



# Today's Farm

Business, production, environment and countryside issues [www.teagasc.ie](http://www.teagasc.ie)

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Forestry, botanics and more....



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COMMENT



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

## Controlling costs, selling well and respecting heritage

Pat, Tony and John McGuinness, who farm near Ardee, Co Louth, produce grain as cost-effectively as possible; dry it on farm and sell forward. "We're conservative; we won't sell more than 50% of our projected yield," says Tony.

The farm was bought by Pat and Tony's father in 1942 and it has fabulous 19th century grain management relics. These include an indoor threshing unit - like an immobile combine made of wood - and a reservoir to drive an electric motor for grain drying.

Restoring this heritage costs time and money but is something the brothers are passionate about. "Like our predecessors here we try to focus on new technology and take a long term view," says Pat. "You just do your best until things improve again. As they will."

## Smacht a choimeád ar chostais, go leor a dhíol agus meas a léiriú ar an oidhreacht

Ar fheirm in aice le Baile Átha Fhirdhia, Co. Lú, déanann Pat, Tony agus John McGuinness arbhar a tháirgeadh ar bhealach chomh costéifeachtach agus is féidir, triomaíonn siad ar an bhfeirm é agus ansin díolann siad é. "Bímid cúramach, ní dhíolaimid níos mó ná 50% dár mbarr réamh-mheasta," a deir Tony. Ba é athair Tony agus Pat a cheannaigh an fheirm i 1942 agus tá iarsmaí iontachacha ón 19ú haois don bhainistiú gráin le feiceáil inti. Ina measc, tá aonad buailte arbhair faoi dhíon - cosúil le hinneall bainte doghluaiste agus é déanta as adhmaid - agus tanc chun mótar leictreach triomaithe arbhair a thiomáint. Ní mór airgead agus am a chaitheamh agus an oidhreacht sin á hathchóiriú, ach tá na deartháireacha an-tugtha don iarracht.



**FUTURE VIEW**  
Looking to technology in tillage  
>> 22-23

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**Cover** | Pat, Tony and John McGuinness with Teagasc crops advisor Conor Dobson (second from right) say grain marketing, including forward selling, is as important as agronomy in achieving a positive result from barley production.

# 'Expand Your Horizons' evening seminars

**T**eagasc and the National Rural Network (NRN) are jointly organising an innovative series of evening seminars, Expand Your Horizons 2017, running from the end of January to March. The purpose of the seminars is to provide information on the range of agencies, services and funding and training opportunities available in rural Ireland.

**Tuesday, 07 March**

• Offaly: Tullamore Court Hotel 8PM - 10PM

**Wednesday, 08 March**

• Cavan: Kilmore Hotel, Cavan 8PM - 10PM

**Thursday, 09 March**

• Monaghan: Four Seasons Hotel, Monaghan, 8PM - 10PM

**Monday, 13 March**

• Wexford: Riverside Hotel, Enniscorthy 8PM - 10PM

**Tuesday, 14 March**

• Wicklow: Lawless Hotel, Aughrim 8PM - 10PM

**Wednesday, 15 March**

• Carlow: Dolmen Hotel, Carlow 8PM - 10PM

**Wednesday, 22 March**

• Kilkenny: Springhill Court Hotel, Kilkenny 8PM - 10PM



**FARM WALKS**

- March 9 Agri Aware/Teagasc Farm Walk and Talk. Teagasc Grange Animal and Grassland Research and Innovation Centre, Dunsaney, Co. Meath.
- March 9 Agri Aware/Teagasc Farm Walk Pallaskenry Salesian Agricultural College, Pallaskenry, Co. Limerick.
- March 10 Agri Aware/Teagasc Farm Walk, Teagasc Kildalton Agricultural College, Piltown, Co Kilkenny.
- March 10 Agri Aware/Teagasc Farm Walk, Teagasc Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork.
- 28-30 March, Farmhouse Cheese Making (QQI/FETAC) Teagasc Moorepark.

**EARLY SPRING GRAZING EVENT FOR BEEF FARMERS**

- Mar, 9, Mayo**
- Venue: Michael Mellett, Mochara, Shrule, Co. Mayo
  - Event Time: 3PM

**HOW SAFE IS YOUR WATER?**

- Monday, 14 March 2017**
- Growing safer crops seminar for the horticultural food sector
  - Venue: Teagasc Ashtown
  - Event Time: 9:30AM - 1PM

**SEPTORIA CONFERENCE**

- The conference will focus on understanding resistance development and to promote the measures that should

help to reduce disease pressure in crops

- Venue: Dunboyne Castle, Co. Meath, Ireland Event Time 09.30

**13-17 MARCH FORESTRY ADVISORY CLINICS**

- Teagasc to Host On-Farm Biogas Workshop assessing the viability of on-farm co-digestion systems
- Venue: Animal Bioscience Research Centre, Teagasc Grange, Dunsany, Co. Meath
- Event Time: 10AM

**TEAGASC AGRI ENVIRONMENT CONFERENCE**

- Thursday, 06 April 2017**
- Venue: Tullamore Court Hotel
  - Event Time TBA





# Teagasc career events

**T**eagasc is the main provider of further education and training for the land based sector. Full time courses in agriculture are offered at levels 5 and 6 at three Teagasc colleges ( Ballyhaise, Clonakilty and Kildalton) and at three linked private agricultural colleges ( Gurteen, Mountbellew and the Salesian Agricultural College, Pallaskenry) Horticultural courses are offered at two Teagasc colleges (the College of Amenity Horticulture, National Botanic Gardens and at Kildalton). Equine programmes are offered at Kildalton and forestry at Ballyhaise. Detailed

information on Teagasc courses is available at [www.teagasc.ie](http://www.teagasc.ie)

Teagasc has a major involvement in nationwide higher education delivery at levels 7 and 8 for the land based sector through its extensive partnerships with the higher education sector. This linkage also provides opportunities for Teagasc further education learners to progress to higher education.

The need for new knowledge and skillsets is increasing rapidly across the land based sector. Education will be a key enabler for young entrants to meet new opportunities and challenges. Research studies highlight the

high returns to investment in agricultural education. This is particularly true in an Irish context with exceptionally strong economic returns to formal agricultural education both to individual farmers and to the country at large.

Teagasc is inviting schools, students, teachers and parents to attend one of these special career events at a college convenient to you. These event provide a unique opportunity to update you on career opportunities in and Teagasc course offerings for the land based sector.

## COLLEGE OPEN DAYS

### Thursday 9th March 2017

- Open Day 10.00am – 1.00pm (Tours on-going)
- Teagasc, Agricultural College, Ballyhaise, Co Cavan. H12 E392
- Principal: John Kelly
- Phone: 049 4338108
- Email: [ballyhaise.college@teagasc.ie](mailto:ballyhaise.college@teagasc.ie)
- Open Day 2.00pm – 4.00pm (Tours on-going)
- Teagasc, College of Horticulture, National Botanic Gardens, Glasnevin,

Dublin 9. D09 VY63

- Principal: John Mulhern
- Phone: 01 8040201
- Email: [botanic.college@teagasc.ie](mailto:botanic.college@teagasc.ie)

### Friday 10th March 2017

- Open Day 11.00am – 2.00pm (Tours on-going)
- Teagasc, Agricultural College, Darara, Clonakilty, Co Cork. P85 AX52
- Principal: Majella Moloney
- Phone: 023 8832500
- Email: [clonakilty.college@teagasc.ie](mailto:clonakilty.college@teagasc.ie)

### Wednesday 15th March 2017

- Open Day 10.30am – 12.30pm (Tours

on-going)

- Gurteen Agricultural College, Ballingarry, Roscrea, Co Tipperary. E53TP93
- Principal: Mike Pearson
- Phone: 067 21282
- Email: [info@gurteencollege.ie](mailto:info@gurteencollege.ie)

### Thursday 23rd March 2017

- Open Day 10.00am – 2.00pm (Tours on-going)
- Salesian Agricultural College, Pallaskenry, Co Limerick. V94 EP80
- Principal: Derek O'Donoghue
- Phone: 061 393100
- Email: [info@pallaskenry.com](mailto:info@pallaskenry.com)



# Is clover part of your expansion strategy?

## Clover and dairy cow genetics performed at Clonakilty Agricultural College

### George Ramsbottom

Dairy specialist, Teagasc Animal and Grassland Research and Innovation Programme, Oak Park

**H**igh genetic-merit breeds and crossbreeds at Teagasc Clonakilty have been managed extremely well, and delivered excellent milk and reproductive performance over the past three seasons. While I admit to having been a sceptic initially, the performance of the cows grazing on the high clover-content swards makes for a compelling argument to use the plant in dairy swards. In this article, I'll summarise the first three years of analysis led by researcher Brian McCarthy and farm manager Fergal Coughlan at the college.

### Dairy herd performance

Three different breeds/crossbreeds are being evaluated at Clonakilty. These are: pure Holstein Friesian (HF), first cross Jersey X Friesians (JEX) and threeway crosses (3way) that are 50% Norwegian Red, 25% Holstein Friesian and 25% Jersey. The September 2016 EBI and sub indexes are presented in Table 1 below.

The data in Table 1 shows that the three groups of cows are all of high EBI, compared with the national average of €66. All three groups are negative for milk volume kg, particularly the JEX, but all are positive for milk solids kg.

Yield of milk solids did not differ statistically between the breeds. Concentrate input averaged 340kg/head/annum, so overall milk solids

yield was excellent for the cows all stocked at 2.75 LU/ha. On an A+B-C system the milk from the JEX group was worth €40 more than that from the HF group, with the 3way group intermediate.

Fertility is the other major driver of profitability in spring-calving herds, with excellent performance observed for all three groups of cows at Clonakilty.

No difference was recorded for all measures of fertility in Table 2, apart from pregnancy rate to first service – which was higher for the JEX than for either of the other two groups.

The weight of the HF cows at Clonakilty was greater than that of either of the other two groups, and the milk solids yield per 100kg liveweight was greatest for the JEX cows.

**Table 1:** September 2016 EBI and sub indexes of the three breeds/cross breeds at Clonakilty

	EBI	Milk	Fertility	Calving	Beef	Maint.	Health	Mgt.	Milk (kg)	Fat (kg)	Protein (kg)
HF	€102	€27	€41	€32	-€9	€7	€0.0	41.7	-4	6.0	3.2
JEX	€111	€40	€27	€33	-€27	€35	-€1.2	€4.4	-164	9.8	2.3
3way	€128	€33	€48	€38	-€14	€21	€1.2	€1.1	-127	6.5	2.2



**Clover**

The white clover study at Clonakilty is now starting its fourth year. Four treatment groups are being investigated at this former tillage unit. Diploid or tetraploids ryegrass swards with or without clover are being trialled with equal numbers of the cow breeds tested above. All swards were stocked at 2.75 cows/ha. The results of the first three years of the study are presented in Table 3.

A grass-clover system receiving 250kg N/ha produced an extra 1,467kg DM/ha in comparison with a grass-only system receiving similar N.

The pasture production profile of a grass-clover system is significantly different to that of a ryegrass-only system: similar pasture growth rates from February to May, higher pasture growth rates from May to October and lower pasture growth rates over the winter period when compared with the grass-only systems.

The same grazing management practices developed for ryegrass pastures are equally applicable to grass-clover systems. However, during the first grazing rotation in spring, at similar high stocking rates, there will be a requirement for an additional 150kg of silage DM/cow for the grass-clover system.

White clover content averaged 26% in the Clonakilty study: low levels in spring (<10%), increasing to a peak of 40-50% in late summer/early autumn.

In the study, perennial ryegrass ploidy had no significant effect on milk production, pasture DM production or clover content.

Animal performance has been consistently high in the grass-clover systems at similar stocking rates: +58kg of MS/cow higher.

White clover can be incorporated in grassland either by direct reseeding or over-seeding using a recommended medium leaf size cultivar. It's important that established perennial weeds are controlled prior to establishment and post-establishment using a white clover-friendly herbicide to control seedling weeds.

The incidence of bloat was associated with pastures with clover content of > 50%, low sward DM content and cows with an excessively high appetite when introduced to fresh grass-clover pastures. In the future it will be necessary to develop grazing strategies that avoid pastures with excessively high or low clover content.

The results of these studies indicate that incorporating white clover into ryegrass pastures has the potential to reduce costs (lower N input), increase animal performance (increase milk production per cow) and improve environmental sustainability (reduced nitrous oxide emissions).

**Table 2:** Three-year average (2014-2016) milk production, fertility performance and weights of the three breeds/crossbreeds at Clonakilty

	HF	JEX	3way
<b>Milk production</b>			
Milk solids yield (kg/cow)	455	466	448
Fat % / protein %	4.43 / 3.64	4.76 / 3.79	4.71 / 3.80
<b>Fertility performance</b>			
Calving to conception interval (days)	95.6	95.0	97.0
Pregnancy rate to first service (%)	60.0	74.8	57.1
Six-week in-calf rate (%)	81.3	86.1	77.2
Empty rate (%)	6.7	5.9	6.0
<b>Liveweight</b>			
Annual liveweight (kg/cow)	531	480	496
Kg MS / 100kg LWT	86	97	90

**Table 3:** Sward and milk solids production of cows grazing clover and grass or grass-only swards (2014-2016)

	Grass + clover	Grass only
<b>Sward production</b>		
Annual dry matter yield (T DM/ha)	17.0	15.5
Clover content (%)	26.0	-
Pasture disappearance (kg DM/cow/day)	16.5	15.5
<b>Milk production</b>		
Milk solids yield (kg/cow)	486	428
Fat % /protein %	4.63/ 3.73	4.65 / 3.76
Lactating liveweight (kg/cow)	507	499



Farmer  
FOCUS

Pat Walsh, who farms near Durrow in Co Laois, sees the addition of clover as a way to potentially increase the intensity of production from his grazing platform: "There was clover grown on the farm in the distant past and our light land should suit clover, so we are reseeding with clover in the mix now. "I'm working with my local Teagasc

advisor Fintan Monahan and Mike Egan from Moorepark and we are optimistic we can gain another 50kg of milk solids per hectare as a result of incorporating clover." Pat's herd of 165 cows grazes on 125 acres. Last year, each hectare of the milking platform yielded 18.5t of dry matter. "We are highly stocked and clover should help us to produce even more from the land we have."

# Team building

*With herd size increasing since the removal of milk quotas, dairy cow housing has come into focus from both cow welfare and management points of view.*

**James Mullane**  
Teagasc, Clonmel

A good dairy cow house should be cow friendly, easily managed and labour efficient. The importance of planning and carefully designing cow housing facilities is crucial in achieving this.

Dan Butler, Clerihan, Clonmel, Co Tipperary (pictured right), has recently constructed a cow housing facility. "We operate a 100% autumn-calving liquid milk herd supplying all milk under a liquid contract to Glanbia," says Dan, who is currently milking 115 Holstein Friesian cows with an average yield of 7,500 litres of milk at 3.54% protein and 4.35% butterfat (609kg milk solids/cow).

Unusually for a liquid/winter milk producer, Dan does not operate a split calving herd. All cows calve in the autumn, with a six-week calving rate of 90% and a calving interval of 365 days. "Cow housing is very important to us," says Dan. "All the cows will be milked from the shed over the winter period. Unlike our spring-calving colleagues, perhaps we need to place even greater emphasis on the design of a dairy house."

Dan was milking the herd out of a cubicle house, which, as on most farms, had evolved as an amalgam of different sheds and conversions over the years.

However, all the cubicle housing was under the one roof as herd size grew and cow type evolved. Over the years, the existing facility became outdated and was not meeting the requirements of his herd.

Cow cubicle bed lengths ranged from 1.95m to 2.1m (6ft 6in to 7ft). There was not enough feed space available to all cows in the herd. The ventilation inlets and outlets were not adequate for the numbers of stock housed and because of the fact that sheds had been grafted on to one another, valley gutters were present

which required constant maintenance.

These limitations provided problems with regard to environmental mastitis and keeping cubicle beds dry and clean was a constant battle. However, key features of the existing dairy housing, which Dan was keen to maintain, were the loafing area in which he normally identifies cows in heat and also the straw-bedded calving area.

The loafing area was particularly important, as Dan uses AI on all cows and, in the past, he would pick up almost 90% of the cows in heat in this area. The loafing area is an area free of any obstructions similar to a large rectangular pen with a non-slip surface. The straw-bedded loose calving area was also important in order for calving cows in the autumn.

Although cows routinely calve outdoors, this calving area is important if required during adverse weather which makes outdoor calving impractical.

The key design features of the shed had to incorporate the following:

- All cows to be able to feed at once – 0.6m/cow (2ft feed space required per cow).
- Cubicle dimensions to take into account cow type and size 2.4m x 1.2m (8ft long X 4ft wide) head to head and 2.6m x 1.2m (8ft 6in x 4ft wide) against the wall.
- All cow walkways/scrapper passages 2.4m (8ft wide) and feeding areas 4.2m (14ft wide) to be of dimensions which allow free movement of the cows without risk of injury or bullying.
- The loafing area for identifying cows in heat and the straw-bedded area to be retained or incorporated into the design of the structure.
- The cubicle shed to be easily managed and labour friendly.
- Meet all Department of Agriculture, Food and the Marine requirements with regards to slurry storage.

## Planning the new facility

Dan had been considering changing the structure for a while and consulted me with regards to his plans for the structure. Firstly, we set about examining the existing facilities.

The existing shed was measured and sketched out to scale. Dan's local discussion group, the Suir Valley group, was consulted with regards to the project and all comments and ideas were taken into consideration before making final decisions.

Initially, options were looked at



which involved altering the existing layout in order to achieve Dan's key requirements. Cubicle beds were to be removed and refitted, passageways widened and a central feeding passageway installed. Shed stanchions would have to be altered in order to make the new layout fit.

After careful examination and drafting of the new layout, it was decided that after going to the cost of altering the shed, ventilation was going to be compromised. As a result, the overall projected cost was not significantly cheaper than completing a new build.

The site was also limited in that it was close to the farm boundary. However, because of its close proximity to the milking parlour and silage clamps, relocating it was not an option.





If completing a new build, the shed structure was going to require planning permission from the local authority, so a draftsman or building design planner had to be employed. Aidan Kelly of Kelly Agri Design and Planning Services was consulted and, together with all parties' input, the layout was designed and drawn up.

All of the key design features outlined which Dan required from the facility were met. The new facility incorporated the existing slurry storage tanks in the design. A new slurry storage tank had to be constructed in order to comply with nitrates regulations. However, by retaining the existing slurry tanks, it reduced the overall cost of the build.

Dan has seen the benefit of the shed in terms of improved cow welfare,

reduced cases of environmental mastitis and reduced labour requirements. The new cubicle house has a fibre cement roof which prevents any drip, thereby keeping cubicles dry.

The new facility also incorporates a unique feature. The lighting in the shed is worked off a timing switch in order to encourage the onset of heat in the cows. This is especially important as cows are bred during periods of short daylight (November and December) on Dan's farm. In order to observe cows in the evening, red lighting is provided. Red light is not visible to cows and is less disturbing to them.

The shed has 133 cow cubicle places and 33 maiden heifer cubicles. The overall cost of the cubicle house worked out at €1,250 per cow place.

The building was constructed in accordance with Department specifications. The building was completed by John English Fabrications and Paul Bergin. Both building contractors are local and any adjustments and alterations could easily be made by all parties involved in the construction phase.

This article hopefully demonstrates the importance of planning any new building project on a farm. "By setting out the key design features we needed from the new housing facility and working with all parties involved, including my Teagasc advisor, local discussion group, planning consultant and the construction team, we ended up with a shed which meets my needs and those of the herd," concludes Dan.

# New technologies

**Pearse Kelly, David Kenny and Bernadette Earley**  
Teagasc Animal and Grassland Research and Innovation Programme, Grange

**L**arge numbers of calves are currently moving from spring-calving dairy herds to beef farms throughout the country. How these calves are treated on arrival and in the days and weeks that follow has a huge bearing on their lifetime performance. With proper management, healthy, well-grown calves that continue to grow at optimum daily gains will be turned out to grass later in the spring. Where their management is below standard, there will

be increased deaths, higher costs, lower lifetime performance and greater workloads.

Technologies that can help beef and dairy farmers to reduce labour requirements and keep calves healthy and meeting performance targets are a welcome addition to any farm.

There are many different pieces of equipment now on the market. The following are some which have been tried and tested at Teagasc Grange.

## Digital rectal thermometers

It is good practice to use the rectal thermometer on all calves when they arrive on the farm to ensure they are fit and healthy and in particular that they are not showing signs of pneumonia.

For Teagasc Grange staff, this is routine and any calf that is above 39.5°C (103.1°F) is taken out into a separate pen for treatment until it is fully recovered.

Any calf that looks dull or is off its feed during the rearing phase also has its temperature taken. New electronic rectal thermometers make this a much easier, faster, more accurate and safer job. They can be purchased for approximately €20 to €25.



## Digital anemometers

Housing calves in well-ventilated but draught-free housing is essential to keep calves healthy. Many farms set up micro-climates within calf sheds where calves can lie down to maintain their body temperature.

There is always a risk of draughts though. Measuring air speed at calf height using an easy-to-use handheld digital anemometer gives the calf-rearer the comfort of knowing that the animals are in a draught-free environment. These are a very accurate and can be bought for less than €60.

Air speed can have a direct affect on the temperature at which a calf has to use its additional energy to keep warm. This has an influence on the lower critical temperature (LCT). LCT for healthy calves to two weeks old is in the range of 10°C to 15°C.

As calves grow, their LCT reduces, enabling them to withstand lower temperatures without becoming stressed. Similarly, as growth rates increase, LCTs tend to reduce.

A draught is considered to be present if wind speed is greater than 0.5 metres per second (m/s) in any of the calf pens.

Draughts hitting calves causes them to lose heat energy. Energy loss will double when wind speed rises above 0.5m/s. If air speed within the shed is greater than 0.5m/s, changes should be made to the ventilation in the calf shed. Most digital anemometers have the added benefit of measuring the ambient air temperature in a shed.

## Calf-rearing colostrometers

The greater the quality of colostrum produced by cows, the better the immunity passed on to calves that drink that colostrum in the first few crucial hours after birth.

Colostrometers are available for on-farm use to test the quality of colostrum. They work by measuring the density of the colostrum.

You simply place the colostrum in the cylinder provided, insert the colostrometer and wait to see where it floats (it is important that this





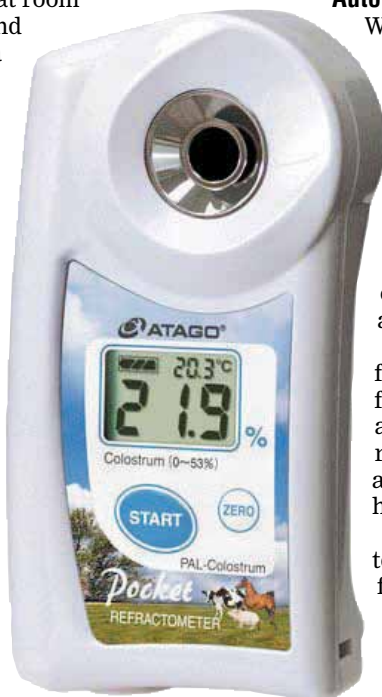
# for calf rearing



is done inside, at room temperature, and not outside in a shed).

If it is poor-quality colostrum, then it will drop into the red zone, whereas good-quality colostrum will see the colostrometer settle in the green zone. Colostrometers can be purchased for less than €35.

There are also digital hand-held devices called Brix Refractometers (pictured), which will test the quality of colostrum by measuring the total solids percentage. If the Brix value is above 20%, then you can assume that it is a high-quality colostrum. These are easier and quicker to use than the colostrometers, but cost considerably more.



## Automatic calf feeders

While calves can be successfully reared using a variety of manual feeding equipment from buckets to large multi-teated systems, there has been considerable interest in recent years in the use of automatic calf feeders, particularly where large numbers of calves are being reared annually.

Teagasc has successfully used this technology for many years at Grange and has found it to be both reliable and labour efficient, as well as being useful in the health management of calves.

There are a number of systems available and many can facilitate either whole milk or milk replacer.

Typically, a single machine can feed 60 to 120 calves using feed stations positioned in different pens.

Each calf is assigned an electronic ID, either in the form of an ear tag or collar, and its nutritional plan up to weaning can be set up in advance.

Indeed, the machine will automatically wean calves over a preset period and this is further facilitated where electronic concentrate feeding sta-

tions are added, which record daily concentrate intake.

Calves typically become accustomed to the machine within one to two days, particularly where they have been used to suckling a teat since birth.

In our experience, nutritional diarrhoea or scour is rarely encountered in machine-fed calves where good-quality milk replacer is used. Indeed, recent data from Teagasc Grange shows that monitoring the feed intake and feeding behaviour of calves on an automatic feeder can alert farmers to developing clinical disease (e.g. pneumonia).

Our study showed that calves had a tendency for reduced feed intake (approximately 8%) during the three days prior to the identification of pneumonia, compared with healthy calves.

As is the case with any electrical equipment, a contingency plan is required for a power outage and farmers also need to be vigilant to ensuring continuous water supply during periods of cold weather.

sheep

# Growing more grass for your sheep flock

*You should be aiming to grow 10t of grass dry matter per hectare in 10 grazings across your farm*

## Frank Hynes

Sheep Specialist, Teagasc Animal and Grassland Research & Innovation Programme

Michael Fitzgerald and his son James from Mocharra, Shrulce, Co Mayo, hosted one of the Teagasc Grass 10 campaign events in February. Key management components within the campaign include setting up a paddock system, keeping an eye on grass heights or yields and knowing when to move animals into, or out of, a paddock. Father and son say Teagasc advisor Eamonn Patten is a key member of the team.

The Fitzgerald farm consists of 25ha divided into four blocks. They run a flock of 130 mid-season lambing ewes and keep 35 to 40 replacements each year. Ewes are stocked at 11 per hectare and typically wean 1.6 lambs per ewe mated. All progeny other than replacements are taken to slaughter and output per ewe is over 70kg of liveweight. Grass is key to these achievements.

## Grass for early spring

"We close paddocks in good time and in rotation from late October onwards," says Michael Fitzgerald. "The paddocks will have been grazed out well and quickly in the autumn. This allows them maximum time to recover."

Closing date has a significant bearing on the amount of grass available in spring. Table 1 shows the difference in grass cover available in spring when fields were closed on two different dates in autumn for two different farms.

Closing in mid- to late October results in significantly more grass

available in mid-February than for fields not closed until late November. Ideally, fields should be closed for a rest period of 120 days or four months over the winter.

## Fertiliser

"The second key factor is fertiliser, in particular nitrogen (N)," says Michael. "In late January, we spread almost 30kg N per hectare (23 units per acre). We need to use a higher level for the second rotation as we are stocked at over 10 ewes/ha.

"This nitrogen helps deliver grass for the first grazing rotation and also helps get growth going quickly once it is grazed off. The combination of resting and fertiliser application should result in having an average farm cover of 5cm to 6cm (600kg to 700kg DM/ha) when we start to turn out sheep after lambing."

To get the best value for your nitrogen, it is important that the basic soil fertility in terms of phosphorous (P), potassium (K) and soil pH (lime status) is optimum. If soil samples indicate P or K levels are below optimum, slurry or a compound fertiliser, such as 18:6:12, pasture sward or some other compound will help rectify the deficiency.

## What is grass worth?

One kilogramme of nitrogen yields approximately 12kg of grass dry matter. If urea costs €350/t, this puts the cost of the 1kg of nitrogen and, therefore 12kg of grass, at 76c. When concentrates cost €300/t, the cost of 12kg of dry matter is €3.46. Which would you prefer – 12kg of grass dry matter for 76c or 12kg of dry matter of meal at €3.46? I would take the grass, thank you.

## Grass for the second rotation

The next challenge is to make sure you have adequate quality grass for the second and subsequent rotations. The aim should be to have enough grass to feed ewes until grass growth rate picks up to match demand. The day this occurs is often referred to as 'magic day'. It occurs around 14 April,



but may be slightly earlier depending on what part of the country you're in. Every effort should be made to make sure you have adequate grass to get you to that date in the first rotation.

## Working the percentages

Teagasc researcher Philip Creighton says that farmers should aim to have 20% of the ground grazed by mid-March and 40% by the end of March. This 40% will then be rested, getting time to recover, with enough grass available for the ewe flock for the second rotation. The remaining 60% will be grazed during the first two weeks of April when demands from ewes and lambs are increasing rapidly in line with peak milk yields.

Sheep are regularly stocked lightly and spread out over a large part of the farm for the first couple of weeks after lambing. However, from late March, they should be grouped together. This reduces the number of





**Michael Fitzgerald and his son James farm at Mocharra, Shrule, Co Mayo.**

groups of animals and will facilitate grazing paddocks more quickly, providing the opportunity for faster regrowth.

The aim should be for the first and second rotation to graze tightly to 3.5cm to 4cm.

This will ensure a leafy regrowth will be available when lambs start to graze and help ewes maximise milk production during this critical five- to six-week period.

“The key to managing grass for the remainder of the year is to have adequate divisions,” says Michael Fitzgerald.

“The minimum should be five permanent divisions per group of sheep. By having larger groups, you will have less groups, and therefore need fewer divisions overall. We’ll further divide the five permanent divisions per group with an electric fence, particularly during periods of rapid grass growth.”

## CONCLUSION

Managing grass carefully, enabling you to graze out small areas of land in not more than three days will directly increase the overall amount of grass you grow throughout the year. This will help you achieve the target of 10 tons of grass dry matter per hectare in 10 grazing’s throughout your farm.



The aim should be to have enough grass to feed ewes until grass growth rate picks up to match demand

**Table 1:**

Farm	Field number	Date closed	Grass yield in mid- Feb (kg DM/ha (cm))
Farm 1	Field A	10th October	1,200 (8-9)
	Field B	20th November	125 (4)
Farm 2	Field A	Late October	1,300 (8-9)
	Field B	Late November	150 (4)

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# KT Beef Farm Improvement Plans – what you need to do **Part 2**

## Aidan Murray

Beef specialist, Teagasc Animal and Grassland Research and Innovation Programme

In the January-February edition of *Today's Farm*, my colleague James Keane outlined three of five key tasks which knowledge transfer (KT) discussion group members are required to complete before 31 May 2017 as part of the farm improvement plan (FIP) component.

They were the Teagasc eProfit Monitor, the breeding plan and the animal health measure.

This article will address the remaining areas of farm health and safety and grassland that complete the FIP.

### Farm health and safety

As part of the KT groups programme, each group must hold a mandatory farm health and safety meeting in year one. In addition, the group facilitator should have a one-to-one meeting with each group member who must complete a farm health and safety work advisory template tailored to their own farm.

As well as completing this as part of the FIP in year one, it will have to be updated and revised in subsequent years of the programme to ensure a constant focus on health and safety.

The focus in the FIP is on work organisation. The reason is that evidence shows that there is an increased risk of accidents occurring when farmers are:

- Overworked.
- Lacking sleep and are hungry or thirsty.
- Working in a poorly organised system.

The main causes of farm accidents are:

- Human error – rushing fatigue; poor work organisation.
- Slips / trips / falls – rushing; inadequate footwear; dirty and untidy farmyards.
- Contact with farm machinery.
- Livestock – unpredictable movement; poor handling facilities; no escape route.

The work organisation document needed for the FIP is relatively straight-forward. It is divided into four distinct areas:

**1 Farm details** records the area being farmed, stocking rate and whether you operate a breeding or non-breeding system.

**2 Labour Input and Demand by Season:** The purpose of this section is to get you to examine what labour is used on the farm. It breaks the farming year down into the four seasons and you are asked to estimate how much time per week is spent on farm work according to season and it also highlights when help is available. Completing this section will help you identify the times of year when there is a surplus or a deficit of labour.

**3 Identify the main work areas where labour supply/demand is problematic.** Once you identify any potential problem areas along with your facilitator, you are asked to consider options to help improve the situation reducing the risk to you and those working on the farm.

**4 Overall recommendations.** This is the final section and is a natural follow-on from the previous sections. Based on the areas already identified, it looks to target what changes you make in the short term – i.e. the next 30 days – and what can be done in the longer term over the next six months.

Remember, this is all geared to getting you to think about how you approach your work on the farm and to make things safer for you and your family.

When assessing the risks on your farm, be mindful of the top five killers on farms, which are:

- Tractors/machinery/PTO shafts.
- Livestock.
- Falls from a height.
- Falling objects.
- Slurry/drowning.

### Grassland plan

One of the key competitive advantages Irish farmers have over our competitors is that we have a climate that is good for growing grass. When well-managed grass is a highly nutritious, sustainable and cost-effective feed that should be used to help drive farm profitability.

The reality is that on many farms, it is an under-used resource and the KT groups programme, through the grassland plan, targets an improvement in overall grassland management. All beef farmers must address through the FIP, in conjunction with their advisor, a number of critical components which influence grassland productivity.

The grassland FIP focuses on three basic areas which are fundamental to grassland management:

**1 Soil fertility:** If you feed the soil you feed the plant, so this is your starting point. Do you know the soil fertility on the farm? If not, the plan may recommend that you take soil samples to get baseline information for your farm, but this is not compulsory. If you are in GLAS, you may already have soil samples, so the plan may focus on acting on soil sample results by addressing the issue of lime,





phosphate and potash status.

Other issues to be addressed include timing slurry application to coincide with the growing season and optimum nutrient uptake.

**2 Grass utilisation/grazing plan.**

With improved fertility comes higher grass yields. There is no point in growing extra grass if you are not in a position to utilise it. This is the focus of the second section of the grassland plan.

Areas of stocking rate, turnout dates, grazing system, number of grazing divisions and how to maintain grass quality should all be discussed with your advisor. Areas for potential improvement should be identified.

Silage quality, winter feed budgets and using tools to improve grassland management are other areas that require attention on some farms.

**3 Grass production.** In essence, this section looks to examine what the reseedling history on the farm has been. At higher stocking rates, there could well be a benefit to reseedling and increasing the proportion of perennial ryegrass in swards. Along with your advisor, you could look at a potential reseedling programme.

Is there an opportunity to incorporate more clover in the sward? At lower stocking rates, reseedling may not be attractive, but existing swards could be improved with better management. For some farms, the plan may focus on dealing with weeds such as docks, rushes, ragwort, etc.

The FIP is there to help you identify areas within your farm, which, if addressed, would help to reduce your costs, increase your output or improve your overall efficiency.

The farm plan will make a number of recommendations, but it is up to

you whether or not you want to follow through on them. Unlike in BTAP, they are not compulsory tasks.

Our research shows though that adopting key practises by discussion group members will improve your profitability over time.

Engage with your advisor to highlight a few key areas in your FIP that you will work on over the next few years. Select areas that you are interested in improving and which will benefit you.

Do not look on the KT group programme just as a scheme that will pay you €750/year for attending group meetings. The money is merely an incentive to show you the benefit of partaking in a discussion group. It represents a very small financial gain compared with the returns you could get from adopting best practise as being promoted by the FIP and discussion groups.

# Is labour availability a problem?

A registered farm partnership might be the answer

**Tom Curran**  
Farm Structures Specialist, Teagasc  
Rural Economy Development  
Programme

**A**s the scale of your farm operation increases, the amount of work also greatly increases. Good facilities and mechanisation can help to alleviate this, but the nature of farming means it will always require a high level of hands-on work.

Farmers can spend longer hours working and find it difficult to secure dependable hired labour. You often here farmers say 'I had a great lad there for the past two years but he has got a job elsewhere'. The turnover in farm labour can be high, even where working conditions are excellent.

Uncertainty around hired labour coupled with increased workload through expansion intensifies the amount of work to be done and the time it takes to do it. This puts pressure on the farmer's ability to focus on key performance indicators, farm planning and more importantly to take time off for family.

Registered farm partnerships provide a sustainable business structure that can apply in many farm situations. The partnership can be used to amalgamate two or more farms together, to bring a young person on board where there is no farming successor or to formally involve a farming successor in the farm business.

Where farmers work together in a partnership structure, they share the available resources and all partners can take advantage of the benefits of working together. The key benefit that has been highlighted by farmers who have established a partnership is to their work-life balance.

With a bit of thought and structure, the potential gains in efficiency of

labour input can greatly improve work-life balance for all partners. The on-farm agreement is the key document to set out the labour input.

## The busy times

The busy times of the year, such as spring, require an all-shoulders-to-the-wheel effort to get through the volume of work. Working together in partnership with another farmer means that this work is carried out more efficiently.

Two jobs can be done in parallel or there is a second pair of hands to tackle larger jobs. An example would be on a dairy farm where one farmer milks the cows while the other feeds calves. Then they head for breakfast to discuss and plan the day.

By working together, farmers get to take a breather and get enough rest while still getting the work done to a high standard on the farm. A simple example would be operating alternative nights off in the calving season so that all partners catch up on sleep.

## The quieter times

In the quieter times of the year, farmers in partnership can structure time off to plan for weekends away or take a family holiday. Normally, the arrangement to take weekends off is kept flexible to allow a partner to take time when they need to or want to. This works well for partners in the partnership provided it is agreed and balanced equally.

## Increasing capability of the business

We all have different skill sets, abilities and interests. When farmers work together in partnership, it increases the pool of knowledge, skills, abilities and interests available to run the farm business. With good discussion, the pooling of knowledge can lead to better decision-making



on critical issues that affect the farm business.

Skills can include stockmanship skills, grassland management skills, financial skills, IT skills and interpersonal skills among others. The key to creating a successful partnership is making sure that the partnership makes use of these skills. This can be done by assigning tasks and responsibilities to make best use of the skillset of each partner.

## Establishing a working partnership

In Ireland, as with many other countries, we have a long history of farmers co-operating in various ways to complete work on the farm. This is a very positive feature of Irish farming culture. In most cases, these are informal arrangements where neighbours help each other out.

A common feature of successful formal partnerships that have been in operation for 10 years or more is that the farmers had built up a working relationship or friendship gradually before making the step to form a farm partnership. Typical examples of this would be where the farmers were part of a discussion group, they shared tasks on their farms or they helped each other out in times of need.

Through this informal co-operation, the farmers built up a working relationship over time and then progressed on to a farm partnership. The learning from this is that there needs to be a 'getting to know you' period





before the agreement is formalised. The question is whether you know, or can you identify, someone who you already work well with that you could consider partnership with.

Once you identify a person whom you can work with, further compatibility can be established through discussions on expectations, needs, goal-setting, deciding on systems of production, investments and how the farm will operate on a daily basis.

#### What is success built on?

Success in a partnership is very much about the working relationship between the partners. They do not have to be best friends, but they have to establish an effective working relationship. The partnership, like any collaborative arrangement, must deliver mutual benefits to all partners to become established and to remain successful during its lifetime.

Included in this is economic viability and the ability of the farming enterprise to deliver an adequate income to meet the needs of each partner. Success is also built on strong core values between partners. These include transparency, trust, honesty, respect, understanding, shared decision-making and good open communication at all times.

It is essential to have a well prepared on-farm agreement which gives clarity on how the farm will operate on a day-to-day basis and a written partnership agreement that gives

clarity to the formation, operation and dissolution of the partnership. Both of these documents should be reviewed on an on-going basis to make sure they remain current and relevant.

In the past, many collaborative farming structures, including partnerships, were formed with very little thought given to the operation of the arrangement and even less thought to the dissolution.

It is vital to keep in mind that the dynamics of a relationship between two farmers in an arrangement may change at any time. The default comment is that they fall out, but in reality the cause of this change can be anything – a death, a serious injury or a change in people's outlook in life or the arrangement has simply served its purpose for a period of time.

The key to a successful partnership is to devise an exit strategy during the formation of the partnership. This strategy must also be to the fore in any major decision-making and investments during the lifetime of the partnership.

Farm partnerships can offer a solution to many farmers who experience issues involving work-life balance and hired labour issues. Make sure it is included in your list of potential solutions.

Teagasc has published a booklet titled *Guidelines to forming a farm partnership*. It is available to download at [www.teagasc.ie/rural-economy/farm-management/collaborative-farming/](http://www.teagasc.ie/rural-economy/farm-management/collaborative-farming/)



# You can't beat real silage data

*These samples from County Meath show just how variable silage quality can be*

**Edward Egan**  
Teagasc Navan, Co Meath

Testing your silage quality is the first step to improving it. With this in mind, 53 sheep and beef farmers from Meath and Dublin who are participants in the KT programme submitted a total of 74 silage and haylage samples to me. Samples were tested between October 2016 and January 2017. Farmers had the option of submitting fodder samples through Teagasc or through local feed merchants for testing.

These results do not represent an average of the silage on Irish drystock farms. For example, some farmers only tested the cut that they intended to feed at a critical time, such as to ewes in late pregnancy. As a result,

some farmers tested their best fodder.

The aim of the exercise was to:

- Discuss farmers' own results at group meetings.
- Make feed recommendations based on known results.
- Discuss practices causing these results.
- Discuss changes in practices to improve next year's crop.

### Dry matter

Sheep farmers like high DM silages because it means fewer bales, less effluent, less straw and less lameness. Wilting increases the fodder intake by sheep, beef cattle and suckler cows. However, high-DM fodders tended to have reduced CP, lower DMD, higher pH and sometimes poorer aerobic stability.

To maximise dry matter, mow the grass in the afternoon when dry matter (and sugar) concentrations are likely to be at their highest. To maintain silage quality, wilting needs to be short and sharp. Wilt for a maximum of 30 hours.

Among these samples, it could be seen that long wilting periods lowered silage DMD and CP levels. Research by Tim Keady of Teagasc indicates that each 24 hours of wilting reduces the DMD by 0.6% to 2.2%. To speed up wilting, spread grass over the entire ground.

### Crude protein

Crude protein levels are highest in young leafy high-DMD grass. Tim Keady's research found that every one week delay in cutting date resulted in a loss of about 1.5% in CP levels. To maximise the amount of leafy material, graze the silage ground down tight to 3.5cm to 4cm by mid-March. This will remove any dead butt left over from previous autumn and winter. Mow the crop when the seed heads start to come out of the grass.

### Dry matter digestibility

This is a very important figure. The higher the DMD, the higher the intake and performance. To maximise the DMD% of the silage crop, con-

**Table 1:** Range in fodder test results from 74 samples

	Lowest	Average	Highest
Dry matter (%)	17	33	74
pH	3.5	4.4	5.6
Ammonia (% total N)	1	9.6	21
Protein (% DM)	7	11.7	18
DMD (% DM)	51	67	77

**Table 4:** P & K fertiliser nutrient application rates guidelines for first cut silage (kg/ha)

Soil index	1	2	3	4
P required	40	30	20	0
K required	175	155	125	0

(Source: J.Patton, 2016)

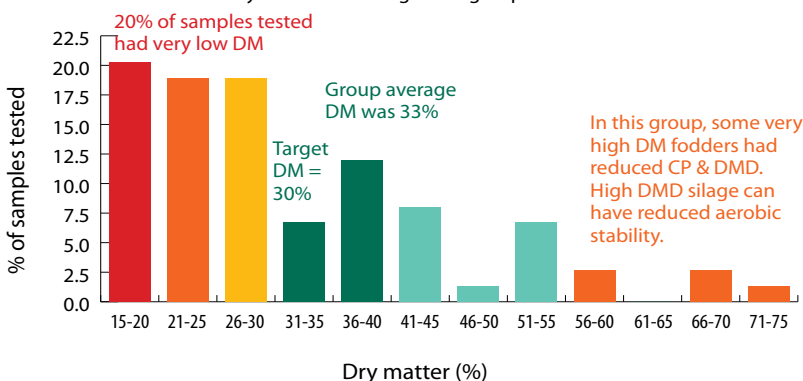
**Table 2:** Main reasons for drop in DMD

Cause of drop	Size of drop (DMD % units)
1 week delay in harvesting	3%
Old pasture low in ryegrass	5%
Lodging	9%
Not grazed (dead butt)	3%
Heating at feed out	3%
Bad preservation	3%

(Source: Teagasc Grange Beef Research Centre)

**Figure 1**

Variation in fodder dry matter % among 54 KT group members



**Table 3:** Target silage DMD for different types of livestock

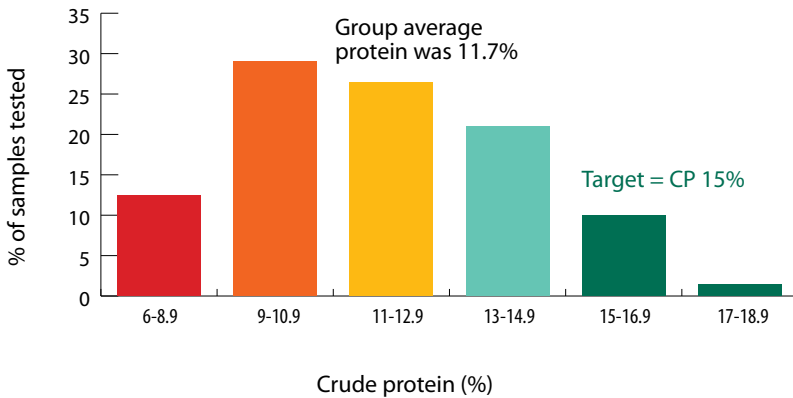
Livestock type	DMD
Breeding ewes in late pregnancy	75%*
Finishing cattle	75%*
Growing cattle	72%**
Milking suckler cow or dry suckler cow requiring BCS gain	70%**
Dry suckler cow requiring maintenance	66%**

(Source: \*Tim Keady 2012, \*\*Quality Grass Silage for Dairy & Beef Production Systems, 2016)



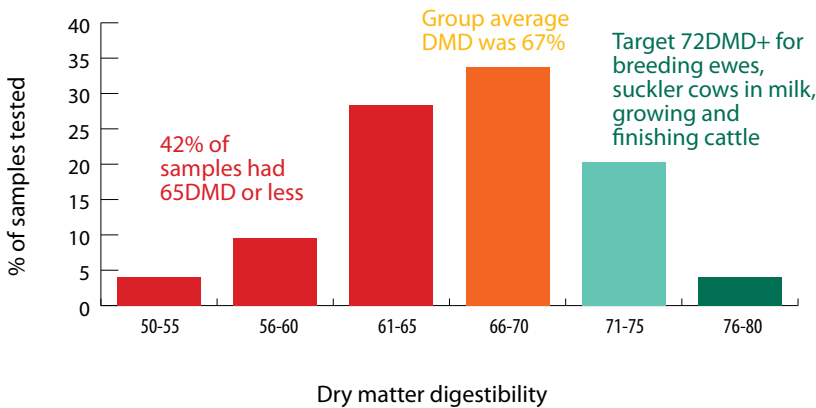
**Figure 2**

Variation in fodder crude protein % among 54 KT group members



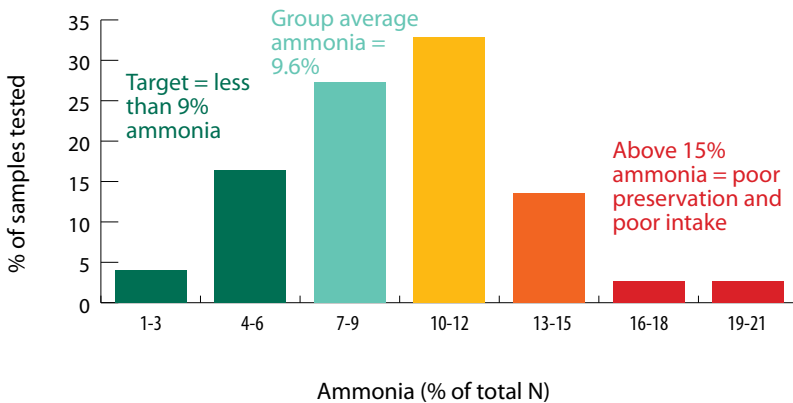
**Figure 3**

Variation in fodder DMD among 54 KT group members



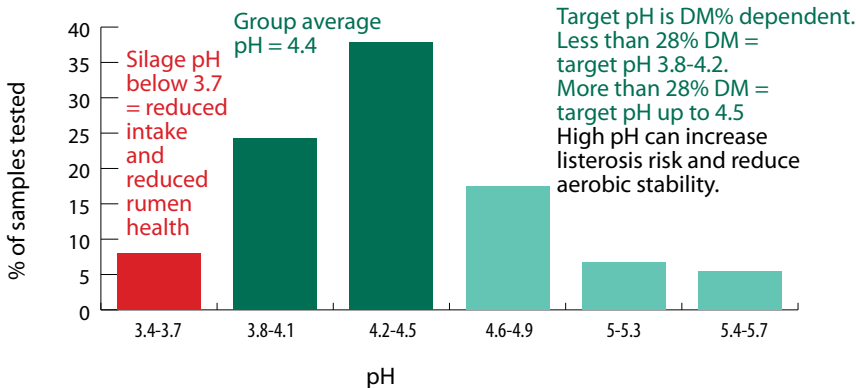
**Figure 4**

Variation in fodder ammonia % among 54 KT group members



**Figure 5**

Variation in fodder pH among 54 KT group members



consider the Teagasc research findings in Table 2. Graze down the butt by mid-March and mow the crop when the seed heads start to come out of the grass. Avoid under-use of N, as the tendency is to wait for crops to bulk up. Avoid too much N, as crops can lodge. See N, P and K section below.

**Livestock will decide target DMD**

As shown in Table 3, the type of livestock on your farm will decide your target DMD silage.

**Ammonia %**

Of the samples tested, 5.4% had ammonia levels above 15%. This indicated they were poorly preserved. The farmers with the high ammonia silage noted that it reduced intakes.

To minimise ammonia levels: soil contamination appeared to increase ammonia levels in a number of samples. Soil contamination, particularly when combined with high pH, increases the risk of listeriosis. Mowing too close to the ground, lodging or excessive tedding can also increase the risk of soil contamination. Allow at least one day for every two units of N applied. This appears to particularly important for low dry matter silages.

**pH**

Of the samples, 8% had a very low pH (3.7 or less) which is likely to reduce intake. The target pH depends on the DM% of the silage. If the silage is less than 28% DM, then pH of 3.8 to 4.2 indicates good preservation. However, if the silage is more than 28% DM, then silage can be well preserved up to a pH of 4.5. High pH can increase the risk of listeriosis and reduce aerobic stability. However, it is quite common to have a high pH in well-preserved high-DM silages.

**N, P and K requirements**

As a rough guide, grass will use about two units of N per day. Typically apply 80 to 90 units of N per acre on ryegrass swards. To get good yields, it is important to soil test and meet the P and K requirements of the crop as outlined in Table 4.

**Key conclusions from this exercise**

- Massive variation in silage quality between farms and within farms.
- Tendency to underestimate good-quality silage.
- Tendency to overestimate poor-quality silage.
- Key characteristics often hard to predict accurately without lab analysis, e.g. protein %.
- Most of the factors influencing silage quality are within the farmers' control.
- Farmers who make good silage year after year have a plan.

# Securing your income for 2017

*Claiming your entitlements accurately and in good time is more important than ever*

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

**T**able 1 shows us just how important direct payments were to the Irish farming community in 2015 (the most recent year for which we have data). The figures for 2016 will not be much different. We are in an era of volatile and depressed prices, with global politics and weather having a significant impact on farmgate prices. It is crucial that you get all monetary supports due to you.

As we go to print, the 2017 Basic Payment Scheme (BPS) application process is due to open early to mid-March. The 2017 application forms (where online is not mandatory) and information packs are due to issue at the same time. Why not make a phone call to your advisor telling him of your plans for this year and schedule an appointment.

The Department of Agriculture, Food and the Marine has added extra functionality to the online process this year. This is part of building the system to handle all applications and it will be mandatory to apply online for everyone by 2018.

The online system this year 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 enti-

tlements must be submitted.

Last year, a revised penalty system was introduced. This was not agreed until after the closing date. These changes were communicated to all applicants during the autumn of 2016. This will continue and only applies to online applications. This allowed some checks (dual claims and other small errors) to take place immediately after the closing date and gave the applicant the facility to respond without a penalty.

This will continue, but will only apply to online applications. This is another advantage of the online system and it prevented almost 2,000 penalties in 2016.

### The 2017 application

The BPS is an application that must be made if you wish to qualify for other schemes, for example GLAS, BDGP, and Organics, etc.

The BPS application process encompasses:

- Basic Payment Scheme.
- Greening Payment.
- Continuation of the Young Farmers' Scheme if you were an applicant in 2015 or 2016.
- Aid for Protein Crops (peas, beans, lupins).
- Areas of Natural Constraint.

### Making changes to the herd/crop/flock identifier

Every year, a significant number of farmers make changes to the herd/crop/flock number for one reason or



We are in an era of volatile and depressed prices, with global politics and weather having a significant impact on farmgate prices

**Table 1:** Value of direct payments and contribution to income in 2015

Sector	Direct payments	Contribution to income (%)
Dairy	20,039	32
Cattle rearing	13,148	104
Cattle other	15,851	97
Sheep	17,609	109
Tillage	24,385	71
<b>All</b>	<b>17,168</b>	<b>65</b>





another. For example, a herd number in a single name was joined with a child to avail of the National Reserve and/or the Young Farmers 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 District Veterinary Office (DVO) to process the application.

Making changes to the identifier can result in late or slow processing of the BPS application, as there are extra steps involved in this processing.

Please note:

- If a change must be made, it should be completed by 15 March to allow the DVO adequate processing time.
- The date the application is received becomes the date of change. When making a change to the identifier, include a copy of the application and a stamped addressed envelope and request the copy be returned 'stamped received'. This should be given to your advisor to upload with the BPS applications.
- If no correspondence is received by you from the DVO by the time of your BPS appointment, you must inform your advisor of this fact, as a new blank BPS application (paper or online) 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.

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

### National Reserve (NR)

In 2015, there was just under €25m available for distribution to successful applicants. This was funded by a once-off cut to the national BPS fund. From now forward, this fund will be

significantly less, I would expect, as it is replenished from unused funds from the previous year (2015), unused entitlements and claw-backs.

All entitlements were used up in 2015, so there are none available from that source. From speaking to advisors, few farmers seem interested in selling entitlements due to the 50% claw-back on sales. So this is unlikely to yield a large pot for the NR.

In 2015, the NR granted BPS entitlements to successful applicants worth just over €180. On top of this, all of the applicants also were paid Greening, which was worth a further 44% (€77). Some of these applicants also qualified for the Young Farmer Scheme (~€65).

The opening of a National Reserve was recently announced. The rules are expected to be similar to the 2015 Scheme. The NR will have 2 categories:

- Young farmers.
- New entrants.

### The Young Farmers Scheme (YFS)

This scheme delivers a top up to young farmers who have recently taken up farming, depending on when you started. To be eligible, you must have started in the last five years and you must be 40 or younger in 2017.

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 2017, you are guaranteed to get at least three payments; the fourth and 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. I expect that the terms and conditions will be broadly similar to last year. The funding for this scheme is similar every year during the current CAP agreement.

Those who applied last year 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. This application is in the Department's online application system.

### Deadlines

The deadline for all schemes (BPS, NR and YFS) is **Monday 15 May 2017**. 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 would like help with the Basic Payment Scheme or any of the other CAP schemes, make an appointment with your advisor immediately. Before you arrive at the meeting, make sure you have reviewed all the documentation you have received from the Department.

If you plan on making significant changes to the 2017 application, state that you may need longer than usual, so that all can be completed in one visit.

The more complex cases may also involve a solicitor, accountant or valuer and involve some or all of the following transactions:

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

# A history of forward thinking

*Progressive tillage farmers have always looked to technology and the future whether in production or marketing*

**Shay Phelan**  
tillage specialist Teagasc Crops, Environment and Land Use Programme  
**Conor Dobson**  
Teagasc tillage advisor, Drogheda

While Irish grain growers achieve some of the highest yields in the world, we still find ourselves struggling to make ends meet at the end of the season. Many will blame high input costs such as fertilisers, seeds and sprays, while others will blame poor grain prices. In truth, it is probably a combination of both.

Growers' ability to negotiate reductions in input costs are limited given that most input prices are relatively

static, with the exception of fertiliser and land prices. However, more and more growers are taking a proactive role in selling grain in an effort to improve overall grain pieces.

Forward selling of grain has had a chequered history in Ireland, with some growers still nervous of the concept. Many people are still reeling from the decision to forward sell grain in 2012 when the perfect storm of poor yields, poor quality and harvesting difficulties resulted in growers failing to meet agreed contracts. They were penalised by having to supply grain, which they didn't have, by buying it from a booming market.

However, some have stuck with the idea of forward selling or agreeing contract sales and they have reaped the benefits in the last four harvests.

Figure 1 shows the average European dried feed wheat prices available on a monthly basis since 2010. It highlights the volatility of prices over the last number of years.

What is interesting is that, with the exception of one or two years, the price of grain, on average, is at its lowest just after harvest in August and September, just when most Irish



growers want to sell.

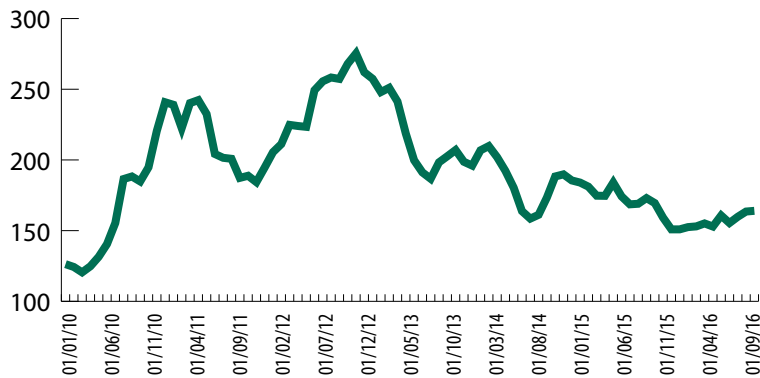
With the exception of 2010 and 2012, selling some grain before harvest had the potential to increase the overall grain price achieved on farm.

While the market has been declining since 2012, in each subsequent year there were opportunities to sell at a higher price than what was available at, or after, harvest. While some might call it risky to sell something that you don't already have, it seems to be far more risky to sell everything at harvest time. Selling a proportion of the grain on a regular basis is probably the safest bet.

Teagasc has estimated that there was the potential of acquiring an extra €10/t to €20/t by selling a proportion of your grain each month from January to August each year from 2012 to 2016 rather than selling all in August. It has been noticeable in the premium markets, for example malting, gluten free, etc., that forward selling has become more popular, as this allows growers to plan and budget their crop inputs.

One of the key aspects of forward selling is knowing your own growing costs. Teagasc has many tools such as the e-Profit Monitor and e-Crops that can help growers to calculate their own costs. The crop margins

**Figure 1**  
Feed wheat price (€/t)



Prices courtesy of AHDB





**ABOVE:** Pat and Tony McGuinness with the old threshing system, powered by a reservoir on the farm.

**LEFT:** Pat and Tony McGuinness, Conor Dobson and John McGuinness.

booklet that is printed every year is also a good guide as to what the likely growing costs will be for cereal crops in that particular year. Table 1 shows the average cost per tonne for the different cereal grains at different yields, excluding straw sales, on your own land.

Having this information, along with the average recorded yields in each field, makes decisions around selling grain much more straightforward, as the farmer can see clearly if the grain is being sold at a profit or loss. The table clearly shows that land or fields that don't have high yield potential are unlikely to grow crops at a profit at current grain prices.

### Practical experience

The McGuinness family of Pat and Tony and their nephew John, who farm near Ardee, Co Louth, have been forward selling grain for the last number of years. They grow mainly feed wheat, feed barley, oats, oilseed rape and potatoes.

"We first started forward selling/drying grain in the early 1990s because of falling harvest prices," says Tony. "Over 60% of our area farmed is on conacre or long-term lease. This can cause a lot of uncertainty on farm, as conacre prices can change on

a yearly basis. Having some certainty in relation to grain price allows us to budget and cost what land is viable in advance."

Tony says they will forward sell at most 50% of their project yield. "We find we can achieve a better average price overall," says Pat. The McGuinnesses dry their own grain and store it for sale throughout the year. This allows them to sell when the time suits them and provides cashflow during quieter times of the year.

Their local merchant plays an important role in selling this grain and they rely on the information coming from the trade and also grain market websites such as Nogger's blog, AHDB markets, etc.

Tony also feels that the key to forward selling is to know your produc-

tion costs of all crops grown, as this will enable you to make key decisions regarding the forward selling of your grain.

He also feels by forward selling grain, it allows him to forward purchase inputs and obtain these at keener rates. The brothers store the grain at 18% to 19% and then dry it down to the required moisture content when the grain is being sold.

The home farm, where Pat lives, was bought by their father in 1942. The farm was always a progressive one and has a number of innovations including a reservoir, which was used as a source of hydro-electric power. The electricity generated (in the mid-19th century) ran an engine which powered a threshing system in the loft of one of the farm sheds.

This thresher, built of wood and still in magnificent condition, looks for all the world like a combine which has lost its wheels and header. The drum and straw walkers are essentially the same as any modern combine, which is based on straw walkers rather than a rotary system.

"The family, who embraced these new technologies, were always looking for a better way to grow and sell grain, just like us," concludes Pat McGuinness.

**Table 1:** Average cost per tonne for cereal grains

Yield t/ac	Feed wheat		Feed barley		Malting barley	Feed oats	
	Winter	Spring	Winter	Spring		Winter	Spring
2.6	193	165	177	145	146	154	143
3.0	167	143	154	126	126	134	124
3.2	156	134	144	118	118	125	116
3.6	139	119	128	105	105	111	103
4.0	125	107	115	94	95	100	93
4.4	114		105				

Costs/tonne excluding straw based on 2017 Crops costs and returns booklet

# Pig slurry a valuable fertiliser for spring crops

Eileen Casey, Ciaran Collins & Mark Plunkett

**R**aymond Moloney farms near in Ballinspittle, Co Cork, with his two sons Killian and Gavin where they run a pig and tillage enterprise on their farm. The business consists of a 400-sow integrated pig unit producing 5,900m<sup>3</sup> (1.3m gallons) of slurry every year and the tillage enterprise of 160ha which is made up of a combination of owned and rented land plus some share farming. “We use a lot of the slurry from the pig unit on our tillage land, but we also export a large quantity of the slurry to neighbouring farmers,” says Raymond. “We regularly soil test to monitor soil pH, P and K levels in order to maintain soil pH in the optimum range and adjust slurry applications based on soil P and K levels.”

**Fertiliser (P & K) value of pig slurry**  
Phosphorus (P) and potassium (K) applications are based on soil analysis in conjunction with crop P and K off-takes based on grain yields. For example, the average spring barley yield on the farm over the last number of years has been 8t/ha.

On index 3 ground, the crop removes 30kg P/ha (25 units/ac) and 91kg K/ha (73 units/ac). Therefore, to meet crop nutrient requirements during the growing season and maintain soil fertility levels, the fertiliser programme must deliver this level of nutrient. Table 1 shows N, P and K advice for spring barley yielding 8t/ha at different soil indexes (1 to 4).

“Depending on soil results, we use either slurry alone or a combination of slurry and chemical fertiliser to supply crop requirements,” says Raymond “We’ve found that using pig slurry alone in some situations has resulted in some K levels dropping, so we use 15:3:20 to deliver a proportion of the crop’s N, P and K requirements in the seed bed. We use muriate of potash (50% K) to replenish soil K levels based on soil test results.”

### Fertiliser N value of pig slurry

Pig slurry is a valuable source of nitrogen (N), as each 1,000 gallons contains approximately 19 units N at 4% dry matter (good quality). To maximise the recovery of N by the crop, it is essential that slurry is well

agitated, applied in moist, cool conditions and most important that it is ploughed-in within three to six hours of application. Raymond has found from experience that it is important to adjust bag fertiliser N applications to take account of the N in the slurry.

“Once soil temperatures increase, slurry N is released and if we don’t reduce early N applications to the crop, lodging is a real risk later in the season,” says Raymond.

He has noticed over the years that land receiving repeated applications of slurry releases extra nitrogen over time, offering a further saving in terms of reduced crop N requirements.

### Fertiliser programme

The typical fertiliser programme for spring barley on Moloney’s farm comprises of pig slurry at 2,000gal/ac plus two bags/ac of 15:3:20 and 1.75 bags/ac of ASA (26% N, 14% S). Higher rates of pig slurry are applied to very low to low P/K index fields (Index 1 and 2) due to higher P and K demands, as shown in Table 1.

The fertiliser and slurry programmes and nutrient supply are shown in Table 2. Pig slurry is applied and ploughed in ASAP; 15:3:20 is applied and incorporated at sowing time and the 1.75 bags/ac ASA is applied when the crop is at mid- to late tillering.

Raymond says the reason for having such a low requirement for chemical nitrogen is that he always endeavours to apply slurry and plough the field on the same day to aid maximum recovery of the nitrogen.

### Building soil P and K

On the Moloney farm, fertiliser programmes will change depending on soil P and K fertility levels. For example, where new land was taken on and soil fertility levels were Index 1 for P and K, a combination of 10:10:20 and slurry was applied.

The 10:10:20 is a more suitable fertiliser due to the higher demand for P and K on very low-fertility soils, plus the P in slurry is not as available (reduced availability of slurry P by 50% on Index 1 and 2 soils). Raymond hopes to reduce the amount of chemical fertiliser here as his indices rise. It is planned to retest this new land after three years to see the changes in soil fertility levels.

### Slurry quality

Raymond believes that knowing the dry matter of the slurry is one of the most important factors to applying the correct rate. Slurry application rate is adjusted based on knowledge of the slurry dry matter depending on the part of the pig unit it comes from.

The dry content of pig slurry can be easily determined on farm by a slurry hydrometer at least cost. For example, the application rate for slurry from the dry sow house is increased compared with slurry from the finisher house to ensure the correct level of N, P and K is applied.

### Fertiliser costs and pig slurry

The efficient use of the slurry has significantly reduced chemical fertiliser costs on the Moloney farm. The 2016 Teagasc e-Profit Monitor shows fertiliser costs for spring barley was €251/ha compared to the Teagasc costs and returns figure of €313/ha. When further analysed, a block of land which did not receive slurry (too far from the piggery), but only received chemical fertiliser, the fertiliser costs totalled €340/ha.

In comparison, the land which received the slurry, two bags/ac of 15:3:20 and 1.75 bags/ac 24% ASN, fertiliser costs only amount to €183/ha – a saving of €157/ha, after the cost of spreading is shared between the tillage farm and the piggery.

### Changes to legislation

The ending of the transitional arrangements that were in place for pig and poultry farms has made it more difficult to utilise and export pig slurry (see following article). While the aim is to apply the majority of pig slurry in the springtime to attain maximum nitrogen utilisation, it is difficult to build soil fertility for winter crops without autumn application.

Changes in the Nitrates Directive are required, in that slurry applied is attached to the crop rather than the year in which it is applied, as in the case for winter crops. For example, slurry applied to winter crops planted in October 2016 for the 2017 harvest goes into the 2016 records instead of the 2017 records.

“Pig slurry will always have to be carefully managed,” says Raymond. “But when used carefully, it’s a fantastic fertiliser which benefits the soil and crop profitability.”





**Table 1:** N, P and K advice for spring barley yielding 8t/ha

Soil index	N (kg/ha)	P (kg/ha)	K (kg/ha)
1	165	50	121
2	130	40	106
3	105	30	91
4	70	0	0

**Table 2:** Fertiliser programme for feed barley at 8t/ha receiving pig slurry

Nutrient requirements kg/ha (units/ac)		22m <sup>3</sup> /ha pig slurry kg/ha (units/ac) (2,000gal/ac)	Crop balance required kg/ha (units/ac)	Fertilisers applied (bags/acre)
N (Index 1)	165 (132)*	69 (55)	96 (77)	2.0 bags/ac 15-3-20, 1.75 bags / ac CAN
P (Index 3)	30 (25)	18 (14)	12 (10)	
K (Index 3)	91 (73)	48 (39)	43 (34)	

\* 8.5t/ha (135kg + 30kg = 165kg N/ha)

# Transition arrangement is at an end



It is now more important than ever that farmers who import pig slurry know at the start of the year how much slurry they can use without exceeding the restrictions on organic nitrogen

**Michael McKeon and Gerard McCutcheon**

The spreading of pig slurry is regulated under the Good Agricultural Practice for Protection of Water Regulations (SI 31 of 2014). Under these regulations, the transition arrangement ended in December 2016. This arrangement allowed farmers exceed the crop requirement for phosphorus (P) by 3kg/ha if the excess arose from the application of pig or poultry manure or spent mushroom compost.

This will have implications for farmers who use pig slurry from 2017 onwards. It is now more important than ever that farmers who import pig slurry know at the start of the year how much slurry they can use without exceeding the restrictions on organic nitrogen (N) (170kg/ha) and the P limits that apply to their farm. The only way to achieve this is by having the calculations done early in the year.

**Table 1:** Nutrient content and value of pig slurry (4.3% solids)

	N	P	K
Nutrient content (kg/m <sup>3</sup> )	4.2	0.8	2.2
Nutrient availability (%)	50	100	100
*Fertiliser cost per kg (€)	0.96	2.31	0.78
Value of each nutrient (€)	2.02	1.85	1.72

Note: 1m<sup>3</sup> equals 220 gallons.

\*Based upon chemical fertiliser prices in February 2016

**Table 2:** Cost per cubic metre of slurry spread with 3,000 gallon slurry tanker, or delivered in the case of a 6,000 gallon truck

Distance	3,000 gallon slurry tanker	6,000 gallon truck
3 miles or 5km	€2.57	–
5 miles or 8km	€3.56	–
10 miles or 16km	€6.20	€3.76
15 miles or 24km	–	€4.88
20 miles or 32km	–	€6.00

**Conclusion:** Farmers may save money if they use locally available organic fertilisers effectively (i.e. to replace the nutrients contained in chemical fertilisers) to grow their crops. You should get your adviser/consultant to do a fertiliser plan to maximise the potential savings for your farm.

The value of pig manure as a fertiliser depends on how much chemical fertiliser is replaced as well as the cost of the chemical nutrients replaced. The fertiliser value of pig manure at 4.3% solids is €5.59/m<sup>3</sup> when there is a requirement for N, P and potassium (K) – see Table 1.

This translates into €25.37 per 1,000 gallons. A reasonable rule of thumb is that a thousand gallons of pig slurry is equivalent to a bag of 19:7:20. A lorry tanker conveying 25m<sup>3</sup> or 5,500 gallons will contain nutrients to the value of €145 based on 4.3% solids.

### 1,000 gallons is equivalent to a bag of 19:7:20

The EU Good Agricultural Practice for Protection of Waters Regulations (often referred to as the nitrate regulations) were reviewed in 2014, giving some benefits to farmers using pig slurry.

The new Statutory Instrument (SI 31 of 2014) came into effect on 31 January 2014. A number of requirements in these regulations are summarised briefly below:

- The P requirement for crop growth depends on the stocking rate of the grassland (i.e. if it is less than 85, between 86 to 130 or between 131 to 170kg organic N/ha).
- No organic fertiliser may be imported if the stocking rate is above 170kg/ha.
- If hay or silage is sold off, the farm allowance can now be factored in for extra P required to grow these forage crops.
- The first 300kg of concentrate fed to each grazing livestock unit (i.e. 85kg organic N) is now discounted in calculating the P from concentrates fed to grazing livestock.
- The availability of P is considered to be only 50% if used on soils with a P index of 1 or 2 as per the Morgan's extractable P test. So if you have low P levels in your soils, it is an ideal fertiliser.

### Use pig slurry to save money

If you use chemical P on your farm, it will greatly reduce the volume of



**Raymond Moloney, Ballinaspittle, Co Cork, with his sons Killian and Gavin. Read Raymond's pig slurry advice on P24-25.**





pig slurry you may use on your farm. Two field demonstrations run by Teagasc in 2014 showed savings of over €100/ha (i.e. €40 to €50 saved in fertiliser costs per acre).

It is important that you know the volume of pig slurry you may use in compliance with the nitrate regulations to ensure maximum savings in fertiliser costs.

You should have a fertiliser plan done by your own agricultural adviser or consultant. Let the pig farm manager/owner know how much pig slurry you will need as early in the year as possible.

### Transport costs

Transport and spreading costs should be included when assessing any savings made if using an organic fertiliser.

Research at Moorepark modelled the loading, transport and spreading of slurry in different situations of a standard slurry tanker and using a truck to transport the slurry longer distances.

These will vary greatly based upon

the distance travelled and the tanker size used to draw the slurry.

Table 2 is a summary of the costs associated with a 3,000-gallon slurry spreader (based on a contractor cost of €50/hour) and 6,000-gallon lorry delivering slurry to a storage tank (using a cost of €72/hour here).

There are a number of assumptions factored into this model relating to transport speed with full loads on the outgoing journey and empty tanks on the return journeys.

So it is cost-effective based on the model assumptions to have pig slurry delivered and spread on land if the recipient farmer is drawing it and spreading it up to nine miles or 14km away from the pig farm (i.e. the cost to transport and spread it does not exceed the nutrient value of €5.59/m<sup>3</sup> as shown in Table 1).

Likewise the use of a transport truck to deliver it, will allow the slurry be brought a greater distance from the pig farm – up to approximately 18 miles (or 29km) from the farm before the value of the slurry being transported is outweighed by its' value.



Teagasc B&T advisor Eileen Casey with Raymond Moloney, Ballinspittle, Co Cork. Read Raymond's pig slurry advice on P24-25.

# equine

## Partnership shows promise for the sport horse sector

**Declan McArdle,**  
Equine Specialist, Teagasc Rural  
Economy Development Programme

It's that time of year again, preparing for the arrival of this year's foals. In finalising decisions regarding choice of sires to produce next year's foals it is important to look at the requirements of the market place and how as a breeder one can:

- Meet market demands
- Gain financial reward

To meet market requirements one must first understand the needs of the potential customer in the market you are breeding for.

### Target market

There are many markets for sport horses. Showjumping and eventing tend to be the most lucrative markets. Whichever market you are targeting it is imperative to aim for the top. For example in the context of show jumping the 1m60 performer is the pinnacle.

This horse must have good conformation, technique, scope and a balanced canter in order to deal with the technicalities of modern day 1m60 tracks along with being competitive against the clock.

Likewise, an event horse breeder must consider the demands of a 4\* horse requiring four good paces, conformation, technique, scope, brave cross country and with enough stamina to complete the course.

Breeders must constantly keep in touch with the sport to enable more informed decisions in the breeding enterprise

### The product

In order to produce a product fit for purpose the key lies primarily with the mare and the attributes she brings to the table.

Questions to be asked:

- Does your mare have a performance rich dam line appropriate to your chosen market?
- Has she performed well and at what level?
- Has she good conformation and athleticism traits?

If your answers to the above are positive, the next step is to select a sire to complement your mare.

The true test of a sire is the results of his progeny. It is important, if possible, to go and see progeny competing in the flesh and make an appraisal.

### Costs of production

It's important to keep in mind the po-



tential financial returns from breeding. I estimate the average cost of producing a foal to be approximately €1,650 plus stud fee.

Approximately 27% of horses are sold through the auction houses namely Cavan Equestrian Centre and Goresbridge Horse Sales.

The results of these sales are not a complete representation of the industry, however, we can learn some important points from them about the current climate.

From Charts 1 and 2, it is clear that the elite sales are significantly improving the returns to breeders whose stock are selected for this avenue of marketing and sale.

The trend shows that if you breed what the market requires it will reward you.

Tables 1 and 2 strongly suggest that the majority of breeders who are in the average bracket of the sales returns are losing money when you exclude the elite sales results and take stud fee and estimated costs of production into account.

One of the key factors which influence breeding enterprises is finance. Many breeders want to breed for the market place but cannot afford to buy a mare with a strong dam line for their chosen market.

This issue was addressed at the re-

**Table 1:**

Foals	Average not including elite	Average of elite	Average including elite	Top 20%
2016	€2,076	€9,627	€2,918	€8,027
-Costs	€1651 + stud fee	€1651 + stud fee	€1651 + stud fee	€1651 + stud fee
Total Profit	€425 (-Stud Fee*)	€7,976 (-Stud Fee*)	€1267 (-Stud Fee*)	€6,376 (-Stud Fee*)

\*Plus any additional costs that may have been incurred

**Table 2:**

Three year olds	Average not including elite sales	Average of elite sales	Average including elite sales	Top 20%
2016	€3,176	€11,842	€4,700	€12,529
-costs**	-€3,440	-€3,440	-€3,440	-€3,440
Total Profit	-€264 (-stud fee*)	€8,402 (-stud fee*)	€1260 (-stud fee*)	€9,089 (-stud fee*)

\*plus any additional costs that may have been incurred

\*\* not including stud fee



# ENNISNAG STUD BACKGROUND



Andrew developed his mare herd by purchasing filly foals with strong dam lines (1.60m performance in the first three dams), sound, and have blood (athletic with quick reflexes).

Andrew recycles the bottom 10% of his mare herd every year while ensuring he retains his best fillies. He is constantly researching the marketplace by watching shows online, attending stallion inspections in Europe and watching progeny of up-and-coming sires.

Andrew regards the market as good for elite foals, however, he feels the six/seven/eight year old market is the most profitable.

To enable him retain ownership and afford to produce his horses under saddle Andrew selects riders best suited to his horses and offers them half-shares in return for the production of the horses.

"For me to put 10 – 12 horses into training is financially prohibitive so what I do is rear the horses to three to four years of age, select the riders I think best suit my horses and then invite the riders to view them. If a rider agrees to take a half share of a horse in order to produce him it validates my decision to produce the horse through to competition.

"The benefits are that my horses get produced correctly and achieve their true value and it adds value to the family coming on behind."

cent Teagasc National Equine Conference, 'Opportunities to Grasp', which was held in Kilkenny last November. Partnerships were a key theme throughout the day with the majority of speakers recommending breeders combining forces to produce horses which meet market demands.

Examples discussed were:

- Breeder and breeder working together
- Breeder and rider working together
- Breeders utilising their mares (if the mare wasn't producing what the market required) as recipients for embryo transfer

## Ennisnag Stud

Andrew Hughes of Ennisnag Stud who spoke at the conference promotes the concept of partnerships.

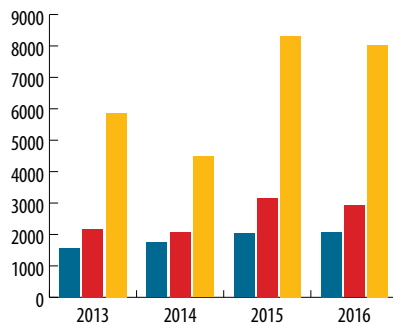
Andrew has grown his herd from a single mare to 20 over the last 12 years. The fruits of his labour are now being realised. Andrew had three horses competing in the finals of World Young Horse Championships in Lanaken last September.

For the majority of breeders this would not be financially possible. However, Andrew has entered partnership with a number of riders which enables him to bring these horses further along the supply chain, reaping a higher reward.

**Chart 1**

Analysis of foal sales

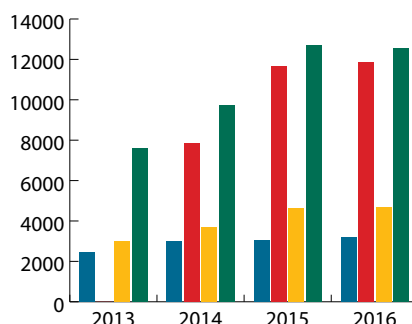
- Average not including elite sales
- Average including elite sales
- Average top 20%



**Chart 2**

Overview of sales results for three-year-olds

- Average not including elite sales
- Average of elite sales
- Average including elite sales
- Average top 20%



## IN CONCLUSION

As evidenced by the sales results there is financial reward for those who breed stock which meet market demands.

In future it may be more beneficial for breeders to combine forces and work collaboratively with other breeders/riders to achieve their goals and get financial return for their endeavours.

# Impressions of New Zealand

*In November last year, three Teagasc advisors – John Noonan, Westport; Joe Hand, Thurles; and John Cannon, Letterkenny – made a knowledge-gathering mission to New Zealand. In this article, I have assembled just a fraction of the knowledge they gathered from meeting researchers, advisors and farmers there.*

**T**he major strength of New Zealand farming, like our own, is that the production systems are based on the crop the country is very good at producing, namely grass. This is across cattle, sheep and dairy production,” says John Noonan.

“Animal breeding in New Zealand has focused on producing ewes and beef cows that require a very low level of man hours to operate, especially at lambing and calving time. The stud ram breeders have concentrated on producing replacements with lower levels of lameness than in the past.

“Farms have access to the performance figures for the various rams and bulls offered for sale and use them to select sires for replacements. There is a strong emphasis on maternal qualities. In addition, buyers refine their choice of sires using visual assessment. This focus on easy-care has resulted in a very high level of output per person.”

## Challenges

“The government is prepared to support agriculture, as it represents a large percentage of the foreign earnings in New Zealand, but agriculture is faced with a range of challenges,” says Joe Hand.

“The largest issue is protection of the environment. Central government and the regional councils are driving this, in response to demands from the public, who have observed deteriorating water quality, especially where dairy farming has intensified over the last few years.

“Allied to this is the demand for water for irrigation and opposition from the lobby that have concerns about fish in rivers.

“Limits have been set for the levels of discharge of nitrogen (N) from farms. This currently appears to be



15kg N/ha on drystock farms. Hill farms have much lower levels of discharge due to the extensive nature of the farming there.”

## Enterprise trends

“The trend towards new dairy farms is coming at the expense of decreased numbers of drystock and arable farms on the better soils,” says John Cannon.

“In the Canterbury plains area, there is a decline in the lamb fattening enterprise and the possibility that more store lambs will have to be retained on the farms of birth to be fattened and eventually be sold directly to the meat plants, known locally as the ‘works’.

“At present, the level of farm debt

is estimated at NZ\$63bn (€43bn), with dairy farming accounting for 63%. Herd size is averaging about 800 cows on the newer dairy farms on the South Island.

“It requires NZ\$1.20/kg MS to service this debt. The capital employed in milk production works out at about NZ\$45 to NZ\$50/kg MS, about 65% of this is for the land.

“The level of mechanisation and amount of capital tied up in machinery, as well as the increased trend to feed more concentrates to dairy cows, is causing an increase in the production costs of milk solids. This is a threat to the traditional low-cost production method employed on farms with its emphasis on grass production and utilisation.”



John Noonan,  
Judy Carter,  
Joe Hand and  
Sean Carter.

# Drystock on grass

## John Noonan

Sean and Kate Carter farm 503ha of their own and lease another 160ha on the western side of the North Island. Their 480 effective hectares carry 150 South Devon x Aberdeen Angus cows with all progeny sold finished off grass at 16 to 18 months old. Heifer target carcase weight is 240kg; 300kg for bulls. This performance is achieved with a grass only diet. Although retired from farming, Sean's father John and wife Judy live next door and are there to help when called upon.

"We buy in c.150 Friesian bull calves as four-day-old calves and sell them (pictured left) at 16 months off grass at a 300kg carcase as bull beef, with no meals," says Sean. "Our sheep flock consists of 2,000 ewes and we have a maternal and a terminal flock. The maternal flock is Coopworth (Romney x Border Leicester). The terminal studs are Texel. Hogget ewes are mated to a Cheviot for easy lambing. The ewes are vaccinated against Leptospirosis, Toxoplasma and Campylobacter."

Rams are bought at 14 months of age for mating at 19 months of age. "The idea is that any structural defects will be spotted and the rams ultimately last longer," says Sean. "The rams are generally mated at one ram/100 ewes usually in groups of 500/600 ewes per group. The rams cost around NZ\$1,140 to \$1,200 (which is about €800) each.

"This year, the overall scan was 1.84,

Sean and Kate Carter  
Mangoataki, Piopio,  
North Island.



with 1.46 weaned/ewe to the ram. The mortality levels were higher this year due to increased levels of facial eczema – though we supplemented with zinc to reduce its incidence."

Lambs are born in early September with a target of drafting a one-third in late December for slaughter at 38kg, giving an average 17kg carcase. On that day, the lambs made \$88 (€60).

All purchased rams are recorded with performance data. This is the norm and farmers put great value in recording and see it as an essential part of their business. In this area, there is additional emphasis on resist-

ance to foot rot and facial eczema.

"We have practically eliminated lameness through strict culling along with using the use of resistant rams," says Sean. "So lambs don't generally suffer from lameness issues."

## Aerial application

The farm receives an annual application of DAP (a combination N and P) dressing by aeroplane over 20% of the pasture. Lime is also applied. Much of the farm is rolling/steep grassland and is of good quality by New Zealand standards. The flat areas receive fertiliser via tractor spreading. The aeroplane uses GPS technology when spreading and most farms in the area have their own airstrip and fertiliser silo. Urea is applied over smaller areas for cattle mainly. The overall nitrogen use appears to be low by our standards.

"Ewes are grouped post-weaning on condition score, with any ewe that does not have a lamb at weaning excluding two-tooth sheep being culled," says Kate Carter. "The ewes with triplet lambs are put into a sheltered paddock and the third lamb is often reared artificially."

The Carters are not only efficient but also extremely environmentally conscious; cattle are fenced from all watercourses, for example. As the environment becomes an ever more important issue, there are now competitions to highlight environmental protection on farms in New Zealand. The Carters are being encouraged to enter and their chances must be good.







# New findings

**John Cannon, Dr Margaret Brown, Joe Hand and John Noonan.**

**T**he advisors met with Dr Margaret Brown, senior researcher at Agresearch, Palmerston North.

Dr Brown employs her expertise as an educationalist to help design agricultural extension programmes.

“Dr Brown said that the New Zealand government is only prepared to fund research into agriculture if research organisations can demonstrate that the industry uses the new findings and adopts the necessary changes in practice,” says John Noonan.

Dr Brown described how the complexity of any adoption process will vary depending on the level of change necessary by the end users. For example, simple changes such as the use of a new animal vaccine may affect a small number of other factors, while a complex change of farming system such as from a sheep breeding enterprise to a cattle fattening system may involve an interaction with family members, partners, parents and the needs of dependents, bankers, consideration of the environment, shed requirements, feed requirements and so on.

“The design of a complex change programme must meet the needs of all the stakeholders, and the decision

to adopt the change rests with the farmer,” she says. “While the requirements of most of the stakeholders may be relatively clear, the needs of the farmer and his family must be understood and are often very complex, in order to adopt change successfully. In addition, the question needs to be asked what’s in it for ‘me’.”

“An example of a novel approach used by Dr Brown, was to visit a primary school in a rural area and speak to the pupils about a proposed meeting on a specific topic (such as environmental issues, rural development, etc.) for their parents a few days later,” says John Noonan. “She says wives as well as children are potential stakeholders who can influence what happens on the family farm. She says she knows from experience that New Zealand farmers’ wives are more focused on long-term planning and environment issues than men.”

The advisors were very impressed by all the farms and organisations they visited and contacts made. These included Focus Genetics, Mount Linton Station, Wairere Station, Nithdale Genetics, Beef and Lamb New Zealand, Alliance Foods, AbacusBio, Lincoln and Massey Universities, PGG Wrightson and Glenthorpe Station.

## CONCLUSION

In conclusion: John Noonan, Joe Hand and John Cannon report that they received phenomenal help and hospitality throughout their trip to New Zealand. They visited 17 farms, institutes and businesses which face many of the same issues we face in Ireland and the people there were universally generous with their thoughts and insights.



**NEW**

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# Cash your chips now or sell your woodchips later?

**John Casey**  
Forestry Development Officer,  
Teagasc Crops, Environment & Land  
Use Programme (CELUP)

I am often asked by farmers whether they should sell their timber 'standing' (i.e. where the timber buyer purchases the timber in the field at an agreed value per volume/weight), or whether the farmer should organise the harvesting himself and try to increase the value of the crop as a roadside or 'delivered' sale? The answer depends on the level of knowledge, time and effort the forest owner is willing to put into selling his/her timber.

Timber is sold using one of the following options:

- **Standing sales:** The forest owner sells timber as it stands in the forest at an agreed price in advance of harvesting. The buyer is responsible for thinning and harvesting. Timber is sold by volume (m<sup>3</sup>) or weight (tonne). Most first-time forest owners opt for this, the most straightforward method of sale.
- **Roadside sales:** Timber is sold to the buyer when stacked on the forest road. The harvesting contractor is paid by the forest owner. The haulage is covered by the buyer. Timber is sold by volume (m<sup>3</sup>) or weight (tonne).
- **Mill gate sales:** The buyer pays for the timber delivered to their yard/mill. The forest owner pays for the

harvesting and haulage cost. Timber is sold by weight (tonnes). Obviously, the closer the timber gets to the processing stage, the higher the price offered.

In addition to the method of sale, the price the forest owner receives for the timber depends on the diameter assortment category of the logs produced during harvesting. The quantity (and price) of each category produced depends on the species, quality, size, and age of the timber being harvested (Figure 1).

• **Small diameter timber:** This is generally the top section of the tree and has a diameter between 7cm and 14cm and is generally divided into three further categories: pulpwood, stakewood and energy wood/biomass.

• **Palletwood:** This is cut from the mid-section of the log, which has a large end diameter generally up to 20cm and a small end diameter down to 14cm. It is used as the name suggests in the packaging industry, manufacture of garden furniture and fencing.

• **Sawlog/light sawlog:** This is cut from the lower section of the stem and is cut to a small end diameter of 20cm. It is used to produce timber for the construction industry. In general, first and second thinnings would not contain timber large enough to fall into this category.

*Note - the timber lengths and categories mentioned refer to products from conifer trees.*



## Keen forester

Tom Hickey, Stradbally, Co Waterford, is an example of a farm forester keen to get the most out of his thinnings, while remembering that the crop remaining at clearfell stage is the priority.

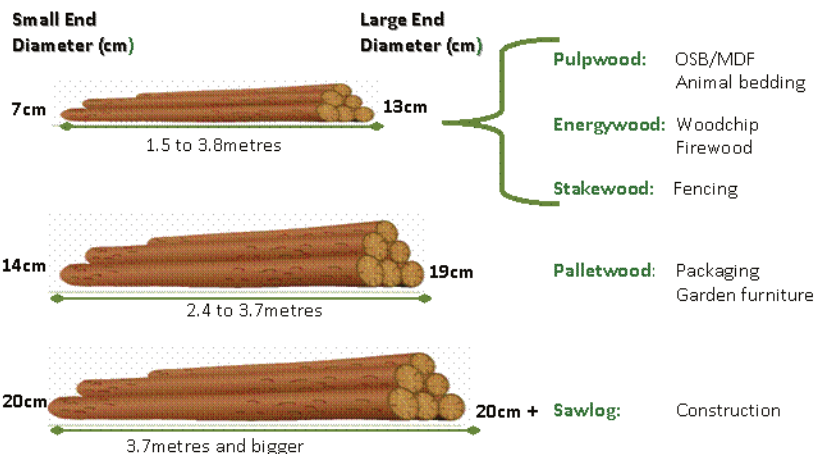
Tom planted 7.3ha of mainly Sitka spruce conifers in the winter of 1997 after trying twice unsuccessfully to drain parts of the land. In fact, he remembers turf being cut in one area in his father's time.

Tom estimates that there was a three-year lead time between first considering forestry and finally planting. Tom's spruce plantation is quite representative of farm forestry, as the average private forest area is 7ha to 9ha.

"I felt I knew almost nothing about timber as the crop approached thinning stage," says Tom. "And I had concerns about selling timber standing."

Tom was one of the founding members of the Waterford Forest Owners

**Figure 1**







Members of WFOG on a field trip to Tom Hickey's farm (ninth from left) with Teagasc's John Casey (fourth from left).

Group (WFOG), initiated by John Casey, Teagasc, in 2010, and is currently the secretary of the group.

Training events and info days offered the group the opportunity to learn as they went along. The Waterford members are very active; organising site visits with Teagasc to demonstrate harvesting and chipping and running clinics at Dungarvan Mart to engage new members, as well as promoting the group and active forest management.

WFOG joined groups in Wexford, Kilkenny and Laois in 2015 to form a new producer group collaboration called Irish Wood Producers. This grouping focuses on:

- Active forest management.
- Professional advice.
- Compliance and infrastructure.
- Training and co-operation.
- Economy of scale.
- Added-value timber products.

From 55 members initially, the Irish Wood Producers now delivers events, training and forestry services to

approximately 700 members in five counties. The group is a registered not-for-profit forestry company with a contract forester, a general manager and a part-time office manager with the capacity to deliver forestry services ranging from afforestation to clear fell, working with 34 sub-contractors.

An initial site visit to a new member starts with an inventory and site assessment. When the group has a number of sites ready in an area, a harvesting cluster is organised.

The group provides a cost estimate based on the plantation and sales contracts.

Safety assessments are completed before the harvester and forwarder/chainsaw team arrive on site. When the timber is stacked, any commercial timber is sold to sawmills and offset against the cost of harvesting. So far, 2,314t of sawlog and 5,674t of palletwood have been sold to sawmills.

The group encourages retaining pulpwood to increase timber value for

biomass, in this case in the form of woodchip. A network of small depots has been established and, depending on site access, biomass is processed either on site or at a depot.

This sales system requires the forest owners to part-fund the timber harvesting instead of a standing timber sale and may involve a possible year-long wait until the pulp is dry enough to chip.

However, it increases the return from the timber sales. To date, 10,045t of woodchip have been delivered, with Danone's infant milk formula plant in Co Wexford one of its major customers.

In Tom Hickey's case, selling his timber using the system outlined above has proved very beneficial. In October and November 2015, Tom organised the first thinning of his 7.3ha Sitka spruce plantation under the auspices of Irish Wood Producers, at an overall cost of €11,735. This was paid for by the sale of 131m<sup>3</sup> of palletwood valued at €5,862 and by Tom paying the harvesting contractor the remainder.

The thinning harvest of 131m<sup>3</sup> of palletwood and 255m<sup>3</sup> of pulpwood came to 386m<sup>3</sup> in total, or approximately 60m<sup>3</sup> per productive hectare, when open spaces, ridelines, etc., are taken into account. If Tom had sold the crop standing at a flat price of €10/t or per m<sup>3</sup>, he would have earned €3,500 to €4,000 minus the Universal Social Charge (USC), without any time commitments or other inputs from himself.

The 255m<sup>3</sup> of pulpwood was stacked on the farm before being chipped in June to August 2016 at a moisture content (MC) range of 23% to 37%.

The lower the MC, to a certain point, the more valuable the woodchip is. After chipping and transport costs of €6,586 and the 10% IWP commission were subtracted, Tom earned €17,615 from the sale of woodchip due in part to its high calorific value.

Timber prices will vary according to a range of factors such as season, demand, location, quality, access, etc. Even when the €6,600 top-up payment to the harvesting contractor is taken into account, Tom still earned an impressive €11,000 profit (minus USC) from the overall sale of his first thinnings, while keeping a degree of control by selling through a forest owner-owned grouping.

Tom says that he has learned two very important lessons from his experience:

- "Keeping pulpwood for woodchip can work if you have the market, the patience and resources to wait for the delayed pay day."
- "The real money is in the clearfell. Everything you do is leading to that."



# The Nitrogen Derogation

*Applying for a DAFM-approved derogation is the right thing to do, as the benefits can be far greater than simply receiving the derogation itself.*

**Brendan Smiddy,**  
Teagasc Dairy Advisor, Middleton,  
**and Tim Hyde,**  
Environment specialist, Teagasc Crop,  
Environment and Land Use Programme

Many farmers complete the derogation plan and records because they have to for cross-compliance, stock density reasons and to protect their Basic Payment. The additional benefits from discussing all aspects of nutrient management for the next few years (a liming plan, where to target organic/chemical fertiliser) means a win-win for all concerned. The discussion of regular soil test results will ensure farmers can maximise grass production and also comply with Department (DAFM) regulations.

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.

On the day you come in, there are three main jobs to be done; (1) complete records for the year just gone, (2) apply for the derogation and (3) prepare a fertiliser plan for the coming year.

### What you should bring

- Feed for 2015: To complete records for 2016.
- Fertiliser for 2016: To complete records for 2016.
- Feed 2016: To prepare plan for 2017.

- Projected stock figures for 2017.
- Any changes to land area for 2017.
- Any changes to yard: e.g. new buildings, slurry storage facilities, etc.
- Copy of your 2015 fertiliser records (any opening stock of chemical fertiliser in 2016).

### What you will have when leaving

- Maps showing the lime, phosphorus (P) and potassium (K) status of your farm so you can plan a lime 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 the updated fertiliser plan, particularly what the soil analysis is saying.
- Details about the livestock manure storage capacity of the farm – 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.
- Clarity about what your fertiliser nitrogen (N) and P requirements and what your limits are for Department nitrates inspections. Remember; there are no limits to potassium (K) or lime.
- Information about when your soil samples need to be retaken.
- Completed records for 2016.

### How is the N/ha figure arrived at?

The kg of N per hectare figure (N/ha) is arrived at by dividing the total kg of N produced on the farm, by the eligible area under the Basic Payment Scheme. The annual nutrient excretion rate for dairy cows in the regulations is 85kg, so if, for example, you had 30 dairy cows on the farm (with a farm size of 20ha) for the full year, the total N figure would be 2,550kg and the N/ha would be 127.5kg, rounded to 128, i.e. 2,550 divided by 20.

- N figures for cattle are calculated on a daily basis using data from AIMS.
- Maximum amount of kg of livestock manure fertiliser you're allowed to apply to land = your hectares x 170kg (or 250kg for derogation farmers) – e.g. 20ha x 170kg per ha = 3,400kg N – e.g. 20ha x 250kg per ha = 5,000kg N.
- Example of a farm with 30 dairy



**Table 1:** Nitrogen excretion figures for some typical animals

Animal type	kg/head/year
Dairy cow	85
Suckler cow	65
Cattle > 2 years	65
Cattle (1-2 year old)	57
Cattle (0-1 year old)	24

cows and 10 suckler cows for 12 months:  $[30 \times 85 + 10 \times 65] = 3,200\text{kg N}$ .  $3,200\text{kg N} \div 20\text{ha} = 160\text{ N/ha}$ .

The Department issues text messages throughout the year to help farmers comply with the limit.

Farmers not already registered for agfood.ie can do so by logging on to [www.agfood.ie](http://www.agfood.ie) and clicking the 'register' button. To register a mobile





phone number for future SMS text alerts, log on to [www.agriculture.gov.ie/mobileupdates/](http://www.agriculture.gov.ie/mobileupdates/) to access the sign-on form. There is also a nitrates helpline at 053-916 3444 or email [nitrates@agriculture.gov.ie](mailto:nitrates@agriculture.gov.ie).

### Derogation statistics

- 6,323 farmers applied for a derogation in 2015 and 6,803 applied for derogation in 2017.
- Teagasc help support 60% to 70% of the derogation applicants yearly.
- 4,129 farmers breached the 170kg N/ha limit in 2015 and did not apply for a derogation. Some of these farms may have exported slurry, rented/ grazed other lands not declared on BPS in 2016 or some farms may have been locked up with TB during 2015 and were unable to reduce cattle numbers. All of these can help reduce the N/ha on farms.

### Penalties

Farmers who exceeded 170kg N/ha without a derogation or those derogation farmers who exceeded 250kg N/ha will receive letters from the Department this spring indicating the breaches. Therefore, they will be penalised on payments from EU-funded schemes of which they are in receipt, unless they can provide an adequate explanation which shows that the farm was not above the 170kg N/ha limit in 2016. The Department recommends that all recipients of these letters should contact their agricultural consultant for advice on this issue.

The Department letters will contain the following text: "According to our records, you are in breach of the nitrates regulations. Our records indicate that the total amount of nitrogen from livestock manure applied on your farm for [YEAR] was XXXkg

per hectare (kg N/ha), which is more than the limit of 170kg...."

### What happens if I exceed the limit more than once?

Penalties will be multiplied by three for repeated breaches within three calendar years.

On a first repetition, the current sanction is multiplied by a factor of three. For second or further repetitions (reoccurrences), the previous percentage sanction is multiplied by three, up to a maximum of 15% for negligent sanctions.

Repetition breaches after this will be deemed intent and will lead to higher sanctions up to the loss of the current calendar year's entire payment(s). It can also lead to the loss of any payment(s) due in the following calendar year.

**Table 2:**

Year	Approved Derogation applicants (REPS & Derogation farmers)*	Farms > 170 who did not apply for a derogation **	Farms > 250 who did not apply for a derogation ***
2007	4,133	3,600	700
2008	3,855	3,700	500
2009	4,909	3,477	470
2010	4,190	3,520	496
2011	4,600	2,800	450
2012	5,214	3,047	446
2013	4,932	1,511	158
2014	5,120	2,336	250
2015****	6,329	1,876	146
2016	6,803	4,129****	No data yet

\* Derogation applications rising steadily since 2007

\*\* Farms >170 NpH who did not apply for a derogation have reduced significantly since 2007 however in 2014 and 2015 these have risen due to increased stock numbers on mainly dairy farms

\*\*\* Farms >250 reducing gradually as farmers are proactive in reducing stocking rates to comply with the Nitrates and Derogation Terms and Conditions.

\*\*\*\* These figures contain data after exports and restrictions (TB), are taken into consideration.

\*\*\*\*\* These figures may not include Record 3, 4 or 5 forms submitted to DAFM in 2016 as this data is currently being processed.

Source: DAFM Data

**Table 3: DAFM Nitrates penalties for exceeding the stocking rate limits**

Band for non-derogation Applicants	% Penalty
>170 <=180	1%
>180 <=210	3%
>210 <=250	5%
>250	20%

Band for Derogation Applicants	% Penalty
>250 <=300	5%
>300	20%

## DEROGATION ADVANTAGES

Brendan Smiddy, Teagasc advisor, Middleton, highlights the top five advantages for farmers who apply for a derogation:-

- 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.
- Completing the derogation gives a full profile of the soil fertility status on the farm and to see how the soil fertility has changed over time. The status and requirements for lime is a very important part of soil fertility in terms of achieving the optimum pH for nutrient availability and responses.
- 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.
- Issues such as silage and grazing areas need to be identified to target optimum slurry and fertiliser applications based on land use.
- Slurry storage calculations are part of the discussion and this highlights any surpluses or deficits on farm especially where farms are in an expansion mode in that it highlights any investments that will be required over time.

## DEROGATION REQUIREMENTS THAT YOU NEED TO KNOW

- Application deadline for 2017 is 31 March 2017 (only be submitted online).
- Fertiliser records for 2016 must be submitted online by the deadline of 31 March 2017.
- You must be farming a holding that is at least 80% grass.
- A derogation is only available in respect of grazing livestock.
- You cannot import livestock manure on to their holding.
- You must have a fertiliser plan in place for your holding by 1 March. Where a new or amended fertiliser plan is submitted in 2017, only a plan pro-

duced by the Teagasc online Nutrient Management Plan (NMP Online) programme is acceptable.

- Only soil analysis dated after 15 September 2013 can be used.

### You must submit

- A farm map indicating location of 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.
- If fertiliser plans are subsequently amended for either new soil analysis,

farm map and/or farmyard sketch, they should be submitted online.

- Soil samples must be for every 5ha of all land declared on BPS 2016 (including owned, leased and conacre lands).
- Derogation farmers are liable to a 5% Department inspection if in derogation.
- Full details of the scheme are available on the Department of Agriculture, Food and the Marine website at [www.agriculture.gov.ie/ruralenvironment/environmentalobligations/nitrates/nitratesderogation/2017derogationforms/](http://www.agriculture.gov.ie/ruralenvironment/environmentalobligations/nitrates/nitratesderogation/2017derogationforms/)



# GOLDEN DAFFODILS

*Never allow the bulbs  
which yield these  
glorious blooms to get  
too 'comfortable'*

## Chris Heavey

lecturer at the Teagasc College in the National Botanic Gardens.

**I**wandered lonely as a cloud that floats on high o'er vales and hills when all at once I saw a crowd a host of golden daffodils" ..... everyone's favourite poem with its origins in the English countryside about a beautiful and versatile flower that has its origins in Spain and Portugal.

Daffodils announce the beginnings of spring with a flood of yellow. Whether you have a pot or an acre to plant up, the humble daffodil perfectly fits the bill. The choice is huge when it comes to daffs and better still you can be assured of colour from January right through until Easter by choosing a mix of varieties.

The tall statuesque trumpeter demands your undivided attention, while the tiny bulbacodium nod shyly in the spring breeze,

hardly daring to look up. Yellows and blues are a match made in heaven so why not use hyacinth and perhaps forget-me-nots to show off these yellow beauties to best advantage. Both planters and gardens need a little perfume at this time of the year and daffodils such as paper whites pack a punch in the perfume department.

## Propagation

Daffodils don't seed themselves naturally in the Irish climate, but they do multiply easily by creating small bulblets around the edges of the larger flowering bulbs. This allows daffodils to spread in a natural way; something similar to the way they naturally disperse themselves on the prairies of central Spain.

It is said that the best way to position bulbs for planting in the garden is to throw a handful up in the air and plant them where they fall – it actually works quite well.

Nine billion bulbs are produced in Holland alone each year and sent around the world. These are of all types and varieties. This means a wonderful range of characteristics and sizes is available to us: single, double, scented and toned flowers and miniature, medium and tall plants.

Cross pollination and production of new daffodil varieties is something that has been prac-

ticed by growers and amateurs alike for centuries. The catch is that it takes about seven years from seed for a bulb to flower.

Blindness in clumps is when daffodils fail to flower and only produce green leaves. The depth we plant at is key in preventing this. When planting the bulbs, it is very important that they are planted deeply to a depth of at least 9in/225mm. This protects the bulbs and, to a certain extent, stresses them into flowering early and prolifically over a long period of time.

However, it is important to recognise the signs of blindness in daffodils which have been planted a long time in one place. To deal with this problem, we should dig up our bulbs every nine or 10 years and move them about or spread them around. This causes the bulb to not get too comfortable in one place and makes them flower better.

So, plan ahead and when your daffodils are finished flowering this spring, dig them up and spread them around. Then expect to encounter spring in all its glorious and abundant yellow next year.



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\* *Mannheimia haemolytica* A1 and A6

\*\* RSV and PI3 viruses

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