as GLAS, BDGP, BEEP, etc. While these may not be the main focus of discussion groups, they are undoubtedly given air time at relevant times of the year. Your facilitator and fellow members can contribute advice regarding the rules and regulations of these schemes and steer you through inspection processes

and procedures. MK

4 Personal development
I've been involved in facilitating discussion groups for over 25 years. I've watched the development of farmers who said that they'd never be able to chair a meeting or speak in public. Through becoming members of discussion groups, they've learnt how to interact with others, share information and gradually grown in self-confidence.

“ I've watched the development of farmers who said that they'd never be able to chair a meeting or speak in public

Over the years, I've watched them become committee or board members of the milk processing co-ops, chair their discussion groups, speak at conferences and win awards. Things they'd never have thought possible a decade earlier. Group participation develops members as people too. GR

5 You'll receive technical information at the right time
As farming technology reaches ever forward, no one in the farming industry knows it all. Timely technical information at meetings from fellow discussion group members, facilitators, specialists, researchers, industry representatives, etc. can help to drive your farm business forward. MK/GR

6 You'll implement more technology
Research has shown that members of established groups have adopted a greater number of new technologies than those who are not in groups. Those in some of the newer groups were intermediate. GR

7 You'll do more goal setting
Good discussion groups formulate an annual plan with scheduled meetings and topics to be covered over the course of the year. Members can align their own farm business schedule to this plan and set targets accordingly. These can be something as simple as selecting start and end dates for the breeding season and committing within the group to have all herd breeding completed by a set date. Having to report back to the group encourages the farmer in his efforts to meet the targets. MK



The NEW suckler group

Padraig Mc Nally (back row, light blue jacket), Chairperson of the Nighttime, Evening and Weekend (NEW) suckler group facilitated by Mairead Kirk, believes that the social aspect has been vital in keeping the group together over the years. As Padraig says, "Being able to share your farming experiences and use group meetings to solve problems on your farm is invaluable."

As the group now approaches its 10th anniversary, they have organised a KT-approved health and safety event to mark this occasion on Padraig's farm in Carrickmacross on **Tuesday 30 April** at 4pm. Padraig says the focus on the day will firmly be on farming safely every day as the group acknowledges that there are still too many farm accidents and tragedies on Irish farms.

8 Positivity
Progress made by members of discussion groups is underpinned by the positive support that members receive from others in the group. A farmer said: 'I wouldn't have tried out the on-off grazing for myself if I hadn't seen some of the others [in the group] doing it themselves. They gave me the push I needed to try it out for myself – our group has a real 'try it out for yourself and see how you get on' attitude which I've really enjoyed.' GR

9 Financial discipline
On many drystock farms, off-farm income acts as a cushion

for farm finances and little effort is made to establish true farm costs. However, completing the annual Teagasc Profit Monitor gives discussion group members an insight into their farm finances and the ability to benchmark performance against other group members. The value of this quickly becomes apparent and the smart guys will tell you the Teagasc Profit Monitor results meeting is the most important of the year. MK

10 Problem solving
Someone else in the group has seen it happen before and can point you in the right direction. This past summer was

exceptionally dry. Discussion group members helped each other to decide on the decisions that members made during the height of the crisis.

According to one farmer, "I hosted a group meeting in early July. I was in denial about the drought, thinking we'd have rain any day and that things would green up again. After the meeting was over, I followed the plan set out by the group, buying whole-crop silage from a tillage farmer a few miles away and bales from a neighbour. While there was a good bit of spending involved, I was in control of my forage situation for the rest of the drought and had my winter feed sorted." GR

Grass management

PastureBase Ireland: what can it do for you?

According to these Longford farmers, PBI has something to offer whether you're in drystock or dairying

Sean Doorley
Teagasc, Longford.

"If you don't measure it, you can't manage it," said Peter Drucker, a highly respected business consultant, who might be surprised to see himself quoted in relation to animal feed. But most farmers make a winter fodder budget. It enables them to predict if there will be a surplus or deficit of feed during the winter. So, why not measure grass during the grazing season too?

What is PastureBase Ireland?

PastureBase Ireland (PBI) is an internet-based grassland management tool run by Teagasc. It offers farmers "grassland decision support" and stores a vast quantity of grassland data from dairy, beef and sheep farmers in a national database.

Farmers measure grass heights weekly on designated paddocks. Measuring is carried out by cutting and weighing grass, use of a plate meter, a Teagasc Grass Sward Stick, or more experienced farmers estimate it by eye (eyeball it). The results

Grass measuring

What are main benefits from measuring grass?

- Minimise feed costs by better utilization of grass for dairy, beef and sheep farmers.
- Maximise the proportion of grazed grass in the diet.
- Maximise pasture regrowth rates.
- Improve pasture quality and feed more grass.
- Graze more grass in the spring and autumn to shorten the winter period.
- Achieve target average farm covers at key times during the year.

are entered on to the PBI system. The majority of the 5,000+ farms on PBI are dairy farms but drystock farms can benefit too.

This spring, Longford farmers Ben and Conor Lynn, Tang, Ballymahon, Andrew McHugh, Brianstown, Newtownforbes and John Coyle, Edgeworthstown, decided to join PastureBase Ireland (PBI).

Ben and Conor Lynn are in partnership since 2015. "I became enthusiastic about developing grass on our farm when I was doing the Certificate in Agriculture at Gurteen Agriculture College," says Conor.

Ben and Conor produce early lamb, have spring-calving suckler cows and purchase store heifers, finishing all animals on the farm. They are part of the Longford Beef Discussion Group.

"We completed some development work on part of the farm over the last three years and put in place a number of new paddocks and new water troughs," says Ben.

The farm was soil-sampled in 2016 for GLAS, a nutrient management plan was drawn up and they have applied fertiliser and lime, based on the sample results, in 2018. Last autumn, an 18ac section of the farm was closed up in rotation and on 2 February 2019 they were able to let weanlings out six weeks earlier than normal.

"We will start recording grass measurements on PBI this year on this part of their farm, choosing seven paddocks where they will be grazing weanling heifers on a 21-day rotation during the main grazing season," says Conor.

Ben adds: "The main reason we joined PBI is we believe recording will take the guesswork out of managing grass. We hope to see benefits such as identifying paddocks with low yield so we can target them for reseeded."

Ben and Conor say they are delighted to have made this first step and they plan to be measuring grass on the entire farm over the next few years.

John Coyle runs a mixed beef and sheep farm with an overall stocking rate of 1.1LU/ha. He runs an early lamb production system, has spring-calving suckler cows and purchases weanlings, finishing all animals. John describes his soils as half heavy, half dry. John has been winter finishing cattle for the last 15 years.

"It's a high-costs system and because of tight margins I began to look at ways to get more grass in the diet,"



Ben Lynn and his son Conor will be using the Teagasc Grass Sward Stick to measure grass.



John Coyle intends to measure grass on 40 acres of his best ground where he mix-grazes cattle and sheep.

says John, who is part of the Longford Grass Discussion group run by his Teagasc adviser Shane Devaney. The group includes beef, sheep and dairy farmers.

“In the group I’ve seen what other farmers are doing to grow more grass: paddock grazing, soil testing, reseeding and more recently an increasing number of farmers have been signing up to PBI. This prompted me to set up a new paddock system on a dry 40ac outfarm to make better use of the ground,” says John.

He put in new fencing and water troughs and intends to mix-graze sheep and heifers on the seven divisions.

John says: “I will have more control over the grass now with better quality swards and better animal performance. Weed control will be easier as spraying can be done when paddocks are rested between grazings.”

By joining PBI this spring, John will be able to benchmark his grass performance against farmers in Longford Grass Discussion group and other farmers nationwide.

Andrew McHugh runs a spring-calving dairy herd with 3.8LU/ha on the grazing block. He feeds one tonne of meal per cow/year and would like to reduce that figure. Milk solids per

cow are at 485kg and he is targeting 500kg for 2019.

“I’m a member of the Longford Grassroots Discussion group facilitated by Seamus Nolan my Teagasc advisor,” says Andrew.

“I have been measuring grass weekly and keeping paper records. Our grazing performance is reasonably good as we achieve 10 grazings annually but we feel we are falling short on a few areas. Joining PBI will help us address those.”

Over the last number of years, there have been extremes of weather. For example, the heavy rainfall in autumn 2017 and the drought of 2018

when grass growth was restricted for six weeks. The farm manager Seamus Cullen says: “By inputting our data to PBI we will be able to manage our grass better during these very wet or very dry weather periods.”

As Seamus says, “Using the grass wedge will allow us to know when and how to react to a constantly changing grass supply on the farm.”

At high stocking rates, every extra day of grass you can get counts. Seamus also sees using PBI as an excellent tool to calculate the tonnes of grass grown by each paddock each year and to decide which should be prioritised for reseeding.

“We expect the online spring and autumn rotation planners will also help us manage grass in the shoulders of the grass growing season. Quantifying your business really allows you to see patterns, set targets, and measure progress.”

If you are interested in joining PBI, there is plenty of help available from your local Teagasc advisor to get you up and running. PBI also operates a support helpline. If you wish to join PBI and start managing your grass better, contact your local Teagasc advisor, email support@pbi.ie or visit www.pbi.ie.



Seamus Cullen wants to use PBI to identify when a deficit or surplus of grass could occur.

Grass management

Silage 75: making better-quality silage on drystock farms

Tom Coll
Teagasc, Leitrim

John Maher
Teagasc, Grass10

Grass silage accounts for 25-40% of the total feed input on beef farms and makes a significant contribution to sheep feed too. The primary challenge for drystock farmers making silage is to maximise yield while at the same time achieving quality. Based on surveys of silage results over recent seasons, it is clear that silage quality can, and should, be improved.

Average silage quality on drystock farms currently sits at just 66% DMD, which means that many farms are achieving well below this average figure. As a standalone feed, silage is expensive to produce. Producing low quality makes it even more expensive.

Leafy silage with high dry matter digestibility (DMD) results in higher feed intake and liveweight gain and lower meal bills, so targeting 75% DMD silage is really worthwhile.

Why Silage 75? Silage 75 outlines some clear and simple steps which will give farmers the very best chance to have an adequate supply of really top-quality silage in 2019.

75 units of bag nitrogen (as a minimum) applied with the required amount of P and K and sulphur based on soil sample results. This will grow the crop, replace offtake and allow for some build-up. It will also ensure that there is adequate bulk when the grass is at the ideal stage for cutting, maximising quality.

Applying just 50-60 units of nitrogen for first-cut silage, then waiting for the crop to bulk up and harvesting from mid- to late-June results in poor-

Silage 75

- 75 units of N (minimum) spread in early April.
- 75% of main cut taken by end of May.
- 75 DMD target.
- 75% of slurry spread after cutting.

Which is worth:

- €75 per livestock unit (300kg concentrates).
- €75 per 10 ewes (250 kg concentrates).

quality, stemmy, silage. This silage will have a DMD in the low 60s.

Additional concentrate feeding will be needed to achieve target performance in all categories of livestock.

75% of the main cut harvested by the end of May. This will help ensure high-quality silage with a large percentage of leaf, as the grass will not have headed out at this stage. Early cutting will also allow for additional land being available for grazing from June onwards. There will be faster regrowths and the possibility of second cuts where required. Over the past 10 years, the best period weather-wise for making silage has consistently been from about 25 May to 5 June.

75 DMD

is the target you should be aiming for when making silage. Silage is not cheap to make, especially in the form of round bales. Making high-DMD silage can dramatically reduce concentrate usage on farms.

Table 1 outlines the concentrate requirements for weanlings being fed silages of varying quality.

75DMD silage can deliver 0.6kg of weight gain per day in weanlings over the winter without the requirement for additional concentrate feeding. The main factors that influence the decline in DMD are outlined in Table 2.

Delayed harvest, low percentage of ryegrass in the sward, dead leaf at the base of the sward and crop lodging can quickly reduce a potential 75 DMD crop to low 60s within a relatively short period of time.

75% of slurry can be spread directly after silage cutting, which will replace some of the offtake of P and K. Slurry should, of course, be spread as early as possible in the year to take advantage of its N P and K content. Ground conditions don't always allow for early slurry application and are normally at their best after cutting. In the last few years, farmers who waited to spread slurry late on in the year faced issues with ground trafficability.





€75 per livestock unit is the potential saving on concentrates by making top-quality rather than poor-quality silage. 300kg of concentrates valued at €250/t for every livestock unit of cattle on the farm can be eliminated when silage is 75 DMD. 75 DMD silage is too good for dry cows but can be restricted, reducing the amount of silage required over winter. The amount of concentrates required by ewes pre-lambing can be reduced by up to 25kg per ewe by making silage which is 75 DMD or higher. This results in a saving of €7.50 per ewe or €75 for every ewe 10 ewes on the farm.

Teagasc in the Sligo/Leitrim/ Donegal ran a series of farm walks in early April of 2018 in conjunction with Aurivo Co-Op focusing on the preparation steps that are essential for making top-quality silage.

This year, farm walks will take place in mid- to late-May with the focus on the importance of harvesting the crop at the right stage to ensure yield and quality.

Table 1: Concentrate requirements for weanlings being fed silages of varying quality

Silage quality	Good (72% DMD)	Average (68% DMD)	Poor (62% DMD)	Very poor (55% DMD)
Concentrate levels (kg/hd/day) based on silage quality				
Weanlings ADG = 0.6kg	1.0	2.0	3.0	4.5
Conc needed 25 weanlings 160-day winter	4t		12t	

Table 2: Reasons grass silage digestibility can be below target

Cause of drop in DMD	DMD percentage points lost
One week delay in harvesting	3
Old pasture (little ryegrass)	5
Lodging	9
Not grazed (dead butt)	7
Bad preservation	3
Heating at feedout	3

Tillage

Balancing cereal crop micronutrient supply

Manganese deficiency can reduce cereal yields by one-third or more

Mark Plunkett

Soil & Plant Nutrition Specialist,
Teagasc Crops, Environment and Land
Use Programme

Nitrogen (N), phosphorus, potassium (K), sulphur (S) and magnesium (Mg) are applied in kilogrammes per hectare based on soil test results and the crop's grain yield potential. Micro nutrients such as copper (Cu), manganese (Mn) and zinc (Zn) on the other hand are required in much smaller amounts – grammes/ha – one thousand times less! But balanced supplies of both major and micronutrients are essential to maximise grain yield and profitability.

Soils and micronutrient supply

In general, micronutrients are plentiful but some soil types deliver sub-optimal quantities. For example, light/sandy or peaty soils can deliver low to medium amounts. Other relevant factors are soil pH, soil structure, seed bed conditions (consolidation), soil temperature, soil moisture and recently applied lime.



Figure 1: Soil moisture is the medium of trace element mobility and uptake by the plant roots. Dry soil conditions in April and May can result in numerous trace element deficiencies (Cu, Mn and Zn) in spring cereal crops.

Test soils every three to five years and take an S4 (pH, LR, P, K, Mg, Cu M<n, Zn) soil sample on a range of

tillage soils on the farm. This is your starting point in detecting possible nutrient deficiency. Maintain a soil

Table 1: Guide to nutrient deficiencies depending on soil factors and visual symptoms and suggested treatments

Nutrient	Soil Factors	Soil Analysis	Visual Symptoms	Soil Treatments	Foliar treatments
Copper	Low or high soil pH / Light textured soils / Soils over granite or sandstone / Peaty soils	Good Indicator	Yellowing / withering leaf tips & spiraling of leaves / Secondary tillering	Apply copper sulphate 15-20kg/ha & incorporate	GS 1 to 4 leaf stage / Tillering
Manganese	High soil pH (<7.0) / High soil P (>15ppm) Light textured / peaty soils / unconsolidated seedbeds / dry soils / poor rooting	Poor Indicator	Interveinal chlorosis / patches of pale green limp growth / oldest growth affected first / greening of tram lines	Soil Mn application ineffective. Seedbed consolidation	Seed treatments on very deficient soils Foliar application GS 14 / 21 - 31
Zinc	Light textured soils with high soil pH (>7.0) + P (>15ppm) or Low soil (<6.0) / High organic matter soils. Clay soils with high Mg can fix Zn	Good Indicator	Leaf chlorosis with pale green, yellow color / leaf bleaching.	Seedbed application 20-30kg/ha zinc sulphate & incorporate	Apply during early tillering (GS 22-25)

GS – growth stage



Figure 2 Warning signs of restricted manganese uptake in spring barley. Three to four times more leaf production in tractor wheel tracks (darker green).

pH 6.5 and apply lime based on the soil test to improve soil pH. Take care not to use excessive amounts of lime as that can reduce the availability of micro nutrients for a number of years.

Manganese and cereal crops

Manganese deficiency is one of the most common deficiencies in cereals, especially on naturally high-pH or recently limed soils.

Manganese deficiency in crops can reduce yield by 30-60% in extreme cases. Yield responses to Mn are found where cereals are growing in soils of pH 7 or more or when the easily reducible Mn level in soil test falls below 50mg/l.

Soil analysis (for easily reducible manganese) is an indicator of soil Mn availability. However, this is not fully reliable for predicting the occurrence of Mn deficiency. Leaf analysis is a more reliable test for possible Mn deficiency.

Transitory Mn deficiency can also occur as a result of the conversion of Mn^{++} , the plant-available form that is found in the soil solution, to manganese oxides and hydroxides which are unavailable to plants. This process occurs when Mn comes into contact with oxygen and is more likely during drying weather conditions or low soil moisture levels.

Anything which increases the amount of air in the soil, such as loose seedbeds or dry soils, can induce manganese deficiency. Seedbed consolidation plays an important

role in increasing Mn availability by increasing root to soil contact and reducing Mn oxidation.

Manganese deficiency that occurs as a result of dry soils will often be corrected by a good spell of rain. Manganese deficiency can be controlled by applying foliar sprays of Mn compounds with manganese sulphate (this requires high water volumes and check mix/product compatibility). Application should be repeated if

“Anything which increases the amount of air in the soil, such as loose seedbeds or dry soils, can induce manganese deficiency

the symptoms persist.

Chelates and inorganic compounds of Mn are also effective and should be applied once a Mn deficiency is identified as early action will reduce yield loss. These have the added advantage of being applied in lower volumes of water, and compatibility with certain fungicide and other pesticides.

Manganese-treated seed and manganese-treated fertilisers can be effective. Applications of manganese sulphate to the soil will not eliminate long-term deficiency. See Table 1 for information on copper and zinc.



Farmer focus

David Walsh-Kemmis farms just outside Stradbally in Co Laois. Spring malting barley, the main crop on the farm, is grown to supply the on-farm brewery. David's farm is currently one of the monitor farms which is participating in the Teagasc/Boortmalt joint malting barley development programme.

“We altered our early crop management to alleviate the problem of manganese deficiency,” says David. “We started by identifying the worst-affected areas on the farm so that they could be given special attention in the following cropping season. For us, seedbed preparation plays a key role. Over-tilled and loose seedbeds can accelerate manganese problems in crops and seedbed consolidation is an essential part of how we combat the problem.”

A move to disc drills and away from power harrow-operated one-pass drills has made it easier to achieve firmer seedbeds.

“Pre-sowing pressing of the soil and post sowing rolling has major benefits for improving seed to soil contact and seedbed consolidation,” says David. “We will also apply foliar manganese on the most affected cropping areas: 2.5kg/ha at the two-leaf stage and repeating the application at first or second node. This minor nutrient can have a big impact.”

Challenge, opportunity, progression

Participants on Teagasc agricultural college courses gain practical experience, practical skills and, crucially, further opportunities say these current and former students

Louise Carroll

“Since I left the college, I have rented a farm and begun my own tillage enterprise. These are challenges I would have never undertaken if it hadn’t been for the course,” says Louise Carroll of Tullow, Carlow, who completed the Advanced Certificate in Machinery & Crop Management Level 6 at Teagasc Kildalton College.

“I loved the many practical elements, especially regarding machinery. We all got to plough and sow on our own and to operate different makes and models of tractor and machinery. We walked crops weekly to monitor for pests and diseases and we managed three different crops on our own as a group.

“There were a lot of really practical modules including crop production management, farm equipment fabrication, farm machinery maintenance and financial planning. The lecturers were always very involved and put in a lot of time and effort into each student.

“I was a bit apprehensive about the design and manufacture project, which was part of the farm equipment fabrication module, as I had never even picked up a welder before I started in Kildalton. But the lecturers were great and we had the best of equipment to complete our projects with. I am now confident using a welder and other equipment which I had never used prior to doing the course.

“The course included a 12-week

practical learning period on a host farm which I spent on a tillage and beef farm near Athy, Co Kildare. This was a great experience as I got to see tillage techniques and operate different types of machinery.

“A highlight for me was the study tour to England. We attended the LAMMA agricultural show in Peterborough as well as going to the JCB factory and an 8,500ac cereal and spud farm. That was an excellent trip.

“Since completing the course in Kildalton, I have progressed with my studies and am now completing year three of the BSc in Agriculture in Waterford Institute of Technology. I have enjoyed the challenge of progressing from a practical-based course to a more academic course of study.”

John Smith

John completed a level five course in Poultry production at Teagasc, Ballyhaise. “What I found most positive about the course was that I could apply what I learned on a given night, in class, the following day on the farm and see instant benefits. The practical skills training was delivered on site visits to poultry units across the region. This was a major part of the course and an area that I learned a lot from.

“I farm with my parents and brother near Shercock on the Monaghan/Cavan border. The farm is suckler beef, but due to the uncertainty in this industry we decided to diversify into poultry broiler production. The op-



John Smith learned the skills to become an effective broiler finisher.



portunity arose to set up a 40,000-bird unit supplying a local poultry factory beside the town.

“I wanted to complete a course that would give me the skills and confidence to become an effective broiler finisher and make the most of the new enterprise. The timing worked out great as Teagasc started a Level 5 course delivered part-time by night in Ballyhaise in 2018. I was part of the first class to complete this course.

“The course was a very positive experience, with a good balance of theory in class and practical skills. Two areas I am particularly interested in are animal welfare and biosecurity. The course also covered different areas of poultry, including egg and duck production. I enjoyed learning about those systems too.

“ The course was a very positive experience, with a good balance of theory in class and practical skills

“We will perfect the broiler unit that we have for a few years before deciding the next step for the family farm. Getting to this point has been a steep learning curve for my parents, my brother and myself, but one which we have enjoyed. The course has given me great confidence to drive on with the unit.

“Teagasc will start a Level 6 poultry management course later in 2019 and I intend to progress on to this course once it is available.”

Paul Sheehan

“Managing grass is my favourite thing by a nice bit,” says Paul Sheehan, who is now on the Professional Diploma in Dairy Farm Management having completed his Green Cert and the level 6 course in Dairy Herd Management at Teagasc Clonakilty College.

“My favourite part about the courses in my two years there was when in second year we used to measure the grass on the farm every Monday

» Continued on page 26



Paul Sheehan says that measuring grass was one of his favourite parts of the courses in Teagasc Clonakilty.

afternoon. I always had an interest in grass as I know this is the cheapest source of feed for your cows but had never really measured grass before, or used Pasturebase.

“Since then, I have been measuring grass weekly at home and I find it very beneficial. There is also a dairy discussion group for students at Clonakilty which is very good. You have a network of farmers your own age you can discuss a problem with and there will always be a solution. At the discussion group meetings, you will always learn something new. I found the level 5 course was a very good start on my road to farming. It covered all aspects to farming from financials to milking.

Ultimately, Sean says he hopes to farm in partnership with his father in Carraig na Bhfear, but he says he is open to any possibilities that include cows and grass!

“The great thing is that you are all the time building a network with fellow students, lecturers, and host farmers who you could contact, or who might contact you, about something in relation to cows. There’s a lot of potential opportunity in dairying and I think the Teagasc courses prepare you very well to avail of it.”

Eamon Comiskey

“I currently work full time for Kieran Pigs and have also taken over my family farm near Kilnaleck in Cavan. I went back to education at the age of 30 to learn how to run my farm better and more efficiently. The opportunity to do a level 5 pig course and progress to a level 6 Specific Purpose Certificate (Green Cert) allowed me to make efficiency changes to my home farm but also gave me a renewed confidence in my daily work on the pig unit.

“When I took over my family farm, we had 23 suckler cows, which I have since increased to 45. As I was working full-time and running my family farm, I was delighted I could do this course part-time, with most of the classes in the evening, so I did not need to take too much time off work.

“The Green Cert programme broadened my knowledge and decision making and it has inspired me to breed better-quality animals and keep a younger herd. I still have a lot of work to do to get my farm where I want it, but I feel this course has given me the ideas, ability and knowledge to get there. The Farm Business Planning module has given me new skills which allow me to manage more effectively.



Since then, I have been measuring grass weekly at home and I find it very beneficial



Eamon Comiskey says the Green Cert programme broadened his knowledge. This newborn calf is about to be tagged.

“Being part of a suckler/beef discussion group in second year was hugely beneficial in advancing my expertise and capabilities and I really enjoyed the farm walks on real commercial farms.

“I could compare what different farmers were doing at various times of the year to what I was doing. Some of this included calving, silage making and having cows in good condition for calving down.

“Probably one of the biggest things I have taken from this was the im-

portance of farm safety, especially during calving time. The class work gave me a greater understanding of the importance of paperwork and documentation in running a farm as a business. The skills I gained help me to keep on top of things, both financially and for the Department of Agriculture.

“For anyone thinking of doing their Green Cert, you will definitely gain practical knowledge that is easily applied into everyday farming and you will make friends for life.”

Agricultural courses at agricultural colleges

All Teagasc Level 5 and 6 programmes lead to a QQI award. The Teagasc full-time Level 5 Certificate in Agriculture and Teagasc Level 6 advanced certificate programmes are delivered at six agricultural colleges. While full-time courses in the main attract school-leavers, they also attract older learners who are interested in pursuing the full-time option.

Applications for the full-time Teagasc Level 5 Certificate in Agriculture course should be made online through the “Apply for Courses” option on the www.teagasc.ie homepage. Potential applicants should apply now.

Agricultural colleges also deliver Teagasc part-time and distance education Green Cert courses to adult learners. (The part-time and/or distance education Green Cert options are also delivered in Teagasc regional centres across Teagasc’s Advisory Regions).

All of the agricultural colleges have developed significant linkages with the higher education sector and depending on the agricultural college deliver substantial elements of Level 7 and 8 agricultural degree programmes for the higher education sector.

Teagasc-supported private agricultural colleges

Of the six agricultural colleges, three are owned by Teagasc (Ballyhaise, Co Cavan; Clonakilty, Co Cork and Kildalton, Co Kilkenny). The other three colleges are privately owned but supported by Teagasc. These colleges (Gurteen, Co Tipperary; Mountbellew, Co Galway and Salesian Pallaskenry, Co Limerick) deliver the same Level 5 and 6 full-time, part-time and distance education programmes as Teagasc colleges. As for Teagasc colleges, all three private colleges operate commercial farms to support their education activities. The overall network of six agricultural colleges has made a very valuable contribution to farmer education for more than 100 years.

The Nitrates Derogation 2019: key points to note

Tim Hyde

Environment specialist, Teagasc Crop, Environment and Land Use Programme

Derogation farmers in 2018 had several new things to comply with under the new Nitrates Action Plan (Nitrates Directive).

- 50% of all slurry produced on a derogation farm must be applied by 15 June. After this date, slurry can only be applied using low-emission equipment.
- If all slurry is applied before 15 June by splash plate or other methods, this is acceptable.
- Soiled water can continue to be spread by splash plate all year around.
- A derogation holding must have sufficient storage for all livestock manure and soiled water produced on the holding.
- Any soil samples used in a 2018/2019 derogation plan that were received in soil laboratories from 01/01/2018 cannot be for an area of more than 5ha.
- Soil samples taken prior to this date and used in derogation fertiliser plans can cover an area of up to 8ha.
- A separate requirement is that there must be a minimum of one soil sample for every 5ha. Teagasc recommend one soil sample for every 4ha.

Other derogation requirements that you need to know

Derogation farmers must apply each year to stay in derogation.

- 2018 fertiliser accounts must also be submitted online by 31 March for those who applied for a derogation in 2018 and (also exceeded 170kg NpH in 2018).
- The 2019 deadline for online applications is 31 March.
- Where a new or amended fertiliser plan is submitted in 2019, only a plan produced by the Teagasc Online Nutrient Management Plan programme or Farmeye Nutrient Management Plan is acceptable.
- Only soil analysis dated after 15 September 2015 can be used for the fertiliser plan in 2019.
- Fertiliser accounts for 2019, including information related to management of nitrogen and phosphorus inputs and management of soiled water, shall be kept in relation to the farm and shall be submitted online no

later than 31 March 2020.

- You must be farming a holding that is at least 80% grass.
 - A derogation is only available in respect of grazing livestock.
 - You cannot import livestock manure on to your holding.
- When applying for a derogation, the following documents must be submitted:
- A farm map indicating location soil samples and plot numbers.
 - A fully labelled farmyard sketch showing manure storage facilities and livestock housing, that provides a link with the buildings outlined on the fertiliser plan;
 - Fertiliser/nutrient management plan;
 - Soil sample results.
 - If fertiliser plans are subsequently amended for either new soil analysis, farm map and/or farmyard sketch, they must be submitted online.
 - Derogation farmers are liable to a 5% DAFM inspection if in derogation.

Full details of the scheme are available on the Department of Agriculture, Food and the Marine Web site <https://www.agriculture.gov.ie/ruralenvironmentsustainability/environmentalobligations/nitrates/nitratesderogation/>

What you should bring in to your Agri Advisor when completing your 2018 Derogation Fertiliser Records

- Feed for 2017: To complete records for 2018.
- Fertiliser for 2018: To complete records for 2018.
- Feed 2018: To prepare plan for 2019.
- Soil samples: must be dated after 15/09/2015 to be valid for 2019.
- Projected stock figures for 2019.
- Any changes to land area and crops for 2019.
- All yard measurements: eg new buildings, slurry storage facilities, etc.
- Copy of your 2017 fertiliser records (any opening stock of chemical fertiliser in 2018).

What you should have when leaving your agricultural advisor

- Maps showing the lime, P and K status of your farm so you can plan a liming campaign over the next four years, where to target your livestock manures and chemical P and K

compounds (Remember 6:1 return on money spent on lime).

- A full understanding of what is in the fertiliser plan, particularly what the soil status of your farm is (needs to be compared to previous set of soil results).
- Details about the livestock manure storage capacity of the farm and what is the limit of the stock you could keep over a winter based on your current facilities. This is one major area that will be checked if you get a cross-compliance inspection.
- Updated plan for 2019 taking account of any changes in land area, stock numbers, etc.
- Remember, there are no limits to potash (K) or lime and these should be spread in line with soil analysis reports.
- Information about when you will need to next take soil samples to comply with derogations.
- Completed records for 2018.
- Maps showing the possible high organic matter (OM) areas on the farm which may need to be analysed for OM.

There are many associated benefits besides receiving the derogation itself:

- 1 Following the recommendations in a nutrient management plan will reduce costs; increase the effectiveness of nutrients; increase grass DM production/ha; improve farm sustainability and improve water quality.
- 2 Completing the derogation plan encompasses looking at your overall farming enterprise efficiency. It takes into account stocking rates, soil fertility, feed/forage input and farm output.
- 3 Having a nutrient management plan with regular soil tests allows farmers to assess the current soil fertility status on the farm and to see how the soil fertility has changed since the last set of soil results.
- 4 Lime status is the first key component in correcting soil fertility issues on farms and targeting this can help farms achieve the optimum pH for nutrient availability and responses.
- 5 Home-produced organic fertilisers (slurry and FYM) can be used to target those soil samples that are low in P and K. Silage and grazing areas that's don't normally receive these fertilisers need to be identified to target optimum slurry and fertiliser ap-

lications based on land use, distance from the yard, etc.

6 On the basis of soil fertility and crop use, a better mix of fertilisers can be used to balance soil requirements and farmers can manage the cost of fertiliser and lime to be purchased.

7 Over the past few years, derogation farmers are taking soil samples on a more regular basis to track P and K fluctuations while trying to maximise soil fertility.

There are three main jobs to be done each year for derogation: complete records for the year just gone, apply for the derogation and prepare a fertiliser plan for the coming year.

Derogation farms must assess their manure storage requirements

Derogation farmers must have adequate slurry storage each year for all livestock over the winter period, otherwise they are ineligible to apply for a derogation. Farmers should assess their slurry storage calculations each year as this will highlight any surpluses or deficits on farm, especially where farms are in an expansion mode.

Calculate the slurry storage needed for your farm against what storage you have:-

High organic matter

Farmers whose lands appear in the indicator map of possible high organic matter (OM) will need to discuss this with their Teagasc advisor or agri consultant. There are more detailed maps available to agri consultants and also on the DAFM AgFood site which bring this down to individual farm level. There are consequences for some farmers:



Soil types in these areas could possibly be >20% organic matter (peaty in nature). Soils with >20% organic matter are considered to be "At risk for nutrient runoff", which can affect water quality. The phosphorus fertilisation rates for these soils cannot be higher

than the amounts allowed for Index 3 soils which are known as maintenance amounts, which means the amounts that are needed to replace whatever the crop takes up.

Farmer and agri consultant have three options:

- Carry out organic matter analysis for each soil sample in the area concerned.
- If soils are mineral soils and the peat maps are incorrect then the agri consultant can sign off on this.
- Assume the map is correct and the soils are peaty (>20%OM) and then only maintenance dressings are allowed.

- Weeks storage is 16, 18, 20 or 22 weeks.
 - Length, depth and width are all in metres.
 - Adjusted depth means take 0.2m off roofed slatted tanks and 0.30m off unroofed tanks.
 - Rainfall on these open tanks needs to be calculated separately.
- Planning additional storage requires time and as planning permis-

sion may be needed this needs to be planned well in advance.

You may be able to qualify for TAMS II. Grants of 40% are available, and for qualified young farmers this could increase to 60% if the young farmer is the only name on the herd number or in a partnership/company. TAMS II is due to close in 2020 so plan now to have your application submitted this year.



YOUR One-Stop Shop for

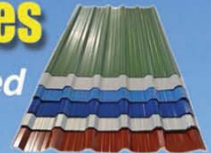
Box & Corrugated Sheeting
Steel Purlins & Gutters
Flashings & Accessories
Curved & Vented Sheeting
20 Year Guarantee
CE Certified ISO 9001



Sheeting Farm Sheds of the Future

Cladding & Roofing Supplies

Agri Spec Sheeting Grant Approved
by Department of Agriculture



Made to Suit Your Individual Lengths

Nationwide Delivery

Laser and HD Plasma cutting services also available.



Call: 021 7333987

www.irishrollforming.ie

Connect with Us:



Farm management

Preparing for your one-to-one

Over 40,000 Teagasc clients will meet with their adviser over coming months. A little preparation will ensure you get more from this important meeting than a completed Basic Payment Application

James McDonnell

Financial Specialist, Teagasc Rural Economy Development Programme

1 Preparation

Every spring, advisors spend a significant amount of time in offices completing Basic Payment Scheme applications. Last year, Teagasc advisors completed more than 40,000. Ensuring farmers gain all of their entitlements without penalty or delay is crucial work.

But early spring is a time when farmers are very busy farming and advisors are keen to be in the field advising them. So, before you head to the Teagasc office, prepare well and ensure you make the most of the BPS consultation.

Write down a list of items for discussion to ensure nothing gets missed. 2018 was a tough year, so you may want to review your farm plan, farm finances, increase the amount of silage conserved, or plan an investment.

2 The Basic Payment application

It is crucial that the application and associated forms are completed on time with due diligence.

Now that the information packs have arrived, you should contact your Teagasc office for an appointment. Making an early appointment will mean you'll probably get more time as advisors are generally under greater time pressure the closer the deadline.

The 2019 application

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

The BPS application process encompasses:

- Basic Payment Scheme.

- Greening Payment.
- Continuation of the Young Farmer Scheme if you were an applicant in 2015, 2016, 2017 or 2018.
- Aid for protein crops (peas, beans, lupins).
- Areas of Natural Constraint.

Making changes to the herd/crop/flock identifier

Every year, 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 Farmer Scheme. Registered Farm Partnerships and farming "Companies" are other examples.

If you are planning to make changes to the herd identifier number, do so in good time to allow the Regional Veterinary Office time 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 involved in its processing.

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 of this fact, 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 28 February and 1 June this year. This is to help make the BPS application process more efficient.

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

3 Farm succession

It is important that every farmer has thought about farm succession. The first step is to write a will. This is an insurance policy in case you pass on unexpectedly. Have a conversation with your advisor about farm succession.

Succession 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





Write down a list of items for discussion at your advisory meeting to make sure nothing gets missed.

upon what happens in the next CAP negotiations. The payment is payable on a maximum of 50 entitlements. The payment is worth about €65.

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 Wednesday 15 May 2019. This will not be extended. As for 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).

All amendment forms will be acknowledged in writing.

Making the appointment

Before you visit your advisor, review all the documentation you have received from the Department. If you plan to make significant changes to the 2019 application, state that you require a longer appointment than usual so that it can be completed in one visit. The more complex cases may also involve the solicitor, accountant and valuer and 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.

Conclusion: It's human to put things on the long finger, but those who can overcome this inclination are always well rewarded.

very specific conditions, for example, "age" or being an "active farmer".

National Reserve (NR)

This scheme is aimed at new entrants to farming. This year, the National Reserve has opened for applications also. The funding available is less than last year's, but fewer applications are expected. Successful applicants will expect to receive entitlements worth just over €180. There may be a cap applied as in 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 Young Farmer Scheme (~€65).

The National Reserve scheme has two mandatory categories:

- a) Young Farmers.
- b) New Entrants.

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

“ It's human to put things on the long finger, but those who can overcome this inclination are always well rewarded

The Young Farmer Scheme

This Scheme delivers a "top-up" to young farmers who have recently taken up farming. To be eligible, you must have started in the last five years and you must be 40 or younger in 2018. 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 started farming in 2018, you are guaranteed to get at least two payments. The final payment depends

Diversification

Why it's nice to have options

Sean Cooney,
Teagasc, Thurles

The Teagasc Options for Farm Families Programme is designed to encourage new thinking and new ideas, leading to additional income on and off farm.

The programme consists of a series of workshops covering a wide range of topics. Guest farmers who have successfully diversified speak at these workshops and Teagasc specialists are available to answer questions.

Visits to farms with successfully diversified farm enterprises are a vital aspect of the programme. Participants also have the opportunity to network with local development and training agencies.

The Tipperary Options Programme in 2018 took place over four consecutive Tuesday nights in November. The course covered a broad range of topics including artisan food, horticulture, social farming, snail farming and poultry.

Artisan producers

On the first night Patrick Killeen gave an overview of the local Leader group and its role for artisan and food producers.

Con Trass spoke about his apple business giving an insight into his farm shop and displayed some of his produce on the night, which included apples, strawberries, sparkling juice, apple juice and cider vinegar.

Maurice O'Dea from Canvas Brewery shared his experiences of diversifying into craft beer to complement the family tillage enterprise.

John O'Connell shared his experience of integrating truffles into his forestry enterprise and his intention to establish a community of truffle growers.

In the second workshop, Teagasc specialist Stephen Alexander gave an overview of the horticulture industry and highlighted opportunities.

Maeve O'Hare spoke about growing organic lettuce and supplying it locally. She described growing demand from hotels and restaurants for fresh local produce.

Eva Mika from Carlow, who is running a snail farm, explained in detail what this involved.

Stephaney Jaeger Liston explained to the audience about social farming and highlighted the benefits of it for the elderly, people with special needs and those who are rehabilitating from social problems.

The third night explored rural tourism. John Birmingham, Mullinahone, gave an insight into developing out-buildings on his farm to accommodate various events, which include weddings, music concerts and B&B. John has integrated this business



Jack, through collaboration with University College Limerick and local authorities, ... developed a unit that now uses the poultry manure to heat the chicken houses

into his forestry enterprise.

Tipperary Leader group was also present on the night and members gave an overview of the funding available to farmers for diversifying into rural tourism.

Ailbhe Gerard gave an insight into how she made best use of GLAS to enhance the honey bee pollination through the use of the correct seed mix under the wild bird cover action.

She displayed samples of her produce, including beeswax candles, beeswax lip balm and organic honey. She also runs yoga classes on the farm.

Poultry

The final night looked at poultry. Teagasc poultry specialist Michael Duffy gave an overview of the poultry industry and gave ideas of simple options into which farmers could diversify.



Jack O'Connor explained to the audience about how poultry manure had become an environmental risk on his farm in Limerick. Jack, through collaboration with University College Limerick and local authorities, came up with an innovative and sustainable solution to the problem.

They developed a unit that now uses the poultry manure to heat the chicken houses.

The final speaker on the night was Kylie Magner who is running an organic free-range egg business in Fethard, Co Tipperary.

Kylie is a full-time farmer who grew up on a mixed farming enterprise in New South Wales, Australia. After studying for a bachelor of business in agricultural commerce at Sydney University, Kylie undertook work in various marketing and equestrian roles from Sydney to Japan before landing in Fethard where she met her now husband Billy.

The couple bought a 20-acre holding and started farming sheep and cattle. "I very soon realised that it wasn't

The Options Programme looks at:

- The generation of ideas
- Successful case studies
- Grant aid for new start-up businesses through collaborative delivery with external agencies (Leader, Enterprise Ireland)

The farmers who could consider diversifying are those:

- With surplus labour capacity
- Looking to change farming enterprise
- Looking to generate extra farm income inside the farm gate



Kylie Magner and Sean Cooney.

possible to make the holding viable," says Kylie. "So we decided to diversify into the poultry business by converting a three-bay hay shed and starting free-range egg production."

There are currently 300 hens on the farm producing an average of 1,700 eggs per week. The hens spend their days grazing on chemical-free natural grass, with fresh air and clean water. At night, they retire to their warm custom-built shed.

They are moved to fresh grass every week, sometimes every day and they leave behind their organic fertiliser for the pasture to thrive on.

All the eggs are graded on the farm and are sold at markets in Cahir, Fethard and other retail outlets. Some of the produce is also going into hotels.

A new product which Kylie has begun developing is chicken broth. The gelatin in chicken broth has been known to have many positives in restoring human gut health.

Kylie is marketing this based on its many health benefits. Kylie distributes this product locally at farmers' markets and various other outlets.

"My aim is to increase the flock to 1,000 free-range hens," says Kylie. "As for livestock, grass is a great feed and I plan to buy or develop a portable grazing hut so we can move the birds to paddocks which are further from the barn."

Eavaun Carmody

Eavaun Carmody from Dublin purchased Killenure Castle and 16 acres in Dundrum, Co Tipperary, 12 years ago.

"My original idea was to use the castle as my family home and run a small drystock farm," says Eavaun. However, this plan soon changed after a local told her about the Dexter breed which originated in Dundrum in 1776.

At the time, there were no Dexters in the area, despite them being a huge part of the local identity of Dundrum. Stock is small in stature, weighing between 350kg and 400kg mature liveweight.

At the time, the breed was not an economically viable option for farmers. The only incentive was the €200 per head in AEOS which was capped at 10 animals.

For Eavaun, there seemed to be little commercial future for Dexters until she met with some international visitors who were intrigued by the story of the Dexter. Eavaun had attended previous options courses run by Michael White in the Teagasc office in Thurles.

Funding sources

"I heard about some of the various sources of funding from the different agencies," says Eavaun. "And I relied a lot on the Teagasc Advisory Service for help in the practical farming elements of the business."

Today, Eavaun farms 800 Dexter cattle through collaborative arrangements with many local farmers. The majority of the finishing takes place on the grounds of the castle and on a rented farm.

All Eavaun's finished animals are slaughtered locally by craft butchers John and Ciaran O'Dwyer. Every part of the animal is used and there is no waste. The hides are sent to Italy and are used to make handbags, wallets, washbags, laptop sachets, diaries and passport covers. Tipperary is the home of hurling and Eavaun has distinctive sliotars made using Dexter leather.

Premium price for meat

The beef is available locally and in other outlets globally at a premium price. The fat of the Dexter is used to make a gourmet dripping. As Eavaun has added value to the carcass of a Dexter, she can afford to offer a premium price to the farmers, with Dexter beef €5.00/kg deadweight – considerably more than that paid for conventional beef. This also allows her to offer her B&B farmers a premium price for their services of grazing animals.

"I want to be able to return as much of the market share to the primary producer as possible," says Eavaun. In the future, Eavaun aspires to secure markets in Hong Kong. She also hopes to secure funding for research into Dexter milk and the benefits of their A2 milk.

Eavaun concludes: "Diversifying in farming can be challenging and farmers who embark on such a journey can feel alienated at times – perseverance is essential!"

The Teagasc Options Programme provides a forum for farmers to share ideas and insights about how they have overcome some of the challenges which they may encounter with their business.



Eavaun Carmody

Diversification

Adding value: Dunany Flour Organic Farm

Growing, processing and marketing their organically produced grain has been a great success for this Louth farm family

Elaine Leavy

Organic specialist, Teagasc Rural Economy Development Programme

Alan McEvoy

Teagasc B&T Tillage Advisor, Drogheda, Co Louth

Andrew and Leonie Workman met at college. They were both studying agriculture at Seal-Hayne Agricultural College in Devon. In 1981, they returned to Dunany and took over the farm, which has been in Andrew's family for generations, located along the Co Louth coast overlooking the Irish Sea to the east and the Cooley Peninsula and the Mourne mountains to the north.

The Workmans established a tillage farm growing cereal crops. Increasing input costs squeezed the charm out of growing conventional cereals and the Workmans began to look at other options to improve the overall viability of the farm and their quality of life.

Why organics?

"There were several reasons why we started looking at organic production," says Andrew, admitting that: "I wasn't a great enthusiast for spraying and fertilising."

They gathered as much technical information as they could, visiting and speaking to organic farmers in Ireland and others as far away as France and Germany.

"After processing all we had learned, we entered the land into organic conversion in 2004 and it



Alan McEvoy and Andrew Workman.

achieved full organic status in 2006."

In the last 12 years, there have been many changes made with regards to the crops being sown and the routes to market.

"Initially we sold our grain into the animal feed market," says Andrew. "But with fluctuating grain prices we began looking into other ways of selling grain. We started growing oats for the organic porridge market which we still do."

Milling

"We realised that the way to survive was to add value by processing the grain ourselves and that's what we decided to do," says Leonie.

In the nearby town of Dunleer, there was Whiteriver Mill, a traditional stone water mill still in working order. With the help of the mill owner, the Workmans started milling and producing a nutty traditional extra

coarse flour from their wheat. Initially this was sold locally and within a year demand outstripped what the mill could produce.

"We began to see an opening in the market for other organic flours from grains such as rye and spelt," says Leonie. Again, they researched how to grow these crops, and with their "can do" attitude decided to grow spelt and rye. But these grains needed a faster more efficient milling system.

By chance, on their way home from their son's wedding in Poland they came across an electric stone mill being used by a German organic farmer. "We bought it as it suited the volume of grain that we were producing on the farm," says Andrew.

The Workmans also sourced a reconditioned stoneground mill for the extra coarse flour. Over time, they have invested in grain cleaners, gravity separators and a de-huller, all of which were sourced secondhand and are essential pieces of equipment for producing weed seed-free quality grain for milling.

Market development

With the flour selling very well locally, the rye and spelt growing and the greater capacity with the mill, the Workmans looked to expand their market.

"We did this by simply loading the car with samples and cold-calling to wholefood stores, artisan bakeries and restaurants," says Leonie.

They began to get great feedback and achieve a better financial return for their grains. Then the market

Organic cereal and pulses production in Ireland

The area devoted to organic cereal and pulse production in Ireland is relatively small.

According to Department of Agriculture, Food and the Marine figures, the area of organic cereal and pulse production in 2017 was 2,426ha, of which 1,181ha were oats, which rep-

resented 0.8% of total cereal production in Ireland.

The sector is made up of approximately 161 extensively located farmers with the majority growing less than 10ha.

Demand and opportunities for organic cereals and pulses

The production of organic cereals in Ireland is not enough to meet the demand from the existing and future demand for the organic animal

concentrate/straight feeds, breakfast cereal (mainly porridge oats) and organic aquaculture sector. For instance, it has been estimated that the existing production levels of oats grown for the organic porridge market (mainly Flahavans) accounts for only 40% of present demand.

At the end of 2018, the organic sector is made up of 1,700 farmers, with approximately 70% of them having a livestock enterprise on the farm, which leads to a significant demand



Andrew Workman, Elaine Leavy, Leonie Workman and Alan McEvoy.

started to come to them with distributors and retailers wanting to have Dunany organic flour as part of their product range.

Their flours and berries are sold:

- In Dublin and the rest of Ireland through a distributor.
- Regionally in local shops and Super Valu stores.
- In Northern Ireland through a distributor.

They have developed a range of flours from the wheat, spelt and rye. Also included in their range are spelt berries.

Cropping on the farm

“To have grains and flour for their market, the Workmans need to have a cropping plan in place for the farm,”

says Alan McEvoy, their Teagasc advisor.

“This is done through crop rotation which is a key component of organic cereal production. It is the principal mechanism to provide crop nutrients; it is a major way to control pests/diseases along with maintaining soil structure, allows for spreading the fertility requirements and provides the capacity to build fertility.”

There is no blueprint for rotations and they vary depending on the farm and the farmer’s needs. The Workmans have implemented a rotation of a two-year fertility building phase with red clover followed by a five-year cycle of cereals including spelt, wheat, rye and oats. This planned rotation may vary depending on soil

type, weed burden and soil fertility.

Selling point

“The unique selling point of Dunany organic flour is that we are able to see the grains through from sowing to harvesting, milling to packaging and distribution,” says Andrew. “Our only regret is that we didn’t do it earlier!” concludes Leonie.

Currently, Andrew and Leonie Workman’s farm is one of 12 organic farms in the 2019 Department of Agriculture Food and the Marine (DAFM)/Teagasc organic demonstration farm programme, which showcases successful organic operators of various enterprises. Their farm walk is taking place on Wednesday 22 May at 2pm.

for organic concentrate/straight feeds. This is mostly being supplied from abroad.

It is estimated that there is 7,500t of organic cereals (excluding arable silage) being currently produced in Ireland, which falls well short of the current demand estimated to be in the region of 25,000t from the following enterprises: sucklers, cattle, dairy, sheep, pigs, poultry, porridge oats and other niche cereal products. The demand for the organic aquacul-

ture industry was excluded from this calculation.

Overall in Ireland, opportunities exist for import substitution of organic cereals and pulses for animal feed and the porridge market.

Teagasc will run QQI accredited organic production courses at Tullamore, Mallow, Athenry and Portlaoise from March through to July 2019.

Attendance at an accredited course is a mandatory requirement for all new applicants to the recently

re-opened Organic Farming Scheme (OFS) Tranche 2. All such applicants must have a course completed before 1st September 2019.

In addition, the course is a great way for farmers to explore the organic option if considering conversion.

Please inform any clients who may be interested.

See the link below to course details and how to book:

<https://www.teagasc.ie/rural-economy/organics/training/>

Forestry

Generations planting towards continuous cover

Frances McHugh

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

There's rarely a year goes by that Bryan Hennessy doesn't plant a tree. In addition to his mixed woodlands, many individual or small groups of trees are dotted around his farm near New Ross in County Wexford.

His interest in trees extends beyond basic timber production and he has planted native but also many unusual species such as Southern beech, Coastal Redwood, Spanish Chestnuts among others.

It's 85 years since planting began in Ballymacar. Bryan's late father, Denis Hennessy planted a hill field with Larch and Scots Pine when planting by farmers was almost unheard of. Thus began a lifetime of tree planting which continues to this day. Bryan remembers his father's love of trees and inherited his enthusiasm for planting woodlands and single trees around the farm.

Taking into account the steep terrain and heavy soils of some other fields on the farm, Bryan and his wife Helen took the decision to plant more trees in 1997. Forestry offered a better return than sheep on this difficult ground. Douglas Fir, Sitka Spruce, Oak, and Ash were planted. In 2003, an area of Beech and Scots Pine was added.

Knowledge and interest in trees

Bryan says landowners have a responsibility to manage farms with an eye on the future: "I believe in a whole-farm approach which increases and maximises income but also improves environmental sustainability." Additional tree planting over many decades, along with the installation of a pond in a wet part of the farm, provides a safe haven for many species of wild animals and birds.

Learning to manage farm woodlands

The initial forest was thinned in the 1970s using horses to extract the timber. It was never clear-felled; but instead was under-planted with Western Hemlock, Beech and Scots Pine so even then, the idea of "continuous cover" was being embraced.

"I think there is a responsibility on forest owners to acquire at least a basic knowledge of forest management," says Bryan.

He takes every opportunity to learn: he attends Teagasc forest walks and events, Irish Timber Growers Association events, is actively involved in the Irish Wood producers (a local forest owner group) and more recently has begun attending events presented by Prosilva Ireland (an organisation that promotes the development of Continuous Forest Cover in Ireland).

Bryan also took part in the new Forest Knowledge Transfer Group Scheme which facilitates forest owners to discuss forestry issues and experiences.



Bryan's granddaughters Molly and Hannah plant new trees around the farm.

Armed with this knowledge, Bryan worked with the Irish Wood Producer Group to help harvest and market his thinnings. Conifers were thinned to produce some pallet wood and the rest went for pulp wood. This pulp was stacked on site to dry and then chipped and delivered to local energy users in Wexford.

Bryan stresses the importance of supervising timber harvesting and sales: "No farmer would allow any other product off their farm without being clear on how much there is and what it's worth; why should timber be any different?"

The broadleaves were also thinned for firewood, availing of the woodland improvement grant. These broadleaves are now due another thinning



Three new schemes to support sustainable forest management

1 Continuous Cover Forestry Scheme

This scheme supports the production of commercial timber while retaining forest cover at all times. Continuous Cover Forestry (CCF) is an alternative forest management approach where the forest canopy is maintained at one or more levels without clear-felling. Natural regeneration is encouraged but natural regeneration can be supplemented by planting if required.

The scheme comprises of a CCF Transformation Management Plan that runs for a period of 12 years with three instalments of €750/ha occurring at intervals throughout a 12-year period.

2 Second thinning intervention for broadleaves

This scheme provides financial support to forest owners towards the cost of a second intervention to thin broadleaf forests (€500/ha). This is in addition to the already existing first thinning grant under the Woodland Improvement Scheme (€750/ha). Thinning operations supported under this scheme must have the potential to improve the quality of the crop and be carried out at least four years after the completion of works for the first intervention and before the crop reaches 15m top height.

3 Deer Tree Shelters and Deer/Hare Fencing Scheme

This scheme provides financial assistance to landowners growing broadleaves in areas where there is a risk of deer/hare damage. Deer and hares are capable of inflicting serious damage to trees (in particular broadleaves). For instance: browsing damage, bark stripping, fraying damage as well as damage to the drainage system. Support for deer tree shelters is available under this scheme for both new and existing woodlands. Support for enclosure with a deer fence is available when deer damage has occurred after establishment. Support may also be available for a hare fence where hare damage has occurred after establishment.

See www.agriculture.gov.ie or www.teagasc.ie/forestry for further details.

“No farmer would allow any other product off their farm without being clear on how much there is and what it's worth; why should timber be any different?”

intervention and can take advantage of the new second woodland improvement grant recently launched (see box on page 37).

The Future

Bryan is proud of the value he has added to his farm through planting. This value comes in many forms: the timber produced now and into the future, the added value to the landscape with the many hedgerow and

parkland trees along with improved habitats that exist alongside the day to day farming.

He likes nothing better than to talk about trees to anyone who will listen! He especially enjoys passing on his knowledge to his grandchildren.

Bryan does not envisage clear-felling his forests under any circumstances. He hopes that through careful management tree cover can remain as new generations of trees are encouraged to grow. He welcomes the recent launch of the new Continuous Cover Forestry Scheme which will pilot this forest management approach on suitable sites.

Forest Owners like Bryan see the worth of schemes but also the longer term benefits.

“Planting offers welcome value in the short term through grants and premiums but its real value continues for generations,” he concludes.

To prune or not to prune?

Armed with a decent secateurs, a loppers, and a couple of simple rules, pruning shrubs is not difficult

Chris Heavey

Lecturer at the Teagasc College at the National Botanic Gardens

There are two main types of shrub to think of when considering pruning:

- 1) Shrubs which flower on the previous season's growth; for example Forsythia, Exochorda, Deutzia, Ribes and Weigela.
- 2) Shrubs which flower on current season's growth; for example Fuchsia, Buddleja, Caryopteris and Perovskia.

Shrubs in category one usually flower in spring which means that pruning cannot take place in the dormant season (from November to February) because the flowering shoots will be removed in the process and you will have few, if any, flowers for that year. Pruning normally takes place immediately after flowering.

Shrubs in category two typically flower in the mid to late summer and can be pruned during the dormant season as they will flower on the shoots that are made from now onwards, this year.

There are a number of reasons for pruning:

- To generate better flowering (Forsythia, Fuchsia);
- To encourage stronger leaf colour (Photinia, Pieris);
- To allow for better stem colour (Cornus alba, Rubus);
- To help control the size of the plant;
- To remove damaged material;
- To shape for design reasons (Buxus, Ligustrum);
- To rejuvenate shrubs.

Hedges

Pruning hedges is one of those jobs which, when done regularly, can keep a garden looking well cared for. De-



Pruning is one of those jobs which, when done regularly, can keep a garden looking well cared for.

ciduous hedges are normally planted in the dormant season. Formative pruning or pruning for shape should be carried out after planting and for the first few growing seasons.

“ As spring rolls in, life will get busier, so the more little jobs around the garden that can be done now the better

The shaping of the hedge is very important to the outcome. Hedges should be pruned with the top of the hedge narrower than the base. This is done to allow as much light as pos-

sible to penetrate as far into the hedge as possible

Stronger pruning of the dominant shoots at the top of the hedge will cause the hedge to bud into growth lower down the plant, allowing for greater coverage at a lower level. This is particularly important in conifer hedges where a lack of light will cause the plant to die back permanently when shaded.

The other thing to remember is that you need to be able to cut back the hedge yourself, so keep it pruned to a height and width that is comfortable for you to manage.

As spring rolls in, life will get busier, so the more little jobs around the garden that can be done now the better.

TEAGASC DAIRY MANUAL

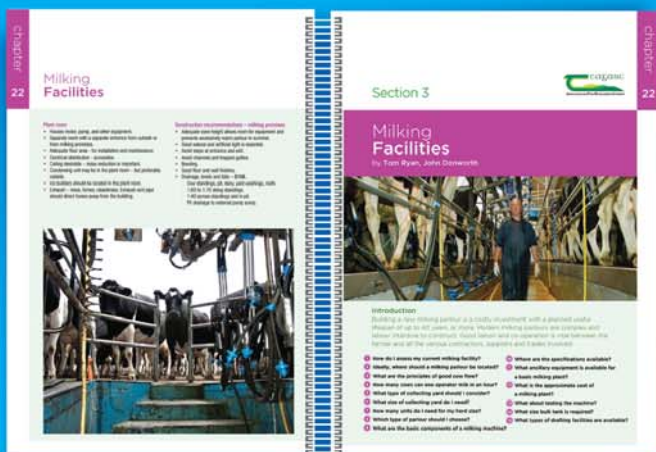
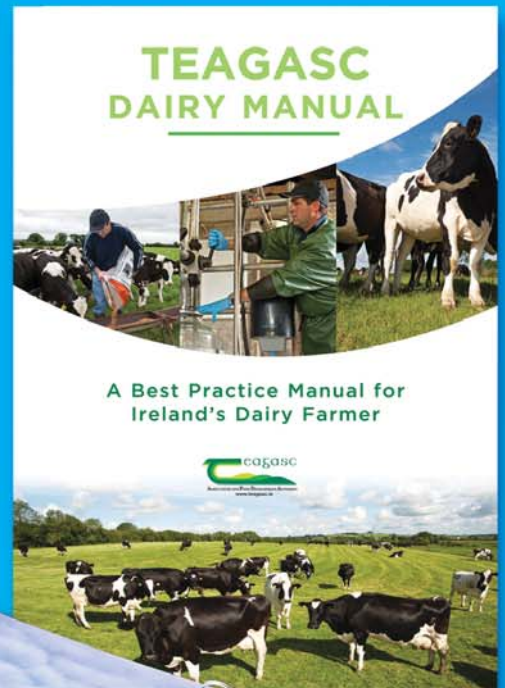
A comprehensive source of practical advice for any dairy business.

- Why dairy farming?
- Business management
- Dairy facilities
- Dairy farming and the environment
- Milk quality
- Feeding dairy animals
- Dairy breeding
- Dairy animal health

These sections are further divided into a total of 49 chapters with titles such as: Creating a Business Plan, Winter Facilities, Feeding the Dairy Cow, Managing Your Grass, Replacement Heifer Management etc.

The information within each chapter is built on feedback from farmers and is laid out as Questions and Answers, How-to's, Key Performance Indicators, Key risks, etc. making the Manual extremely easy to read and use. The Manual will be of particular interest to anyone planning to expand over coming years.

A must for anyone with an interest in dairy farming the 310-page Manual is produced using tear-proof, water-proof paper for real world conditions.



The Teagasc Dairy Manual is available from your local Teagasc office (**clients €25, non-clients €50**). Alternatively contact **Therese Dempsey (059 9183422)** who will send you a copy by post (**p&p €7.50 extra**)



Ireland's No.1 BVD Vaccine¹

In the absence of a PI animal, BVD can continue to circulate within a herd.²



"I didn't have a PI calf for over 3 years and I stopped vaccinating. Next thing I know I have new PI cases in my herd, it's soul-destroying."



Licensed for 12 Month Foetal Protection*



THE ONLY BVD VACCINE THAT CAN BE MIXED WITH AN IBR VACCINE**

Use Medicines Responsibly

Bovilis® BVD Suspension for injection for cattle vaccine contains inactivated antigen of cytopathogenic BVD virus strain C-86. Legal categories: ROI: **[POM (E)]**. NI: **[POM-V]**. Withdrawal period: zero days.

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

1. Based on 2007-2018 sales figures, Kynetec
2. Moen, A.D., J. Sol, and O. Sampomon. 2005. Indication of transmission of BVDV in the absence of persistently infected (PI) animals. Preventive Veterinary Medicine. 72(1-2):93-98.

*If the primary course has been finalised 4 weeks before start of the gestation. Revaccination 6 months after primary course with subsequent revaccinations at intervals no greater than 12 months.

**Use as a booster dose in cattle from 15 months of age, previously vaccinated separately with Bovilis® IBR Marker Live and Bovilis® BVD.