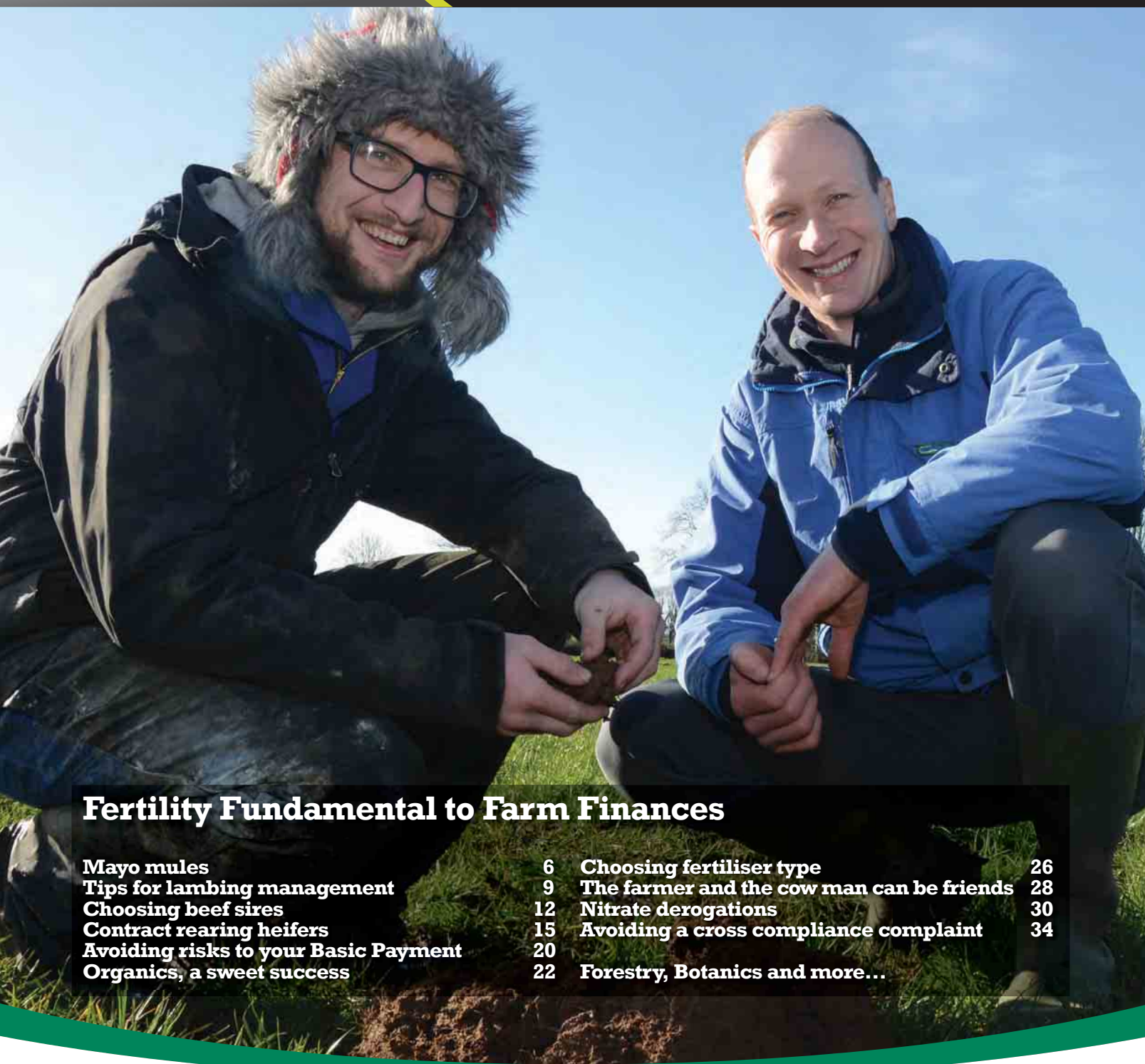




Today's Farm

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



Fertility Fundamental to Farm Finances

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Glanbia Co-op 2018 Trading Bonus for Glanbia Ireland Milk Suppliers

| Purchases From Glanbia Ireland (cpl) | Trading Bonus (cpl) | Trading Bonus (€) for 500,000 Litre Supplier |
|---|------------------------|---|
| 1 - 3 | 0.10 | €500 |
| 3 - 5 | 0.25 | €1,250 |
| 5 - 7 | 0.50 | €2,500 |
| > 7 | 0.75 | €3,750 |

Glanbia Co-op 2018 Grain Supplier Trading Bonus

| Trade With Glanbia Ireland (€ Per Tonne) | 2018 Grain Supplier Trading Bonus (€ per tonne) |
|---|--|
| €40 - €50 | €5 |
| €50 - €60 | €7.50 |
| >€60 | €10 |

Glanbia Co-op 2018 Feed Trading Bonus

| Trade With Glanbia Ireland | 2018 Feed Trading Bonus (€ per Tonne) |
|-------------------------------|--|
| Beef & Sheep Feeds | €10 per tonne |
| Pig Feed | €5 per tonne |
| Straights | €5 per tonne |

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Henry Corbally,
Chairman, Glanbia Co-operative Society

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or contact your local Glanbia representative
or LoCall 1890 321 321**

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COMMENT



Mark Moore
Editor,
Today's Farm

Trying something new

In *Today's Farm*, we like to place emphasis on the visual. So we try to use good-quality images to illustrate articles. We also aim to be innovative and try new things in the magazine. So you'll notice a cartoon, which we have included outlining the principles of grass management. We think it's an interesting new way to tell a somewhat complicated story in a simple way. What do you think? Are you happy to see information delivered in this way? Is it too simple? Do you think it's silly? Do like this approach? Please email your frank opinion to: Farmappvice@teagasc.ie

Triail a bhaint as rud éigin nua

In 'Today's Farm', is maith linn béim a leagan ar rudaí a fheictear. Mar sin déanaimid iarracht íomhánna ardchaighdeáin a úsáid le cur leis na hait. Féachaimid chomh maith le bheith nuálaíoch agus triail a bhaint as rudaí nua san iris. Mar sin tabharfaidh tú 'cartún' atá curtha san áireamh againn faoi deara ina ndéantar cur síos ar phrionsabail na bainistíochta féir. Ceapaimid gur bealach suimiúil nua é le scéal réasúnta casta a insint ar bhealach simplí. Céard a cheapann tú féin? An bhfuil tú sásta a fheiceáil go bhfuil eolas á chur in iúl mar seo? An dóigh leat go bhfuil sé amaideach? Nocht do thuairim go neamhbhalbh dúinn ag.

DOUBLE DIVERSIFICATION

A recipe for success

>> 22-23



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Cover | James Breen from Lattin, Co Tipperary, and Leonard Betts from Teagasc, Clonmel, discuss the many benefits of applying lime once conditions allow.

events

OPEN DAY, TEAGASC KILDALTON COLLEGE, 16 MARCH

Kildalton College is the largest land based college in Ireland with more than 1,200 students studying on a range of 11 Level 5 and 6 courses in addition to 6 higher level course run in conjunction with our partners in WIT and UCD. It provides courses in Agriculture, Horticulture and Equine through a combination of theory and practicals. Students who complete any of our agriculture, horticulture and equine courses to level 6, or higher, qualify for Green Cert status. For further information contact the college via telephone or email.

OPEN DAY TEAGASC BALLYHAISE COLLEGE, 5 APRIL

Students and parents will have an opportunity to visit Ballyhaise College and apply for courses when the college holds its careers day on Thursday April 5. Tours run at 10.30 am where potential students and career guidance counsellors can get full details on the range of courses at Ballyhaise.

OPEN DAY TEAGASC CLONAKILTY COLLEGE 9 MARCH

During the Teagasc Clonakilty College open day, which runs from 11am to 1pm, visitors can explore the campus and see the on-farm training facilities where staff will demonstrate the activities and skills that course participants will develop while on the course they want to pursue.

OPEN DAY TEAGASC COLLEGE AT THE NATIONAL BOTANIC GARDENS 8 MARCH

This year the Teagasc Horticultural College in the National Botanic Gardens Glasnevin will host a careers and course information day in the new Education centre on Thursday 8 March from 2-4.30 pm. Students and the public are invited to meet with industry professionals and college staff to interact in relation to full-time and part-time courses in horticulture. Currently there is huge demand in the industry for suitably qualified people to develop rewarding careers in Horticulture. Representatives from different companies will be present in the form of landscape, nursery, and turfgrass professionals who can answer queries that people might have about aspects of employment in the

industry. Pallaskenry College Open Day was cancelled and will take place later in March. Mount Bellew College held an Open Day on March 7.

If you cannot attend an Open Day, or you have not received Today's farm in time, and would like to visit just contact the relevant College and you can arrange a visit with a staff member. All information on courses is also available on the Teagasc website.

EARLY SPRING GRAZING EVENTS

Teagasc planned a series of Early Spring Grazing Farm Events during early March. This schedule was disrupted by the severe weather conditions so please consult the Teagasc website or your local Teagasc office to confirm when events near you will take place.

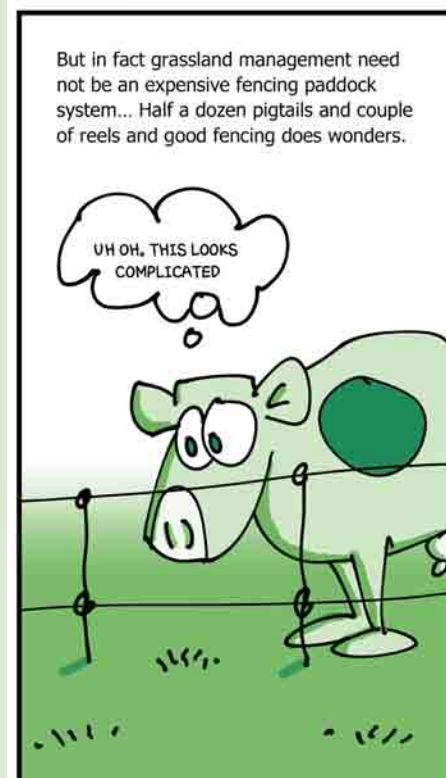
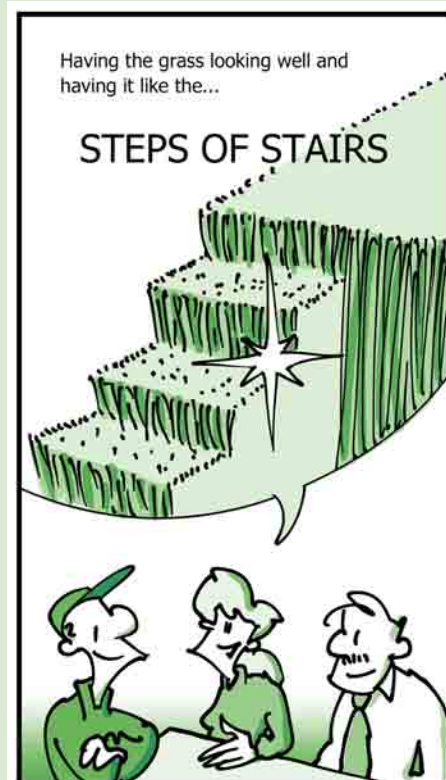


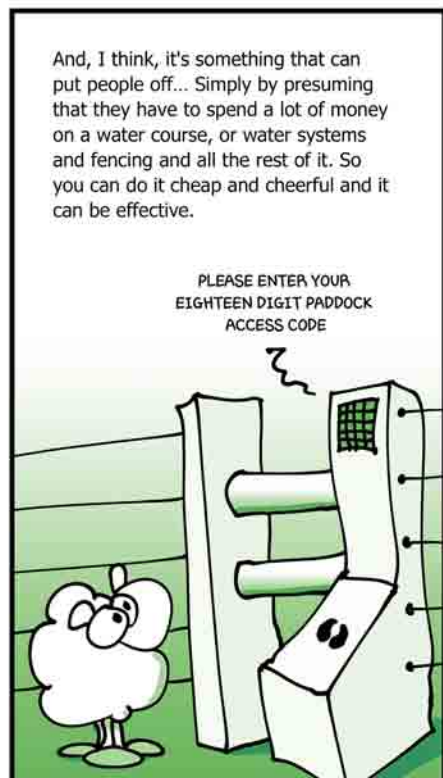
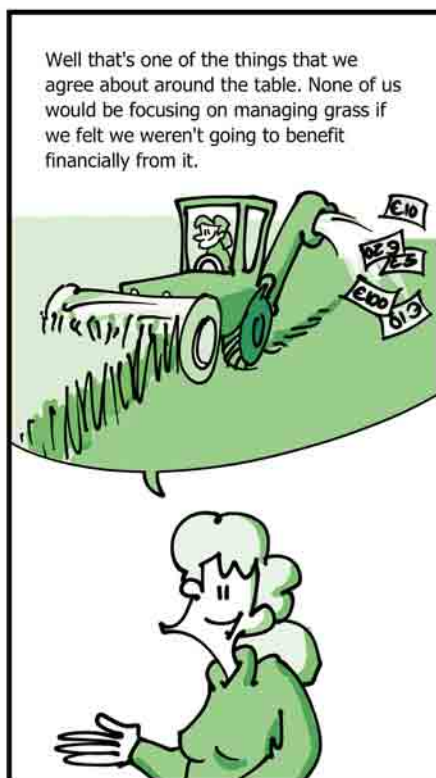
EGF GENERAL MEETING 17-21 JUNE

The 27th EGF General Meeting will be held at the Rochestown Park Hotel in Cork from 17-21 June 2018. The EGF was last held in Ireland in 1988. The overall theme of EGF 2018 is Sustainable Meat and Milk Production from Grasslands. Invited speakers include a number from Teagasc (Pat Dillon, Michael O'Donovan, Laurence Shalloo and Catherine Stanton) and European Research Centres in France, the Netherlands, Switzerland, Germany and Northern Ireland. The conference will be a mix of plenary presentations, offered oral and poster presentations, as well as a visit to Teagasc Moorepark, and technical visits to farms, grass evaluation sites and a dairy processor. Full details are available on www.egf2018.com.

GRASS10 FARM WALK - WINNER OF YOUNG FARMER CATEGORY THURSDAY 29 MARCH

Farm walk on the farm of Tim Crowley, Bandon, Co Cork. Tim is the winner of the Young Farmer Category in the Grass10 Grassland Farmer of the Year Competition.





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AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

THURSDAY, DAIRY OPEN DAY - BALLYHAISE 18 05 APRIL

'Technologies for Resilient Dairying', Ballyhaise Agricultural College, Co. Cavan, 10am.

WEDNESDAY, GRASS10 FARM WALK - OVERALL WINNER 18 APRIL 2018

Farm walk on the farm of Eddie O'Donnell, Golden, Cashel, Co. Tipperary, Overall Winner of the Grass10 Farmer of the Year Competition.

ORGANIC DEMONSTRATION FARM WALK MONAGHAN 25 APRIL

A nationwide series of national organic farming open days will take place from Autumn 2017 to Summer 2018. Gordon McCoy, Clones, Co Monaghan Eircode: H23 RR84, 12pm.



The Scahills produce top quality Mule females, sold at special Mule and Greyface sales annually

Growing the family farm

This Mayo farmer left school at 13 to start building an impressive business based on the best breeding and management for his flock.

Frank Hynes

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

Today Joe Scahill lives and farms on the family farm in Prospect, Westport, Co Mayo. The scenery is fabulous, contributing to the hugely successful Wild Atlantic Way, “though not to the sheep farmer’s bottom line”, says Joe, smiling.

He is married to Cathy and they have four children Lisa (19), Kate (17), Sean (14) and Joseph (12). Together, they farm around 162ha (400 ac).

Much of the land is mountain grazing, with some of the farm up to 370m (1,200ft) above sea level.

The terrain is a mix of heather, blanket bog, upland grassland and some good-quality lowlands. “We keep 600 Scotch Blackface ewes,” says Joe. “The flock is made up of Lanark and Lanark Mayo Connemara crosses. We also have a small flock of pedigree Blueface Lecesters. We buy 20 to 30 weanling cattle each year to sell off grass the following autumn.”

History

Joe left school at 13 to work on the family's hill farm. "At that time, the farm consisted of just 9.5ha (23ac). This included 2.5ha (6 ac) of owned fenced land and 6.9ha (17 ac), being a share of commonage, which was not fenced. Joe's father, Sonny, kept a small number of cows and sheep on the home farm. At 17, Joe rented some land in his own name.

"I bought 200 Scotch Blackface ewes and applied for a herd number as soon as I was eligible," says Joe. "Over the years, I bought land whenever possible and I was fortunate to be able to buy out the other shares of the commonage that I farmed as a boy with my father."

After buying this land he was able to set up a grazing system by fencing the commonage land. Joe also established a contracting business with his brother, Brian. This included shearing, fencing and, at a later stage, a sheep showering business. "The contract work provided us with a steady source of income over the years, enabling us to fund expansion."

The farm consists of a mix of heather, blanket bog, upland grassland and some good-quality lowlands.

Breeding

The Scahills operate two flocks. The best 200 ewes are picked for breeding with Scottish Blackface rams to produce replacements for the Scotch Blackface flock. The remaining 400 are mated to Blueface Leicester rams. The objective for this group of ewes is to produce females for sale at the Mule and Greyface breeding sales in Ballinrobe.

Here, it is generally lowland producers from around the country that purchase these as replacements for their own flocks. About 17 years ago Joe introduced the Scottish breed Lanark to his ewe flock. "I believe this has brought great improvement to our breed of sheep over the years," says Joe.

"In the early years, we crossed the Lanark with the Mayo Blackface to produce crossbred ewes. These ewes were then mated with the Blueface Leicester ram to produce Mules. Annually, we produce around 250 to 300 Mule ewe lambs but this varies depending on the male to female ratio of the lambs born in any year."

Joe believes the Mayo Mule is a very suitable ewe breed type for part-time farmers. He says: "They are great mothers, well capable of lambing on their own with little supervision and are well capable of rearing two good fast-growing lambs." This he claims means that "they suit a low-labour system".

They are also highly prolific. Joe's



They are great mothers, well capable of lambing on their own with little supervision and are well capable of rearing two good fast-growing lambs

Teagasc advisor, Andy Ryder, says Mules and Greyface ewes have no difficulty delivering weaning rates of 175% and even more when properly managed. "They are top-class mothers great for producing excellent fat lambs for slaughter when crossed with terminal sires," says Andy. "So, when properly managed they can produce a big crop of lambs and farmers will end up with a lot of lambs for sale."

"The quality of the Blueface Leicester ram is very important," says Joe. "It is worth spending an extra bit of money on the ram. Because of AI in sheep, it is now possible to access the top sheep genetics at a relatively low cost. This can make a huge difference when producing Mules, for example, by giving Irish farmers access to high merit Blueface Leicester rams from Scotland or other places."

The Scahills use such semen in their flock of Blueface Leceisters. This means that farmers generally can access progeny from this breeding through the organised sales which includes pedigree Blueface Leicester rams as well as the highly prolific Mule and Greyface females.

Marketing

The group approach to marketing lambs and adult sheep, which is greatly supported by Teagasc advisor



Continued
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Continued from P7

John Noonan, is very important in Mayo. Over the years, Joe has been involved in a number of groups. In 1984, the Mayo Mule and Greyface group was established in the area. "The aim was to produce quality productive ewes for lowland sheep farms," says John Noonan. Joe joined the group in 1995 and in 2014 he became chairman.

This group has three sales in autumn, with the premier sale having around 3,000 mule ewe lambs and hoggets on offer. In 2018, the group intends to spread the premier sale over two days: one for ewe lambs and the other for hoggets. "The special breeding sales are a great way to sell. The sellers have an opportunity to put top-class sheep together for the sale that they know buyers will be interested in."

Buyers are confident of the spec of the animals on sale. Over the years, many buyers return every year knowing they will continue to find top-quality breeding stock. Having these special sale days in place gives the producer a sale date and a market to work towards. The male lambs are sold through another producer group, the Blackface Group, which was set up in 2004. This group currently deals with Kildare Chilling. The Scahills usually aim for a target carcase weight of about 19kg.

Technical Management

Putting fences in place meant the Scahills could make better use of the land. "We can out-winter and feed a lot of ewes on the rough grazing," says Joe. "We have soil tests taken regularly on the better-quality land and we aim to keep soil fertility at the optimum. This includes applying lime as well as phosphorous and potash according to recommendations."

The Scahills see liming as important to maximise the value from fertilisers. The better-quality land is regularly reseeded over time in an effort to maintain pasture in good condition. The cattle are used to eat surplus grass on land where it is not possible to access with a topper.

In 2017, the Scahills grew a crop of Typhon. This is essentially a stubble turnip variety that has high levels of leaf production. It is the leaf, not the root that is the main target for grazing. "We grew it as a leafy catch crop to finish lamb lambs at a lower cost than feeding meals. We sowed about six acres of Typhon in total. This was planted the first week in



Joe Scahill with his flock.

Conclusion

The Scahill farm has always been a family business and it continues to be that way. "While it takes a lot of hard work and determination we see this is a great way of life and a great environment to bring up a family," says Joe.

Key to their success has been the maximised use of whatever land is available. This includes effective use of fertiliser, operating a rotational grazing system taking good care of livestock with a positive flock health programme.

"By working with other farmers in a group approach to marketing, it is possible to exploit whatever potential there is in the market. By operating an effective breeding programme, it is possible to produce good quality stock and that is what buyers demand," concludes Joe Scahill.

June and was ready for grazing four weeks later.

"We stocked it at 20 forward store lambs per acre. It took four to five weeks to eat it down and this was sufficient time to finish the lambs," says Joe. "After the first grazing we applied a bag of nitrogen per acre and it was ready again for grazing again a little over two weeks later."

The crop was grazed three times in 2017 and finished 350 lambs in total. The Typhon was under-sown with grass seed. "While lamb growth rate was satisfactory, the new grass is somewhat patchy and open but we expect that it will thicken after grazing in spring 2018."

The Scahill farm achieves a good litter size and a weaning rate of 1.5 lambs reared per ewe mated. This is a top level of performance for a Scotch Blackface flock. "I put this down to grassland management and breeding," says Joe.

Ewes are scanned around the middle of February. The singles are usually left outdoor to lamb while those carrying twins are usually housed. Housing on the farm consists of both slatted and straw-bedded accommodation.

Flock health

Flock health is very important on the farm. Lameness is treated very seriously with regular use being made of a footbath. Worm control and liver fluke are also major issues receiving attention. With vaccinations following the correct programme is another important factor.

Male lambs

The Mule male lambs are castrated. "The mule lambs are easier finished if they are castrated," says Joe. "The Scottish Blackface lambs are left entire as they grow into heavier carcasses."

Since introducing the Lanark breed, the Scahills find that all lambs are killing with heavier carcasses. Joe says that this is especially noticeable in the Blackface ram lambs. He says these lambs are killing on average 4kg heavier than 10 years ago.

Steady progress is a constant for Joe and his family. "We don't have a choice," says Joe. "Farmers in Mayo need to keep moving forward if they want to continue to survive in these beautiful surroundings."



Patrick Nuttall and Peter Lawrence.

Managing sheep in March and April

Peter Lawrence,
Teagasc Drystock advisor, Tinahely.

After a wet January and the worst blizzard since 1982, 2018 has been a tough year for sheep farmers here we feature a Wicklow farmer who has refined his systems to deal with what is always a challenging time of year.

Patrick Nuttall farms in east Co. Wicklow outside Newtownmountkenedy with his wife Fiona and their son Finlay, five. Patrick operates a 50 cow suckler calf-to-beef enterprise alongside his 450 mid-season ewe lambing flock. Their 325 acres includes 60 acres of forestry and ranges from 800-1,100 ft above sea level so spring growth is comparatively late.

"Our biggest challenge is labour especially during spring time," says Patrick. However, he has made strategic investments and management

plans on the farm to help cope with the demand. "Sucklers calve during autumn and spring. Calving finishes in mid-March before the lambing season so I can focus on calving cows and their young calves."

Patrick uses an Aberdeen Angus stock bull on his cows to reduce the risk of calving difficulties and most calves are polled so do not require dehorning. The progeny are finished as steers at 24 months and the heifers at 22-24 months. Limousin x Freisian replacement heifers are all bought in to keep the system simple and streamlined.

Lambing Time

"You need to be prepared and have good handling facilities to reduce the stress and workload at lambing," stresses Patrick. "I aim to lamb 80-85% of my ewes in the first two weeks and at the peak we will have 60-70 ewes lambing per day."

The ewes were put to the ram in late October and lambing is due to start on 20th March. This year the ewes scanned at 1.8 lambs/ewe put to the ram which is similar to previous years. The ewes are all homebred and are mostly Cheviot x, Suffolk x, and Belclare x and are bred back to Cheviot, Suffolk, Belclare, Texel or a Vendeen ram.

The success of any flock is largely linked to the output per ewe. Therefore it is important that ewe pregnancy rates are on target and lamb mortality levels are minimised. For the last 40 years Patrick and his father Frank have employed UCD Agricultural Science students to assist them during the lambing season.

The extra help allows Patrick to operate a shift work system so that there is 24 hr supervision yet everyone gets some sleep. This really helps spread the workload and minimise lamb mortality. When students arrive on

**Continued
on p10**

the farm the first thing Patrick does is give them a copy of the farm yard map which outlines where each shed is. Patrick also has each shed named so new staff know exactly where everything is.

Facilities

Patrick converted an old straw bedded shed to a large slatted shed in 2006. Depending on the weather and grass supply the sheep are housed in late November/early December in groups of 33. They are shorn 2-3 days after housing and are fed a precision chop silage based diet (70DMD) supplemented with minerals and vitamins for the winter during early and mid-pregnancy.

The shed has really reduced the labour requirement and it has also cut straw usage significantly. Patrick uses a Teagle straw blower to feed out all the silage and bed cattle in other sheds. "I can have all the feeding done in the yard in two hours with very little manual work," says Patrick. Silage can then be pushed back up to the ewes later in the day to encourage feed intakes with a home-made silage pusher he had made which attaches to the front of his Manitou telescopic loader.

All the gates used for group penning and single pens are made from steel and are sheeted so they can be easily washed and cleaned and fit together very easily using steel rods and hinges.

"The gates were a great investment as they making penning very quick and easy to erect and dismantle at the end of the season. I have also invested in a mobile handling unit which I can set up in the shed at housing so I can foot bath, dose and vaccinate my ewes very easily."

Ewes are re-penned in mid-January after scanning according to litter size and body condition score. The silage is then supplemented with whole oats and Patrick then feeds a 20% Crude Protein course ration to triplets five weeks out from lambing, doubles three weeks out and singles 10 days out. Patrick uses a steel container that can be transported into the shed with his telescopic loader and the feed can be distributed out very easily and quickly.

Lambing equipment

All of Patrick's lambing equipment is stored in a shed/office that is located centrally in the farm yard. Here are located a freezer, fridge, a sink with hot and cold running water, a kettle, work bench and well organised labelled shelving and lockers.

Before the busy lambing period starts Patrick ensures that he checks his equipment and makes a shopping

list of any items he may be missing such as gloves, lubricant, iodine, harnesses, medicines, disinfectant, bottles and teats, stomach tubes etc.

"These items are essential and when the work gets busy it can be difficult getting away from the farm so I make sure I have everything I need in stock," he says.

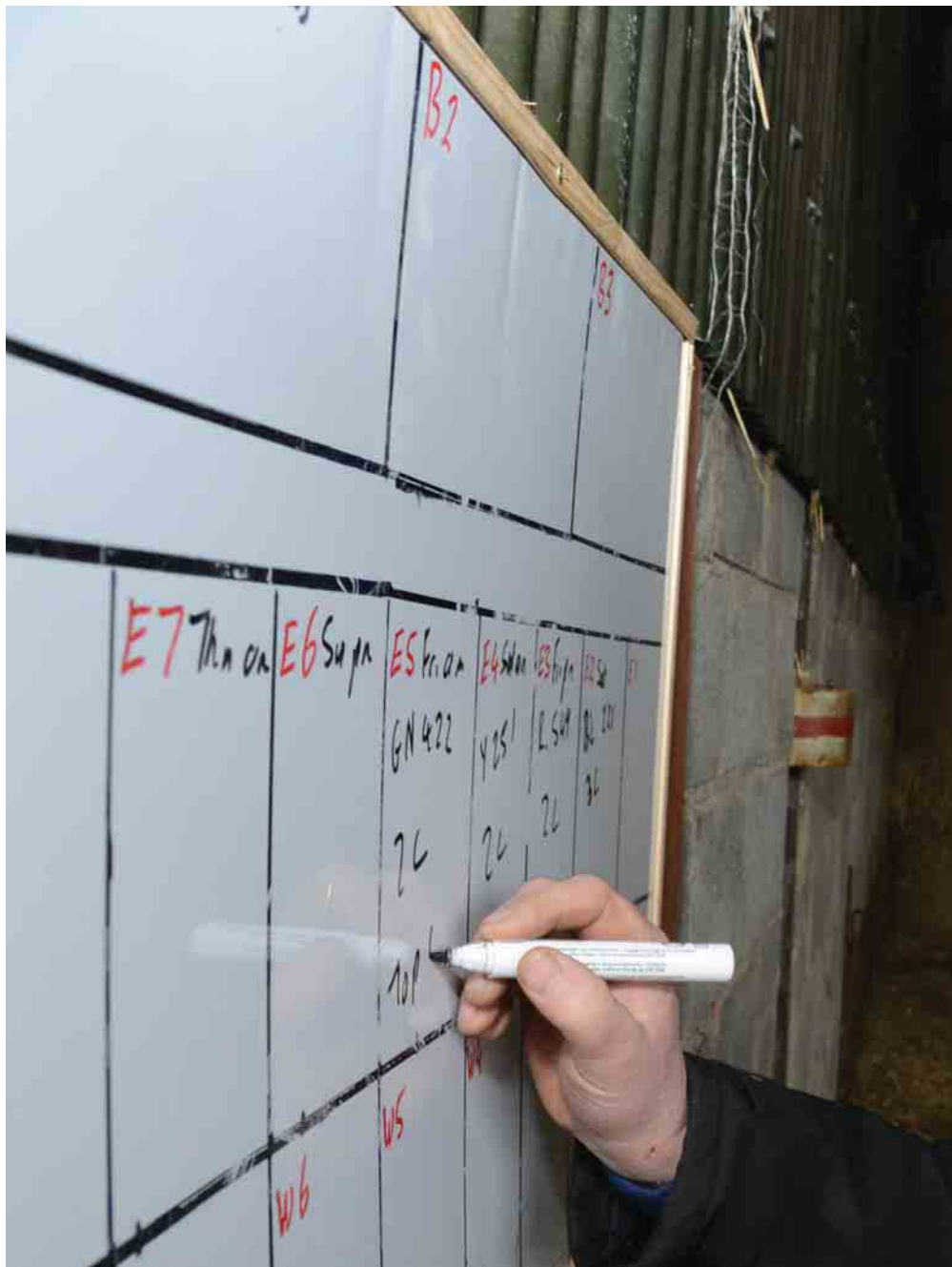
Lambing

All pregnant ewes are housed on slats before lambing. Once lambbed, the ewe and her lambs are moved into one of eighty five 5x5 ft individual pens where they will stay for 2-3 days to allow the ewe to mother her lambs.

Patrick maintains that: "It is vital to have enough individual pens to allow the lambs get hardy and it makes herding the lambs much easier as you can assess them individually."

Each shed has two warming boxes with infra-red lamps should lambs need to be warmed up. Patrick always has a supply of harvested cow's colostrum ready in case a ewe may not have enough for the most-important first feed. Patrick is very conscious of hygiene so individual pens are regularly cleaned out between lambing and are always well bedded with straw and limed.

Easy identification. All the ewes and lambs are lettered (A-Z) with specific coloured aerosol spray to match them up. All singles are identified with a dot on the tail of the ewe and lamb. Triplets are either fostered on to single ewes or sold off as pet lambs to reduce the workload. Fostered lambs and their new mothers are marked with a stripe down the side of their leg so they can always be identified.





Patrick Nuttall says white-boards are a great way for his lambing team to communicate which jobs need to be done.



Finlay Nuttall, 5, is an enthusiastic sheep farmer.

The ewe and lambs are then moved into larger straw bedded group pens containing 6-7 ewes where they will stay for another 2-3 days (weather permitting). There is now enough space to group 130 ewes and lambs at once if the weather is proving difficult to let them out to grass. Patrick has a white board hung on the wall of each shed with the outline of each pen and pen number detailed on it. The white board allows notes to be taken and recorded for each ewe and lambs.

Whoever is on duty must detail the ewe's tag number, date and time she lambed, number of lambs born and any comments worth noting. Patrick then records this information into his notebook. Patrick believes communication is important at lambing time when the farm is so busy and the white boards help keep everyone

clear on what needs to be done.

All lambs are tagged, vaccinated against orf, tail ringed and the males are castrated with rubber rings the evening before they are let out to grass. Patrick maintains that this system allows the ewes and lambs to be turned out to grass first thing in the morning so whoever is on duty can work away at this job.

Patrick spreads the first round of nitrogen in spring time on all the grazing in mid-to-late February before the workload gets very busy. A contractor is used to agitate and spread slurry in the spring and to bulk spread the fertiliser on the silage in April as he just won't be able to reach it at that time.

The Nuttalls have been sheep farmers for generations in Wicklow. Finlay, 5, shows every inclination that he intends to continue that tradition.

Key Messages:

- Have a work plan prepared – fencing, fertiliser spreading, lambing, turning-out stock to grass...
- Check facilities and keep notes on how to improve them next year
- Erect all single pens before lambing
- Ensure you have all your lambing supplies and equipment ready for use before lambing
- Prepare lamb warming boxes (with infra-red lamps or blow heaters)
- Ensure you have a supply of colostrum (artificial or frozen cow's colostrum)
- Use a black board/white board to notify people of ewes/lambs that need urgent attention

Selecting beef AI sires for the dairy herd

George Ramsbottom, Stephen Butler,
Teagasc Animal and Grassland,
Research & Innovation Programme

Jim Moyles,
Teagasc dairy advisor.

The contribution of the calf enterprise to the profit of the dairy farm is generally considered small, with beef bull selection on dairy farms often not considered a high priority. However, this is likely to change in the years ahead as the rapid rate of expansion of the dairy herd is set to decline and improvements in dairy herd fertility combine to reduce the proportion of dairy breed calves required on Irish dairy farms.

This is presenting Irish dairy farmers with the opportunity to increase the proportion of beef breed calves born on their farms. This will increase both the value of calf sales and the marketability of the calves, as there is a larger market for beef breed than for dairy breed dairy calves.

Calves from the dairy herd for beef production

The dairy beef sector in Ireland is an important and growing industry. The national dairy herd will have increased by an estimated 500,000 cows between 2010 and 2018.

With it has come an increase in the number of dairy calves available for beef production. The use of breeding tools, such as the EBI, has increased the fertility of Irish dairy herds.

Consequently, fewer cows need to be bred to dairy bulls to produce heifer replacements in the coming years. This will allow dairy farmers to use more beef genetics in the years ahead. While the contribution of the calf enterprise to dairy farm profit is small, there are opportunities to increase its value and contribution in the years ahead.

In 2016, 30% of dairy calves born were replacement heifers (398,000), (AIM, 2016). The remaining calves born (approximately 900,000) were available for beef production (see Figure 1). Male dairy calves account for 45% of these dairy beef calves. Early-maturing crossbred male and female calves (of the Aberdeen Angus and Hereford breeds) account for a similar number, with a variety of different breeds making up the balance.

Choosing the right beef bull for your dairy herd

Three key traits are of interest to dairy farmers in selecting beef bulls for their herds:

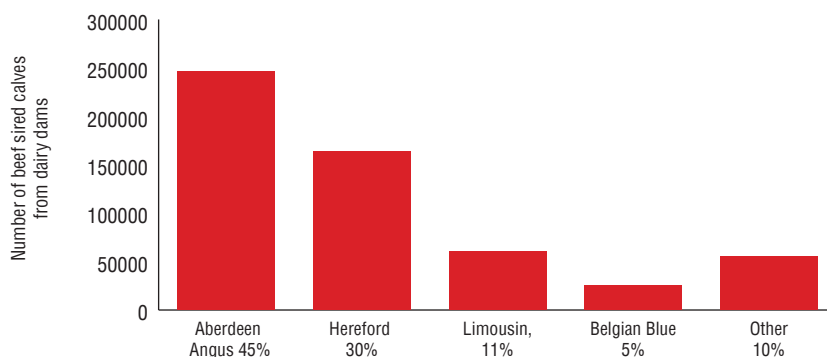
- Calving ease.
- Gestation length.
- Carcase weight.

Two key reasons for using beef AI rather than beef stock bulls on the farm are:



Figure 1

Number of calves from dairy herds by sire breed in 2016 (AIM, 2016).



A mixture of varieties with different uses is a good idea



- The ability to choose suitable proven bulls for the herd – particularly among those proven for ease of calving and gestation length (see Table 1).
- To reduce the number of stock bulls on the farm – as a rough rule of thumb, every three weeks you halve the number of bulls required (see Table 2).

Using the current active beef bull list on the ICBF website, 66 beef AI bulls meet the <4% calving ease with greater than 90% reliability. This falls to 51 bulls when a gestation length target of less than 1.5 days with 70% reliability is included. The number declines further to 14 bulls when the carcass weight target is included.

However, it's important to note that there are beef bulls available that meet all three targets. A small number of suitable beef bulls are also available for use on heifers.

In a 100 cow compactly calved dairy herd with 20 replacement heifers

also bred, the following is the pattern of breeding during each three week period of the breeding season.

In the example detailed in Table 2, if stock bulls were introduced at the start of the second three weeks, a minimum of two such bulls are required because there are 56 cows and heifers for breeding.

Continuing to AI for a further three weeks means that only one stock bull is required. Some dairy farmers are considering the use of stock bulls exclusively across their herds. I generally recommend that AI is used in all dairy herds for 6 weeks, particularly in larger herds because the number of bulls required is large. The experience of farmers running larger units is that the wastage of stock bulls is very high and very costly. Delaying the introduction of bulls until later in the breeding season dramatically reduces the number required to finish off the breeding season.

IN SUMMARY

Sexed semen

Sexed semen is a revolutionary animal breeding technology that enables the required number of replacement heifers to be produced from a targeted proportion of the herd (i.e., highest EBI, greatest fertility potential etc.).

This provides dairy farmers with the opportunity to increase revenue by breeding the remainder of the herd with semen from beef sires. In Ireland, beef sired calves from the dairy herd (male or female) attract a premium of approximately €150 compared to bull calves sired by a dairy sire.

Clearly, this represents an economic stimulus to increase the proportion of offspring from the dairy herd with beef sires, and would increase the quality and value of the beef derived from the dairy herd.

A collaborative field trial involving Teagasc, ICBF, NCBC and Dovea Genetics will be conducted in Irish dairy herds during the spring 2018 breeding season to evaluate the fertility of the newest technology available for producing semen sexed.

Dairy beef

Suitable beef sires would generate progeny that are easy-calving with short-gestation length, but also have suitable terminal traits to produce offspring that meet key market specifications at slaughter (conformation grade O= or greater; fat score 3-; carcass weight >280 kg).

In the longer term, a dairy-beef breeding programme and a dairy-beef index will be required to accelerate genetic gain and identify the most suitable beef bulls to meet the requirements of both the dairy farmer (short gestation, easy calving) and the beef farmer (good growth rates and terminal beef traits).

Table 1: Targets when selecting AI beef bulls for dairy cows and heifers

| Trait (reliability) | Cows | Number | Heifers | Number |
|------------------------------------|------------------------------------|--------|------------------------------------|--------|
| Calving ease (> 90% reliability) | <4% | 66 | <2% | 16 |
| Gestation (> 70% reliability) | < +1.5 days Preferably negative | 51 | < +1.5 days Preferably negative | 16 |
| Carcass weight (> 70% reliability) | > + 8kg Preferably greater | 14 | > +6 kg Preferably greater | 4 |

Table 2: Breeding pattern during the breeding season of a compactly calved 100-cow dairy herd

| | Cows | Heifers |
|-------------------------------|------|---------|
| Bred in the first 3 weeks | 90 | 20 |
| Bred in the second 3 weeks | 50 | 6 |
| Repeats in the third 3 weeks | 22 | 2 |
| Repeats in the fourth 3 weeks | 10 | - |

Farmer profile

John Lyons is dairy farming on the outskirts of Banagher, Co Offaly. He operates a very simple grass-based system, keeping 80 cows plus approximately 20 replacement units. All beef stock are sold shortly after birth. He has a milking platform of 27ha that runs down to meet the River Shannon. Some land often floods over the winter.

Each year, John breeds approximately 60% of his milking herd plus all maiden heifers to dairy sires. This is enough dairy genetics to generate sufficient replacements for his herd. The remaining 40% of cows are bred to beef AI.

One-hundred percent AI is used with both the cows and heifers. No stock bull is kept on the farm.

John has no plans to increase cow numbers above 80. He was milking 60 cows five years ago and gradually increased to the existing number, which John feels is a good fit for the available land, facilities and labour.

Milk recording records are used to help determine the best cows in the herd, so they can get a dairy AI straw. Poorer-performing cows are AI-ed to beef sires.

The compact nature of calving on this farm (87% six-week calving rate average over past three years) means that John has the luxury of using some beef AI from the outset of the breeding season. This means that there are high-value beef calves available for sale from the very start of the calving season.

He uses a combination of both Belgian Blue (BB) and Hereford (HE) sires.

According to John: "The main reason I use Belgian Blue is that the calves are worth a lot more and are very easy to sell. These calves sell for up to €350/head at a few weeks old.

"The two things I look for in selecting beef bulls are ease of calving and gestation length. The BB bull I have been using the last few years has been very good on both these fronts. Twenty BB

calves sold at €350 each, or €7,000, is a welcome addition to cashflow, particularly if they are paid for in early spring when milk volumes are low."

John also sells approximately eight to 10 Hereford-cross heifer calves annually to his brother Paddy, a local suckler farmer. Paddy is in the process of converting his Limousin-continental-cross suckler herd to a Friesian-Hereford-cross suckler herd. These calves are reared on John's farm to 10 weeks and then transferred at approximately €250/head.

John tried sexed semen five years ago (admittedly that process was probably not as effective as the technology now available). "I used 10 sexed semen straws on 10 heifers and I only got two calves from them, although both were heifers.

"If it can be got to work at a sufficiently high and reliable level, I would be very enthusiastic about using it. I would use sexed semen dairy straws on the heifers and the rest of the animals would be sired by beef bulls."



John Lyons and Jim Moyles with a couple of John's Belgian Blue cross calves.

Heifer rearing under contract

Considering rearing heifers under contract? Maybe you should. Done well, returns are very attractive.

Tom Curran,
Teagasc Rural Economy Development Programme,

Tom Coll,
Teagasc Drystock advisor, Sligo.

Table 1: Target weights for dairy heifers based on age and breed

| | Month | % Mature live-weight | Holstein Friesian | New Zealand / Br. Friesian | Jersey X Holstein Fr. |
|-------------------------|-----------|----------------------|-------------------|----------------------------|-----------------------|
| Birth | February | | 41 | 38 | 34 |
| 6 Weeks | March | | 63 | 56 | 56 |
| 3 Months | April | | 90 | 80 | 80 |
| 6 Months | July | 30% | 155 | 148 | 138 |
| 8 Months | September | | 175 | 170 | 160 |
| 9 Months | October | 40% | 220 | 210 | 196 |
| 12 Months | February | | 280 | 267 | 250 |
| 15 Months | March | 60% | 330 | 315 | 295 |
| 19 Months | September | | 450 | 425 | 390 |
| 21 Months | November | | 490 | 470 | 437 |
| 24 Months (pre-calving) | February | 90% | 550 | 525 | 490 |

* Source: Teagasc Moorepark

In its simplest terms, contract heifer rearing is where a dairy farmer pays another farmer to rear his replacement heifers. A written agreement is essential to keep a record of what has been agreed between the two farmers. The arrangement must be built on good communication, honesty and trust between the parties from the beginning.

Why should you consider it?

Dairy Farmer: With the cost of rearing a heifer to two years of age at approximately €1,500, the decision for the dairy farmer is whether to do that work or to pay another farmer to do it and ease the workload. The problem of labour availability is why contract rearing must be considered. It allows the farmer to:

- Free up time to concentrate on the dairy herd.
- Reduce the number of stock groups to be managed.
- Avoid the need to lease in expensive land to carry the heifers which also brings with it an additional labour demand.
- Avoid the need to provide winter accommodation for heifers.
- Increase of stocking rate with milking cows on the grazing platform. Milking cows will give a better financial return per hectare than heifers.

Heifer Rearer: Contract rearing provides an opportunity to increase output/hectare and profitability on drystock farms. The average number of land parcels on Irish farms is 4.5.

Continued on p16

Slash Milk Cooling Costs...



At farm level, typical savings over the lifetime of the equipment would be in excess of €40,000 for 100 cow herd.*

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- Heat water to a minimum of 55°C.
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- Different to anything else on the market.

* Based on farm data published by Teagasc in the Journal of Dairy Science

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On many drystock farms, there is an opportunity to carry on the existing drystock enterprise while also operating a contract rearing enterprise on another part of the farm. The main advantages for the rearer are:

- It has the potential to deliver good profit if technical performance is good.
- The volatility of buying and selling prices is eliminated as the stock are not bought or sold by the rearer.
- Steady monthly cash flow. Payment is normally by direct debit into the rearer's bank account.
- Farmer experience is that dairy calves are easier to manage on the farm.
- The enterprise can be run part-time.

What are the rearing stages?

The cost of keeping an animal varies as they go through the rearing period and the dates for turnout and housing will vary depending on geographic location, weather conditions and land type. The five rearing stages are:

- Calf rearing up to 12 weeks old.
- First grazing season from May 1st to housing.
- First winter housing period.
- Second Grazing Season from mid-February to Housing.
- Second winter housing period.

What is good performance?

Performance of the heifers is based on two key criteria. 1) weight gain and 2) incalf rate. Other factors may

include the health status of both herds.

Daily weight gain: The weight gain of the heifers is a key indicator of good performance. Regular weighing at intervals during the rearing period is a key management practice that benefits the rearer while reassuring the dairy farmer. Weighing allows lighter animals to be separated into smaller groups and reduces the number of animals that have to be fed meal. This contributes greatly to the profitability of the enterprise for the rearer.

Incalf Rate: The target is to have 95% of the heifer's in calf after six weeks' breeding. Weight gain plays an important role in this but practical skills such as heat detection are hugely important. Whether to use synchronisation protocols; who has responsibility to call the technician; or will DIY AI be used. There is also the matter of who provides stock bulls for cleaning up any repeats while also setting a date for when the bull is taken out. All this must be worked out and agreed at the beginning and included in a written agreement.

Is a written agreement necessary?

"Word of mouth" or "one page" agreements are fine until there is a problem. Then, if nothing has been written down, it can exacerbate even a small issue. The written agreement should set out the key elements of

what is agreed between the dairy farmer and the rearer. It must document practical issues such as weighing dates, vaccination dates, responsibilities, payment rate and payment date. Flat rate, and 'weight bonus' template agreements are available to download from www.teagasc.ie.

How profitable is contact rearing?

For the dairy farmer, the sum is straightforward. It is a comparison of the cost of contract rearing versus the financial benefit of carrying extra cows and/or the cost of rearing heifers themselves. For the heifer rearer, the enterprise must make a profit otherwise it is not sustainable.

The payment rate must factor in who provides key inputs such as AI/Breeding, vaccines etc. It must also factor in the five stages of rearing. However, profitability is not only dependent on the price received. Achieving good technical performance from grazed grass is a major factor.

Table 2 presents three options for the average suckler to weanling farmer to get into contract rearing.

Option 1: Continue on suckling and take in heifers on part of the farm.

Option 2: Get out of suckling and contract rear heifers at the same farm stocking rate.

Option 3: Get out of suckling and increase the farm stocking rate to 1.92 lu/ha.

From the outset it must be said that

Table 2: Suckling to weanling/store farm 2018

| | Average | Top 1/3 | Suckling & Contract Rearing | Contract rearing only LSR | Contract rearing only HSR |
|--------------------------------|---------|---------|---|--|--|
| Farm Size (ha) | 32.1 | 33.9 | 32.1 | 32.1 | 32.1 |
| Stocking Rate (LU/ha) | 1.56 | 1.92 | 1.92 (2.5hu/ha) | 1.56 (2.08 hu/ha) | 1.92 (2.5 hu/ha) |
| | | | €1.30/heifer/day at 14 heifer units ¹ for 549 days | €1.30/heifer/day at 65 heifer units for 549 days | €1.30/heifer/day at 80 heifer units for 549 days |
| Gross Output (€/ha) | 998 | 1,412 | €998+ €311 = €1,445 | €1,309 | €1,779 |
| Variable Costs | | | 175 | 170 | |
| Feed** | 144 | 161 | 177 | 152 | 187 |
| Fertiliser/Lime | 121 | 143 | 143 | 121 | 143 |
| Veterinary | 73 | 83 | 92 | 91 | 112 |
| AI | 13 | 15 | 32 | 91 | 112 |
| Contractor | 124 | 122 | 122 | 124 | 122 |
| Other | 75 | 83 | 83 | 75 | 83 |
| Total Variable | 550 | 607 | | | |
| Costs (€) | 649 | 654 | 759 | | |
| Gross Margin (€) | 448 | 805 | 660 | 680 | 883 |
| Fixed Costs (€) | 484 | 547 | 547 | 484 | 547 |
| Net Profit/ha Excl. Premia (€) | €-36 | €258 | €113 | €307 | €473 |

* The figures in shown Table 2 are calculated on a payment rate of €1.30/hd/day for 549 days.

** Meal feeding is based on 300 kgs of meal (@€250/tonne) per heifer unit.

***A heifer unit (hu) is equivalent to one heifer calf and one maiden heifer. One heifer unit equates to 77% of a Livestock unit as the calves will be on farm for approximately 8 months of the first year and 10 months of the second year.

the top 1/3 of farmers in this suckler to weanling system are top performers both technically and financially as it is a difficult system to make profit in. The 2016 profit monitor data in Table 2 shows that the average farmer in this system is making a loss and the enterprise is being subsidised by the CAP payments received. So can contract rearing be an option to

improve farm profit?

Table 2 shows that if the average suckler weanling farmer were to get involved in contract rearing either partially or fully, the enterprise has the potential bring the farm into profit before CAP payments. Other factors such as the geographic location and the quality of the land must also be borne in mind.

The figures show that contract heifer rearing can be considered as both a complimentary or alternative enterprise to the existing drystock operation. It also shows that where land type and management ability are good, contract rearing at 1.92 lu/ha or above gives a greater financial return.



Farmer Profile

The prospect of a regular income attracted Neill Boland to convert from running a suckling enterprise to contract rearing. After taking over the family farm in the '90s, he moved to convert the dairy enterprise into suckling as the land was fragmented in small parcels and they couldn't carry the number of cows to make dairying viable.

Neill who is married to Catherine and has two young children Eabha (3) and Liam (1) was the first farmer in the area to contract rear dairy heifers. From rearing 30 heifers in 2009 from a neighbouring farm Neill made the decision to sell all his own stock and go full time contract rearing in 2012.

He now plans to rear 300 heifers in 2018 from three dairy farmers one local and two from Meath. "I take in the heifers from as young as four weeks of age in mid-March and return them to the

dairy herds in-calf in November of the following year to calf in February at two years old."

The calves are fed once a day milk replacer and concentrates up until weaning. A leader-follower system is operated whereby the calves graze ahead of the year old heifers on each grazing block. Neill has been using Pasturebase Ireland since 2014 as a grazing management tool to help maximise animal performance at grass.

"The paddocks I cut to maintain grass quality have enabled me to consistently make silage of 75+ DMD which reduces my concentrate usage over the winter period," says Neill. "90% of the farm has been reseeded in the last 10 years and 14.75 tons of grass DM/ha were grown on the home block in 2017.

Neill, who is a qualified AI technician, synchronises all heifers to reduce the time spent on heat detection. "Last year I got 90% of the heifers in-calf in the first three weeks of the breeding

season to AI, a bull was then used for the remainder of the breeding season with 95% of the heifers in-calf after nine weeks." Neill has a contract rearing agreement in place and feels he has a good working relationship with the dairy farmers he rears for. "Good communication and trust are vital" says Neill. "We sit down in January and plan out the year ahead and look back on how the agreement is working."

Neill regularly weighs the heifers and sends the information to the dairy farmers so they can monitor animal performance. "Done right, it works well for everybody," he concludes.

- Neill Boland is a member of the Sligo/Leitrim Contract Rearers' Group and is a Focus Farm as part of the Teagasc/Aurivo Farm Profitability Programme. Neill will be hosting an open day on contract rearing on Thursday 19 April at 11am at his farm in Enniscrone, Co Sligo.

Mapping the route

Four farms in Tipperary have acted as latter-day pioneers in improving soil fertility.

By Mark Plunkett,
Teagasc Crops, Environment and Land
Use Programme, Johnstown Castle
& **Leonard Betts,** Teagasc Dairy Advisor, Clonmel

As part of the Teagasc / Tipp Co-Op joint programme, four farmers agreed to a programme of intensive soil sampling to target lime and P & K applications to correct soil fertility. On their journey to improved soil fertility a number of key findings emerged.

"The key message is that a one-size-fits-all approach would not have worked for the four of us," says James Breen from Lattin. "Improving pH, P and K will certainly pay off but each farm needs its own unique plan."

"Up until about eight years ago, we rarely spread lime except when reseeded. We were slow to spend money but we've seen over the years, through the Emly discussion group, for example, what other people were achieving and what might be possible here."

James points out that group members, Simon Breen and others, have strongly encouraged him to do more with grass. "Fertility is the basis for grass production, so you have to start there," says James. "And there's plenty of evidence available. If one guy does a trial with lime and gets great results and another guy repeats that and he also gets great results you can be confident there is proof."

James says he has seen the benefits of their new approach: "As a result of increasing our grass production we've been able to increase cow numbers from 145 to 190 and reduce concentrates fed per cow from 1,000kg to 500kg."

Look under the bonnet – soil testing

"You'd never buy a tractor without looking under the bonnet," says James. "The same goes for soil fertility, which means testing to see where you stand." Every paddock/field on the participating farms was sampled each year to get the farm baseline fertility (pH, P & K) and monitor soil fertility changes.

Farm 1: Soil pH levels ranged from 5.7 to 6.4, with an average soil pH of 5.7. The lime requirement on this farm was 475t. 50% of the farm was at P index 4 and 33% of the farm was at K index 4.

Farm 2: Soil pH was on average pH 6.3 with a very low lime requirement of about 60t. On average, soil P levels were at index 2 and soil K levels ranged from index 2 to 3.

Farm 3: 40% of the fields had a pH 5 to 6, with an average farm soil pH 6.2. This farm had a very large lime requirement of about 700t of lime. 40%



James Breen and Leonard Betts admire the excellent structure in James' soil.



You'd never buy a tractor without looking under the bonnet. The same goes for soil fertility

of the farm was P index 1 and 60% of the farm was P index 2. 80% of the farm was K index 4.

Farm 4: 60% of the farm had soil pH 5.0 to 5.5, with a farm average pH of 5.5. The lime requirement on this farm was about 1,000t. 85% of the farm had a soil P index 1 and K index 2.

Analysing the above, soil pH was a major issue on three out of the four farms and there were significant lime applications needed to correct soil pH into the optimum range of pH 6.3 to 6.5. Secondly, soil P and K levels ranged from index 1 to index 4.

It was clear that a different approach to improving soil P and K levels would be required for each farm. Soil testing provided the basis for field-specific advice and a tailored approach to maximising the return from expensive fertilisers.

James Breen's farm is Farm 4, where soil fertility was low for lime, P and K. Figures 1 – 3 indicate the farm's progress.

Most of the farm had a soil P index 1 in 2015, as shown Figure 1. James prepared an annual fertiliser plan with his adviser Leonard Betts where they took advantage of additional P allowances as per the Nitrates Directive changes in 2014.

"We applied approximately 1,050t of lime

to expansion



KEY MESSAGES

It's important to know where you are starting from and where you plan to go before you set out on that journey to improved soil fertility for your farm.

- 1 Soil sample every paddock / field
- 2 Establish farm soil fertility (pH, P & K) base line
- 3 Prepare a farm lime plan & only apply lime based on a recent soil test result
- 4 Apply recommended levels of P & K
- 5 Apply a 10-10-20 / 18-6-12 type fertiliser

Figure 2: soil pH

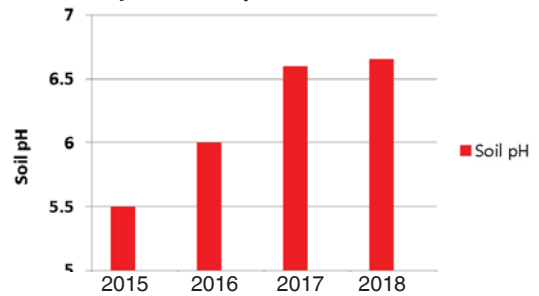


Figure 2: soil P

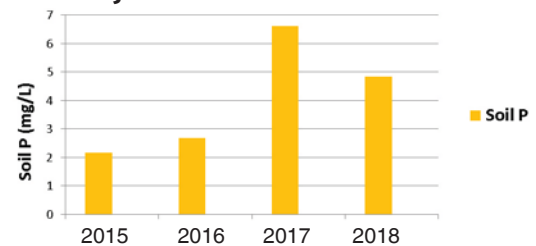
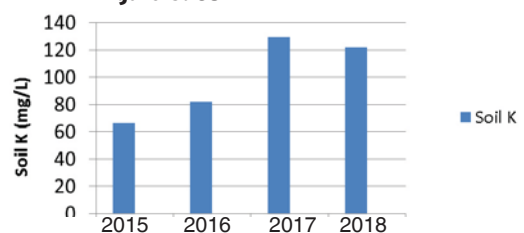


Figure 3: soil K



between 2015 and 2017 based on soil test results," says James. "Soil pH increased from an average of pH 5.5 in 2015 to 6.6 in 2018.

"Cattle slurry was used as efficiently as possible and targeted to very low fertility/poor parts of the farm. Fertiliser practice changed and 18-6-12 was applied to supply the majority of P and K during the growing season."

Soil P levels improved in 2016 and 2017, which can be attributed to, firstly, the improvements in soil pH during that period and, secondly, a higher rate of P being applied in the form of 18-6-12.

"In 2018, soil P levels dipped slightly which can be explained by the increase in grass production on the farm indicating that there is a larger P requirement required to sustain higher levels of grass production annually," says James.

In 2015, average farm soil K was index 1 as shown in Figure 3. Between 2015 and 2017, soil K levels increased to the optimum soil K index 3. In 2018, there has been a slight drop due to higher grass production levels. On the farm a two-cut silage system is operated and the silage fields are easily identified as the soil K levels are at index 2. Additional K will be required later in the season (August /September) to replenish soil K reserves

using either slurry or 50% K (MOP).

Where rapid progress is needed, soil fertility improvements can be fast-tracked, with an intensive soil sampling programme implemented to monitor soil fertility levels. This provides field-by-field information specific to the soils and indicates how reactive they are to lime, P and K applications.

A fertiliser plan will provide direction on applying the correct rates of P & K and the selection of a suitable fertiliser type to deliver the correct balance of P & K at timely intervals during the growing season. The other three farms in the study – John Fitzgerald, Michael O'Dwyer and Gerry Ryan – have experienced improvements in soil fertility but have taken a slightly different approach depending on their soil test results.

"Leonard Betts of Teagasc, Andrew O'Neil of Tipp Co-op and friends have convinced me of the need to address fertility, but it's also essential to have a good lime contractor," concludes James Breen. "John Ryan in Lattin and his staff including Conor Breen have been excellent. They've applied lime when it suited me in terms of paddocks and grazing rotation and get it on very accurately. Optimising fertility takes a team."

Secure your entitlements for 2018

Complete your Basic Payment form now

James McDonnell

Finance Specialist, Teagasc Rural Economy Development Programme.

Table 1 below shows us how important direct payments were to the farming community in 2016. The figures for 2017 will not be much different.

The agricultural sector is enduring a tough period, with market volatility, global politics and weather having a significant impact on farmgate prices. Therefore, it is more important than ever to ensure that you are making the best use of the monetary supports available. In this article, I will discuss the completion of the 2018 Basic Payment application form.

The 2018 Basic Payment Scheme (BPS) application system opened in early February. The information packs were posted recently, which is about a month earlier than last year. It would be prudent to make a phone call to your adviser (Teagasc or otherwise) telling him or her of your plans for this year and schedule an appointment to complete the application.

The Department of Agriculture, Food and the Marine (DAFM) has added extra functionality to the online process this year. All applications must be submitted online in 2018. The online system also incorporates a transfer of entitlements section to cater for those with changes to their

herd number or farming structure. Note: if there is any change to a herd number, a transfer of entitlements must be submitted.

The online applications make the preliminary checking of applications more effective. This functionality allows early flagging of errors. It also allows some checks to take place immediately after the closing date and give the applicant the facility to respond without a penalty. The system will allow DAFM to cross check applications for inadvertent dual claims and other small errors.

The 2018 application

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

The BPS application process includes:

- Basic Payment Scheme.
- Greening Payment.
- Continuation of the Young Farmer Scheme if you were an applicant in 2015, 2016 or 2017.
- Aid for Protein Crops (Peas, Beans, Lupins).
- Areas of Natural Constraint Scheme.

Making changes to the herd/crop/flock identifier

Every year, a significant number of farmers make changes to the herd/crop/flock number for one reason or another. For example a herd number (identifier) in a single name was joined by a child to avail of the



National Reserve and/or the Young Farmer Scheme. Registered farm partnerships and farming companies are other examples.

If you are planning to make changes to the herd identifier number, it must be completed in good time to allow the Regional Veterinary Office (RVO) 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 required.

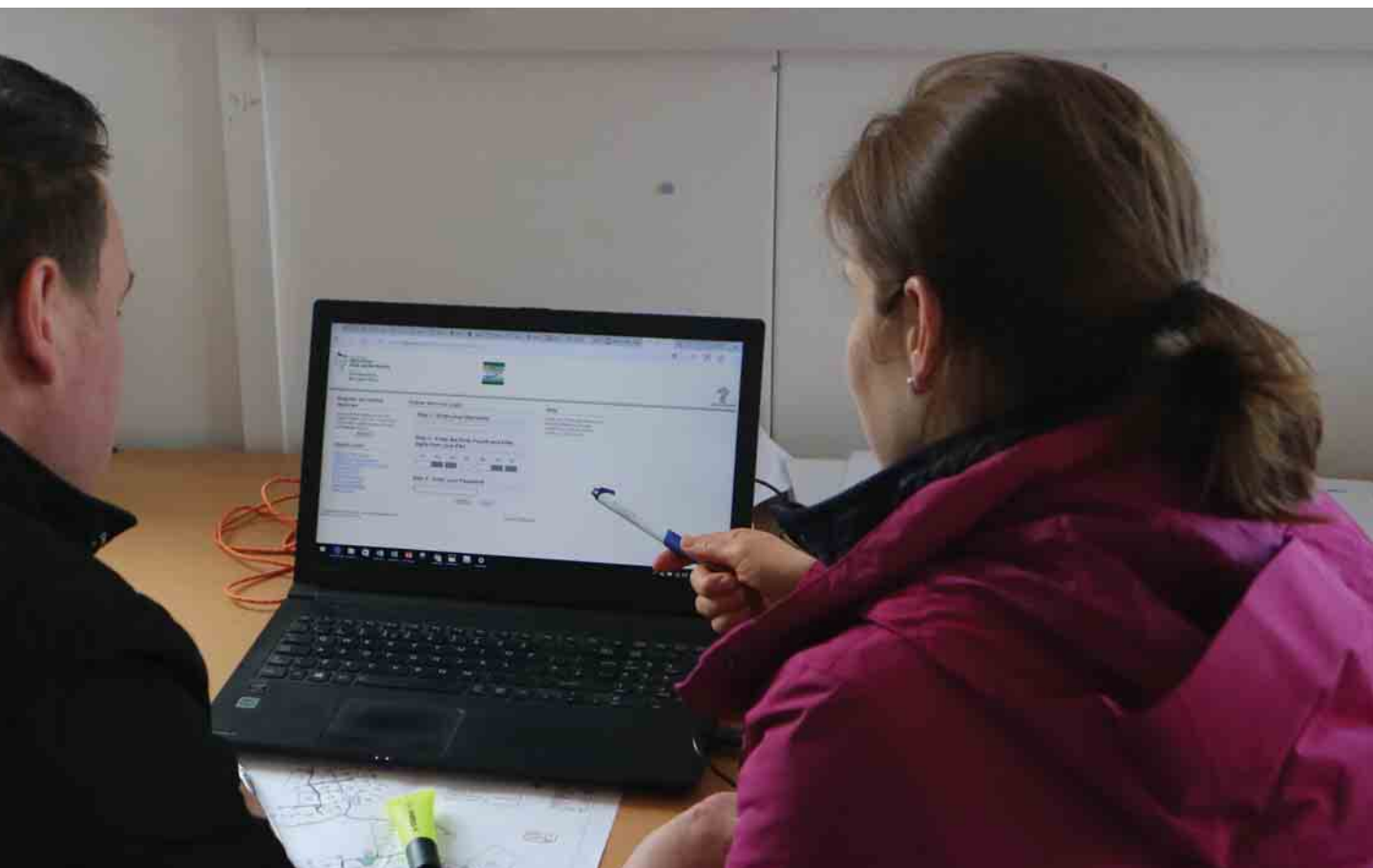
Please note:

- 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 adviser 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 adviser 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 31 March and 1 June this year. This is to help make the BPS application process more efficient.

Table 1: Value of Direct Payments and contribution to income in 2016

| Sector | Direct payments | Contribution to income (%) |
|----------------|-----------------|----------------------------|
| Dairy | €19,735 | 38 |
| Cattle Rearing | €14,400 | 115 |
| Cattle other | €16,209 | 96 |
| Sheep | €17,946 | 114 |
| Tillage | €26,331 | 85 |
| All | €17,804 | 75 |

Payments are average/farm. Source: Teagasc National Farm Survey



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

National Reserve (NR)

This year, the National Reserve opened for applications in early February. The funding available this year is less than last year's, but fewer applications are expected.

A 90ha limit was applied in 2017. The rules are similar to last year. Successful applicants will expect to receive entitlements worth just over €180. On top of this, all of the applicants were 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 be submitted through this online service also.

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 start farming in 2018, you are guaranteed to get at least two payments. The final payment depends upon what happens in the next CAP negotiations.

The payment is payable on a maximum of 50 entitlements. The payment is worth about €65 (per hectare). 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.

Applicants who were successful 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 Tuesday 15 May 2018. This will not be extended. As with other years, amendments can be made after submission of the application until the end of May.

Reasons for making an amendment include:

- Correcting an obvious error (minor

clerical error).

- Adding or deleting a parcel.
- Change of use of a parcel.
- All amendment forms will be acknowledged in writing.
- Ticking/unticking the ANC box.
- Ticking of the YFS box (where applicable).

Getting help with the form

If you intend getting help in completing your application form for the BPS or any of the other CAP schemes, it is important that you make an appointment with your adviser immediately.

Before you visit your adviser, review all the documentation you have received from the Department (DAFM). If you plan significant changes to the 2018 application, state that you may require a longer appointment than usual, so that it can be completed in one visit.

The more complex cases may also involve your solicitor, accountant or valuer and potentially 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.

Double diversification: a recipe for success

Organic beef production and a catering contract add up to sweet returns for this Laois couple

Elaine Leavy,
Teagasc Rural Economy Development Programme

Like many farm families, Tom and Gemma Dunne came to a point where income became an issue. Remarkably, they have been able to increase the family income and improve their quality of life by seizing opportunities and following their passion.

The couple purchased their farm in Ballinaslee just south of Durrow (Co Laois) in 1998; built their family home; and have been innovators and entrepreneurs for 20 years.

"Gemma has had a great interest in food from an early age and studied home economics to leaving certificate," says Tom. "She spent a lot of her free time reading cookery books, experimenting with recipes and adding her own twist to them."

While working off farm, Gemma started to upskill herself by completing a number of cookery courses in the evenings and weekends, travelling as far as England to do a bread making course.

"With the arrival of our first daughter, I gave up my day job but continued to have an interest in food, keeping up to date with food trends and attending short cookery courses as time allowed," says Gemma.

Working locally in the Manor Hotel, Abbeylax, Gemma focused her skills

on making pastries. She completed a two-year professional chef course through the professional cookery traineeship section of Fáilte Ireland.

Course

Meanwhile, Tom was also "upskilling". Through the Laois Rural Employment Partnership (LREP) he completed a course which was aimed at farm families to identify other sources of employment and income. The course was delivered one day a week over ten weeks. Topics covered included business and financial planning, looking for alternatives and life coaching.

"I was so astonished at how positive Tom was after it, that I joined the next course," says Gemma. Part of the course was to identify your individual skills and strengths. The couple quickly realised that they could turn Gemma's talent for cooking and Tom's "people skills" into a way of generating extra income. "It made perfect sense to us, to try and build on our individual strengths," says Gemma.

Direct-selling

The opening of the Naas farmers' market provided Tom and Gemma with an opportunity to do that and see what type of a cash boost this could provide without having to make any large investments. Together, they could deliver the two key skills needed – baking and selling.

Every Friday saw Gemma baking a range of pastries, brown breads and scones; the following day Tom loading them up travelling the 45 minutes to Naas. Gemma was happy to do the baking and Tom enjoyed the selling and banter with the customers, they quickly established a dedicated following of customers every Saturday at the market.





Sweet or savoury, Tom and Gemma Dunne meet the customer's wishes. Their catering business dovetails well with their organic beef production.

Opportunity

Following on from the farmers' market another opportunity came along for the Dunnes. The Department of Agriculture, Food and the Marine (DAFM) in the Government offices in Portlaoise needed someone to run the restaurant in the building. Tom and Gemma won the contract and have been there ever since.

A typical day is as follows: they arrive at 8.15am and fresh bread, scones, muffins and cakes are prepared and baked. Soup is made fresh every day, along with main courses, which could be a choice of beef stroganoff, quiche and a vegetarian option. There is also a salad bar.

Again, this job is a team effort with Gemma very happy in the kitchen baking and cooking while Tom is out front meeting the people.

Organics

Over the years, a suckler-to-beef enterprise had been established on the farm. After a couple of difficult years, Tom "felt that there had to be a new opportunity out there to justify my efforts and input".

He started looking at organic farming as an option and saw it as an opportunity to improve the overall financial position of the farm. After careful consideration, the farm entered organic conversion in 2008.

With the increasing number of drystock farmers entering organic farming, Tom recognised the availability of a supply of quality stock for finishing and the suckler cows were sold.

Animals are bought, fattened and sold directly to the organic processor Good Herdsmen. Most of the animals purchased are sourced directly from other regionally located organic drystock producers. "I source organically

produced grain from a neighbour and he takes land from us to grow organic horticultural crops," says Tom.

Tom is very happy with the transition to an organic farming system and in his own words "has never looked back". Since Tom has changed the system to drystock, it fits in very well with the catering contract he and Gemma fulfil. "I'm back on the farm every afternoon and I am able to do whatever needs doing with relative ease," says Tom.

Advice

Asking the Dunnes if they were to do it all again or would they do anything differently, they both have the same opinion that "grabbing the opportunities and going with their instincts" have worked out for them in the last 20 years.

Some words of advice that Tom and Gemma would give are to "learn and read as much as you can, "don't be afraid of making mistakes". Maybe you also have a talent or hobby that you're passionate about, take a look at the possibility of turning it into a recipe for success.

USEFUL LINKS

- Irish Local Development Network: <http://ildn.ie/>
- Local Enterprise Office (LEO): <https://www.localenterprise.ie/Discover-Business-Supports/Training-Programmes/>
- Fáilte Ireland: <http://www.failteireland.ie/Business-supports/Upcoming-Training-Workshops.aspx>
- Skillnets: <http://www.skillnets.ie/about-skillnets>
- Education and Training Boards (ETB): <http://www.etbi.ie/etbs/directory-of-etbs/>
- Department of Agriculture Food and the Marine: <https://www.agriculture.gov.ie/farmingsectors/organicfarming/>
- Teagasc: <https://www.teagasc.ie/organics>

Farm accidents – alarming rise

Farm accidents have risen by 13% in the last five years and by 31% in the last 10 years. This is the stark finding of a national survey of Farm Accidents conducted by Teagasc National Farm Survey.

John McNamara

Teagasc Health and Safety Specialist

Emma Dillon, Brian Moran

Teagasc Rural Economy Development Programme,
John Lennon

Teagasc National Farm Survey

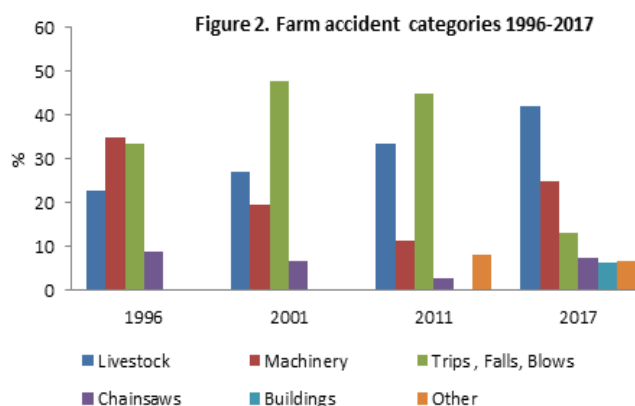
The survey found that in the five-year period 2012-2017, 11% of farms had an accident and in total 2,814 accidents occurred. The 2017 survey represented 85,000 farms with a standard output greater than €8,000.

Farm accidents cause tragedy, pain and suffering, disability and economic loss so it is vital to give safety first priority to reduce the number of on-farm injuries.

Accident categories

Over the period 1996 to 2017, 42% of accidents involved livestock with farm vehicles or machinery involved in a further 25% of accidents (Figure 2).

Trips or falls resulted in a further 13% of farm accidents over the period, with chainsaws accounting for 7% and a further 6% involving farm buildings. The increasing proportion of accidents involving livestock over time is



evident, with a 20 percentage point increase from just over 20% of accidents in 1996 to over 40% of accidents 2017.

Similarly, the proportion of accidents involving machinery more than doubled from 2011 to 2017. On the other hand, a marked decline in the proportion of accidents due to trips and falls is evident over the same period.

Persons injured

The 2017 survey indicates that the vast majority of on-

farm accidents (92%) involved a family member with 80% occurring to the farmer. Twelve per cent involved a spouse or another family member. The remainder involved workers (5%) and others (3%).

Location of Injury

The survey showed that almost two-thirds of farm accidents occurred in the farmyard (64%) and a further 15% in farm buildings. Almost one-fifth of accidents (19%) were in fields with only 2% on farm roadways or lanes.

Medical treatment required

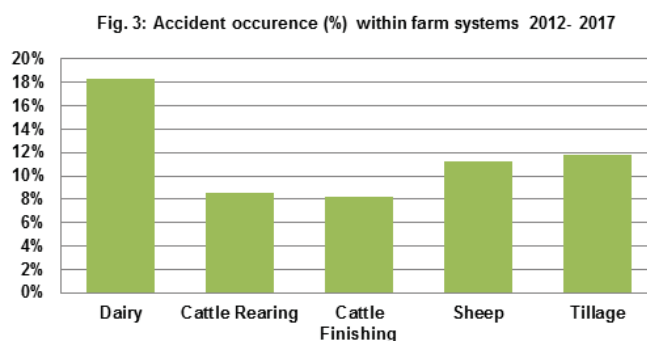
Almost all of the reported farm accidents (97%) required medical treatment, with 73% of accident victims attending hospital, a further 19% seeing a doctor and 4% receiving first aid. Tragically, 1% of such accidents resulted in a fatality.

Recovery time

In terms of the impact of farm accidents on work time, almost one-third (30%) of accidents resulted in a work absence of more than a month, with 21% being more than two months. Thirteen per cent of accidents resulted in an 11 and 30 days' work absence, 22% led to four to 10 days of an absence, while 18% resulted in one-to-three days of an absence. Just 17% of accidents resulted in no work time loss. Ongoing disability arising from accidents were not measured in the survey.

Accident occurrence by farm system

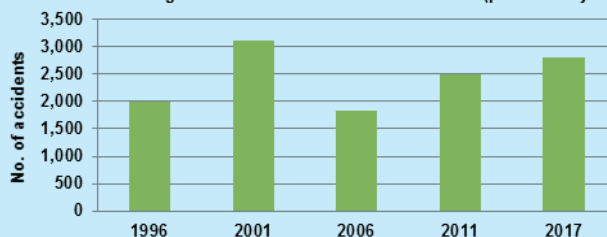
Data for prevalence of accidents by farming system (Figure 3) indicates that dairy farms had the highest accident of 18%. Accidents occurred on 12% of tillage farms and 11% of sheep farms with the cattle systems of rearing (9%) and finishing (8%) reporting marginally lower accident levels.



KEY MESSAGE: MANAGE SAFETY ON YOUR FARM

- The survey highlights a rising trend of accidents on Irish farms. It also indicates increased levels of both livestock and vehicle related accidents. Agricultural output has expanded rapidly in recent years following quota abolition which gives rise to risk factors including long hours, rushing, tiredness and stress.
- The key message is that accident prevention must be integrated into overall farm management. Accident prevention approaches focus on 'Engineering' out hazards and 'Behavioural' work practice approaches:
- 'Engineering' refers to managing the physical aspects of farm workplace to secure safety. This involves many items such as machinery maintenance, farmyard and building design and tidiness. It also involves having infrastructure to match the workload and avoid overload, tiredness and rushing. The DAFM TAMS11 scheme provides grant aid for

Fig. 1: Farm accidents Trends 1996-2017 (previous 5 years)



farm investment including a lengthy list of safety items.

- Behavioural approaches include adopting safe work methods and practices. Farmers 'in principle' have a positive attitude to safety but studies show that when 'the pressure comes on' work completion tends to take over from safety. Excellent overall farm management limits breakdowns and good time management to prevent accidents. Farmers' management of risk is the key requirement to secure safety.
- A practical 'Code of Practice and Risk Assessment' document is available to assist farmers to both understand and implement the standards in a practical way. As a first measure, we suggest to farmers to review their Farm Safety Risk Assessment Document and take action where needed!

Fig. 4: Accident type (%) by farm system

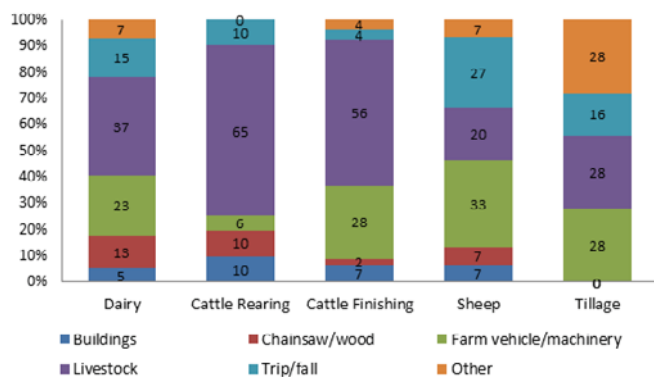
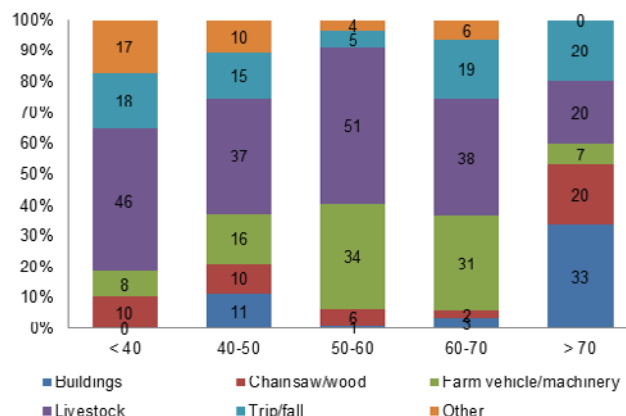


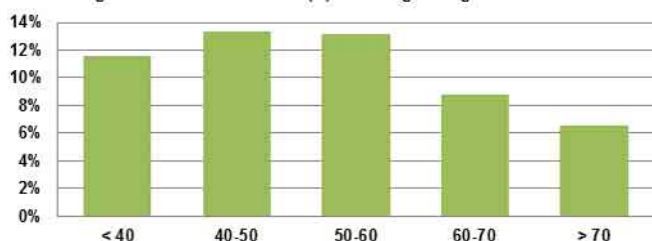
Fig. 7: Accident type (%) by Age category



Accident Type by System

A striking feature of accident type by farm system is that livestock accidents accounted for 65% of cattle rearing, 56% of cattle finishing and 37% of dairy farm accidents. High levels of machinery accidents occurred on sheep (33%), tillage (28%) cattle finishing (28%) and dairy (23%) farms. On sheep farms, machinery accounted for 33% of accidents followed by trips and falls (27%). A high level of accidents classified as 'other' on tillage farms may be due to workshop / repair type work.

Fig. 6: Accident occurrence (%) within age categories 2012-2017



Farm accident by age category

The highest frequency of accidents occurred within younger age categories, with 13% of farmers in the 40-50

and 50-60 age brackets involved in an accident and 12% aged below 40 years of age involved in an accident.

Nine per cent of farmers aged 60-70 and 7% over 70 years of age reported an accident over the time frame of the survey.

Accident category by age

Livestock accidents were most common across all age categories except where the victim was aged over 70 which were more likely to involve farm buildings. Livestock related accidents accounted for over half (51%) of all accidents involving those aged 50-60 and almost half of those (46%) in the less than 40 age category.

Farm vehicle and machinery accounted for 34% and 31% of accidents to 50-60-year-olds and 60-70-year-olds. Chainsaw related accidents accounted for 20% of those occurring to those aged over 70.

The 2017 NFS survey data indicates that younger farmers are more likely to have farm accidents, whereas HSA and international data indicates that fatal accidents are more likely among older farmers. This is in accord with international literature which indicates that older farmers have the highest proportion of fatal farm accidents while younger farmers had the highest level of non-fatal farm accidents.

Choosing to save money

Nitrogen is one of the largest farm costs and savings are there to be made

Mark Plunkett & David Wall

Teagasc Crops, Environment & Land Use Programme, Johnstown Castle, Co Wexford

Every year, there is debate around the most suitable type of nitrogen (N) fertiliser to apply, be it calcium ammonium-nitrate (CAN) or urea in terms of effectiveness and cost at different times during the year.

This debate has widened in recent years to include the effect of N fertiliser type on greenhouse gas (GHG) emissions, ammonia emissions and the sustainability of Irish agriculture. We now regularly read about increasing carbon taxes on fossil fuels as we strive to use cleaner forms of energy and to reduce GHG emissions and help minimise the effects of climate change in the future.

Ireland has committed to reducing national GHG's and ammonia emissions from agriculture by 30% and 5%, respectively, by 2030.

CAN 27% N

CAN is the most widely used N source in Ireland and has dominated the market for decades. This is despite the fact that it is the most expensive source of N. CAN is generally a good-quality fertiliser product with good granule size and excellent spreadability characteristics.

It's the preferred N source for till-

age farmers due to the wide spread widths pursued in crops. CAN contains a small quantity of calcium carbonate (lime) which helps to control the soil acidity generated during N transformations in the soil.

The N supplied in CAN is in two readily plant-available forms – ammonium (50%) and nitrate (50%). Once applied to the crop these N forms are available for plant uptake and growth.

The downside to CAN is that it may be very prone to loss to either air or water where conditions are less than ideal at time of application or thereafter. For example, N may be lost to air as nitrous oxide (N_2O), during the conversion of ammonium to nitrate or when the soil is very wet through a process known as denitrification.

Nitrous oxide is a powerful GHG, 300 times more damaging than CO_2 and 12 times more damaging than the methane produced by livestock. In free-draining soils the nitrate component of the fertiliser can be leached to ground water if there is persistent heavy rain fall following application.

Urea (46% N)

Urea is the most widely used source of N globally and is traded on world markets. Urea occupies between 8% and 12% of the Irish N fertiliser market annually. Urea fertiliser is traditionally applied as an N source early in the season (January to March) as it has a lower cost per unit of N. Secondly, urea is a safer source of N when soils are cold and wet as it is less prone to loss through leaching compared with CAN.

Once urea is applied to the soil it has to be converted to ammonium for plant uptake. During this conversion process N loss, through volatilisation of ammonia gas, can occur if there is insufficient moisture available to wash the urea into the soil.

For example, where urea is applied

to bare soils or in drying conditions there is an increased risk of ammonia volatilisation, which can sometimes lead to lower crop yields compared with CAN.

Urea fertiliser granules are less dense than CAN making it more difficult to spread evenly across wide bout widths. Historically, there was more prilled urea (50% <2mm) available on the market and it was particularly difficult to spread on bout widths (>10m).

The majority of urea on the market today is granular with larger particle sizes (80% of granules are 2mm to 4mm) and are more suitable for wider spread widths. When calibrating and setting your fertiliser spreader for urea it is important to know the particle size distribution which can be determined with a handheld sieve box.

A tray test can also be used to check spread pattern of urea once the fertiliser spreader has been adjusted to the manufacturer's specifications for the particular fertiliser. However,





Figure 1 : Average relative grass yields for CAN, urea and urea + NBPT across six grassland sites with five N application rates and a total of 30 fertiliser application dates

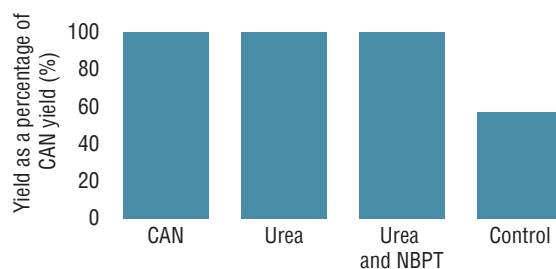
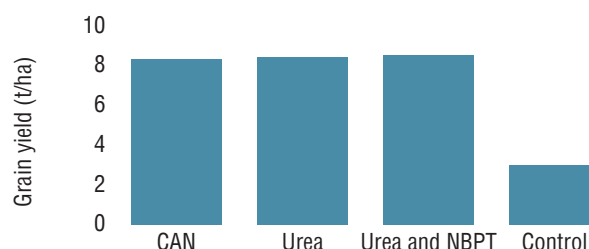


Figure 2: Average grain yield for spring barley across three years for CAN, urea and urea + NBPT applied at 150kg N/ha



Relative star rating of the different N fertilisers

| | CAN | UREA | Protected UREA |
|-----------------------------|-------|-------|----------------|
| € Cost of N | ★★★★★ | ★★★★★ | ★★★★★ |
| Crop Yield | ★★★★★ | ★★★★★ | ★★★★★ |
| N Uptake | ★★★★★ | ★★★★★ | ★★★★★ |
| N ₂ O (GHG) loss | ★★★★★ | ★★★★★ | ★★★★★ |
| Ammonia loss | ★★★★★ | ★★★ | ★★★★★ |
| Leaching loss | ★★★ | ★★★★★ | ★★★★★ |
| Spreadability | ★★★★★ | ★★★★★ | ★★★★★ |

Based on research conducted by Teagasc-Johnstown Castle



urea fertilisers have significant transport and work-rate advantages over CAN because of its higher N content.

Protected urea (urea plus NBPT)

Protected urea is urea fertiliser with a urease inhibitor (NBPT) coated on the urea granule. Protected urea is now widely available on the Irish market. Recent research on grassland and spring barley has shown that protected urea reduced ammonia volatilisation losses by up to 80% compared with urea and consistently produced similar yields of grass and spring barley to CAN. In these studies, the protected urea often had slightly higher fertiliser N recovery indicating that it is a very efficient N fertiliser source. There were reduced N₂O emissions using protected urea compared with CAN.

In terms of cost protected urea is currently 10% cheaper per unit of N than CAN and 10% more expensive than urea. Where protected urea is being used, consider fertiliser granule size and density with regards

to achieving an even and consistent spread pattern, as you would for urea.

Research findings

• **Grassland:** research conducted at Johnstown Castle at three sites over three years show that CAN, urea and urea + NBPT frequently give similar yields in grassland as shown above in Figure 1.

• **Spring barley:** grain yields were similar regardless of the N fertiliser type used (Figure 2), but N uptake was higher, on average 13 kg/ha over the three years, with protected urea compared with CAN. All N fertiliser types also produced similar grain protein levels.

Although urea produced similar yields to CAN in these studies, on some occasions the N uptake from urea was lower. Therefore, farmers should be cautious when spreading urea. Only apply when weather and soil conditions are suitable, due to increased potential for N losses through ammonia (NH₃) volatilisation which could result in reduced crop yields.



Key messages

- Protected urea has a number of advantages as an N source compared to CAN and urea fertilisers. Protected urea will reduce N losses through ammonia volatilisation compared to urea and consistently produced similar yields to CAN with slightly higher N uptake.
- Protected urea also reduces nitrous oxide (N₂O) emissions. Overall protected urea is a good N source for the main growing season in grassland and spring cereal crops for achieving consistent crop yields and high levels of N efficiency.
- Protected urea is a proven technology which can help Irish farmers to reduce GHG and ammonia emissions.
- For best results with protected urea calibrate the fertiliser spreader to deliver the correct rate and check fertiliser quality for even application.

Co-operation in farming

The farmer and the cow man can be friends... rather than compete for land, these farmers co-operate

Conor Kavanagh
Teagasc Tillage advisor, Tipperary

Tillage farmer Tommy Prendergast and his family run a successful farming and agricultural contracting company based in Dangan, Golden, Cashel, Co Tipperary, focused on providing a high-quality service and customer satisfaction to the local farming community.

Tommy grows a range of crops from porridge oats to malting barley, as well as feed wheat and barley and, increasingly, fodder crops such as maize for the increasing cow numbers in the area.

The contracting business has equipped Tommy with a reliable supply of customers who trust him to deliver a quality product. "The relationship we have with our farmers and suppliers is of utmost importance to us. It's vital to be approachable and give each customer personal atten-

tion and ensure their expectations are met," says Tommy.

Straw

The tillage area in Ireland has reduced by 14% since 2012 and this trend is expected to continue. Again, having good relationships with his customers has allowed Tommy to develop a straw business based on mutually benefit. "The straw produced on the farm is supplied to local farmers many of whom return the straw as farmyard manure," says Tommy.

Maize

Maize silage can be used across a range of farm enterprises including buffer feeding in spring herds, winter milk production systems and beef production systems. A benefit for Tommy is that maize provides him with a valuable break crop on his farm. Research from Teagasc indicates the winter wheat following a break crop can increase the yield of the following wheat crop by 1.5t/ha over continuous cropping.

Many farmers will pay Tommy by the tonne for maize but dairy farmer Michael Kennedy from Knockroe, Cashel has worked closely with the Prendergasts for years has his own arrangement. "I pay Tommy a set charge per acre to grow maize and ensile it for me," says Michael. This relationship involves a high degree of trust as Michael does not know

precisely how many tonnes he will get. "We will discuss the crop through the year," says Tommy.

"Michael shares some of the risk and yield will vary a bit from season to season. If you're being paid per acre grown it's important to try achieve not only maximum yield but also top-quality product for the farmers as repeat business is key to the success of growing fodder crops for other farmers."

Growing maize for intensive livestock farmers in the area, who often have to export organic manures in order to comply with the nitrates directive gives Tommy access to valuable organic manure which he can return to the fields.

When asked about the value of organic manure sources, Tommy replied that: "Organic manures such as cattle and pig slurry, farmyard manure and compost are only as valuable as the chemical fertiliser that



Table 1: Available N, P and K values for a range of organic manures

| Units/1,000 gallons | | | |
|--------------------------------|------|-----|----|
| Manure type | N | P | K |
| Cattle slurry (7% DM) | 6 | 5 | 32 |
| Dilute cattle slurry (3.5% DM) | 5 | 3 | 15 |
| Pig slurry (4% DM) | 19 | 7 | 20 |
| Units/tonne | | | |
| FYM | 3 | 2.4 | 12 |
| SMC | 3 | 3 | 16 |
| Poultry manures | | | |
| Broiler/deep litter | 14 | 12 | 36 |
| Layers (30% DM) | 13.7 | 5.8 | 12 |
| Layers (55% DM) | 23 | 11 | 24 |
| Turkey | 28 | 28 | 18 |

Mark Plunkett, 2018

Stakeholder group

An industry stakeholder group was formed in 2015 to discuss the most up-to-date information on the agronomy, quality, feeding of maize silage and farm to farm contracts. The result of this stakeholder group was the production of the *Maize Guide*, which was launched at the Teagasc tillage conference in 2017. The maize guide can be accessed at <https://www.teagasc.ie/media/website/publications/2017/The-Maize-Guide.pdf>.

“A base price is agreed and this is adjusted up or down depending on starch and DM result

The group identified the need for written contracts versus the current standard gentleman's agreement. A gentleman's agreement relies on huge level of trust between the grower and the end user, which is something Tommy has achieved with his customer base. The maize guide contracts are more secure for both newer growers and purchasers.

The maize guide contracts are based on:

- Yield and quality.
- A base price is agreed and this is adjusted up or down depending on starch and DM result.
- Third-party adjudicator is important from both grower and purchaser perspective.

Traditionally, maize and fodder beet are the most common forage crops grown by tillage farmers for livestock farms but wholecrop wheat and barley and the grazing of catch crops are options. Another option is grass, grass grown on tillage farms can be utilised for silage, grazing or zero grazing.



William Prendergast, dairy farmer
Michael Kennedy from Knockroe,
Cashel, Tommy Prendergast, Conor
Kavanagh and Gary Prendergast.

can be saved by using them. If you are importing organic manures without making adjustments to chemical fertiliser applications, then the organic manures will not be saving you any money. The use of organic manures can dramatically reduce costs and leave your soils in a better condition.”

Many tillage soils are index 1 and 2 for both P and K. A recent trial conducted at Oak Park Research Centre on winter wheat showed that a P index 3 soil yields 1.5t/ha more grain than a P index 1 soil.

Tillage farmers getting high yields have high offtakes of P and K from their land. Each tonne of grain removes 3.8kg P and 10kg K.

“It's absolutely vital fields that are under continuous tillage are treated right, the application of organic manure really puts the heart back into the soil,” says Tommy.

Along with nitrogen, phosphorus and potassium benefits (Table 1),

slurry is a valuable source of organic matter. Improving soil organic matter will increase aggregate stability, reduce susceptibility to compaction and soil erosion. Nutrient leaching is reduced and soil fertility is increased through improved nutrient availability.

Tommy feels that organic manure can play an important role when it comes to fertiliser application in spring. Having an up-to-date fertiliser plan will allow you to project your ability to import organic manure during the year. “Having up-to-date soil sample results is essential for accurate planning and can also help reduce fertiliser costs,” he says.

With good planning and mutual trust livestock and tillage farmers can work together to ensure expansion can continue and costs can be saved and, most importantly, soils and the environment benefit too.

The nitrogen derogation: what's new

Brendan Smiddy
Teagasc Dairy Advisor, Middleton

Tim Hyde,
Environment specialist, Teagasc Crop,
Environment and Land Use Programme

Derogation farmers in 2018 have 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 the 15th June. After this date slurry can only be applied using low emission equipment.
- If all slurry is applied before the 15th 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 derogation plan that were received in soil laboratories from 01/01/2018 cannot be for an area of more than 5ha's.
- Soil samples taken prior to this date and used in derogation fertiliser plans can cover an area of up to 8ha's.
- A separate requirement is that there must be a minimum of one soil sample for every 5ha's.

Other derogation requirements that you need to know:

- Derogation farmers must apply each year to stay in derogation.
- The 2018 deadline for online applications is the 20th April.
- 2017 Fertiliser Accounts must also be submitted online by 20th APRIL 2018 for those who applied for a Derogation in 2017 and (also exceeded 170kg NpH in 2017).
- Where a new or amended Fertiliser Plan is submitted in 2018, only a plan produced by the Teagasc Online Nutrient Management Plan programme is acceptable.

- Fertiliser accounts for 2018, 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 31st March 2019.

- 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 onto your holding.

- Only soil analysis dated after 15th September 2014 can be used.

- You must submit

- A Farm Map indicating location soil samples;
- A fully labelled Farmyard Sketch showing manure storage facilities and livestock housing, that provides a link with the buildings outlined on the fertiliser plan;
- Plan;
- Soils.

- If fertiliser plans are subsequently amended for either new soil analysis, Farm Map and/or Farmyard Sketch, they must be submitted online.

- Soil samples must be for every 5Ha of All land declared on BPS 2016 (including owned, leased and conacre lands) where farmers are availing of soil P build-up.

- 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 <http://www.agriculture.gov.ie/ruralenvironment/environmentalobligations/nitrates/nitratesderogation/2017derogationforms/>

What you should bring in to your Agri Advisor when completing your 2017 Derogation Fertiliser Records:

- Feed for 2016: To complete records for 2017.
- Fertiliser for 2017: To complete records for 2017.
- Feed 2017: To prepare plan for 2018.
- Soil samples: must be dated after

15/09/2014 to be valid for 2018.

- Projected stock figures for 2018.
- Any changes to land area and crops for 2018.
- All yard measurements: e.g. new buildings, slurry storage facilities etc.
- Copy of your 2016 fertiliser records (any opening stock of chemical fertiliser in 2017).

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 2018 taking account of any changes in land area, stock numbers etc.
- Clarity about what your fertiliser N and P requirements and what your limits are for DAFM Nitrates Inspections. 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 2017.
- Maps showing the possible high organic matter (OM) areas on the farm which may need to be analysed for OM.

Many farmers complete the derogation plan and records because they have to for cross-compliance, stock density reasons and to protect their Basic Payments. Having a detailed fertiliser plan allows farmers to discuss and plan nutrient management for the next few years. This includes a liming plan, where to target organic/chemical fertiliser; and maximising

grass yield and usage which is a win-win for all concerned.

Most derogation farmers take soil samples on a more regular basis to track P and K fluctuations while trying to maximise soil fertility. Discussing soil test results regularly will ensure farmers can maximise grass production and also comply with DAFM regulations.

The main advantages for farmers who apply for a derogation in 2018 as there are associated benefits besides receiving the derogation itself:-

- 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.

- 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.

- 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.

- 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.

- 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 applications based on land use, distance from the yard, etc.

- 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.

Feed and fertiliser

While completing the derogation application with your Teagasc advisor you will also discuss feed and fertiliser purchases for the previous year, stocking rates and any plans you may have to increase this, the implication of dropping rented land/taking on extra land, the amounts and types of fertiliser you should be purchasing, fertiliser allowances for different crop types etc, etc.

On the day you come in there are three main jobs to be done: complete records for the year just gone, apply for the derogation and prepare a fertiliser plan for the coming year.

In 2018 an increased focus needs to be on slurry storage calculations as this will highlight any surpluses or deficits on farm especially where farms are in an expansion mode in that it highlights changes in stocking numbers and/or investments that will be required over time.

Derogation farmers must have adequate slurry storage each year for all livestock over the winter period. Planning additional storage requires time and as planning permission 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.



In 2018 an increased focus needs to be on slurry storage calculations as this will highlight any surpluses or deficits on farm

IN SUMMARY

Farmers need to be aware of new Organic Matter maps which could affect the fertiliser P allowed on their farms

Farmers whose lands appear in the map below which is an 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.
- These fertiliser rates 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 or
 - If soils are mineral soils and the peat maps are incorrect then the Teagasc advisor or Agri Consultant can sign off on this or
 - Assume the soils are peaty and >20%OM and then only maintenance dressings are allowed.

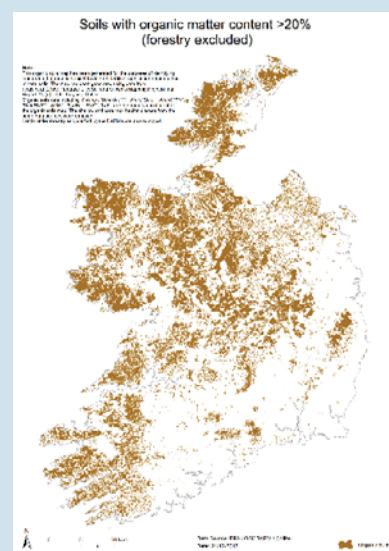
Farmers with low soil P status on their farms can avail of extra chemical (Bag P) in 2018-2021

The new Nitrates Action Plan (NAP) has increased P build-up allowances for P index 1 and 2 soils which will allow an additional 30kg/ha on P index 1 soils and 20 kg's/ha for P index 2 soils.

This only applies to farmers with a grassland stocking rate >130 kg N/ha. Farmers wishing to avail of these P build-up allowances must submit a nutrient management plan (NMP) to DAFM using the Teagasc on-line NMP, prepared by an approved Farm Advisory Service (FAS) advisor. Soil analysis is required, including soil organic matter unless it is certified to be mineral soil by a FAS advisor.

To ensure the protection of the environment, farmers using the increased P build-up rates are required to participate in a dedicated short training programme in the first year of the P build up programme, which is delivered by a FAS advisor.

Teagasc advises any farmers with a grassland stocking rate >130 kg N/ha to discuss this with their Teagasc advisor or Agri Consultant as these new allowances could allow substantial increases in the amount of chemical P permitted on some farms over the next few years when applied to P index 1 and 2 soils. This will address the low P index soils which are affecting 60%+ of Irish soils.



TEAGASC BEEF MANUAL

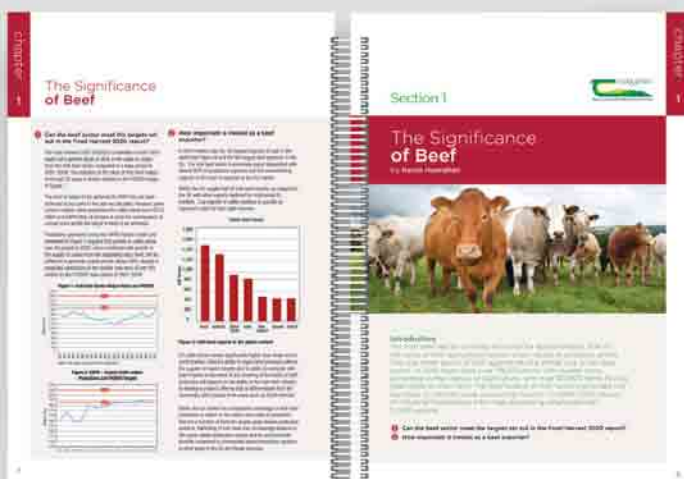
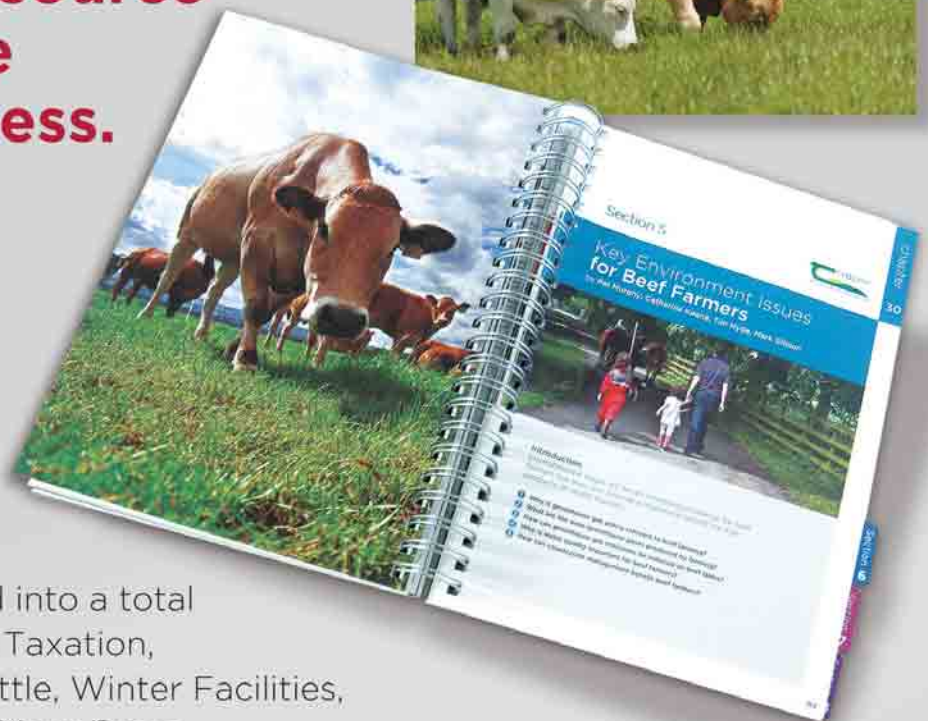
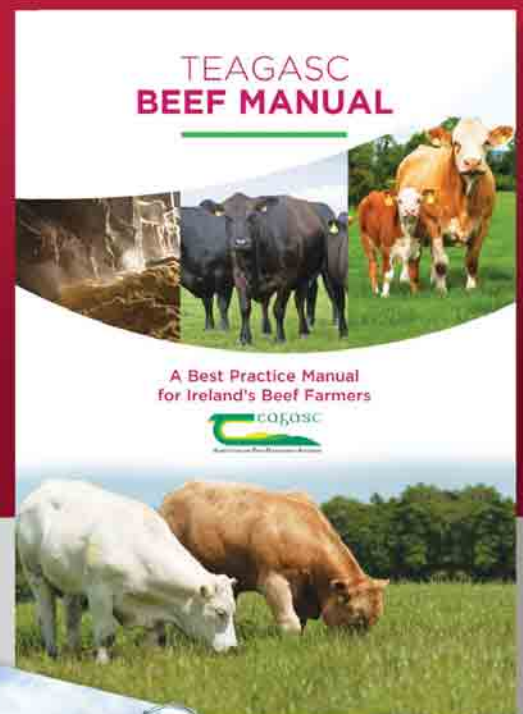
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These sections are further divided into a total of 52 chapters with titles such as: Taxation, Making Money from Bought In Cattle, Winter Facilities, Feeding the beef Cow, Managing Your Grass, Replacement Heifer Management etc.

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 beef farming the 310-page Manual is produced using tear-proof, water-proof paper for real world conditions.



**The Teagasc Beef Manual is available at Teagasc offices for €50.
For a limited time Teagasc clients can purchase copies for €25.**

Cross-compliance events

Andy Boland

Teagasc Crops, Environment
& Land Use Programme

Teagasc, in conjunction with the Department of Agriculture, Food and the Marine (DAFM) held a number of cross-compliance Clinics throughout the country over the last number of months.

Personnel from both organisations made short presentations at each event followed by a series of individual clinics covering various topics where farmers and their families with specific issues or problems could speak to advisors or Department officials to get advice or guidance. Events were advertised locally by Teagasc and the various farm organisations.

Sinead Mulcahy, assistant agricultural inspector in DAFM's Integrated Controls Division, said that these events provide DAFM with an opportunity to engage with farmers and to assist them in furthering their knowledge and understanding of the cross-compliance inspection process.

"We hope that by providing information on the areas where most non-compliances occur on farms, we will help farmers to mitigate against them and, ultimately, result in a reduced number of monetary sanctions being applied," says Sinead.

In addition to a DAFM presentation, farmers also had an opportunity to engage with DAFM officials and Teagasc advisors through one-to-one consultations, enabling them to ask questions pertinent to their own individual circumstances.

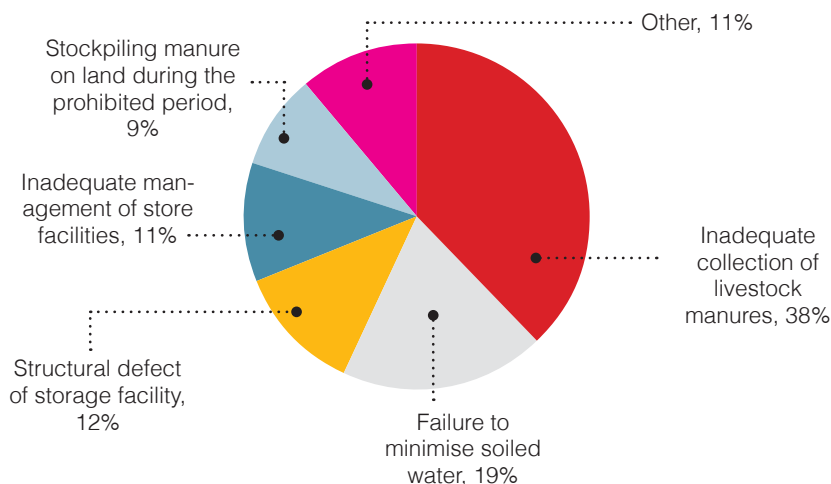
Topics covered by the DAFM presentation included the number of inspections carried out, how farmers are selected for inspection, the notice period provided prior to inspections and the main areas where non-compliances occur on farms.

The main areas where non-compliances occur include nitrates; where issues such as the inadequate collection of organic fertiliser, inadequate management of storage facilities and structural defects of storage facilities are common breaches.

Bovine identification and registration (IDR) is another area where breaches commonly occur, mainly associated with missing tags, and registration/notification issues. Similar breaches arise in bovine IDR where again missing tags is a common area where breaches occur along with census errors and flock register issues.



Nitrates breach distribution 2016



prove a big success



Martin O'Shea, Gathabawn, and Lar Sweeney, Johnstown, discuss cross compliance with Terry Carroll at a meeting on the topic in Kilkenny.

Severe poaching of land by cattle, noxious weeds and the removal of landscape features such as hedgerows are also common areas where breaches arise under the Good Agricultural and Environmental Condition (GAEC) standards.

Avoid penalties

Teagasc advisors showed how best to avoid penalties by calculating the correct amount of storage required for slurries, soiled water and farmyard manure, as well as the need for farmer involvement.

They also showed what was needed to complete a fertiliser plan for the farm, especially a derogation plan.

Plant protection products were discussed in great detail especially how,

and where, to store chemicals and what records are required.

The events were very well attended with over 200 people at some venues. Survey results show that farmer feedback from those attending was very positive with many indicating that this type of meeting consisting of short presentations followed up by access to staff an excellent way of receiving information.

Many also found that being able to discuss their individual issues on the night was very useful for them.

Following on from this series of meetings it is planned to hold a further round of events around the country in the autumn/winter period of 2018/19. Look out for dates locally.

10TIPS

Avoiding a cross-compliance problem

- 1** Talk to your advisor/consultant about cross-compliance and what is required.
- 2** Familiarise yourself with the DAFM booklet explanatory handbook for cross-compliance requirements sent to farmers in 2016.
- 3** Attend information meetings on the topic and don't be afraid to ask a consultant/advisor if you think you have a problem. Speak to other farmers if you know them to have had an inspection.
- 4** Check Teagasc and DAFM websites for information.
- 5** Understand and follow your fertiliser/nutrient management plan.
- 6** Continually check farm structures to make sure they are leak-proof and that clean water is not mixing with soiled water and slurries.
- 7** Keep on top of bovine and ovine registration, eg missing tags, flock register, dispatch dockets and census dates.
- 8** Keep adequate records, eg animal remedies, pesticide application records, feed and fertiliser receipts.
- 9** Know the difference between eligible land and ineligible features on BPS. Make sufficient deductions if applicable.
- 10** Retain and maintain landscape features and they may only be removed if replaced in advance.

Steady income from a growing asset

Very few investments deliver a guaranteed, income tax-free return. Forestry delivers these benefits and more...

John Casey

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

“One of the nice things about forestry is that you don't have to worry about the vagaries of the market, at least in the first 15 to 20 years, and you are independent of big agribusiness,” according to Michael Murphy, a tillage farmer from Middleton, Co Cork.

Michael planted 8ha of broadleaf trees, under the Native Woodland Establishment Scheme (NWS Est.) over the winter of 2015 to 2016. This scheme supports the establishment of new native woodlands on green field sites. In addition to his forestry crop, Michael grows 10ha of barley, incorporating some wild bird cover, and leases out the remainder of his agricultural holding.

Michael's view was that the 8ha were, at best, only suitable for summer grazing because of impeded drainage.

“This particular site has always been very wet and I felt the forestry would help to dry it out and also have a drying effect on the surrounding fields” was Michael's considered view. “You are not trying to force your land to do something nature had never intended it to do.”

Having looked into various land-use options and taking into account his interest in both the environmental

landscape and the recreational benefits of broadleaf woodland, Michael opted for the NWS Est. As well as earning a tax-free premium of €635/ha for the next 15 years, Michael feels that he will (in time) be leaving a living, vibrant legacy to future generations of his family.

The NWS Est is one of a number of options under the Afforestation Programme, supported and administered by the Forest Service. It provides opportunities to protect and expand Ireland's native woodland resource and associated biodiversity and is a key biodiversity measure within Ireland's national forest policy.

It also supports a wide range of other benefits and functions arising from native woodlands. Benefits include reversing wider habitat fragmentation, the protection and enhancement of water quality, landscape enhancement, cultural heritage, wood and non-wood products and services, the practice of traditional woodland management techniques, environmental education and carbon sequestration.

Unusually for a farm forestry owner,

Michael decided to take on much of the work himself. As required by the scheme, he used the expertise and guidance of a registered forester, Mark Donnelly, to draw up the planting application.

Taking into account the wet ground conditions of part of the proposed plantation, Michael and Mark decided to plant a combination of 30% alder, 30% oak and 30% birch, with the remaining 10% consisting of biodiversity-enhancing species such as holly, Scots pine, hazel, etc.

Paths and open areas were planned and integrated throughout the plantation. These will provide further access to this recreational haven for the enjoyment of Michael and his family into the future.

The planting application was submitted and received grant approval from the Forest Service. Michael sourced the trees himself, organised ground cultivation and then preceded to plant (with assistance) the 8ha area over the winter of 2015-2016.

Maintenance work in 2017 included spot-spraying of the grass vegetation



IN SUMMARY

If you have any thoughts of planting, here are some key points to be aware of:

- The afforestation (new planting) grant generally covers all establishment costs.
- The forestry premium is paid annually for 15 years and is income tax-free; USC is payable.
- Land planted since 2009 remains eligible for its BPS payment provided it meets certain criteria.
- Matching the most suitable tree species to your land is critical.
- Forestry is a permanent change of land use.
- Planting forestry may affect other farm payments, for example under the Areas of Natural Constraint scheme.
- Environmental restrictions may affect grant approval.
- Forestry allows you to heat your home by growing your own fuel (from thinnings) and improves the environmental and amenity value of your farm.
- Early forest management (the first four years) will largely determine the ultimate quality of your forest and the return on your investment.
- Timber is a valuable, sustainable and natural crop.

For further information, contact your local Teagasc forestry development officer or visit www.teagasc.ie/forestry



Michael Murphy from Midleton tending to his trees.

with a herbicide, particularly around some of the slower growing broadleaf trees. A small number of dead trees were also replaced as part of routine management.

Michael has availed of the free advisory service provided by myself, John Casey, and we discussed the cur-

rent and future management of his emerging woodland. Both of us were impressed by the additional lammas growth apparent at the end of the 2017 growing season.

Lammas growth is the additional growth that occurs sometimes in autumn, particularly in plantations

where the trees are thriving.

Michael is keen to avoid herbicide use unless absolutely necessary, so trampling of vegetation around individual trees, also known as standing down, might be a new activity in 2018.

The next major task for Michael will be the shaping of the broadleaves at the four- to five-year stage. This is the process of removing forks and large competing side branches and is essential to achieving long straight lengths of quality timber.

Michael says he is very happy with his native woodland plantation, as well as his active involvement in its on-going management. "In the past, we always had plenty of red squirrels and badgers in this area, but in the last 15 years they have become increasingly rare.

"Hopefully the forestry will give them some habitat to recover. Frogs have virtually disappeared locally, with the exception of this particular field, so with a number of wet patches in the site which are not suitable for tree planting, they should have some protected space."

Some stars for your spring garden

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

Not until the snowdrop escapes the winter blues does the promise of spring become reality. Those tiny little nodding *Galanthus* lure even the most confirmed armchair gardeners back out into the fresh air.

Once outside, the beauty of the awakening spring garden is revealed. I'm always amazed at just how vibrant the *Cyclamen coum* is. From humble beginnings this little ground-hugging, tuberous plant becomes a great swath of colour beneath deciduous trees. As long as they like their habitat they self-seed, adding to the rich tapestry of the spring garden. And if you really want to spread the colour around you can collect the seeds in July and disperse them yourself.

Hellebores are among the hardest working of the spring flowering plants. They flower from the middle of January right up to early summer. They are the perfect woodland plant surviving under shade but doing equally well in full sun.

Hellebores need very little attention especially if they are semi wild but in the cultivated garden you might like to tidy them up by pruning off the previous year's leaves just as the new ones emerge around the beginning of January.

The flowers come in a fantastic range of colours and can be either single or double.

The only drawback with hellebore is that they tend to seed profusely all around themselves which isn't as much of a problem in a natural or wild garden as it is in a cultivated one.



Primroses are definitely a must-have plant, in any spring garden, from the native *Primula vulgaris* to the more robust and showy drumstick primrose *Primula denticulate*.

If you have a water source *Candelabra primula* are a great addition because of their ability to thrive along the edges of rivers and ponds, growing in the form of colourful tiered flower spikes.

Primroses, as a rule, tend to prefer life along ditches and forest floors so if you replicate these ideal conditions you will succeed in naturalising them in your garden. Some of the new double flowered varieties are quite stunning and are a great addition to pots and window boxes if your garden space is limited.

When I was a child the cowslip was in abundance in the fields around and about but not so much now unfortunately. Although their seed is finding favour again in some of the better known wildflower mixes.

To finish, it might be interesting to have a look at a rarity and none better than *Lathraea clandestina* which will certainly cause you to stop in your tracks when you see it for the first time.

A haze of purple jewels at the base of a wounded willow looks, for all the world, like a magnificent crocus but they are a parasitic plant that grow on the roots of many trees especially willows, without causing them any noticeable harm,... the best kept secret in a spring garden.

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